

また、USB端子221を介して外部電源によりバッテリー507の充電が行われている場合、制御部501はヘッドセット1への充電を行わないように第1切り替えスイッチ509aおよび第2切り替えスイッチ509bを共にオフにするように制御を行う。ただし、充電経路切り替え部509の動作はこのような例に限られるものではない。例えば、USB端子221を介して外部電源によってバッテリー507の充電が行われている場合に、第1切り替えスイッチ509aをオンにすることにより同時にヘッドセット1の充電を行うようにしてもよい。

【0087】

充電オンオフ切り替え部510は2つのスイッチ、第1オンオフスイッチ510aおよび第2オンオフスイッチ510bを備えるスイッチ回路として構成されている。第1オンオフスイッチ510aの一端は充電経路切り替え部509の第1切り替えスイッチ509aの他端に接続されており、第1オンオフスイッチ510aの他端は給電用端子211に接続されている。また、第2オンオフスイッチ510bの一端は、充電経路切り替え部509の第2切り替えスイッチ509bの他端に接続されており、第2オンオフスイッチ510bの他端はDC/DCコンバータ511に接続されている。

【0088】

充電オンオフ切り替え部510はさらにユニット検出スイッチ212に接続されている。上述したようにユニット検出スイッチ212はクレードル100のL側ハウジング収納部210aの底面に設けられた突起状のスイッチである。充電オンオフ切り替え部510の第1オンオフスイッチ510aおよび第2オンオフスイッチ510bは共に通常はオフ状態となっており、クレードル100にヘッドセット1が収納されてユニット検出スイッチ212がオンになるとそれに連動してオンになるように構成されている。そして、クレードル100からヘッドセット1が取り外されてユニット検出スイッチ212はオフとなると、それに連動して第1スイッチおよび第2スイッチはオフになるように構成されている。これにより、クレードル100にヘッドセット1が収納されると自動的にヘッドセット1に対する充電が行われることとなる。

【0089】

DC/DCコンバータ511は昇圧回路であり、一端は充電オンオフ切り替え部510の第2オンオフスイッチ510bの他端に接続されており、他端は給電用端子211に接続されている。バッテリー507から供給される電力によりヘッドセット1のバッテリー507の充電を可能とするために、DC/DCコンバータ511により規定の電圧に昇圧する。DC/DCコンバータ511により規定の電圧に昇圧された電力は、給電用端子211を介してヘッドセット1のバッテリー507へ送られる。このようにして、クレードル100のバッテリー507を用いたヘッドセット1の充電が行われる。

【0090】

【1-3. クレードルによるヘッドセットの収納】

以上のようにしてクレードル100が構成されている。次に、図11を参照してクレードル100にヘッドセット1を収納する場合について説明する。クレードル100にヘッドセット1を収納する場合にはまず、ヘッドセット1を構成するLチャンネルユニット3またはRチャンネルユニット4のいずれか一方をユニット収納部210に嵌めこむことにより収納する。図11においてはまずはLチャンネルユニット3がユニット収納部210に収納されている。ただし、先にRチャンネルユニット4を収納するようにしてもよい。Lチャンネルユニット3がユニット収納部210に嵌め込まれると、L側掛止用穴35に掛止用突起213が入り込む。これにより、Lチャンネルユニット3がユニット収納部210から不用意に外れてしまうことを防止する。

【0091】

本実施の形態においては、ユニット検出スイッチ212はL側ハウジング収納部210aの底面に設けられているため、Lチャンネルユニット3が嵌め込まれるとユニット検出スイッチ212がオンとなる。これにより充電オンオフ切り替え部510がオンとなり、ヘッドセット1の二次電池61に対する充電が開始される。

【0092】

なお、本技術においては、Lチャンネルユニット3はL側ハウジング31に設けられた充電状態表示LED33が上面側に露出するようにユニット収納部210に収納される。これにより、ユーザはヘッドセット1の充電状態表示LED33とクレードル本体200に設けられた充電状態表示LED214とを同時に視認することができる。よって、ユーザはヘッドセット1およびクレードル100のどちらが充電されているかなど、充電の状況を容易に把握することができる。

【0093】

次に、クレードル本体200の側面の全周にわたって形成されたコード巻き付け部231にコード2を巻きつけていく。図11においては反時計回りにコード2をコード巻き付け部231に巻き付けていく。なお、コード巻き付け部231にコード2を巻き付ける際にクレードル100を持ち替える必要がないため、容易にコード2の巻き付けを行うことができる。コード巻き付け部231は湾曲面状に形成された溝であることにより、コード2は一度巻き付けられると溝の縁に引っ掛かるので、不用意にクレードル100から外れてしまうことがない。

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【0094】

そして、コード2をコード巻き付け部231に巻き付けた後、Rチャンネルユニット4をユニット収納部210に嵌めこむことにより収納する。Rチャンネルユニット4もLチャンネルユニット3と同様にユニット収納部210に嵌め込まれると、R側掛止用穴47に掛止用突起が入り込む。これにより、Rチャンネルユニット4がユニット収納部210から不用意に外れてしまうことを防止する。

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【0095】

Lチャンネルユニット3およびRチャンネルユニット4を収納し、コード2をコード巻き付け部231に巻きつけた場合においてたるみが生じることがないように、コード2の長さはコード巻き付け部231の全周の長さに対応する長さ形成されている。これにより、コード2がたるんでクレードル100からはずれてしまうことがなく、また、コード2が邪魔になるということもない。

【0096】

さらに、本技術においては、コード2をコード巻き付け部231に巻きつけた際、ヘッドセット1のコントローラ5がヒンジ400付近に位置するコントローラ収納部232に収まるように構成されている。これにより、ヘッドセット1を収納した後、蓋300を閉じると蓋300によってコントローラ5がカバーされることとなる。これによりコントローラ5にゴミや汚れが付着すること、衝撃によってコントローラ5が破損してしまうことなどを防止することができる。

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【0097】

図12はクレードル100にヘッドセット1を収納した状態を示す図である。図12Aは蓋300をスタンドとして機能させた状態である。ヒンジ400と蓋300の先端301が机などの載置面に当接しており、蓋300がクレードル本体200を起立した状態で支持している。これにより、ユーザは所望する場所にクレードル100を立てておくことができる。

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【0098】

図12Bは蓋300を閉じた状態である。図12Bに示すように、蓋300を閉じた状態においては、ユニット収納部210に収納されたLチャンネルユニット3およびRチャンネルユニット4が蓋300によってカバーされる。これにより、Lチャンネルユニット3およびRチャンネルユニット4にゴミや汚れが付着することを防止することができる。さらに、Lチャンネルユニット3およびRチャンネルユニット4が破損してしまうことを防止することもできる。

【0099】

さらに、蓋300が閉じられた状態においては、ヘッドセット1のコントローラ5も蓋300によってカバーされている。よって、コントローラ5にゴミや汚れが付着すること

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を防止すると共に、コントローラ5の破損も防ぐことができる。さらに、コントローラ5のボタンが誤って押下されてしまうこともない。したがって、ユーザは、ヘッドセット1をクレードル100に収納してかばんなどに入れて容易に持ち運ぶことができる。一般的に、ヘッドセット1をそのままの状態をかばんやポケットなどに入れるとコード2が絡まってしまう。しかし、本技術においては、コード2はコード巻き付け部231に巻きつけることにより収納されているため、カバンなどに入れてもコード2が絡まることはない。よって、ヘッドセット1をクレードル100に収納することによりヘッドセット1が破損したり、コード2が絡まったりすることがなく、安心してかばんなどに入れて容易に携帯することができる。

【0100】

本技術においては、ヘッドセット1の二次電池61はクレードル100のバッテリー507からの電力によって充電可能であるため、ACアダプタやパーソナルコンピュータに接続しなくてもヘッドセット1の充電を行うことができる。よって、外出先でもヘッドセット1の充電を行うことができる。さらに、携帯中にもヘッドセット1に対する充電が行われるため、バッテリーの残量が足りずヘッドセット1を使用することができないという状況を回避することができる。

【0101】

ヘッドセット1のハウジング内に収納される平面視略円形の扁平形状の二次電池61は、厚さ方向が第1L側ハウジング部31aにL側イヤピース32が接続される方向に対して略垂直になるように第1L側ハウジング部31a内に収納されている。すなわち、二次電池61は厚さ方向が耳への挿入方向と略垂直になるように収納されている。そして、第1L側ハウジング部31aは二次電池61に対応するように平面視略円形の扁平状に形成されている。これによりL側イヤピース32を耳に挿入した際にそれら第1L側ハウジング部31aの円弧の一部が耳方向に向くこととなる。これによりLチャンネルユニット3の安定性が増し、快適な装着感を得ることができる。なお、Rチャンネルユニット4もLチャンネルユニット3と同様の形状に構成されているため同等の効果を奏することができる。

【0102】

また、二次電池61は厚さ方向が第1L側ハウジング部31aにL側イヤピース32が接続される方向に対して略平行ではなく、略垂直になるように第1L側ハウジング部31a内に収納されている。これにより、第1L側ハウジング部31aをL側イヤピース32の幅よりも薄く形成することができる（L側イヤピース32の幅からL側ハウジング部31の側面がはみ出ることがない）。よって、ユニット収納部210の深さを浅くすることができ、クレードル100の薄型化に寄与することができる。

【0103】

<2. 第2の実施の形態>

[2-1. ヘッドセットの構成]

次に本技術の第2の実施の形態について説明する。図13は、第2の実施の形態に係るクレードル2000に収納されるヘッドセット1000の外観構成を示す図である。ヘッドセット1000は第1の実施の形態と同様に、Bluetooth方式の近距離無線通信によるデータの送受信が可能な機器であるものとする。また、ヘッドセット1000は音楽再生機能および電話機能を備える携帯端末にBluetooth方式を用いて接続されるものとする。その場合、携帯端末がBluetoothのマスターとして機能し、ヘッドセット1000がスレーブとして機能する。

【0104】

ヘッドセット1000は、使用しない場合または充電する場合には、クレードル2000に収納されることとなる。ヘッドセット1000は、コード1100、R側ハンガー1200、Rチャンネルユニット1300、L側ハンガー1400、Lチャンネルユニット1500およびコントローラ1600とから構成されている。

【0105】

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コード1100は、内部にLチャンネル用導線、Rチャンネル用導線、電力供給用線（いずれも図示せず。）などが挿通しており、オーディオ信号の伝送および電力供給を行うためのものがある。コード1100の一端にはR側ハンガー1200が設けられており、コード1100の他端にはL側ハンガー1400が設けられている。R側ハンガー1200およびL側ハンガー1400はユーザがヘッドセット1000を装着する際に耳に引っ掛かることにより、ヘッドセット1000を安定した状態で支持するものである。R側ハンガー1200およびL側ハンガー1400は耳の形状に合わせて形状を調整可能なようにある程度の柔軟性を有するとともに、ヘッドセット1000を支えるためのある程度の剛性を備えるように例えばゴムなどを用いて構成するとよい。

【0106】

R側ハンガー1200の先端にはRチャンネルユニット1300が接続されている。同様に、L側ハンガー1400の先端にはLチャンネルユニット1500が接続されている。なお、R側ハンガー1200およびL側ハンガー1400内にはコード1100と同様にLチャンネル用導線、Rチャンネル用導線、電力供給用線などが挿通してある。これにより、コード1100およびR側ハンガー1200およびL側ハンガー1400を介してオーディオ信号の伝送および電力供給が可能となる。また、コード1100にはコントローラ1600が設けられている。コントローラ1600は、ヘッドセット1000が接続される携帯端末に対する各種操作を行うための入力手段である。

【0107】

図14は、Rチャンネルユニット1300の構成を示す図である。図14AはRチャンネルユニット1300の外観斜視図であり、図14B乃至図14Gは六面図である。図14B、図14C図14Dおよび図14Gは側面図、図14Eは上面図、図14Fは底面図である。Rチャンネルユニット1300は、R側ハウジング1310、R側ドライバ収納部1320、音導管およびR側イヤピース1330とから構成されている。

【0108】

R側ハウジング1310は略直方体状に形成されている。R側ハウジング1310は、ヘッドセット動作回路、Bluetooth通信のためのモジュールなどを収納するためのものである。それらR側ハウジング1310内の構成については後述する。

【0109】

R側ドライバ収納部1320はR側ハウジング1310の一端側から横方向に突出するように設けられている。これにより、Rチャンネルユニット1300は略L字型に形状を有している。R側ドライバ収納部1320内には音声出力のためのドライバユニット（図示せず。）が収納されている。また、ドライバ収納部の先端からは音導管が外部に導出されている。音導管内部にはドライバユニットに接続されたRチャンネルスピーカ（図14において図示せず。）が設けられている。R側イヤピース1330は第1の実施の形態と同様に、略中央に孔部1331を有する筒状に構成されており、先端に向かうに従い孔部1331方向へ窄むように形成されている。孔部1331に音導管が挿入されることにより、R側イヤピース1330が取り付けられている。

【0110】

図14Bに示されるように、R側ハウジング1310の側面には受電用端子1311が設けられている。受電用端子1311は後述するクレードル2000が備える給電用端子3300と接触することによりヘッドセット1000が備える二次電池61に充電電流を供給するためのものである。

【0111】

また、図14Bに示されるように、R側ハウジング1310の側面には小径の穴が形成されており、その穴の中にリセットキー1312が設けられている。このリセットキー1312は、例えば、先の尖った細い針金のようなものを穴に挿入することにより押圧可能なボタンであり、ヘッドセット1000の電源を強制的にオフにするためのものである。いかなる動作中であってもリセットキー1312が押圧された場合にはヘッドセット1000の電源はオフになる。

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【0112】

また、図14Cに示されるようにR側ハウジング1310の側面には状態表示LED1313が設けられている。状態表示LED1313は点灯または点滅することにより二次電池61に対する充電がなされているか否かをユーザに示すための通知手段である。また、満充電となった場合には消灯することにより充電が完了したこともユーザに通知する。さらに、状態表示LED1313は、点灯または点滅することにより、ヘッドセット1000の電源がONになっておりヘッドセット1000が動作状態であるということも示すようにしてもよい。

【0113】

また、図14Fに示されるように、R側ハウジング1310の底面にはファンクションキー1314が設けられている。ファンクションキー1314は、例えば、BlueTooth通信のためのペアリング実行指示の入力、ヘッドセット1000の電源オン・オフの切り替え、受話指示などを行うために用いられる入力手段である。

【0114】

ファンクションキー1314は例えば、押し続けられた時間によって異なる種類の動作指示を行うことが可能である。例えば、ヘッドセット1000の電源がオフの状態においてファンクションキー1314を数秒間（例えば、2秒など）押し続けるとヘッドセット1000の電源がオンになる。また、ヘッドセット1000の電源がオフの状態においてファンクションキー1314を電源オン入力よりも長い秒数（例えば、7秒など）押し続けるとペアリングモードになる。さらに、ヘッドセット1000が接続された携帯端末が着信中の場合にファンクションキー1314を短い時間押下することにより電話を受けることができる、などである。

【0115】

このように、ファンクションキー1314に対して入力が行われると、押し続けられた時間などによって異なる制御信号がヘッドセット1000内の制御部に送信され、ヘッドセット1000内に設けられた制御部によって制御信号に応じたヘッドセット1000の制御が行われる。ただし、上述したファンクションキー1314の操作方法はあくまで例示であり、それに限定されるものではない。押し続けられた時間だけでなく、押した回数によってことなる異なる種類の入力を行えるようにしてもよい。また、1つではなく、複数のファンクションキーをR側ハウジング1310に設けるようにしてもよい。

【0116】

さらに、図14Gに示されるように、R側ハウジング1310には通話用のマイクロホン1315が設けられている。これによりユーザはいわゆるハンズフリー機能による通話を行うことができる。

【0117】

Lチャンネルユニット1500は上述したRチャンネルユニット1300と同様に、L側ハウジング、L側ドライバ収納部、L側イヤピースとから構成されている。ただし、Lチャンネルユニット1300には受電用端子1311、リセットキー1312、状態表示LED1313およびマイクロホン1315は設けられていない。

【0118】

L側ハウジング1510内には直方体状の二次電池61が収納されている。二次電池61としては例えばリチウムイオン二次電池61が用いられる。直方体状の二次電池61を用い、さらにL側ハウジング1510を長形状に形成することにより、丸型電池を用いる場合に比べてハウジングの幅を小さくすることができる。

【0119】

なお、L側ハウジング1510の内部には二次電池61に対する充電を制御する充電IC62（図14においては図示せず。）が設けられている。それらを含めたL側ハウジング内部の構成の詳細については後述する。

【0120】

なお、上述した受電用端子1311、リセットキー1312、状態表示LED1313

およびマイクロホン1315は必ずしもR側ハウジング1310に設けられている必要はない。また、二次電池61も必ずしもL側ハウジング1510内に内蔵されている必要もない。受電用端子1311、リセットキー1312、充電状態表示LED1313、ファンクションキー1314、マイクロホン1315の全てをL側ハウジング1510に設け、二次電池61をR側ハウジング1310に内蔵してもよい。また、L側ハウジング1510に二次電池61を内蔵し、L側ハウジング1510に受電用端子1311、状態表示LED1313を設けるようにしてもよい。

【0121】

コントローラ1600はヘッドセット1000が接続される携帯端末に対する各種操作入力を行うための入力手段である。コントローラ1600は例えば、第1の実施の形態と同様のボリュームアップキー51、ボリュームダウンキー52、PLAY/PAUSEキー53、FF (Fast Forward) キー54、REW (Rewind) キー55などを備える。

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【0122】

図15はヘッドセットを装着する手順を示す図である。図15においてはRチャンネル側が示されている。なお、Lチャンネル側の装着も同様に行うとよい。第2の実施の形態に係るヘッドセット1000を装着する際は、図15Aに示されるように、R側ハンガー1200を耳の後ろにかけながらL側イヤピース1330を耳に挿入する。そして、R側イヤピース1330を耳に挿入し終えたら、図15Bに示されるようにR側ハンガー1200が耳の形状に沿い、さらに耳の根元をR側ハンガー1200とR側ハウジング1310で挟み込むようにR側ハウジング1310の位置、R側ハンガー1200の位置、向き、形状を調整する。これにより、図15Cに示されるように、R側ハンガー1200が耳に引っ掛かり安定した状態でヘッドセット1000を装着することができる。

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【0123】

図16はLチャンネルユニット1500、Rチャンネルユニット1300およびコントローラ1600を含むヘッドセット1000のブロック構成図である。ヘッドセット1000のブロック構成は充電状態表示LED1313および受電用端子1311がRチャンネルユニット1300に設けられている点、ファンクションキー1314が設けられている点で第1の実施の形態と異なる。それら以外の構成は第1の実施の形態と同様であるため、第1の実施の形態と同一の符号を付し、その説明を省略する。

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【0124】

受電用端子1311はコード1100内を挿通する電力供給用線を介して充電IC62に接続されており、クレードル2000が備える給電用端子3300と接触することにより充電IC62を介して二次電池61に電流を供給する。状態表示LED1313はコード1100内を挿通する制御線を介して充電IC62に接続されており、充電IC62による制御に基づいて点灯または点滅することにより、二次電池61に対する充電がなされているか否かをユーザに通知する。充電IC62は二次電池61の充電量を監視し、二次電池61が満充電になった場合には状態表示LED1313が消灯するように制御を行う。これにより、充電が完了したことをユーザに通知することができる。

【0125】

ファンクションキー1314はパラレルI/Oインターフェース76の接続されている。各種入力操作に応じたファンクションキー1314からの制御信号はパラレルI/Oインターフェース76およびバス72を介して制御部71に送信される。

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【0126】

[2-2. クレードルの構成]

次に、ヘッドセット1000を取納するクレードル2000の構成について説明する。図17Aはクレードル2000の蓋4000が開いた状態を示す外観斜視図である。図17Bはクレードル2000の蓋4000が閉じた状態を示す外観斜視図である。さらに、図18Aはクレードル2000の蓋4000が開いた状態の上面側を示す平面図であり、図18Bはクレードル2000の底面側を示す平面図である。

【0127】

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クレードル2000はクレードル本体3000と蓋4000とから構成されており、クレードル本体3000に対して蓋4000がヒンジによって開閉可能に接続されている。

【0128】

クレードル本体3000は、ヘッドセット1000を収納する役割を担うものである。クレードル本体3000は平面視略円形状に構成され、さらに、ヘッドセット1000を収納可能なようにある程度の厚さを有するように構成されている。クレードル本体3000は例えばプラスチックなどの合成樹脂を用いて構成されている。

【0129】

クレードル本体3000の上面にはヘッドセット1000のRチャンネルユニット1300を収納するための溝状のRチャンネルユニット収納部3100および、ヘッドセット1000のLチャンネルユニット1500を収納するための溝状のLチャンネルユニット収納部3200が形成されている。

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【0130】

Rチャンネルユニット収納部3100は、ヘッドセット1000のRチャンネルユニット1300のR側ハウジング1310を収納するR側ハウジング収納部3110とRチャンネルユニット1300を構成するR側イヤピース1330を収納するR側イヤピース収納部3120とから平面視略L字状に形成されている。Rチャンネルユニット収納部3100はヘッドセット1000のRチャンネルユニット1300が嵌合するようにRチャンネルユニット1300の形状に対応する形状の溝として形成されている。R側イヤピース収納部3120はR側イヤピース1330が嵌合するように断面視略半円の溝状に形成されている。また、ユーザがクレードル2000からRチャンネルユニット1300を取り出す際にRチャンネルユニット1300を掴むことができるように指を入れることが可能な略半円状のR側凹み部3130が形成されている。

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【0131】

Lチャンネルユニット収納部3200もRチャンネルユニット収納部3100と同様の形状であり、ヘッドセット1000のLチャンネルユニット1500を収納するL側ハウジング収納部3210とLチャンネルユニット1500を構成するイヤピースを収納するL側イヤピース収納部3220から平面視略L字状に形成されている。L側ハウジング収納部3210はLチャンネルユニット1500のL側ハウジング1510が嵌合するようにL側ハウジング1510の形状に対応する形状の溝として形成されている。L側イヤピース収納部3220はL側イヤピース1530が嵌合するように断面視略半円の溝状に形成されている。また、ユーザがクレードル2000からLチャンネルユニット1500を取り出す際にLチャンネルユニット1500を掴むことができるように指を入れることが可能な略半円状のL側凹み部3230が形成されている。

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【0132】

Rチャンネルユニット収納部3100およびLチャンネルユニット収納部3200は、クレードル本体3000において左右対称となるように形成されている。また、Rチャンネルユニット収納部3100は、R側ハウジング収納部3110がクレードル本体3000上面の内側に位置し、R側イヤピース収納部3120が外側を向くように形成されている。同様に、Lチャンネルユニット収納部3200は、L側ハウジング収納部3210がクレードル本体3000上面の内側に位置し、L側イヤピース収納部3220が外側を向くように形成されている。

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【0133】

よって、ヘッドセット1000は、R側ハウジング1310とL側ハウジング1510とが近接し、R側イヤピース1330とL側イヤピース1530とが外側を向く状態で収納されることになる。これにより、R側ハウジング1310に接続されたR側ハンガー1200と、L側ハウジング1510に接続されたL側ハンガー1400が近接し、さらにR側ハンガー1200が接続されたコード1100の一端側とL側ハンガー1400が接続されたコード1100の他端側も近接することになる。これにより、コード1100をコンパクトにまとめることができるとともに、コード1100をまとめるのが容易となる

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【0134】

図18Aに示されるように、R側ハウジング収納部3110の側面に給電用端子3300が設けられている。給電用端子3300は、R側ハウジング収納部3110にR側ハウジング1310が収納された状態において受電用端子1311と対応する位置に設けられている。R側ハウジング収納部3110にR側ハウジング1310が収納されることにより受電用端子1311と給電用端子3300とが接触してヘッドセット1000に対して充電電流の供給が行われる。

【0135】

クレードル本体3000の上面、Rチャンネルユニット収納部3100とLチャンネルユニット収納部3200の間に、充電状態表示LED3400が設けられている。充電状態表示LED3400は点灯または点滅することによりクレードル2000内に設けられたバッテリーが充電状態であるか否かを示すものである。

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【0136】

さらにクレードル本体3000の上面には蓋検出スイッチ3500が設けられている。蓋検出スイッチ3500は、例えば、蓋4000に設けられた突起に押下されることによって蓋4000が閉じられたことを検出することができるものである。ただし、検出方法はこれに限られず、蓋4000が閉じていることを検出できればどのような方法でもよい。蓋検出スイッチ3500は、クレードル2000内部に設けられた充電オンオフ切り替え部510に接続されており、充電オンオフ切り替え部510を動作させる充電切り替えスイッチとして機能するものである。蓋検出スイッチ3500は第1の実施の形態におけるユニット検出スイッチ212と同様の働きをするものである。

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【0137】

図18Bに示されるように、クレードル本体3000の底面にはUSB端子3600が設けられている。USB端子3600は、クレードル2000内部に設けられたバッテリーを充電するためにクレードル2000を商用電源供給のためのコンセント、またはパーソナルコンピュータなどの外部電源に接続するためのものである。

【0138】

また、クレードル本体3000の底面にはバッテリー残量表示LED3700が設けられている。バッテリー残量表示LED3700は点滅回数によりクレードル2000内に設けられたバッテリーの残量をユーザに示す。例えば以下のように点灯、点滅することによりバッテリーの残量をユーザに示すことが考えられる。バッテリーの満充電である場合には、「使用可能（充電不要）」として数秒間継続して点灯する。また、バッテリーの残量が十分にある場合には、「使用可能」として所定の秒数（例えば、1秒）間隔で点滅する。また、バッテリーの残量が少ない場合には「充電必要」として、「使用可能」よりも短い間隔（例えば、0.5秒おき）で点滅する。さらに、バッテリーの残量がない場合には点灯しない。

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【0139】

さらに、クレードル本体3000の底面には、残量表示スイッチ3800が設けられている。残量表示スイッチ3800は、バッテリー残量表示LED3700を点灯させるためのスイッチである。本実施の形態においては、バッテリー残量表示LED3700は通常は点灯しておらず、残量表示スイッチ3800に対して入力が行われた場合にのみ点灯するように構成されている。バッテリー残量表示LED3700を常時点灯させずにユーザがバッテリーの残量を確認したい場合にのみ点灯させることによりバッテリーの消費を抑制することができる。なお、バッテリー残量表示LED3700は残量表示スイッチ3800に対する入力になされて点灯または点滅した後、所定の時間（例えば4～5秒）経過後自動的に消灯するようにするとよい。

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【0140】

蓋4000はクレードル本体3000と同様に平面視略円形の板状に形成されている。蓋4000は閉じられた状態においてクレードル本体3000の上面を覆うものであり、ヒンジを介してクレードル本体3000に回動可能に接続されている。蓋4000とクレ

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ードル本体 3000 は、例えば、互いに係合する爪、マジックテープ（登録商標）などによって、蓋 4000 が閉じた状態が維持されつつ、容易に開閉することができるようにするとよい。

【0141】

図 19 は、クレードル 2000 の構成を示すブロック図である。クレードル 2000 は制御部 501、バス 502、RAM 503、ROM 504、USB 端子 3600、USB インターフェース 506 を備える。また、パラレル I/O インターフェース 505、バッテリー 507、充電 IC 508、充電状態表示 LED 3400、バッテリー残量表示 LED 3700、残量表示スイッチ 3800 を備える。さらに、充電経路切り替え部 509、充電オンオフ切り替え部 510、蓋検出スイッチ 3500、DC/DC コンバータ 511、給電用端子 3300 を備える。第 2 の実施の形態におけるクレードル 2000 のブロック構成においては、バッテリー残量表示 LED 3700、蓋検出スイッチ 3500 以外は第 1 の実施の形態と同様であるため、その説明を省略する。

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【0142】

蓋検出スイッチ 3500 は第 1 の実施の形態におけるユニット検出スイッチ 212 と同様の働きをするものである。充電オンオフ切り替え部 510 は蓋検出スイッチ 3500 に接続されている。充電オンオフ切り替え部 510 の第 1 オンオフスイッチ 510a および第 2 オンオフスイッチ 510b は共に通常はオフ状態となっており、蓋検出スイッチ 3500 がクレードル 2000 の蓋 4000 が閉じられたことを検出するとそれに連動してオンになるように構成されている。そして、蓋 4000 が開かれてオフとなると、それに連動して第 1 スwitch および第 2 スwitch はオフになるように構成されている。これにより、クレードル 2000 にヘッドセット 1000 が収納され、蓋 4000 が閉じられるとヘッドセット 1000 に対する充電が行われることとなる。

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【0143】

バッテリー残量表示 LED 3700 は、残量表示スイッチ 3800 を介して充電 IC 62 に接続されており、充電 IC 62 の制御の元、残量表示スイッチ 3800 がオンになった場合にのみ、点灯または点滅によりバッテリー表示を行う。

【0144】

〔2-3. クレードルによるヘッドセットの収納〕

以上のようにしてクレードル 2000 が構成されている。次に、図 20 を参照してクレードル 2000 にヘッドセット 1000 が収納された状態について説明する。図 20 はクレードル 2000 にヘッドセット 1000 が収納された状態を示す斜視図である。

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【0145】

図 20 に示されるように、L チャンネルユニット収納部 3200 に L チャンネルユニット 1500 を嵌め込み、R チャンネルユニット収納部 3100 に R チャンネルユニット 1300 を嵌め込むことにより、ヘッドセット 1000 が収納される。

【0146】

本実施の形態においては、R チャンネルユニット 1300 は R 側ハウジング 1310 に設けられた状態表示 LED 1313 が上面側に露出するようにユニット収納部 210 に収納される。これにより、ユーザはヘッドセット 1000 の状態表示 LED 1313 とクレードル本体 3000 に設けられた充電状態表示 LED 3400 とを同時に視認することができる。よって、ユーザはヘッドセット 1000 およびクレードル 2000 のどちらが充電されているかなど、充電の状況を容易に把握することができる。

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【0147】

また、R チャンネルユニット収納部 3100 に R チャンネルユニット 1300 が収納されると、R 側ハウジング 1310 の底面に設けられているファンクションキー 1314 は溝状の R チャンネルユニット収納部 3100 の側面方向を向くことになり、クレードル本体 3000 上面に露出しない。これにより、クレードル 2000 に収納された状態において誤ってファンクションキー 1314 が押下されてヘッドセット 1000 が誤動作してしまうことを防止することができる。

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【0148】

図21はクレードル2000にヘッドセット1000が収納され、クレードル2000の蓋4000が閉じられた状態である。図21に示されるように、蓋4000が閉じられた状態においては、クレードル本体3000に収納されたRチャンネルユニット1300およびLチャンネルユニット1500は蓋4000によってカバーされる。これにより、Rチャンネルユニット1300およびLチャンネルユニット1500にゴミや汚れが付着することを防止することができる。さらに、Rチャンネルユニット1300およびLチャンネルユニット1500が破損してしまうことを防止することもできる。

【0149】

本実施の形態においては、クレードル本体3000に蓋検出スイッチ3500212が設けられているため、蓋4000が閉じられると蓋検出スイッチ3500212がオンとなる。これにより充電オンオフ切り替え部510がオンとなり、ヘッドセット1000の二次電池61に対する充電が開始される。

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【0150】

本技術においては、ヘッドセット1000の二次電池61はクレードル2000のバッテリーからの電力によって充電可能であるため、ACアダプタやパーソナルコンピュータに接続しなくてもヘッドセット1000の充電を行うことができる。よって、外出先でもヘッドセット1000の充電を行うことができる。さらに、携帯中にもヘッドセット1000に対する充電が行われるため、バッテリーの残量が足りずヘッドセット1000を使用することができないという状況を回避することができる。

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<3. 変形例>

以上、本技術の一実施の形態について具体的に説明したが、本技術は、上述の実施形態に限定されるものではなく、本技術の技術的思想に基づく各種の変形が可能である。例えば、上述の実施の形態においてはクレードル100にヘッドセット1を収納する場合を例にして説明したが、収納するのはヘッドセット1に限られず、音声出力機能のみを備え、マイクロホン80を備えないヘッドホンを取納するようにしてもよい。

【0151】

また、上述の実施の形態においてはヘッドセット1はバッテリーを備えたBluetooth機器として説明したが、ヘッドセット1はBluetooth機器に限られず、バッテリーで駆動するものであればどのようなものでもよい。例えば、Bluetooth以外の通信方式を採用したワイヤレスヘッドホン、ノイズキャンセリングヘッドホンなどが挙げられる。

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【0152】

また、本技術は以下のような構成も取ることができる。

【0153】

(1) コードと、

該コードの両端に設けられた一対のヘッドホンユニットと、

該ヘッドホンユニット内に収納された二次電池とを備えるヘッドホンを収納可能であり、

クレードル本体と、

該クレードル本体に設けられ、前記一対のヘッドホンユニットを取納するヘッドホンユニット取納部と、

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前記クレードル本体に設けられ、前記コードが巻き付けられるコード巻き付け部と、

前記クレードル本体内に設けられ、前記二次電池を充電する充電手段とを備えるクレードル。

【0154】

(2) 前記コード巻き付け部は、前記クレードル本体の側面全周に設けられた溝である前記(1)に記載のクレードル。

【0155】

(3) 前記ヘッドホンユニット取納部は、前記クレードル本体の上面に設けられ、前記ヘッドホンユニットが嵌合する凹部であり、

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前記クレードル本体に開閉可能に接続されており、閉じた状態においては前記ヘッドホンユニット収納部を覆う蓋をさらに備える

前記(1)または(2)に記載のクレードル。

【0156】

(4) 前記ヘッドホンは、前記コードに一体に設けられたコントローラをさらに備え、前記クレードル本体は、前記コード巻き付け部に前記コードが巻き付けられた状態において前記コントローラを収納するコントローラ収納部をさらに備え、

前記蓋は、閉じた状態においては前記ヘッドホンユニット収納部を覆うと共に前記コントローラ収納部を覆う

前記(3)のいずれかに記載のクレードル。

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【0157】

(5) 前記蓋は、開いた状態においては前記クレードル本体を起立した状態で支持する前記(3)または(4)に記載のクレードル。

【0158】

(6) 前記ヘッドホンユニットが前記ヘッドホンユニット収納部に収納されたことを検出する収納検出手段をさらに備え、

前記充電手段は、前記収納検出手段により前記ヘッドホンユニットが前記ヘッドホンユニット収納部に収納されたことが検出された場合に前記二次電池に対する充電を行う

前記(1)から(5)のいずれかに記載のクレードル。

【0159】

(7) 前記充電手段は、外部電源により前記二次電池を充電する第1の充電手段と、前記クレードル本体内に設けられたバッテリーにより前記二次電池を充電する第2の充電手段とからなる

前記(1)から(6)のいずれかに記載のクレードル。

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【0160】

(8) 前記バッテリーは、前記第1の充電手段により充電可能である

前記(7)に記載のクレードル。

【0161】

(9) 前記ヘッドホンユニットは平面視略円形の扁平状に形成されたハウジングと該ハウジングに設けられたイヤピースとを備え、

前記二次電池は、平面視略円形の扁平状に形成されており、厚さ方向が前記ハウジングに前記イヤピースが設けられる方向に対して略垂直になるように、前記一対のヘッドホンユニットのうちの少なくともいずれか一方の前記ヘッドホンユニットのハウジング内に収納され、

前記ヘッドホンユニット収納部は、前記ヘッドホンユニットの厚さに対応する深さを有するように形成されている

前記(1)から(8)のいずれかに記載のクレードル。

30

【符号の説明】

【0162】

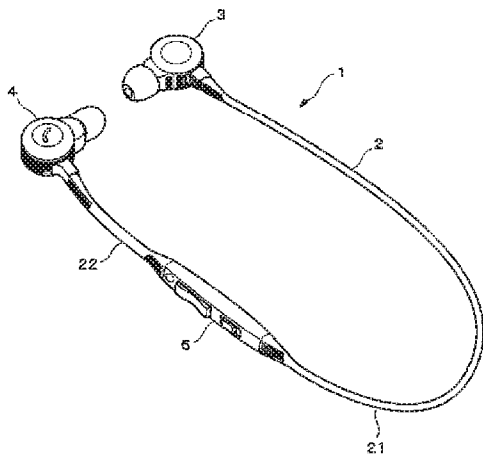
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- 2・・・コード
- 3・・・Lチャンネルユニット
- 4・・・Rチャンネルユニット
- 5・・・コントローラ
- 31・・・L側ハウジング
- 32・・・L側イヤピース
- 41・・・R側ハウジング
- 42・・・R側イヤピース
- 61・・・二次電池
- 100・・・クレードル

40

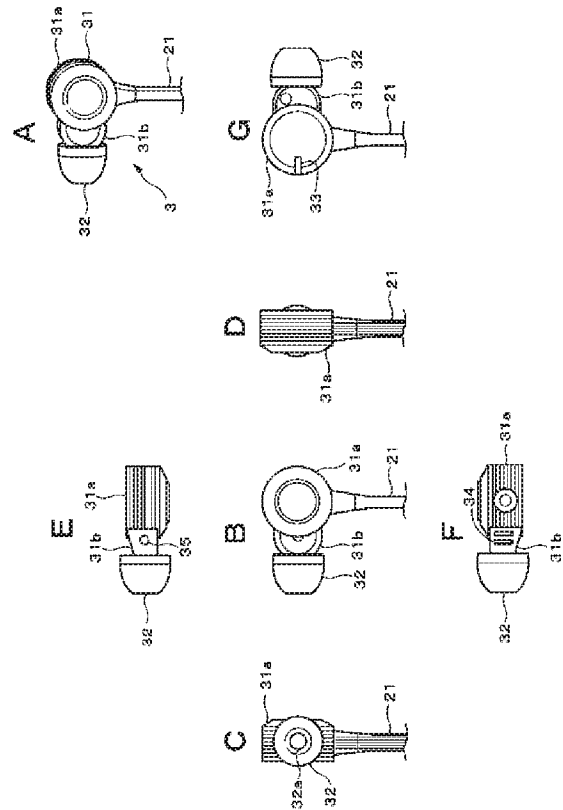
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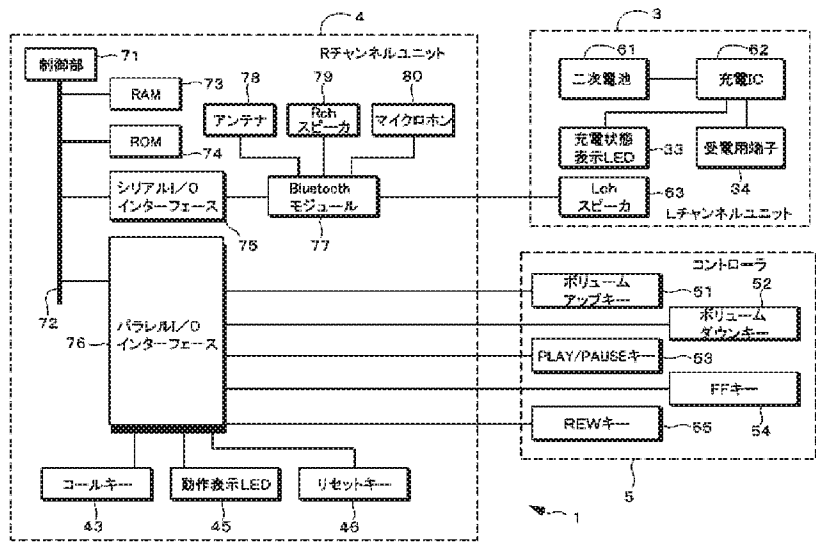
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- 210・・・ユニット収納部
- 212・・・ユニット検出スイッチ
- 232・・・コントローラ収納部
- 232・・・コード巻き付け部
- 300・・・蓋
- 507・・・バッテリー

【図1】

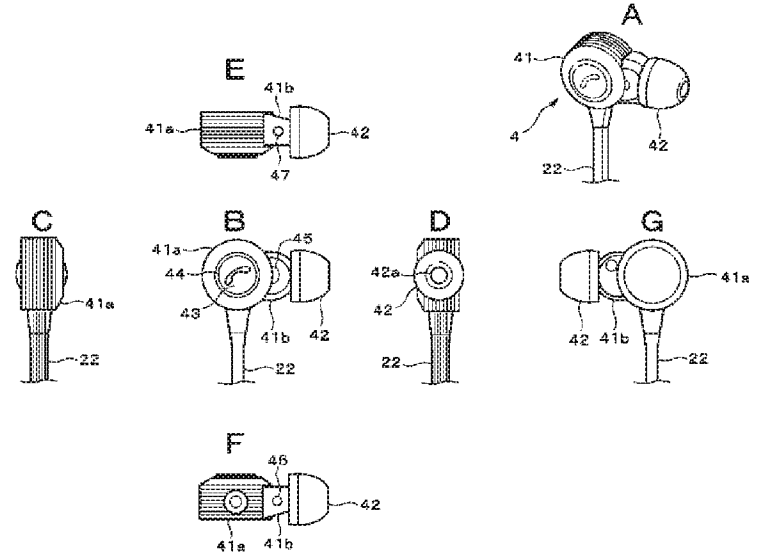


【図2】

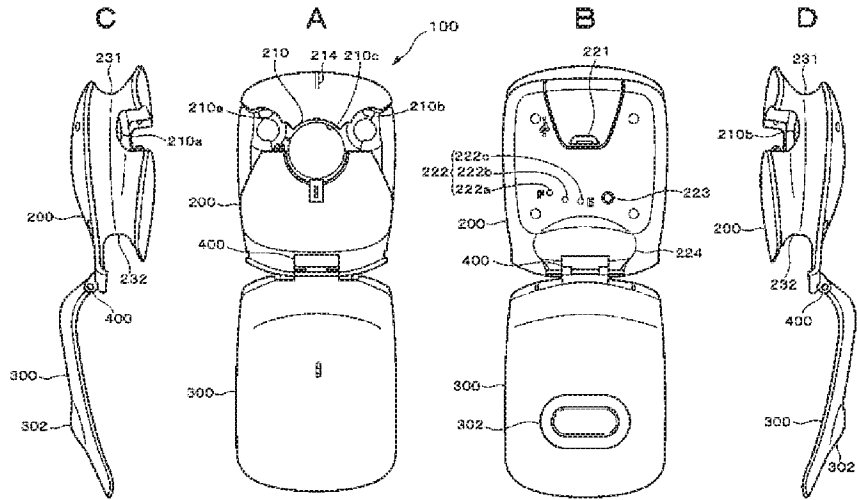




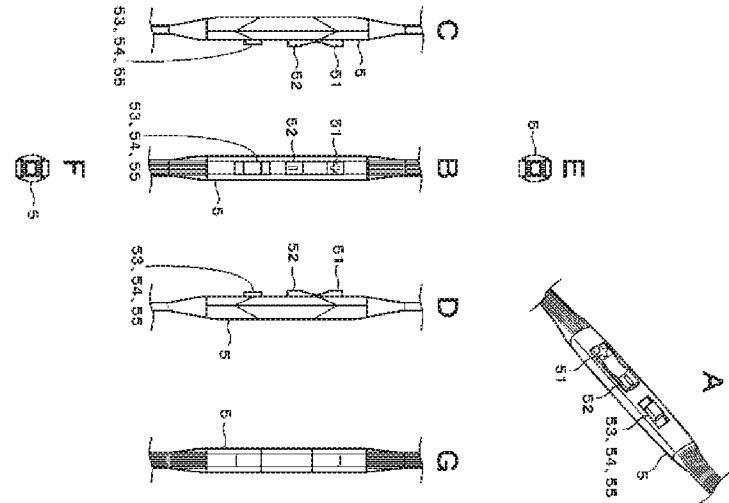
【図5】



【図3】

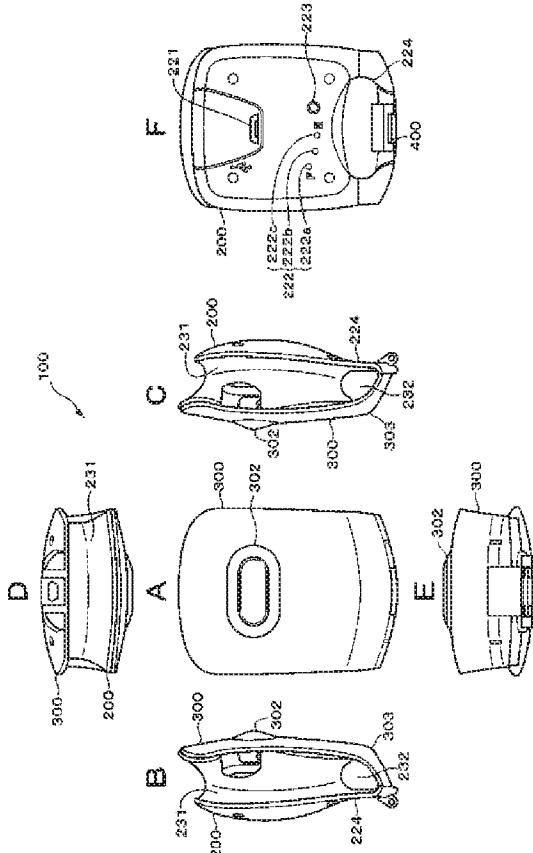


【図6】

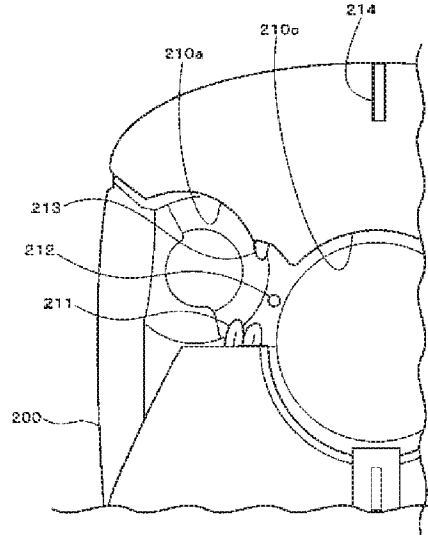


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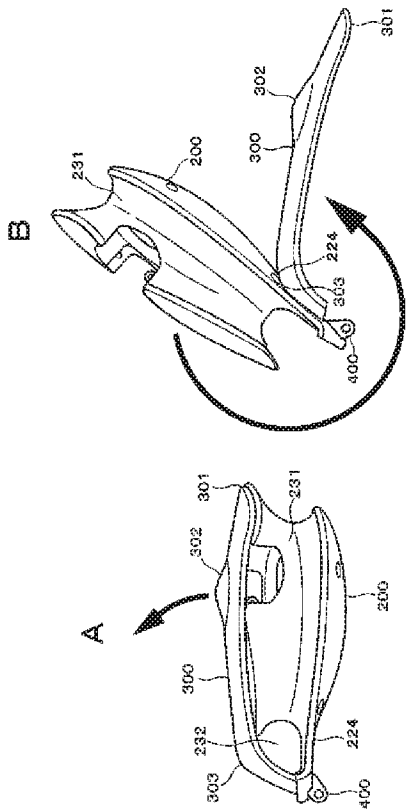
【図7】



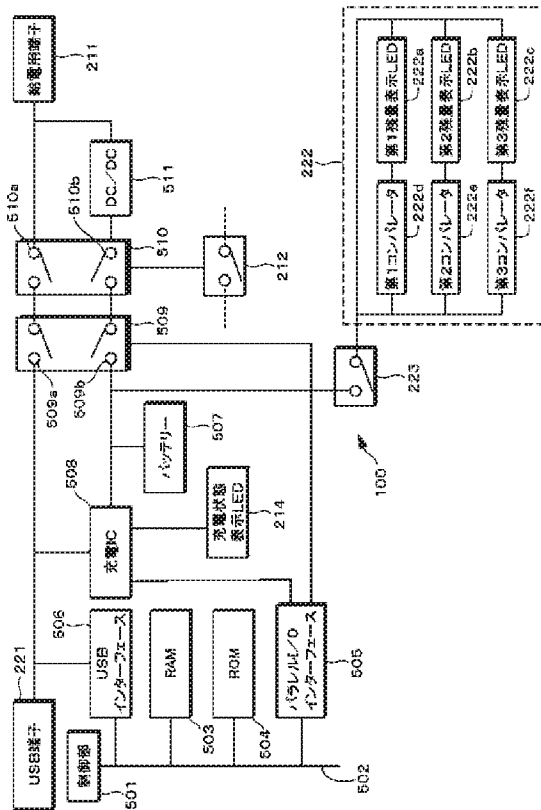
【図8】



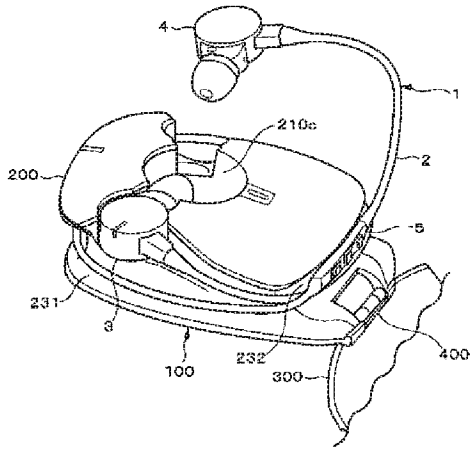
【図9】



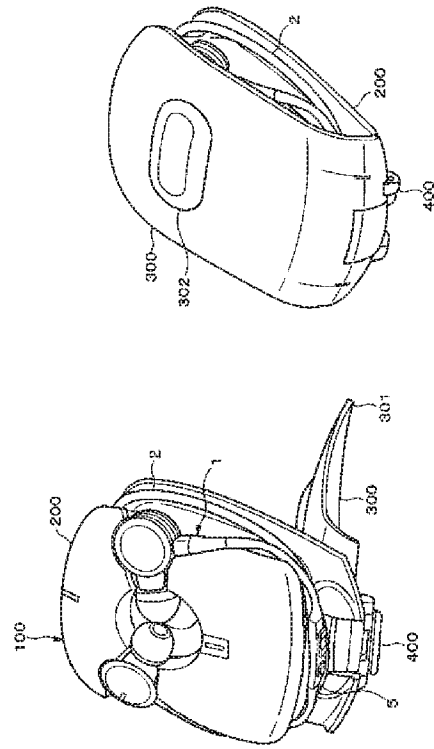
【図10】



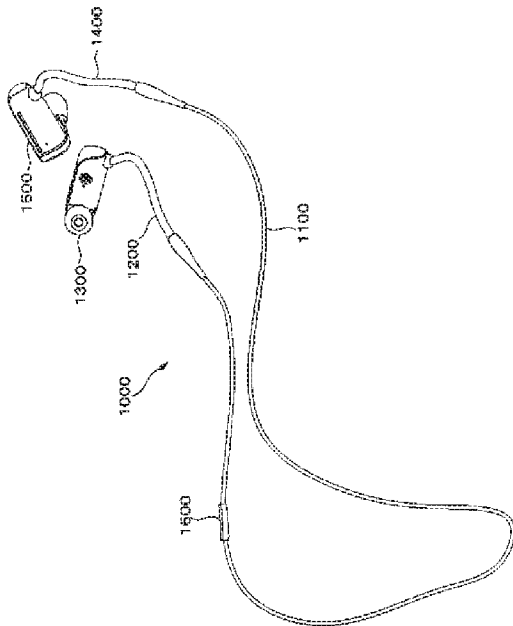
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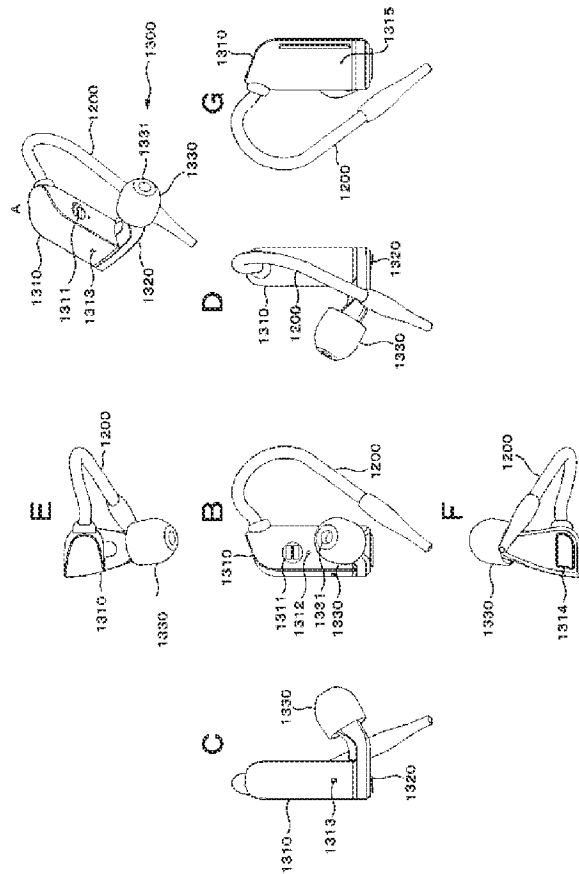
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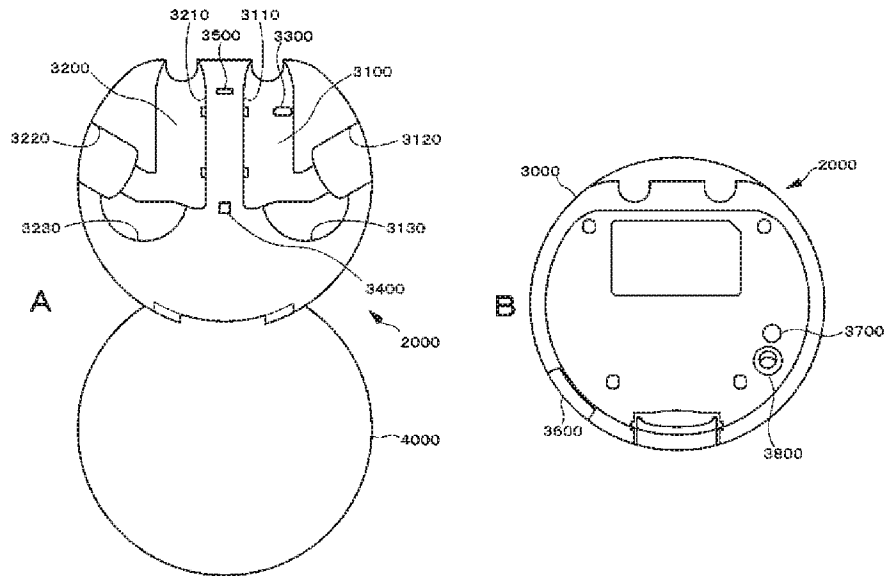


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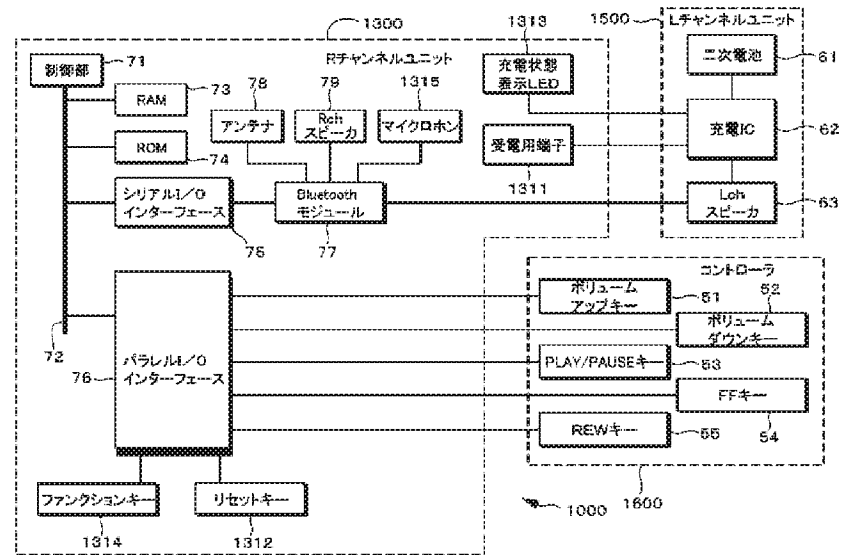


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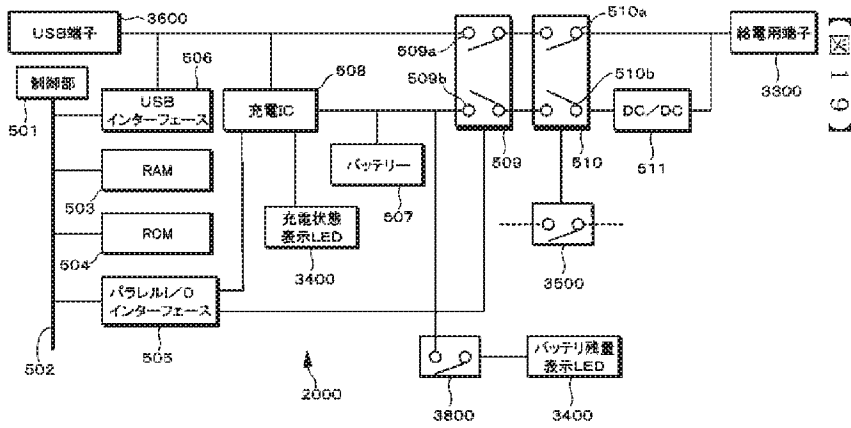




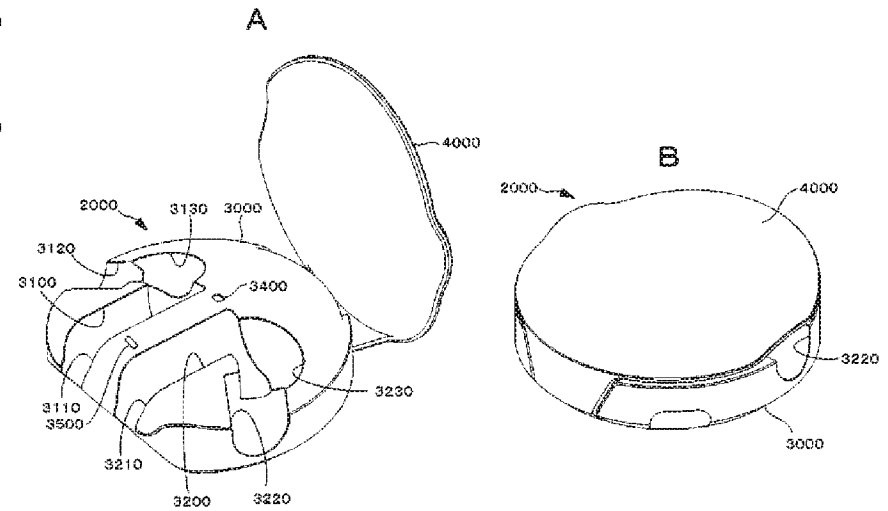
【図18】



【図16】



【図19】

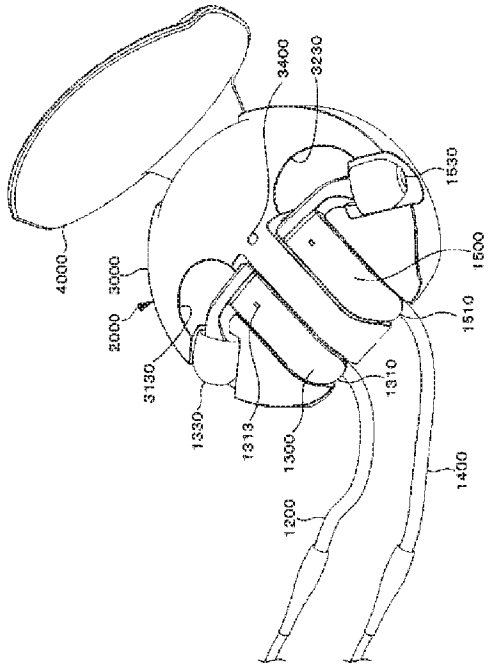


【図17】

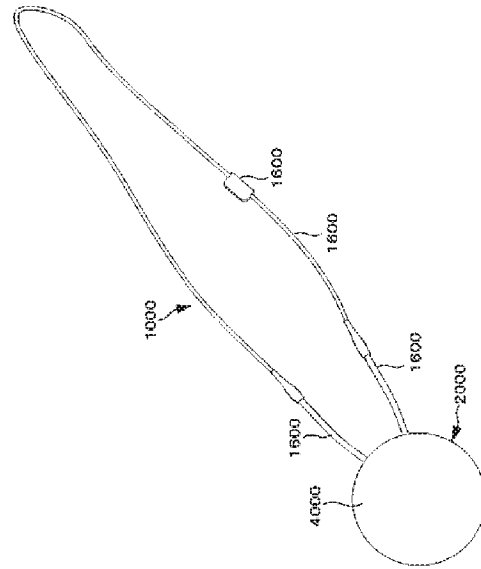
(30)

JP 2012-100248 A 2012.5.24

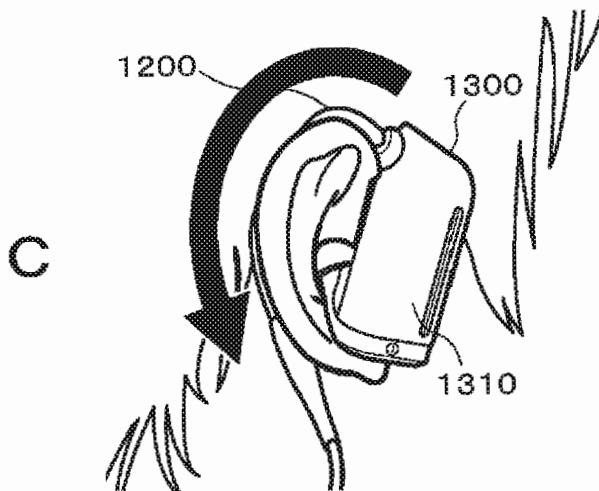
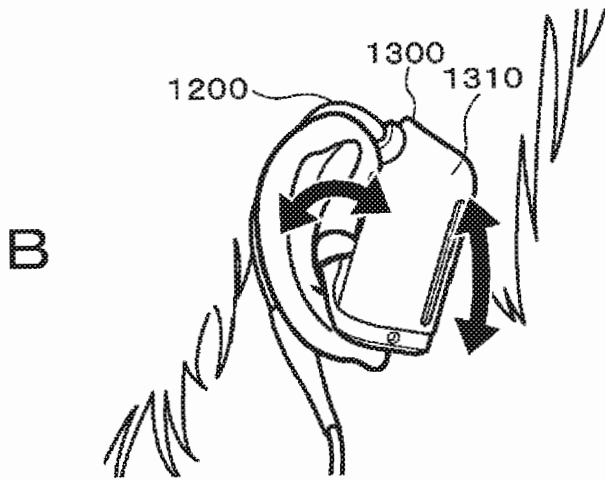
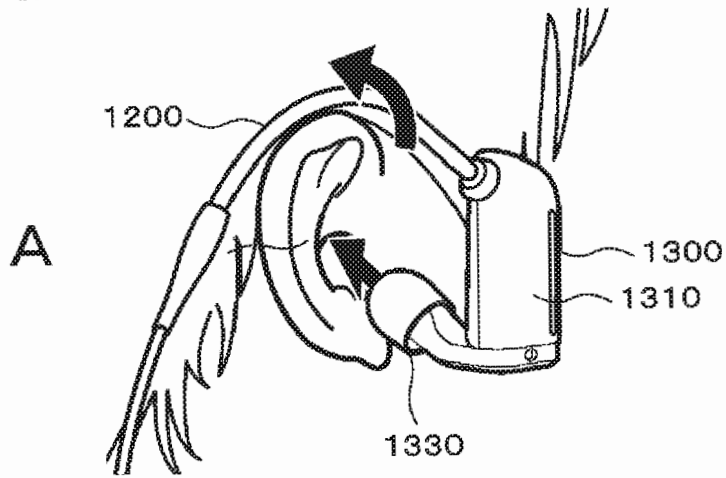
【図20】



【図21】



【図15】



フロントページの続き

(51)Int. Cl.	F I	テーマコード (参考)
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	H 0 1 M 2/10	P

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Fターム(参考) 5D005 BA00 BB09 BF01

5H030 AS11 BB08 DD20

5H040 AA40 AS15 AT03 AY02 AY12 CC05 CC12

Electronic Patent Application Fee Transmittal

Application Number:	15563937
Filing Date:	02-Oct-2017
Title of Invention:	PERSONAL WIRELESS MEDIA STATION
First Named Inventor/Applicant Name:	Seung Jin KIM
Filer:	Mincheol Kim/Jacqueline O'Brien
Attorney Docket Number:	PNN.005NP

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
Total in USD (\$)				120

Electronic Acknowledgement Receipt

EFS ID:	34899388
Application Number:	15563937
International Application Number:	
Confirmation Number:	3453
Title of Invention:	PERSONAL WIRELESS MEDIA STATION
First Named Inventor/Applicant Name:	Seung Jin KIM
Customer Number:	20995
Filer:	Mincheol Kim/Aimee Kazan
Filer Authorized By:	Mincheol Kim
Attorney Docket Number:	PNN.005NP
Receipt Date:	18-JAN-2019
Filing Date:	02-OCT-2017
Time Stamp:	14:56:12
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$120
RAM confirmation Number	012219INTEFSW14564300
Deposit Account	111410
Authorized User	Aimee Kazan

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.492 (National application filing, search, and examination fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS-PNN_005NP.pdf	1036284	no	8
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Warnings:					
Information:					
2	Foreign Reference	CN2783637wAbs.PDF	1955257	no	25
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Warnings:					
Information:					
3	Foreign Reference	CN201045758wAbs.PDF	2490095	no	19
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11	Non Patent Literature	Jabra_MINI_Bluetooth_Headset_YouTube.PDF	444898	no	1
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13	Non Patent Literature	Earin-The_Worlds_Smallest_Wireless_Earbuds-15pgs.PDF	4052780	no	15
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14	Non Patent Literature	BRAGI- The_Dash_Wireless_Smart_In_ Ear_Headphones-29pgs.PDF	4230414 6955fea98a6ba1b2870fe7aaa6eb1a02f556b3e8	no	29
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Warnings:					
Information:					
Total Files Size (in bytes):				36303022	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/563,937	Filing Date 10/02/2017	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 = *		x \$40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 = *		x \$210 =	
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	01/18/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		
	Total (37 CFR 1.16(i))	* 38	Minus	** 20	= 18	x \$50 =	900
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1	x \$230 =	230
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))							
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
						TOTAL ADD'L FEE	1130
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =	
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))							
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. LIE

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". /MARQUITA D JONES/

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
15/563,937 10/02/2017 Seung Jin KIM PNN.005NP 3453

20995 7590 07/26/2018
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

EXAMINER

TON, DAVID L

ART UNIT PAPER NUMBER

2654

NOTIFICATION DATE DELIVERY MODE

07/26/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jayna.cartee@knobbe.com
efiling@knobbe.com

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Information Disclosure Statement

2. The information disclosure statement (IDS) was submitted on 10/02/2018. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory

Art Unit: 2654

double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-l.jsp.

4. Claim 1 is rejected on the ground of nonstatutory double patenting as being unpatentable over either claim 1 or 11 of U.S. Patent No. 9807491 in view of Official Notice.

Regarding claim 1 of the instant application, either claim 1 or 11 teaches all the claimed limitations of the claim 1 of the instant application except the limitation “in response to pressing of the user input button, the at least one processor is configured to execute

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computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone". However, the concept of pairing two wireless device under user's initiating a control command via some form of user's interface such as "a user input button" is well-known in the art (Official Notice).

It would have been obvious to a person of ordinary skill in the art at the time before the effective filing date of the claimed invention to modify claim 1 or 11 of the US 9807491 in view of Official Notice to provide a well-known concept of pairing two wireless devices under user's control to deliver a completed system and the system functioning in detail.

Claim Rejections - 35 USC § 112

5. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24-30 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claims 24 and 25, these claims recite the term "not capable" which is a relative term which renders the claim indefinite. The term "not capable" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification only provides different examples about

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wireless module types in the base station and wireless module types in the earbud but not clearly providing any specific algorithms, software, or any wireless configuration to match with the claimed function of "the wireless earbud is not capable of wirelessly sending data to the base station".

Dependent claims 26-30 are also rejected based on the defected parent claim 25.

Claim Rejections - 35 USC § 103

7. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

8. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to

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consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

10. Claims 23-26, 28, and 30 are rejected under 35 U.S.C. 103 as being unpatentable over Yueh (US 20050107120 – Cited IDS) in view of Castillo et al. (US 20100320961) and Official Notice.

Regarding claim 23, Yueh teaches a personal media system comprising:

a base station (Yueh's Fig. 1: Mobile storage device 1) comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry (Yueh's Fig. 1: Operation key 13 equivalent with user input button; and Fig. 2: Memory 211, Electronic control switch 24 equivalent with user input button, Memory control module and MP3 processing module equivalent with at least one processor, and combinations of all memory, modules, switch, and connections equivalent with circuitry) ; and

a wireless earbud configured for plugging into the connection hole of the base station to form an integrated body with the base station (Yueh's Fig. 1: Bluetooth earphone module 10 inserted/docked in an opening or hole of the Mobile storage device 1; also see para [0018]),

wherein the personal media system is capable of wirelessly pairing with a smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone (Yueh's Fig. 1: Combination of inserting/docking Bluetooth earphone module 10 and the Mobile storage device 1 wirelessly pairing with a computer 100, a mobile phone 101, and a PDA 102;

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or the detached/undocked Bluetooth earphone module 10 wirelessly pairing with a remote wireless Bluetooth module; also see para [0016]-[0018]),

wherein, when the wireless earbud is plugged into the connection hole of the base station, the wireless earbud is configured to electrically connect with the circuitry of the base station and further configured to performing wired data communication with the base station (Yueh's Fig. 2: Bluetooth earphone module 23 inserted/docked to the Mobile storage device 1 via electronically wired connection for data communication; also see para [0023]).

Yueh does not explicitly teach wherein, in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone, and wherein, in response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud.

Castillo teaches a storage device for docking and charging wireless (Bluetooth) earphone comprising:

a base station (Castillo's Fig. 2: storage device 100) comprising a connection hole (Castillo's Fig. 2: Cradles 120 and 140), at least one processor and circuitry (Castillo's Fig. 1: Controller C equivalent to claimed processor and circuitry/connection of charging circuit);

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a wireless earbud configured for plugging into the connection hole of the base station to form an integrated body with the base station (Castillo's Fig. 3: Wireless Earphones 220 and 240 docked/inserted into cradles 120 and 140; also see para [0043]);

wherein, in response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud (Castillo's para [0028]-[0036]).

Since wireless earphones normally have small batteries with a limited usage time, it would have been obvious to a person of ordinary skill in the art at the time before the effective filing date of the claimed invention to modify Yueh in view of Castillo to include a power charging circuit in Yueh's Mobile storage device for the benefit of recharging the wireless/Bluetooth earphone module when docking into Mobile storage device. The motivation is to provide the Mobile storage device with wireless communication means while recharging the wireless/Bluetooth battery for late use. Yueh in view of Castillo still does not explicitly teach in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone. However, the concept of pairing two wireless device under user's initiating a control command via some form of user's interface such as "a user input button" is well-known in the art (Official Notice).

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It would have been obvious to a person of ordinary skill in the art at the time before the effective filing date of the claimed invention to modify Yueh in view of Castillo and further in view of Official Notice to provide a well-known concept of pairing two wireless devices under user's control to deliver a completed system and the system functioning in detail.

Regarding claim 24, Yueh in view of Castillo and Official Notice teaches the system of Claim 23, wherein the wireless earbud is not wirelessly sending data to the base station (Yueh's Fig. 2 showing only wired connection and no wireless connection between Bluetooth earphone module 23 and Mobile storage device 1).

Regarding claim 25, Yueh in view of Castillo and Official Notice teaches the system of Claim 23 wherein the wireless earbud is not wirelessly sending data to the base station (Yueh's Fig. 2 showing only wired connection and no wireless connection between Bluetooth earphone module 23 and Mobile storage device 1) but does not teach the system of Claim 23 further comprising a mechanical clip integrated with the base station and configured for clipping a person's clothing. However, the design of having a mechanical clip integrated with a portable/mobile device and configured for clipping a person's clothing is well-known in the art (Official Notice).

It would have been obvious to a person of ordinary skill in the art at the time before the effective filing date of the claimed invention to modify Yueh in view of Castillo and an Official Notice, and further in view of another Official Notice to have the device including a mechanical clip integrated with a portable/mobile device and configured for clipping a

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person's clothing for the benefit of providing a means for securing the device into user's clothing while carrying and using the device.

Regarding claim 26, Yueh in view of Castillo and Official Notices teaches the system of Claim 25, wherein, when the wireless earbud is plugged into the connection hole, the system is configured such that the smartphone wirelessly communicates with the wireless earbud (Yueh's Fig. 2: Remote Bluetooth module 200 wirelessly communicate with Bluetooth earphone module 23 while the Bluetooth earphone module 23 inserted/docked into the Mobile storage device 1).

Regarding claim 28, Yueh in view of Castillo and Official Notices teaches the system of Claim 25, wherein the at least one processor is configured to determine whether the wireless earbud is plugged into the connection hole or unplugged out of the connection hole (inherently, the memory control module 21, MP3 processing module 22 have to determine if the Bluetooth earphone module 23 is plugged into the connection hole or unplugged out of the connection hole in order, for example, to receive digital files from Remote Bluetooth module 200 and store them in Memory 211; also see [0024] and [0025]), wherein the wireless earbud is not wirelessly sending data to the base station (Yueh's Fig. 2 showing only wired connection and no wireless connection between Bluetooth earphone module 23 and Mobile storage device 1).

Regarding claim 30, Yueh in view of Castillo and Official Notices teaches the system of Claim 25, wherein the base station further comprises an information display (Yueh's Fig. 1: display 12 and para [0017]), wherein the wireless earbud is not wirelessly sending data to the base station (Yueh's Fig. 2: Remote Bluetooth module 200

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wirelessly communicate with Bluetooth earphone module 23 while the Bluetooth earphone module 23 inserted/docked into the Mobile storage device 1).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TON whose telephone number is (571)270-7839. The examiner can normally be reached on Mon-Fri (8:30AM-5:00PM).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/DAVID TON/
Primary Examiner, Art Unit 2654

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	Examiner DAVID TON	Art Unit 2654	Page 1 of 1

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	2	"20170094395"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/07/18: 22:29
L5	1	("20170094396").PN.	US-PGPUB; USPAT	OR	OFF	2018/07/18: 22:29
L6	2751	((earphone earbud earpiece) with (cas\$3 housing box container)) and wireless and (power same charg\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/07/18: 22:29
L7	2528	381/74.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L8	61	L6 and L7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L9	286	L6 and 455/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L10	24433	(H04R1/1041;H04R1/1016;H04R1/1025;H04R1/1091;H04R2420/07).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L11	447	L6 and L10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L12	3	L11 and (power near interface) and (audio near interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L13	48	L11 and (audio near interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18: 22:29
L17	2751	((earphone earbud earpiece) with (cas\$3 housing box container)) and wireless and (power same charg\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/07/18: 22:29
L18	2528	381/74.ccls.	US-PGPUB; USPAT; USOCR;	OR	OFF	2018/07/18: 22:29

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L19	61	L17 and L18	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L20	286	L17 and 455/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L21	24433	(H04R1/1041;H04R1/1016;H04R1/1025;H04R1/1091;H04R2420/07).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L22	447	L17 and L21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L23	3	L22 and (power near interface) and (audio near interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L24	48	L22 and (audio near interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L28	24433	(H04R1/1041;H04R1/1016;H04R1/1025;H04R1/1091;H04R2420/07;H04R2420/07).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/07/18; 22:29
L29	2751	((earphone earbud earpiece) with (case housing box container)) and wireless and (power same charge)	US-PGPUB; USPAT; USOCR	OR	ON	2018/07/18; 22:29
L30	447	L28 and L29	US-PGPUB; USPAT; USOCR	OR	ON	2018/07/18; 22:29
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L38	3169	((earphone earbud earpiece) with (cas\$3 housing box container dock\$3 base)) and wireless and (power same charg\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/07/18; 22:36
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L43	7	((("FISHER") near3 ("H") near3 ("Lawson"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/07/18; 22:41
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L47	37	("20050008147" "20050107120" "20050186905" "20060166715" "20070147629" "20080108306" "20090046869" "20100245585" "20100312944" "20110141357" "20130206612" "20140116085" "20140295758" "20150078575" "20150241922" "20150245126" "20150326990" "20150373448" "20160360350" "20170013342" "6765789" "6768911" "7643283" "7738247" "7869195" "8121329" "8213666" "8238967" "8384527" "8582755" "8867748" "9002420" "9319766" "D586823" "D600013" "D667390" "D728624").PN.	US-PGPUB; USPAT	OR	OFF	2018/07/18; 22:43
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L49	247	38 and 48	US-PGPUB; USPAT	OR	OFF	2018/07/18; 22:46

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Foreign Priority claimed: Yes No

35 USC 119 (a-d) conditions met: Yes No Met After Allowance

Verified and Acknowledged:

/DAVID L TON/

Examiner's Signature

Initials

Title:

PERSONAL WIRELESS MEDIA STATION

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
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	First Named Inventor	Seung Jin KIM	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		PNN.005NP

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First Named Inventor	Seung Jin KIM	
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First Named Inventor	Seung Jin KIM	
Art Unit		
Examiner Name		
Attorney Docket Number	PNN.005NP	

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Seung Jin KIM	
Art Unit		
Examiner Name		
Attorney Docket Number	PNN.005NP	

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	1	International Search Report and Written Opinion dated July 11, 2016 for PCT/US16/25936 which is the parent application - 10 pages	
	2	International Preliminary Report on Patentability dated July 17, 2016 for PCT/US16/25936 which is the parent application - 8 pages	
	3	Archived copy of website, http://mypinn.com in 4 pages. The website, http://mypinn.com , was first published on May 5, 2016 and archived on June 26, 2016. Archived copy was downloaded from https://web.archive.org/web/20160626155438/http://mypinn.com/ on April 13, 2017	
	4	Copy of website, http://mypinn.com/ in 5 pages. The copy was downloaded on April 13, 2017	
	5	Copy of website, https://www.kickstarter.com/projects/906938906/pinn-all-in-one-earbud-mic-and-oled-display-for-sm?ref=discovery in 20 pages. The website was published on August 10, 2016 and the copy was downloaded on April 13, 2017	
	6	Copy of website, https://www.banggood.com/Separate-Design-Bluetooth-Handsfree-Headset-Sports-Watch-For-Phone-6-p-951983.html in 6 pages. The copy was downloaded on June 15, 2017	
	7	Copy of website, https://www.banggood.com/Link-Dream-Separate-Design-Bluetooth-Headset-Sports-Watch-For-Phone-6-p-951983.html in 12 pages. The copy was downloaded on May 1, 2016	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Seung Jin KIM	
Art Unit		
Examiner Name		
Attorney Docket Number	PNN.005NP	

8	Communication in cases for which no other form is applicable dated August 15, 2017 in corresponding PCT application no. PCT/US2016/025936 in 12 pages.
---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/DAVID L TON/	Date Considered	07/17/2018
--------------------	---------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
 (Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Seung Jin KIM	
Art Unit		
Examiner Name		
Attorney Docket Number	PNN.005NP	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mincheol Kim/	Date (YYYY-MM-DD)	2017-10-02
Name/Print	Mincheol Kim	Registration Number	51,306


This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<i>Index of Claims</i> 	Application/Control No. 15563937	Applicant(s)/Patent Under Reexamination KIM ET AL.
	Examiner DAVID TON	Art Unit 2654

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	07/19/2018							
	1	-							
	2	-							
	3	-							
	4	-							
	5	-							
	6	-							
	7	-							
	8	-							
	9	-							
	10	-							
	11	-							
	12	-							
	13	-							
	14	-							
	15	-							
	16	-							
	17	-							
	18	-							
	19	-							
	20	-							
	21	-							
	22	-							
	23	✓							
	24	✓							
	25	✓							
	26	✓							
	27	✓							
	28	✓							
	29	✓							
	30	✓							

Search Notes 	Application/Control No. 15563937	Applicant(s)/Patent Under Reexamination KIM ET AL.
	Examiner DAVID TON	Art Unit 2654

CPC- SEARCHED		
Symbol	Date	Examiner
H04M1/6066;H04M1/05;H04M1/7253	7/19/2018	DT
H04R1/1041;H04R1/1016;H04R1/1025;H04R1/1091;H04R2420/07;H04R2420/07	7/19/2018	DT

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
Assignee search	7/19/2018	DT
Inventor searches	7/19/2018	DT
H04M1/6066;H04M1/05;H04M1/7253 to date	7/19/2018	DT
H04R1/1041;H04R1/1016;H04R1/1025;H04R1/1091;H04R2420/07;H04R2420/07 to date	7/19/2018	DT
IP.com and google patent searches	7/19/2018	DT

INTERFERENCE SEARCH

	/DAVID TON/ Primary Examiner.Art Unit 2654
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US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/DAVID TON/ Primary Examiner.Art Unit 2654
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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 15/563,937, 10/02/2017, 2654, 630, PNN.005NP, 8, 1

CONFIRMATION NO. 3453
UPDATED FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Date Mailed: 06/13/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

Seung Jin KIM, Irvine, CA;
Jason Frederick STONE, South San Francisco, CA;
Vincent Sarcia PASCUAL, Brentwood, CA;
H., Lawson FISHER, Portola Valley, CA;
Devjeet MISHRA, Westbury, NY;

Applicant(s)

PINN, INC., Tustin, CA;

Assignment For Published Patent Application

PINN, INC., Tustin, CA

Power of Attorney: The patent practitioners associated with Customer Number 20995

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/US16/25936 04/04/2016
which claims benefit of 62/142,978 04/03/2015
and claims benefit of 62/199,943 07/31/2015

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 01/26/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/563,937**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

PERSONAL WIRELESS MEDIA STATION

Preliminary Class

381

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
15/563,937

APPLICATION AS FILED - PART I

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	8	minus 20 = *
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

* If the difference in column 1 is less than zero, enter "0" in column 2.

SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	150
N/A	260
N/A	380
x 50 =	0.00
x 230 =	0.00
	0.00
	0.00
TOTAL	790

OR OTHER THAN SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
TOTAL	

APPLICATION AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 3 columns: U.S. APPLICATION NUMBER NO. (15/563,937), FIRST NAMED INVENTOR (Seung Jin KIM), ATTY. DOCKET NO. (PNN.005NP)

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

INTERNATIONAL APPLICATION NO.

PCT/US16/25936

Table with 2 columns: I.A. FILING DATE (04/04/2016), PRIORITY DATE (04/03/2015)

CONFIRMATION NO. 3453
371 ACCEPTANCE LETTER



Date Mailed: 06/13/2018

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office, in its capacity as a Designated / Elected Office (37 CFR 1.495), has ACCEPTED the above identified international application for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above. A Filing Receipt will be issued for the present application in due course. THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE or 371(c) DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1) and (c)(2) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN BELOW. The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363)

10/02/2017

DATE OF RECEIPT OF 35 U.S.C.
371(c)(1) and (c)(2) REQUIREMENTS

The following items have been received:

- Indication of Small Entity Status
• Copy of the International Application filed on 10/02/2017
• Copy of the International Search Report filed on 10/02/2017
• Copy of IPE Report filed on 10/02/2017
• Copy of Annexes to the IPER filed on 10/02/2017
• Preliminary Amendments filed on 04/30/2018
• Information Disclosure Statements filed on 10/02/2017
• U.S. Basic National Fees filed on 10/02/2017
• Assignment filed on 04/30/2018
• Assignee Statement for PGPUB filed on 10/02/2017
• Authorize Access to Search Results filed on 10/02/2017
• Priority Documents filed on 10/02/2017
• Power of Attorney filed on 10/02/2017
• Authorization to Permit Access filed on 10/02/2017
• Application Data Sheet (37 CFR 1.76) filed on 10/02/2017

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute

statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.495(c).

- Properly executed inventor's oath or declaration for the following inventor(s) has not been submitted: **Seung Jin KIM, Jason Frederick STONE, Vincent Sarcia PASCUAL, H., Lawson FISHER, and Devjeet MISHRA**

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

MARIAN E DAY

Telephone: (703) 756-1142

Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 06/12/2018

MDAY22 RF #30214726 Mailroom Dt: 06/12/2018 15563937

Credit Card Refund Total: \$180.00

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (15/563,937), FILING OR 371(C) DATE (10/02/2017), FIRST NAMED APPLICANT (Seung Jin KIM), ATTY. DOCKET NO./TITLE (PNN.005NP)

CONFIRMATION NO. 3453

PUBLICATION NOTICE

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Title:PERSONAL WIRELESS MEDIA STATION

Publication No.US-2018-0131793-A1
Publication Date:05/10/2018

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Seung Jin KIM
Applicant	:	PINN, INC.
App. No.	:	15/563,937
Filed	:	October 2, 2017
Examiner	:	Not Yet Assigned
Art Unit	:	2654
Conf. No.	:	3453

PRELIMINARY AMENDMENT

Mail Stop Amendment

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Prior to the examination on the merits, please amend the subject application as indicated below.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 4 of this paper.

AMENDMENTS TO THE CLAIMS

1-22. (Canceled)

23. (New) A personal media system comprising:

a base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and

a wireless earbud configured for plugging into the connection hole of the base station to form an integrated body with the base station,

wherein the personal media system is capable of wirelessly pairing with a smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone,

wherein, in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone,

wherein, in response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,

wherein, when the wireless earbud is plugged into the connection hole of the base station, the wireless earbud is configured to electrically connect with the circuitry of the base station and further configured to performing wired data communication with the base station.

24. (New) The system of Claim 23, wherein the wireless earbud is not capable of wirelessly sending data to the base station.

25. (New) The system of Claim 23, further comprising a mechanical clip integrated with the base station and configured for clipping a person's clothing, wherein the wireless earbud is not capable of wirelessly sending data to the base station.

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26. (New) The system of Claim 25, wherein, when the wireless earbud is plugged into the connection hole, the system is configured such that the smartphone wirelessly communicates with at least one of the base station and the wireless earbud.

27. (New) The system of Claim 25, wherein the base station further comprises a wireless communication module configured to wirelessly communicate with at least one of the smartphone and the wireless earbud.

28. (New) The system of Claim 25, wherein the at least one processor is configured to determine whether the wireless earbud is plugged into the connection hole or unplugged out of the connection hole, wherein the wireless earbud is not capable of wirelessly sending data to the base station.

29. (New) The system of Claim 25, wherein the base station further comprises a volume control button configured to control volume of the wireless earbud, wherein the wireless earbud is not capable of wirelessly sending data to the base station.

30. (New) The system of Claim 25, wherein the base station further comprises an information display, wherein the wireless earbud is not capable of wirelessly sending data to the base station.

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REMARKS

Applicant has amended the application as set forth above. No new matter is added by the amendments. Applicant respectfully requests entry of the amendments.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 30, 2018

By: /Mincheol Kim/
Mincheol Kim
Registration No. 51,306
Attorney of Record
Customer No. 20,995
(949) 760-0404

28192302

Electronic Patent Application Fee Transmittal

Application Number:	15563937
Filing Date:	02-Oct-2017
Title of Invention:	PERSONAL WIRELESS MEDIA STATION
First Named Inventor/Applicant Name:	Seung Jin KIM
Filer:	Mincheol Kim/Jacquie O'Brien
Attorney Docket Number:	PNN.005NP

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
OATH/DECL > 30 MOS FROM 371 COMMENCEMENT	2617	1	70	70

Petition:
Patent-Appeals-and-Interference:
Post-Allowance-and-Post-Issuance:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				170

Electronic Acknowledgement Receipt

EFS ID:	32491823
Application Number:	15563937
International Application Number:	
Confirmation Number:	3453
Title of Invention:	PERSONAL WIRELESS MEDIA STATION
First Named Inventor/Applicant Name:	Seung Jin KIM
Customer Number:	20995
Filer:	Mincheol Kim/ThuyQuyen Nguyen
Filer Authorized By:	Mincheol Kim
Attorney Docket Number:	PNN.005NP
Receipt Date:	30-APR-2018
Filing Date:	02-OCT-2017
Time Stamp:	19:29:34
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$170
RAM confirmation Number	050118INTEFSW19303900
Deposit Account	111410
Authorized User	ThuyQuyen Nguyen

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.492 (National application filing, search, and examination fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	ResponseInsufficiency-PNN_005NP.pdf	111593	no	1
			e3260908c1817b468f0e0f76c5e46cabf5e13bd6		
Warnings:					
Information:					
2	Oath or Declaration filed	CombinedDecl_Assignment-PNN_005NP.PDF	1289797	no	15
			a8281c7b9a0a334a325b56b65a4e2e6685c7b0ab		
Warnings:					
Information:					
3		PreliminaryAmendment-PNN_005NP.pdf	127980	yes	4
			ee5246b27a89b0a65f3653d478070b994a97b15e		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Claims		2	3	
	Applicant Arguments/Remarks Made in an Amendment		4	4	
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32439	no	2
			f01efe11573ed2977053cefcf51988b63cd342f1		
Warnings:					
Information:					
Total Files Size (in bytes):			1561809		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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RESPONSE TO NOTIFICATION OF INSUFFICIENCY

**Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

Dear Sir:

In response to the Notification of Insufficiency under 37 CFR 1.492 and/or 1.495 (DO/EO/US) mailed January 30, 2018, Applicant submits the following:

- Preliminary Amendment in 4 pages.
- Combined Declaration & Assignment in 15 pages.

Fees will be paid via EFS Web. The Commissioner is hereby authorized to charge any additional fees which may be required, now or in the future, or credit any overpayment, to Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 30, 2018

By: /Mincheol Kim/
Mincheol Kim
Registration No. 51,306
Attorney of Record
Customer No. 20995
(949) 760-0404

28192513

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

Page 1 of 3

Title: PERSONAL WIRELESS MEDIA STATION

Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

Declaration

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I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

Assignment

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AND WHEREAS, **PINN, INC.**, with its principal place of business at 2512 Chambers Rd., Suite 204, Tustin, CA 92780 (hereinafter the "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to the Application and the Work.

NOW, THEREFORE, for good and valuable consideration of which receipt is hereby acknowledged, ASSIGNOR hereby acknowledges that ASSIGNOR has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in the Application and the Work, including all patent properties filed or issued upon the Application and the Work; where "Patent Properties" include, but are not limited to:

all provisional applications relating thereto (including, but not limited to, U.S. Provisional Application No. 62/142,978 filed April 3, 2015 and 62/199,943, filed July 31, 2015;

all nonprovisional applications claiming priority to aforementioned provisionals and/or the present Application, including, all divisions, continuations, continuations-in-part, and reissues, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof; and

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Page 2 of 3

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Devjeet MISHRA

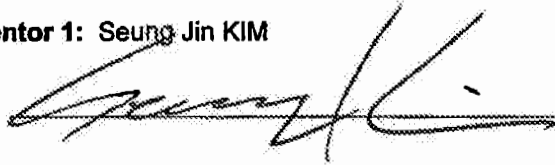
ASSIGNOR hereby acknowledges the ASSIGNEE as the Applicant for all aforementioned patent properties, and authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other Patent Property relating to the Application and the Work or any improvements made thereto, sign/execute all lawful papers, authorize the filing of and execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

Legal Name of inventor 1: Seung Jin KIM

Signature: _____



Date: _____

3/26/2018

Legal Name of inventor 2: Jason Frederick STONE

Signature: _____

Date: _____

Legal Name of inventor 3: Vincent Sarcia PASCUAL

Signature: _____

Date: _____

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

Page 3 of 3

Title: PERSONAL WIRELESS MEDIA STATION

Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

Legal Name of inventor 4: H. Lawson FISHER

Signature: _____ Date: _____

Legal Name of inventor 5: Devjeet MISHRA

Signature: _____ Date: _____

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COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

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Legal Name of inventor 1: Seung Jin KIM

Signature: _____

Date: _____

Legal Name of inventor 2: Jason Frederick STONE

Signature:  _____

Date: 2/13/2018

Legal Name of inventor 3: Vincent Sarcia PASCUAL

Signature: _____

Date: _____

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

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Legal Name of inventor 4: H. Lawson FISHER

Signature: _____

Date: _____

Legal Name of inventor 5: Devjeet MISHRA

Signature: _____

Date: _____

26813943
101017

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

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Title: PERSONAL WIRELESS MEDIA STATION

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Legal Name of inventor 1: Seung Jin KIM

Signature: _____ Date: _____

Legal Name of inventor 2: Jason Frederick STONE

Signature: _____ Date: _____

Legal Name of inventor 3: Vincent Sarcia PASCUAL

Signature:  _____ Date: 4/10/2018

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ASSIGNOR hereby acknowledges the ASSIGNEE as the Applicant for all aforementioned patent properties, and authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other Patent Property relating to the Application and the Work or any improvements made thereto, sign/execute all lawful papers, authorize the filing of and execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

Legal Name of inventor 1: Seung Jin KIM

Signature: _____ Date: _____

Legal Name of inventor 2: Jason Frederick STONE

Signature: _____ Date: _____

Legal Name of inventor 3: Vincent Sarcia PASCUAL

Signature: _____ Date: _____

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

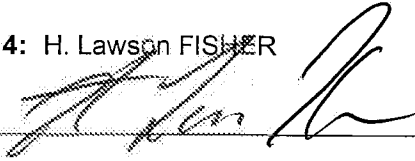
Page 3 of 3

Title: PERSONAL WIRELESS MEDIA STATION

Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

Legal Name of inventor 4: H. Lawson FISHER

Signature: _____



Date: _____

11/28/2007

Legal Name of inventor 5: Devjeet MISHRA

Signature: _____

Date: _____

26813943
101017

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

Page 1 of 3

Title: PERSONAL WIRELESS MEDIA STATION

Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

Declaration

This Declaration is directed to the application identified above that:

Was filed **October 2, 2017** as U.S. Application No. **15/563,937** and incorporating any amendments made thereto prior to the signature date of this Declaration.

As a named inventor, I declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

Assignment

WHEREAS, **above-identified inventor** (individual) hereinafter "ASSIGNOR") invented certain new and useful improvements, technology, inventions, developments, ideas, ornamental designs, or discoveries, and hereby assign or are under an obligation to assign to the below identified Assignee the above-titled application (collectively hereinafter referred to as the "Work") for which an application for Letters Patent in the United States (identified above) has been prepared for filing with the United States Patent and Trademark Office (hereinafter the "Application").

AND WHEREAS, **PINN, INC.**, with its principal place of business at 2512 Chambers Rd., Suite 204, Tustin, CA 92780 (hereinafter the "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to the Application and the Work.

NOW, THEREFORE, for good and valuable consideration of which receipt is hereby acknowledged, ASSIGNOR hereby acknowledges that ASSIGNOR has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in the Application and the Work, including all patent properties filed or issued upon the Application and the Work; where "Patent Properties" include, but are not limited to:

all provisional applications relating thereto (including, but not limited to, U.S. Provisional Application No. 62/142,978 filed April 3, 2015 and 62/199,943, filed July 31, 2015;

all nonprovisional applications claiming priority to aforementioned provisionals and/or the present Application, including, all divisions, continuations, continuations-in-part, and reissues, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof; and

all rights of priority under International Conventions and any related Letters Patent which may hereafter be granted or filed in any country or countries foreign to the United States, all extensions, renewals and reissues thereof.

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

Page 2 of 3

Title: PERSONAL WIRELESS MEDIA STATION

Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

ASSIGNOR hereby acknowledges the ASSIGNEE as the Applicant for all aforementioned patent properties, and authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other Patent Property relating to the Application and the Work or any improvements made thereto, sign/execute all lawful papers, authorize the filing of and execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

Legal Name of inventor 1: Seung Jin KIM

Signature: _____

Date: _____

Legal Name of inventor 2: Jason Frederick STONE

Signature: _____

Date: _____

Legal Name of inventor 3: Vincent Sarcia PASCUAL

Signature: _____

Date: _____

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: PNN.005NP

Page 3 of 3

Title: PERSONAL WIRELESS MEDIA STATION


Inventors: Seung Jin KIM; Jason Frederick STONE; Vincent Sarcia PASCUAL; H. Lawson FISHER;
Devjeet MISHRA

Legal Name of inventor 4: H. Lawson FISHER

Signature: _____

Date: _____

Legal Name of inventor 5: Devjeet MISHRA

Signature:  _____

Date: 01/05/2018

26813943
101017



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 6 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 15/563,937, 10/02/2017, 740, PNN.005NP, 22, 1

CONFIRMATION NO. 3453

FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Date Mailed: 01/30/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

Seung Jin KIM, Irvine, CA;
Jason Frederick STONE, South San Francisco, CA;
Vincent Sarcia PASCUAL, Brentwood, CA;
H., Lawson FISHER, Portola Valley, CA;
Devjeet MISHRA, Westbury, NY;

Applicant(s)

PINN, INC., Tustin, CA;

Assignment For Published Patent Application

PINN, INC., Tustin, CA

Power of Attorney: The patent practitioners associated with Customer Number 20995

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/US16/25936 04/04/2016
which claims benefit of 62/142,978 04/03/2015
and claims benefit of 62/199,943 07/31/2015

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 01/26/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/563,937**

Projected Publication Date: 05/10/2018

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

PERSONAL WIRELESS MEDIA STATION

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
15/563,937

APPLICATION AS FILED - PART I

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	22 minus 20 = *	2
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 = *	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

* If the difference in column 1 is less than zero, enter "0" in column 2.

SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	150
N/A	260
N/A	380
x 50 =	100
x 230 =	0.00
	0.00
	0.00
TOTAL	890

OTHER THAN SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
TOTAL	

APPLICATION AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 3 columns: U.S. APPLICATION NUMBER NO. (15/563,937), FIRST NAMED INVENTOR (Seung Jin KIM), ATTY. DOCKET NO. (PNN.005NP)

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

INTERNATIONAL APPLICATION NO.

PCT/US16/25936

Table with 2 columns: I.A. FILING DATE (04/04/2016), PRIORITY DATE (04/03/2015)

CONFIRMATION NO. 3453
371 FORMALITIES LETTER



Date Mailed: 01/30/2018

Notification of Insufficiency Under 37 CFR 1.492 and/or 1.495 (DO/EO/US)

The following items have been submitted by the applicant or the International Bureau to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495).

- Indication of Small Entity Status
• Priority Document
• Copy of the International Application filed on 10/02/2017
• Copy of the International Search Report filed on 10/02/2017
• Copy of IPE Report filed on 10/02/2017
• Copy of Annexes to the IPER filed on 10/02/2017
• Information Disclosure Statements filed on 10/02/2017
• U.S. Basic National Fees filed on 10/02/2017
• Assignee Statement for PGPUB filed on 10/02/2017
• Authorize Access to Search Results filed on 10/02/2017
• Priority Documents filed on 10/02/2017
• Power of Attorney filed on 10/02/2017
• Authorization to Permit Access filed on 10/02/2017
• Application Data Sheet (37 CFR 1.76) filed on 10/02/2017

The following items MUST be furnished within the period set forth below:

- Additional claim fees of \$100 as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
• To avoid abandonment, a surcharge (for late submission of search fee, examination fee or inventor's oath or declaration) as set forth in 37 CFR 1.492(h) of \$70 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fees required for this application is \$170 for a Small Entity:

- \$70 Surcharge.

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.495(c).

- Properly executed inventor's oath or declaration for the following inventor(s) has not been submitted: **Seung Jin KIM, Jason Frederick STONE, Vincent Sarcia PASCUAL, H., Lawson FISHER, and Devjeet MISHRA**

Total additional claim fee(s) for this application is \$100

- \$100 for 2 total claims over 20.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.

<https://portal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

MARIAN E DAY

Telephone: (703) 756-1142

**MULTIPLE DEPENDENT CLAIM
FEE CALCULATION SHEET**

Substitute for Form PTO-1360
(For use with Form PTO/SB/06)

Application Number

15563937

Filing Date

Applicant(s) **Seung Jin KIM**

* May be used for additional claims or amendments

CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT			*	*	*
	Indep	Depend	Indep	Depend	Indep	Depend				
1	1									
2		1								
3		1								
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46										
47										
48										
49										
50										
Total Indep	1		0		0					
Total Depend	21	↙	0	↙	0	↙				
Total Claims	22		0		0					
51										
52										
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SCORE Placeholder Sheet for IFW Content

Application Number: 15563937

Document Date: 10/02/2017

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via eDAN using the Supplemental Content tab, or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.

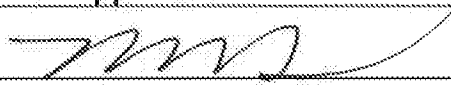
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Not Yet Assigned
Filing Date	Herewith
First Named Inventor	Seung Jin KIM
Title	PERSONAL WIRELESS MEDIA STATION
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	PNN.005NP

SIGNATURE of Applicant or Patent Practitioner

Signature		Date (Optional)	2017-10-02
Name	Mincheol Kim	Registration Number	51,306
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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<i>Seung Jin Kim</i>	10/09/2015
Name	SEUNG JIN KIM
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9	8121329	B2	2012-02-21	Groset et al.
10	8213666	B2	2012-07-03	Groesch
11	9319766	B2	2016-04-19	Weinstein et al.
12	9002420	B2	2015-04-07	Pattikonda et al.
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1	20140295758	A1	2014-10-02	Pedersen
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11	20070147629	A1	2007-06-28	Chiloyan

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12	20160360350	A1	2016-12-08	Watson et al.
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1	2010/083829	WO	A1	2010-07-29	GN NETCOM A/S
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	4	Copy of website, http://mypinn.com/ in 5 pages. The copy was downloaded on April 13, 2017	
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The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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(54) Title: A HEADSET BASE WITH DISPLAY

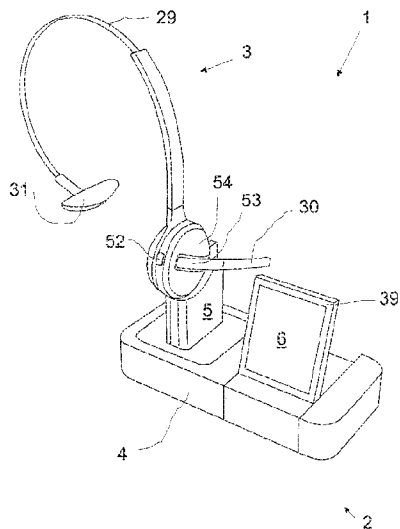


Fig. 1

(57) Abstract: A headset base unit (2) comprising a base housing (4), a headset holder (5, 38) for holding a headset (3). The headset base unit (2) further comprises a first connection device (7), by means of which the headset base unit (2) is connectable to at least one telecommunication device (9, 10, 11), such as a desk phone (9), a PC phone (10) and a mobile phone (11), and a second connection device (8), by means of which the headset base unit (2) is connectable to the headset (3). The headset base unit (2) has control means (9), by means of which an audio channel can be opened between the headset (3) and a selected one of the telecommunication devices (9, 10, 11), and a display unit (39) with a display (6) adapted for displaying device icons (12, 13, 14) representing connected telecommunication devices (9, 10, 11).

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— with international search report (Art. 21(3))

A HEADSET BASE WITH DISPLAY

Technical Field

5 The invention relates to a headset base unit comprising
a base housing,
a headset holder for holding a headset,
a first connection device, by means of which the headset base unit is
connectable to at least one telecommunication device, such as a desk
10 phone, a PC phone and a mobile phone,
a second connection device, by means of which the headset base unit is
connectable to the headset,
control means, by means of which an audio channel can be opened
between the headset base unit and a selected one of the
15 telecommunication devices.

Furthermore, the invention relates to a headset system comprising such a
headset base unit and a headset.

20 Background Art

A headset base unit is a unit, which is arranged between a headset and
one or more telecommunication devices, such as a PSTN (Public Switched
Telephone Network) desk phone, and IP (Internet Protocol) desk phone, an
25 IP soft phone (installed on a computer) and a mobile phone. The headset
base unit comprises a headset holder for holding the headset when not in
use. The headset comprises one or two earphones and a microphone. The
headset base unit is typically placed on a desk beside a telephone and/or a
PC. When the user wants to use the headset, he picks up the headset from
30 the holder and arranges in on his ear or head. The headset can be
connected to the headset base unit by a wire or wirelessly. In both cases the

user's hands are free for other purposes such as using the computer or handling papers while communicating via the headset.

5 GN 9350 is an office headset system comprising a headset base unit to be placed on a desk surface and a wireless headset, which can be placed in a headset holder of the headset base unit when not in use. The headset is recharged when placed in the holder. The headset base unit can be simultaneously connected to a desk phone, which can be a PSTN phone or an IP Phone, and a USB socket on a PC. The headset base unit comprises
10 a "telephone mode" button and a "USB mode" button. When the user wants to make or receive a telephone call via the desk phone, he presses the "telephone mode" button. If the user wants to make or receive a call via a soft phone installed on the PC, he presses the "USB mode" button. The buttons are so-called momentary buttons and small indicator LED is
15 arranged at each button. When the button is pressed, the associated LED is turned on, so the user can identify the chosen telecommunication device. This system works well, as the user by means of the LED easily can identify the selected telecommunication terminal.

20 Disclosure of Invention

As mentioned above, the prior art works well. However, there are room for improvement. Thus, the object of the invention is to provide a more flexible identification system.

25 The headset base unit according to the invention is characterised in a display unit with a display adapted for displaying device icons representing connected telecommunication devices.

30 The display gives the advantage that the user easily can identify which telecommunication terminal is connected to the headset base unit. For

example, if a desk phone is connected, an icon clearly indicates this. Furthermore, the graphic software can be upgraded for future needs and or changed for different utilities.

5 According to a preferred embodiment, the headset base unit is simultaneously connectable to more than one telecommunication device. In this case, a device icon for each telecommunication device on the display makes it easy for the user to identify the connected telecommunication devices.

10

Preferably, the device icons change appearance, when the represented telecommunication device is selected.

15 According to an embodiment, the display is a touch-screen display. In this case, the numbers of mechanical buttons and pointing devices can be reduced or omitted. This saves manufacturing costs and improves the design possibilities, as the base housing can be designed slim and minimalistic. Thus, the touch-screen display forms, in whole or in part, a user interface of the headset base unit.

20

Preferably, a telecommunication device can be selected by touching the device icon representing the telecommunication device. For example, if a call is received by the desk phone, the user can easily choose to open an audio channel between the headset base unit and the desk phone by touching the device icon representing the desk phone.

25

According to a preferred embodiment, one or more of headset speaker volume, microphone volume, and speaker equalisation can be adjusted by means of the touch-screen display.

30

Preferably, the device icons change appearance in dependence on the call status, such as incoming call, on call and on hold, of the represented telecommunication device. Thus, the user can easily identify the call status of the connected telecommunication devices. It also reduces the number of erroneous actions by the user. If there is an incoming call on a connected PC soft phone, a device icon on the display clearly indicates this, and intuitively the user will receive the call by touching this icon.

According to an embodiment, a caller identity icon is shown when a device icon signals an incoming call. The caller identity icon can show the telephone number or name of the calling party.

According to a preferred embodiment, the headset base unit comprises a first base transceiver for wireless connectivity to a wireless headset comprising a headset transceiver. Such a wireless solution provides more freedom, as the user can walk around in the office and even into another room when talking through the headset. A transceiver is a combined transmitter and receiver with common circuitry. However, a transmitter-receiver with no common circuitry can also be used.

If the headset is wireless, the holder may comprise charging terminals for charging a rechargeable battery of the headset, when the headset is received by the holder.

Preferably, the display is able to show battery status of the headset. The status may be sent from the headset to the headset base unit during use of the headset, or the headset base unit may be updated every time the headset is received by the holder.

In an alternative embodiment, the headset and the base unit are connected by means of a wire.

According to an embodiment, the headset base unit is adapted to be able to instruct a connected telecommunication device to initiate an outgoing call. In this case, the user does not need to manipulate the telecommunication device itself.

5

In a preferred embodiment, the touch-screen display is adapted to display a keypad for dialling a telephone number. In this case, the user dials the number by touching the relevant number icons on the touch-screen display.

10

In another embodiment, the headset base unit is adapted to store a call list or phone book and show this call list or phone book on the display, wherein the user can initiate an outgoing call by selecting a contact from the call list or phone book. If a touch-screen display is employed, the user can select the contact by simply touching it on the display.

15

The display device may be hingedly connected to the housing, so that it can be tilted. Then it can be adjusted for the best viewing angle.

According to an embodiment, the headset holder is a part of a headset holder unit, which is an adjustable or releasable part of the headset base unit. In this case, the holder may be adjusted to hold the headset in the most appropriate position or the holder may be replaced by another holder unit, which is adapted for a headset of another type.

25 According to an embodiment, the headset holder or headset holder unit is rotatable about an essentially vertical axis, when the headset base unit stands on an essentially horizontal surface. This is a simple and effective solution.

30 The holder unit may be arranged beside the display device.

According to an embodiment, the headset base unit comprises a second transceiver or transmitter-receiver for wireless communication with a telecommunication terminal comprising a corresponding transceiver or transmitter-receiver. The second transceiver could be a Bluetooth transceiver or transmitter-receiver, which is connectable to a mobile phone also comprising a Bluetooth transceiver or transmitter-receiver. The headset base unit according to the invention with a second transceiver or transmitter-receiver may be without a display.

The invention also relates to a headset system comprising a headset base unit and a headset to be held by the headset holder when not in use.

The headset system may be wired or wireless, which means that the connection between the headset base unit and the headset can be wired or wireless.

The invention also relates to a method of setting up a headset base unit according to claim 1, wherein the display instructs the user to one or more of the following:

- connect the headset base unit to telecommunication devices
- configuring interface wiring between telephone and headset base unit,
- microphone level setup

The display instructions can be assisted by voice tags.

Brief Description of the Drawings

The invention is explained in detail below with reference to the drawing illustrating a preferred embodiment of the invention and in which

Fig. 1 is a perspective view of a preferred embodiment of a headset system according to the invention comprising a headset base unit and a headset arranged on a headset holder of the headset base unit,

5 Fig. 2 the headset base unit of the system of Fig. 1,

Fig. 3 the headset base unit, where a headset holder unit is released from the remainder of the headset base unit,

10 Fig. 4 the headset system with the headset holder unit is in a second position,

Fig. 5 a second embodiment of a headset system according to the invention,

15

Fig. 6 the headset of the first embodiment,

Fig. 7 a diagram showing the headset system according to the invention connected to three different telecommunication devices,

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Fig. 8 different views of the display during use of the headset system according to the invention,

Fig. 9 different views of the display during adjustment of call options, and

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Fig. 10 different views of the display during setup of the headset system according to the invention.

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Modes for Carrying out the Invention

Fig. 1 discloses a headset system 1 according to a preferred embodiment of the invention. The headset system comprises a headset base unit 2 and a wireless headset 3. The headset base unit 2 comprises a housing 4, a headset holder 5 and a display device 39 with a touch-screen display 6. The display device is a part of or physically connected to the housing 4. When not in use, the headset 3 is arranged on the headset holder 5, as shown in Fig. 1. The headset 3 comprises an earphone housing 54, a microphone arm 30 extending from the earphone housing 54 and a headband 29, which extends from the earphone housing 54 and comprises a T-shaped endpiece 31 at the opposite free end.

In Fig. 2, the headset 3 is removed from the headset base unit 2. The upper side of the headset holder 5 comprises charging terminals 30 for recharging the battery of the headset 3, when the latter is received by the headset holder 5. The display device 39 is step-less adjustable from 0° to 90° along the arrow 55. This is made possible through a friction hinge. Thus, the user can adjust the display device 39 to an appropriate viewing angle. In the 0° position (not shown), the display device 29 is received in a recess 37 in the base housing 4, so that it flushes with the upper side of the base housing 4. In Fig. 2, the display device 39 is positioned at an angle between 0° and 90°.

In Fig. 3, it is showed that a holder unit 56 comprising the headset holder 5 and a bottom part 35 can be lifted out of a receiving hole 36 in the base housing 4. By turning the holder unit 56 90° along the arrow 57 about a vertical axis and return it to the receiving hole 36, the headset holder 5 can be adjusted from "right ear position" shown in Fig. 1 to a "left ear position" shown in Fig. 4. In the "right ear position" (Fig. 1), the user can easily grab the headset 3 with his right hand and put it on his head so that the

earphone 54 is placed on the right ear. In the "left ear position" (Fig. 4), the user can easily grab the headset 3 with his left hand and arrange it on his head so that the earphone 54 is placed on his left ear. Electrical contact between the headset holder unit 56 and the remainder of the headset base unit 2 can be maintained during adjustment by means of a not shown wire. Alternatively contact terminals could be provided on bottom part 35 of the holder unit 56 and in the receiving hole 36 so that electrical contact is established in the selected adjustment position.

In an alternative embodiment, the headset holder 5 could be rotatably mounted, so that it could be rotated about a vertical axis without being removed from the headset base unit 2.

The holder unit 56 can also be replaced by another holder unit. This is advantageous as the headset base unit 2 then can be adapted for use with another headset. In Fig. 5 is shown a second embodiment of the headset system 94 according to the invention. This embodiment differs from the first embodiment by the holder unit 38 being adapted for a different type of wireless headset 32. Thus, the holder unit 38 according to the second embodiment does not comprise an upwardly extending headset holder but simply a receiving hole in the top surface. The headset 32 according to the second embodiment comprises a headset housing 61, an earbud 34 to be inserted into the ear and an ear hook 33 to be arranged around the outer ear of the user. The user interface of the headset 32 comprises a multi-function button 52 and an elongate volume touch button 53. The user can inter alia receive and end calls by pressing the multi-function button 52 and adjust the headset volume by sliding a finger along the volume button 53. Thus, the user turns the volume up by sliding the finger in one direction and turns the volume down by sliding the finger in the opposite direction.

30

Fig. 6 discloses the headset 3 according to the first embodiment. As indicated with the arrow 58, the microphone arm 30 can be rotated about an axis essentially perpendicular to the large outer surface of the earphone 54 in order to point it in the direction of the user's mouth and to adjust the headset 3 from left ear use to right ear use and vice versa. In Fig. 6, the headset 3 is adjusted to left ear use. The headband 29 comprises a first headband part 59 and a second headband part 60. The second headband 60 part is telescopically received in the first headband part 59, so that the length of the headband 29 can be adjusted to the size of the user's head.

5 On the outer side of the microphone arm and within the outer boundary of the earphone 54, the headset 3 comprises an elongate volume touch button 53. The user can adjust the speaker volume by sliding the finger in the lengthwise direction of the touch button 53 as explained in connection with the second embodiment. The circumferential surface of the earphone 54

10 comprises a multi-function button 52 for inter alia receiving and ending calls.

15

Fig. 7 is a diagram showing how a headset system according to the invention can be connected to a number of telecommunication terminals.

20 The headset base unit 2 comprises a base processor 29, a first connection device 7, a second connection device 8, a first transceiver 27, a second transceiver 28 and a touch screen display 6. The headset base unit 2 is by means of the first connection device 7 connected to a desk phone (PSTN) 9, a PC 10 and a mobile phone 11. The desk phone 9 and the PC 10 are

25 connected by wires 63, 64 to the connection device 7. The wire between PC 10 and the base unit 2 is a USB cable 64. The first connection device 7 also comprises an antenna 43 by means of which a wireless connection 65 to the mobile phone 11 is established. This wireless connection is established by means of the second transceiver 28 and a corresponding transceiver (not shown) in the mobile phone. The wireless connection

30 follows the Bluetooth standard, which means that the second transceiver 28

is a Bluetooth transceiver. However, other standards such as DECT could be utilized. The headset base unit comprises a speaker (not shown in Fig. 7) for generating an audible feedback to the user when operating the touch display. The speaker will also be used to signal an incoming soft phone call.

5

The second connection device 8 also comprises an antenna 44. A wireless connection 66 between the headset base unit 2 and the headset 3 is established by means of the first transceiver 27 and the antenna 44. The user interface of the headset base 2 comprises the touch screen display 6, which will be described later in detail.

10

The headset 3 comprises a headset processor 48, a headset connection device 46 with an antenna 45, a headset transceiver 51, a speaker 49 a microphone 50 and a user interface 47. The user interface 47 comprises the multi-function 52 button and the touch volume button 53. The wireless connection 66 between the headset 3 and the headset base unit 2 follows the DECT standard. However, other standards, such as Bluetooth could be used. If Bluetooth is used, the headset 3 could be simultaneously connected to another Bluetooth device, such as the mobile phone 11. The headset shown in Fig. 3 is especially suitable for such a solution, as it is compact and easy to carry in a pocket or bag.

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Fig. 8 shows different views of the touch screen display during use of the headset system according to the invention. A touch screen display normally comprises a flat screen display, which is based on LCD, TFT, OLED or other technology and is covered with a transparent touch panel. The touch panel is normally a so-called capacitive or resistive panel. However, other touch panel technologies can be applied. The touch screen display can show different areas, "widgets" or icons, the user can touch in order to control the headset system. In the following, the display 6 is shown for

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typical situations during use of a headset system according to the invention connected to a desk phone, a PC and a mobile phone.

Fig. 8a) "NORMAL IDLE SITUATION"

5 In the idle mode situation shown in Fig. 8a), the headset is in idle mode, i.e. there are no active calls. The upper area of the screen is called the "status bar" and comprises a headset icon 15, a battery level icon 16 and a setup icon 17 represented by a small wrench. The headset icon 15 indicates that the headset and the headset base unit are connected. The battery level icon 17 indicates the battery level of the rechargeable battery of the headset. The large icon 12 showing a desk phone with the handset in the cradle is named the target phone icon 12. An outgoing call made from the headset or the headset base unit is made from the telecommunication device selected as "target phone". Below the large "target phone" icon 12 there is a "button stack" with two smaller icons: a mobile phone icon 13 and a PC icon 14. These icons indicate that these telecommunication devices are also connected to the headset base unit. If the user touches the mobile phone icon 13, the target phone icon 12 changes from a desk phone icon to a mobile phone icon, while a smaller desk phone icon will appear in the button stack. In the lower part of the screen, there are a first handset icon 18 and a second handset icon 19, which are used for receiving and ending calls. It does not appear from the drawing, but the first handset icon 18 is green and the second handset 19 icon is red.

25 Fig. 8b) "RINGING"

In the ringing situation shown in Fig. 8b), there is an incoming call on the mobile phone, which is indicated by an incoming call icon 40 with animated symbols representing sound waves. Thus, the user's attention is drawn to the display. If the user wants to receive the call, he touches the first handset icon 18, and if he wants to reject the call, he touches the second handset icon 19.

Fig. 8c) "ON CALL"

Fig. 8c) disclose the screen when there is an active call on the desk phone. The active call is indicted by an on call icon 41 showing a sound wave symbol at the speaker of the lifted handset. During an active call, the setup icon 17 has changed to a call option icon 67, represented by a small speaker with a sound wave symbol. By touching this icon, the user gets access to various call adjustments shown in Fig. 9. A "recording" icon 42 shown in the status bar indicates that a call via the PC soft phone is recorded on the PC. However, there could also be a recording function built into the headset base unit 2, so that calls through any of the connected telecommunication devices could be recorded.

Fig. 8d) "CALL COLLISION"

Fig, 8d) discloses what is called a "call collision scenario". There is an active call on the desk phone and an incoming call on the mobile phone. The caller ID 24 of the caller on the mobile phone is shown on the screen just below the status bar. The caller ID is normally a phone number or the mane of the calling party. The user now has two options represented by a first call collision icon 68 and a second call collision icon 69. If he touches the first icon 68, he rejects the incoming call on the mobile phone and continues the call on the desk phone. If he touches the second icon 69, he ends the call on the desk phone and receives the incoming call on the mobile phone.

25 Fig. 8e) "ON CALL/HOLD"

In Fig. 8e) a call on the mobile phone is put on hold, which is indicated by the on hold icon 20. By simply touching the on hold icon 20, the user can make the call active again. By touching the icon representing the active call (see Fig. 8c)), the user can put the call on hold again.

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Fig. 8f) "ON CALL/INCOMING CALL ON SAME LINE"

In Fig. 8f), the user has an active call on the mobile phone while there is an incoming call on the same phone. He now has three options represented by a first incoming call icon 21, a second incoming call icon 22 and a third incoming call icon 23. If he selects the first icon 21, he continues the active call and rejects the incoming call. If he selects the second icon 22, he ends the active call and receives the incoming call. If he selects the third icon 23, he puts the active call on hold and receives the incoming call.

10 Fig. 8g) "N-WAY CALL"

In fig. 8 g), the user has a call on hold on the PC soft phone, represented by the on hold icon 25, and an active call on the PC soft phone, represented by the on call icon 26. Between these two icons 25, 26 there is a swap icon 62. The user can swap between the two calls, i.e. put the active call on hold and vice versa, by touching the swap icon 62.

Fig. 9 shows how different call options can be adjusted by means of the touch screen. If the user touches the call options icon 67 (see Fig. 8c)), the call options screen shown in Fig. 9a) appears. The call options screen comprises a call options menu with a speaker volume icon 70, a mute icon 71 and a start recording icon 72. The screen also comprises a scroll down icon 74, a scroll up icon 75 and an exit icon 73 in the lower end of the screen and a scroll bar 76 in the right side of the screen. Further menu icons, such as "tone setting", becomes visible by upwards and downwards scrolling by means of the scroll down icon 74 and the scroll up icon 75. The scroll bar 76 indicates which part of the menu that is visible. Alternatively or additionally, the user may scroll by sliding the finger in the direction of the scroll bar 76. If the user touches the exit button 73, the call options menu is left. A selection of the speaker volume icon 70 will be explained below in connection with Fig. 9b). If the user touches the mute icon 71, the headset microphone is muted. If the user touches the start recording icon 72 all

communication is sent by means of the USB cable 64 to the PC 10 and recorded by means of appropriate software. The software can be set to stop recording at the end of a call, or just pause recording between calls.

5 If the user selects the speaker volume icon 70, the screen shown in Fig. 9b) appears. The screen comprises a speaker meter icon 79 indicating the speaker level, a first adjustment icon 77 with a minus character and a second adjustment icon 78 with a plus character. The user can turn the speaker volume down by touching the first adjustment icon 77 and up by touching the second adjustment icon 78. The speaker meter icon 79 has 10 eight levels and in Fig. 9b), speaker level four is selected. The speed or the number of steps, speaker volume is adjusted by touching adjustment icons 77, 78 may depend on how long the user touches them. In an alternative embodiment, the adjustment make take place by sliding the finger across 15 the touch screen display 6, so that the speaker volume is adjusted upwards, when by sliding the finger in a first direction and downwards by sliding the finger in the opposite direction. The headset base unit may be adapted to remember the last volume setting for each connected telecommunication device and report the volume setting by sending control 20 signals to the headset when a telecommunication device is selected. Thus, the volume is separately set for the desk phone, the soft phone and mobile phone. The user can leave the speaker volume screen by touching the exit icon 73.

25 In Fig. 9c), the user has selected "tone setting" (equalisation) from the call options menu. Here the user can select the sound from the headset speaker to be one of three different types represented by a treble icon 80, a normal icon 81 and a bass icon 82. If he selects the treble icon 80, the sound in the treble area will be accentuated, and if he selects the bass icon 30 82, the sound in the bass area will be accentuated. The normal icon 81 selects a neutral sound.

Preferably, the speaker volume, microphone muting and speaker tone setting takes place in the headset, which means that control signals for adjusting the settings are sent from the headset base unit to the headset. The headset sends status signals to the headset base unit about the settings, so that the display shows the correct levels.

Some of these adjustments can also be carried by means of the headset user interface. It is especially advantageous, if the headset speaker volume can be adjusted by the headset user interface. Thus, the headset volume button 53 shown in Figs. 5 and 6 is used for adjusting the headset speaker volume, while status signals simultaneously is sent to the headset base unit in order to update the display. In this case, it is optional for the user whether he wants to make audio adjustments by means of the headset user interface or by means of the base user interface. If the user is away from the headset, he will use the headset user interface. If he sits at his desk, he may prefer to use the base user interface.

Alternatively, the adjustments take place in the headset base, in which case control signals are sent from the headset to the headset base in order to adjust the audio settings.

In all cases, status or signals are exchanged between the headset and the base, so that the status information shown on the display of the headset base unit is synchronized with the actual sound setting.

Figure 10 discloses different views of the display during setup of the headset system according to the invention. If the user touches the setup icon 17 (see Fig. 8a)), the screen shown in Fig. 10a) appears. This screen comprises an advanced settings menu with a setup wizard icon 83, a reset configuration icon 84 and a desk phone icon 85. If the user wants to use the setup wizard, he touches the setup wizard icon 83 and the display 6 guides

him through a setup. During the setup, a "connect to a desk phone icon" 86 appears as shown in Fig. 10b). If the user wants to connect the headset base unit to a desk phone, he touches the "yes icon" 87, otherwise the "no icon" 88. If he touches the "yes icon" 87, the screen shown in Fig. 10c) appears. Here, the user is asked with the question icon 89: "Does your desk phone have a headset port?". If the user touches the "no icon" 88, the screen shown in Fig. 10d) appears. Here the user is instructed by the instruction icon 90 to unplug the handset cable and connect it to the headset base unit. Display graphics illustrate how to do this. The user can access further setup steps by touching the "next icon" 93 or return to the previous step by touching the "back icon" 92. Further steps guiding the user to a complete cable connection are not shown here. In Fig. 10e) the user is guided through adjustment of the microphone level by means of a microphone level icon 91, which shows twelve levels. Before this screen, the user is instructed to call a friend. The user touches the "adjustment icons" 77, 78 until a desired microphone level is obtained. Off course, Fig. 10 only show a few setup screens, as several other not shown screens guides the user to setup the headset base unit with other telecommunication devices, such as a mobile phone and a PC soft phone.

The invention also covers embodiments, where more than one telecommunication device of the same type, for example two or three desk phones, can be connected to the same headset base unit. In such a situation, it would be possible to name the devices such as "desk phone 1", "desk phone 2" or "local desk phone", "external desk phone".

The display 6, whether it is a touch screen display or not, may also be used for displaying SMS messages, news feeds, e-mail's etc. For example, SMS messages received by a connected mobile phone may be forwarded to the headset base unit and shown on the display. Another example is e-mails

received by a connected PC, which are forwarded to the headset base unit and shown on the display.

5 A wireless headset system is described in detail here. However, the invention also relates to wired solutions, where the headset and the headset base unit are interconnected by a wire.

Reference signs

	1	headset system	25	on hold icon
10	2	base	26	on call icon
	3	headset	27	first base transceiver
	4	base housing	28	second base transceiver
	5	headset holder	29	base processor
	6	display	30	charging terminals
15	7	first connection device	31	endpiece of headband
	8	second connection device	32	headset (second embodiment)
	9	desk phone	33	ear hook
	10	PC	34	earbud
	11	mobile phone	35	bottom part of holder unit
20	12	target phone icon	36	receiving hole in base housing
	13	mobile phone icon	37	recess for display device
	14	PC icon	38	headset holder unit (second embodiment)
	15	headset icon	39	display device
	16	battery level icon	40	incoming call icon
25	17	setup icon	41	on call icon
	18	first handset icon	42	record icon
	19	second handset icon	43-45	antennas
	20	on hold icon	46	headset connection device
	21-23	icons for incoming call on same line	47	headset user interface
30	24	caller ID icon	48	headset processor

	49 headset speaker	73 exit icon
	50 headset microphone	74 scroll down icon
	51 headset transceiver	75 scroll up icon
	52 headset multifunction button	76 scroll bar
5	53 headset volume button	77 first adjustment icon
	54 earphone housing	78 second adjustment icon
	55 arrow	79 speaker volume meter icon
	56 holder unit	80 treble icon
	57 arrow	81 normal icon
10	58 arrow	82 bass icon
	59 first headband part	83 setup wizard icon
	60 second headband part	84 reset configuration icon
	61 headset housing (second embodiment)	85 desk phone icon
15	62 swap icon	86 connect to a desk phone icon
	63, 64 wired connections	87 yes icon
	65, 66 wireless connections	88 no icon
	67 call options icon	89 question icon
	68, 69 first and second call collision icons	90 instruction icon
20	70 speaker volume icon	91 microphone level icon
	71 mute icon	92 back icon
	72 start recording icon	93 next icon
		94 headset system

PATENT CLAIMS

1. A headset base unit (2) comprising
a base housing (4),
5 a headset holder (5, 38) for holding a headset (3),
a first connection device (7), by means of which the headset base unit (2) is
connectable to at least one telecommunication device (9, 10, 11), such as a
desk phone (9), a PC phone (10) and a mobile phone (11),
a second connection device (8), by means of which the headset base unit
10 (2) is connectable to the headset (3),
control means (9), by means of which an audio channel can be opened
between the headset base unit (2) and a selected one of the
telecommunication devices (9, 10, 11),
characterised in a display unit (39) with a display (6) adapted for
15 displaying device icons (12, 13, 14) representing connected
telecommunication devices (9, 10, 11).
2. A headset base unit (2) according to claim 1, wherein it is simultaneously
connectable to more than one telecommunication device (9, 10, 11).
20
3. A headset base unit (2) according to claim 1 or 2, wherein the display is
a touch-screen display (6).
4. A headset base unit (2) according to claim 2 and 3, wherein a
25 telecommunication device (9, 10, 11) can be selected by touching the
device icon (12, 13, 14) representing the telecommunication device (9, 10,
11).
5. A headset base unit (2) according to claim 2 and 3 or 4, wherein the
30 device icons (12, 13, 14) change appearance when the represented
telecommunication device (9, 10, 11) is selected.

6. A headset base unit (2) according to any of the claims 3-5, wherein one or more of headset speaker volume, microphone volume, and speaker equalisation can be adjusted by means of the touch-screen display (6).
- 5 7. A headset base unit (2) according to any of the claims 1-6, wherein the device icons (12, 13, 14) change appearance in dependence on the call status, such as incoming call (40), on call (41) and on hold (20), of the represented telecommunication device (9, 10, 11).
- 10 8. A headset base unit (2) according to any of the preceding claims, wherein a caller identity icon (24) is shown when a device icon (40) signals an incoming call.
- 15 9. A headset base unit (2) according to any of the preceding claims, wherein it comprises a first transceiver (27) or transmitter-receiver for wireless connectivity to a wireless headset (3; 32) comprising a headset transceiver (51) or transceiver-transmitter.
- 20 10. A headset base unit (2) according to claim 9, wherein the headset holder (5, 38) comprises charging terminals (30) for charging a rechargeable battery of the headset (3; 32), when the headset (3; 32) is received by the holder (5).
- 25 11. A headset base unit (2) according to claim 10, wherein the display (6) is able to show battery status (16) of the headset (3; 32).
- 30 12. A headset system (1, 94) according to any of the preceding claims, wherein the headset base unit (2) is adapted to be able to instruct a connected telecommunication device (9, 10, 11) to initiate an outgoing call.

13. A headset system according to claim 3 and 12, wherein the touch-screen display (6) is adapted to display a keypad for dialling a telephone number.

5 14. A headset system (1, 94) according to claim 12, wherein the headset base unit (2) is adapted to store a call list or phone book and show this call list or phone book on the display (6), and wherein the user can initiate an outgoing call by selecting a contact from the call list or phone book.

10 15. A headset base unit (2) according to any of the preceding claims, wherein the display device (39) is hingedly connected to the housing (4), so that it can be tilted.

15 16. A headset base unit (2) according to any of the preceding claims, wherein the headset holder (5, 38) is a part of a headset holder unit (56), which is an adjustable or releasable part of the headset base unit (2).

20 17. A headset base unit (2) according to claim 16, wherein the headset holder (5, 38) or headset holder unit (56) is rotatable about an essentially vertical axis, when the headset base unit (2) stands on an essentially horizontal surface.

25 18. A headset base unit (2) according to claim 17 wherein the holder unit (56) is arranged beside the display device (39).

30 19. A headset base unit (2) according to any of the preceding claims, wherein it comprises a second transceiver (28) or transmitter-receiver for wireless communication with a telecommunication terminal (11) comprising a corresponding transceiver.

20. A headset system (1; 94) comprising a headset base unit (2) according to any of the preceding claims and a headset (3; 32) to be held by the headset holder (5, 38) when not in use.

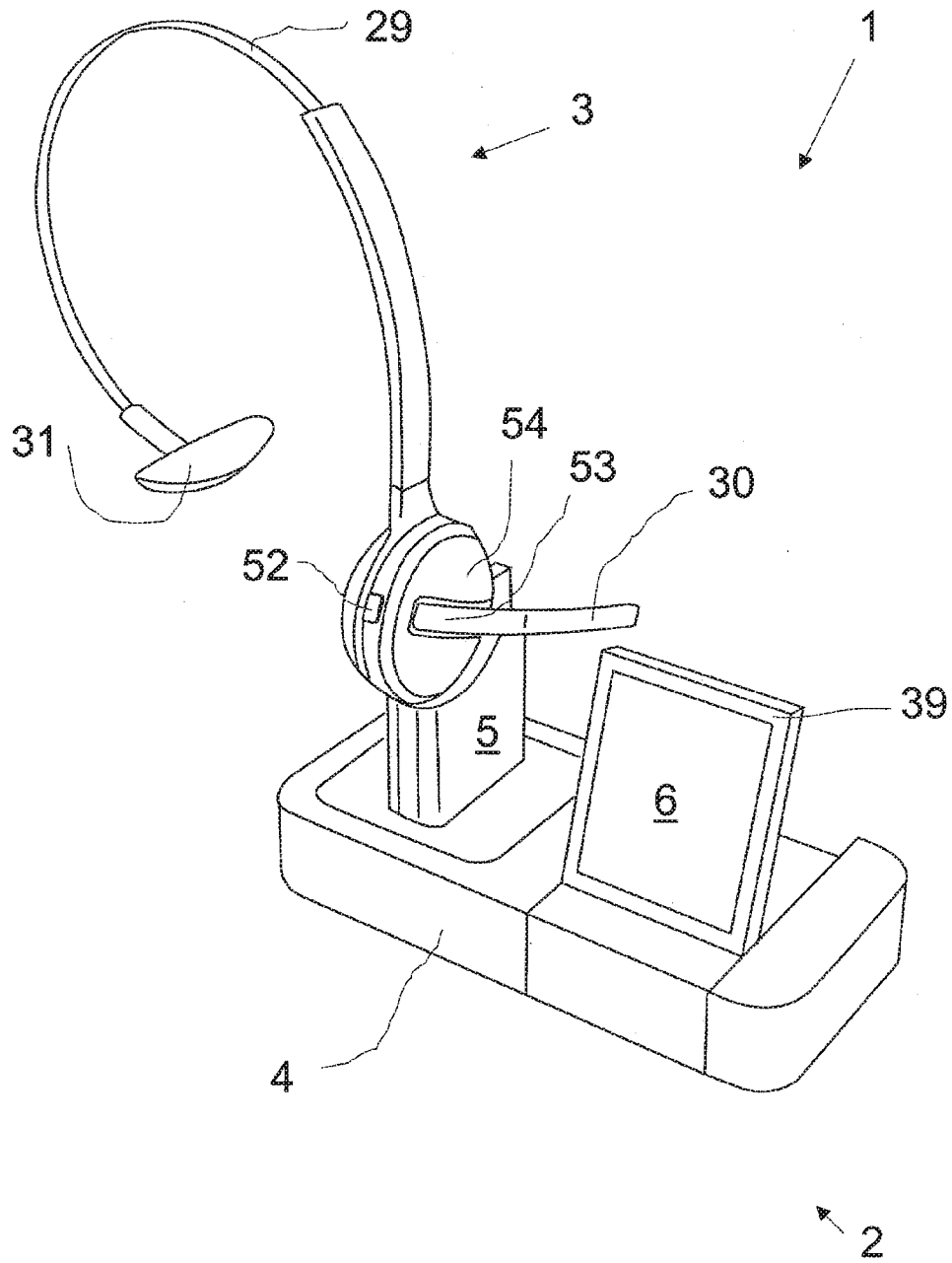


Fig. 1

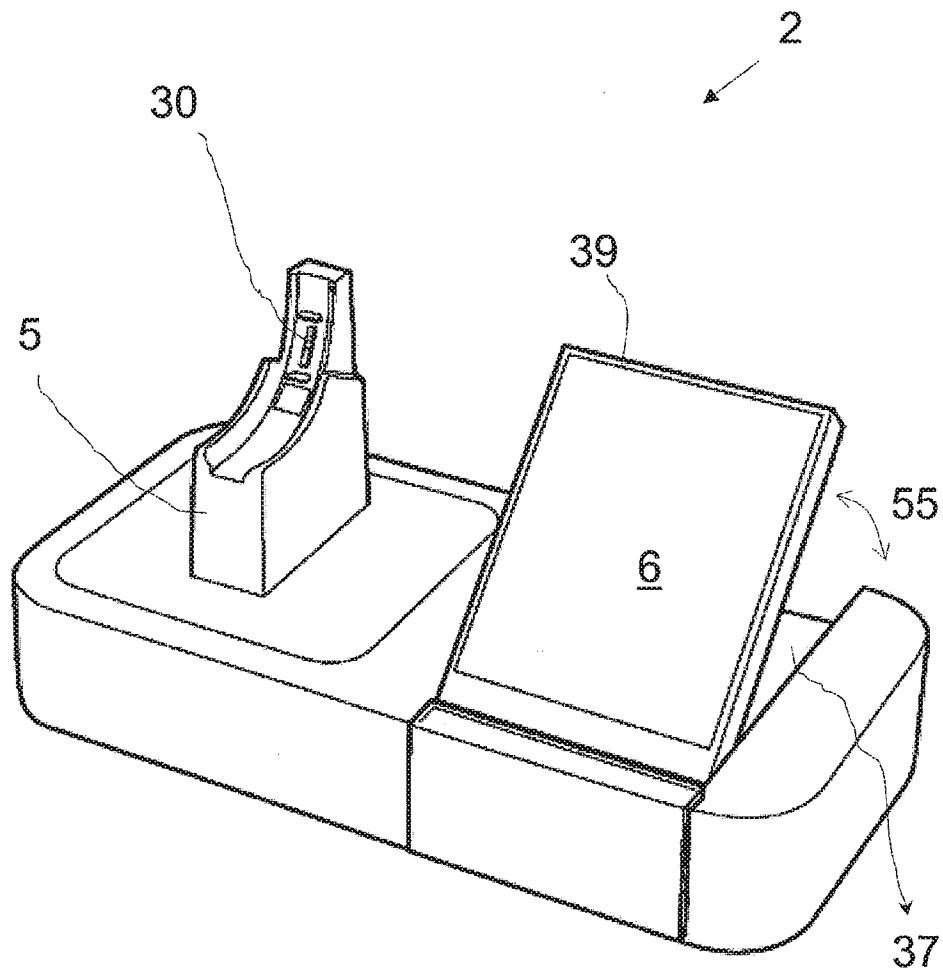


Fig. 2

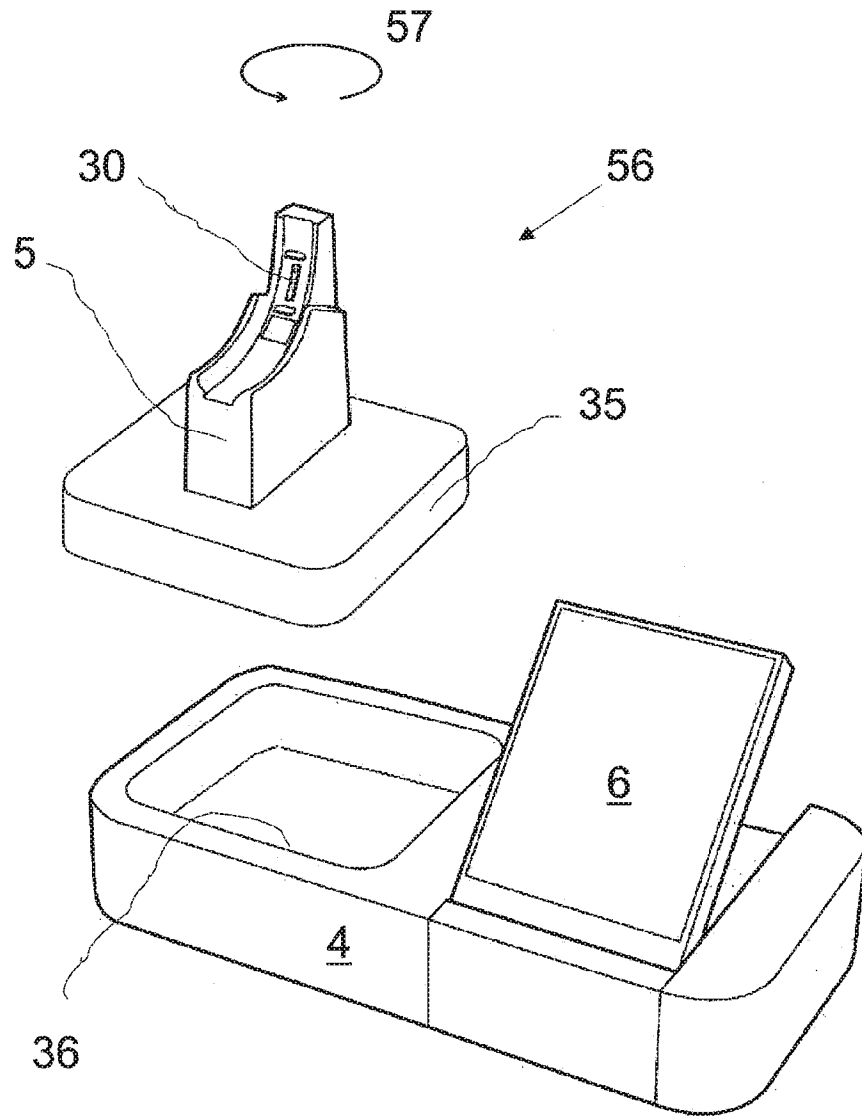
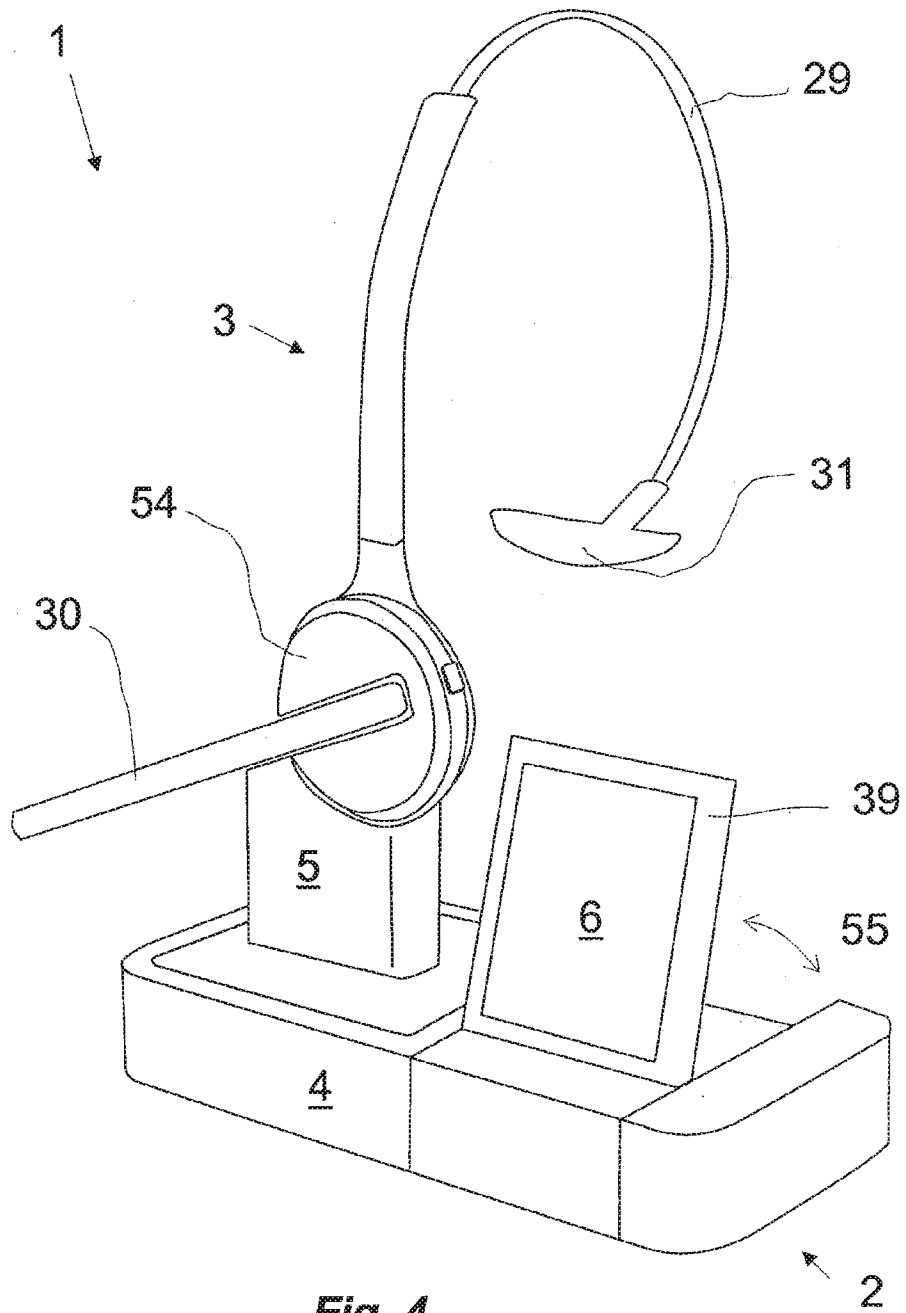


Fig. 3



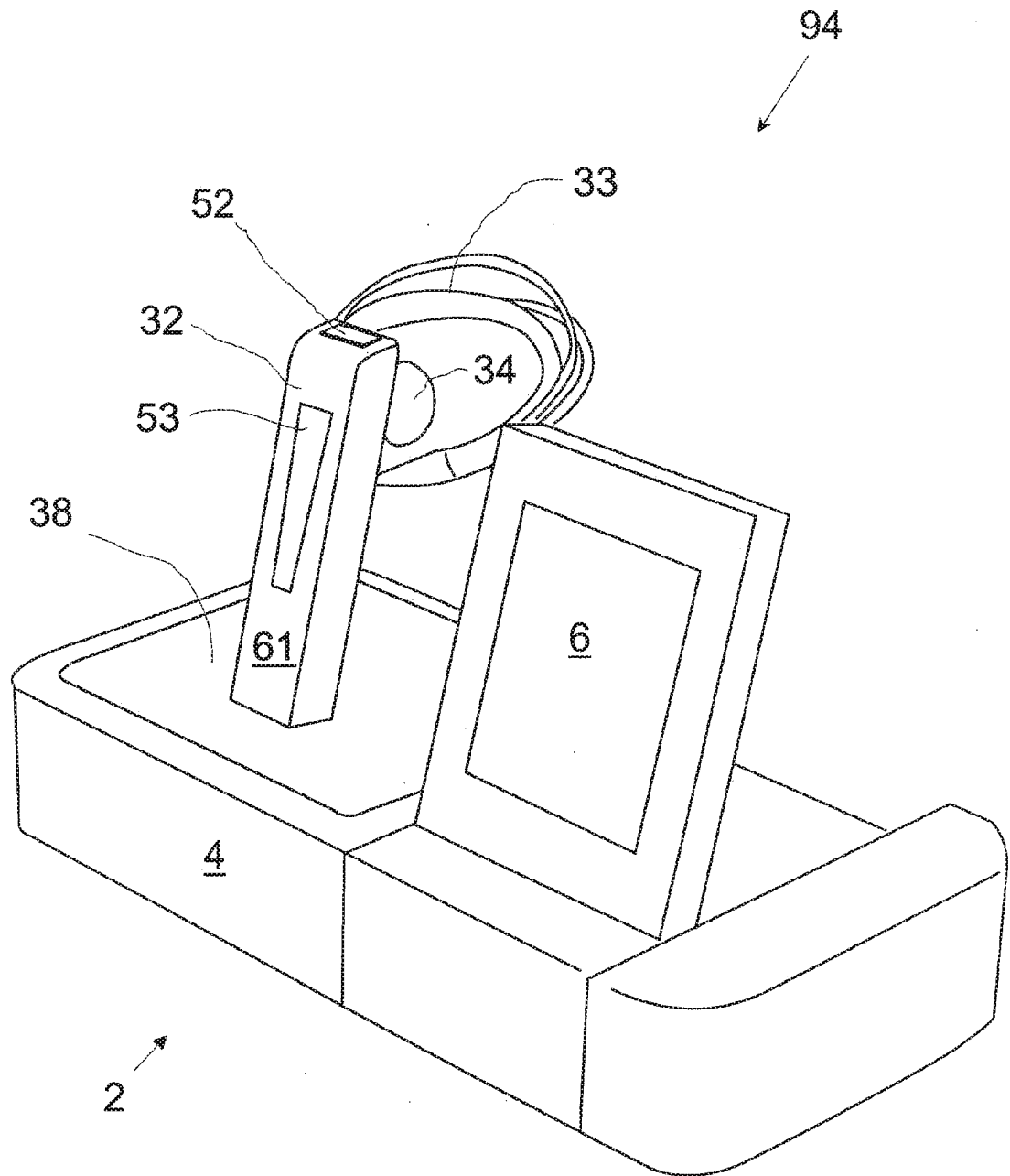


Fig. 5

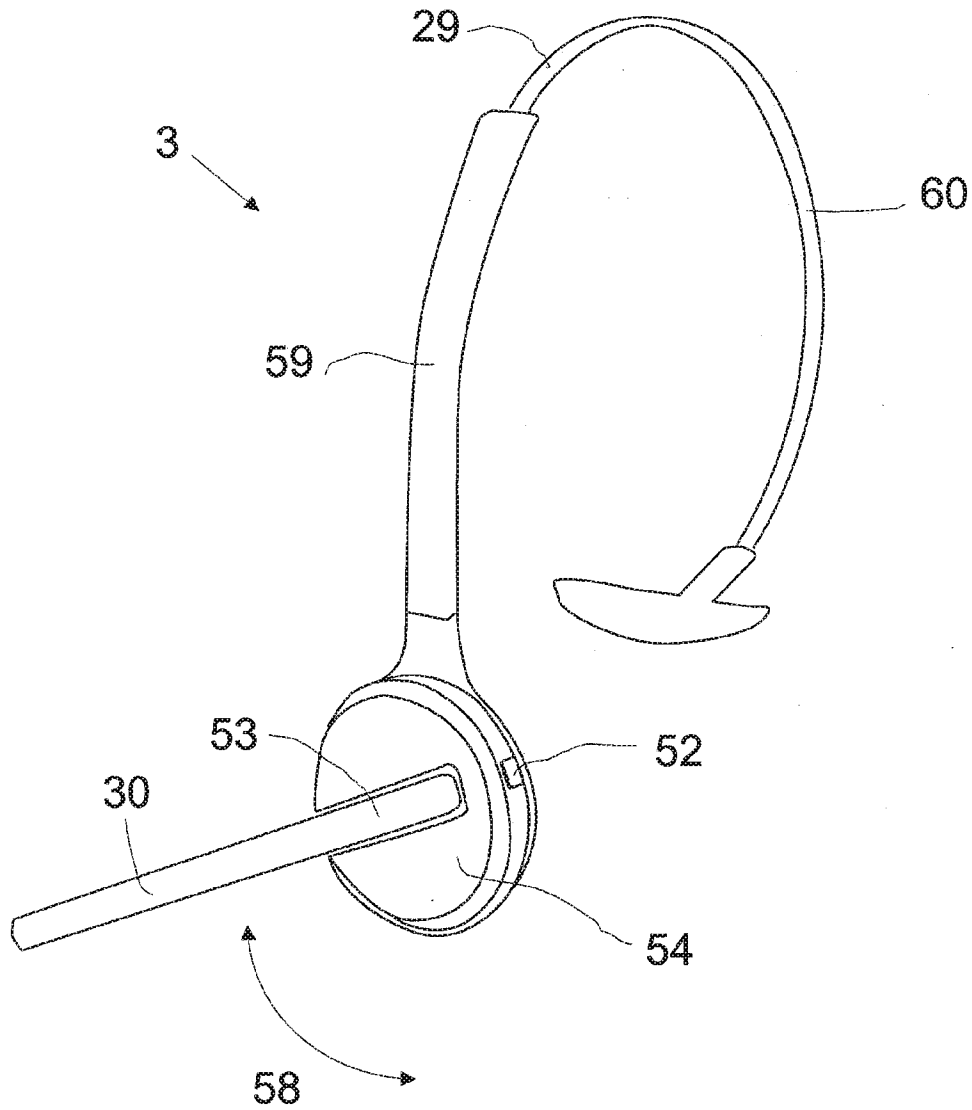


Fig. 6

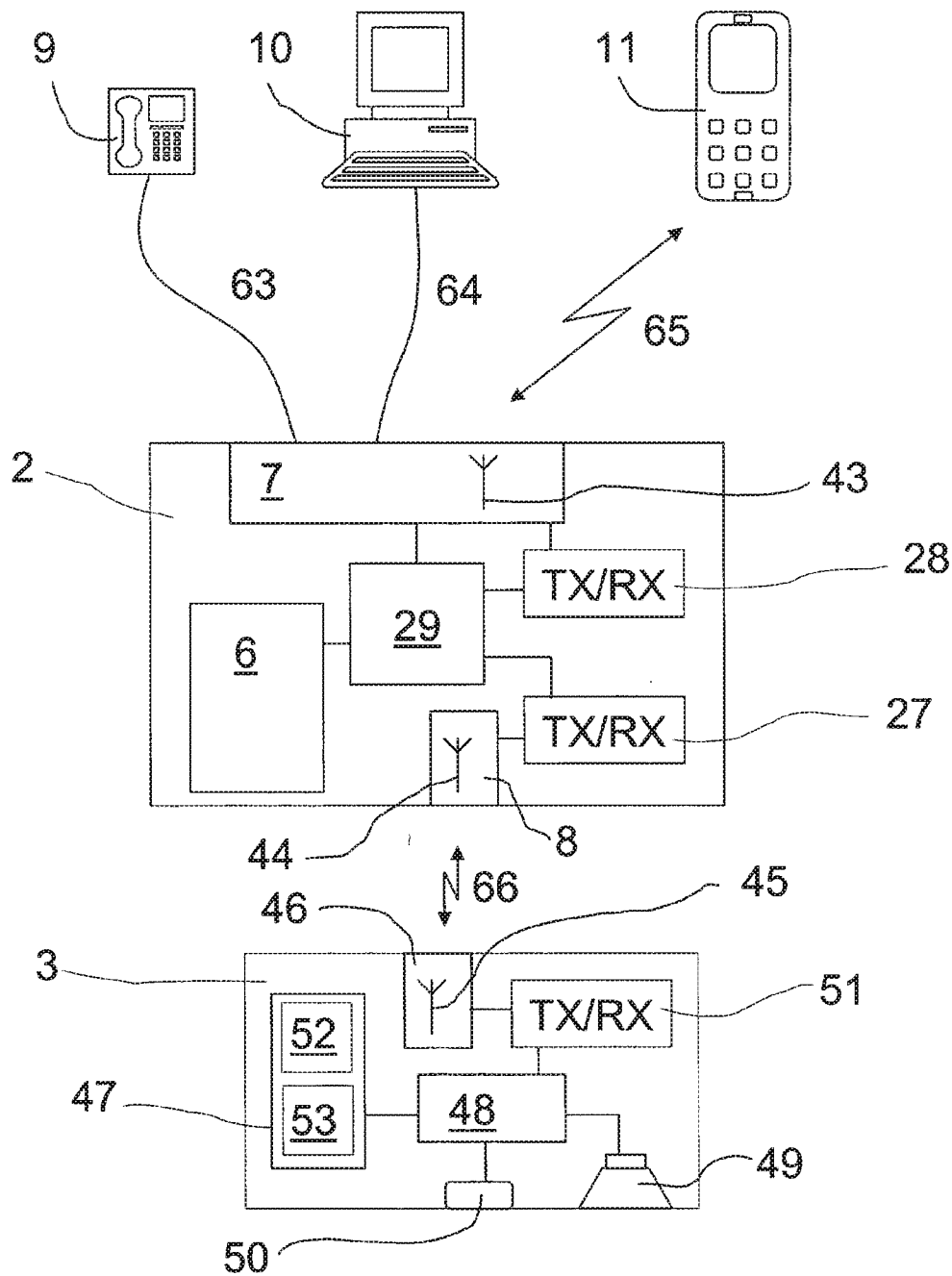
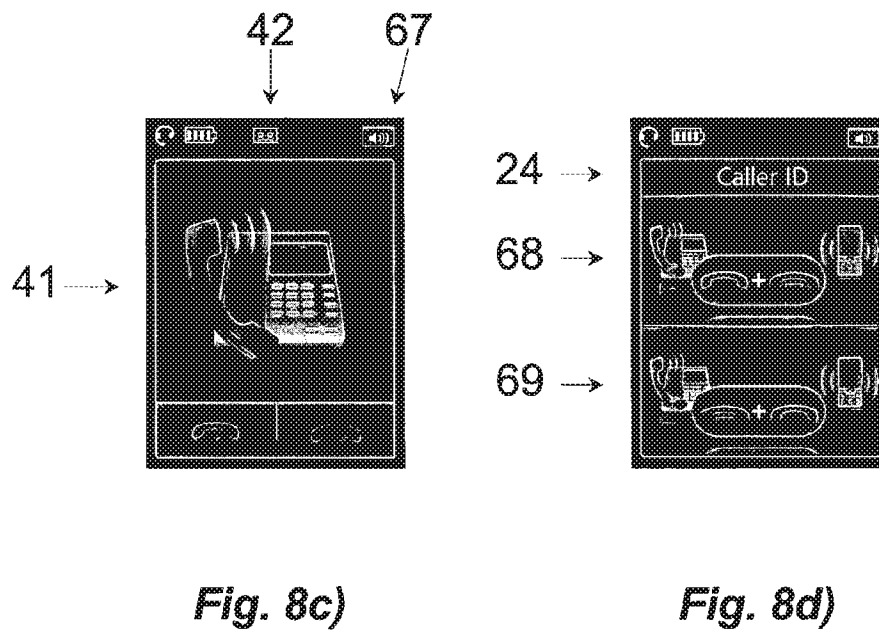
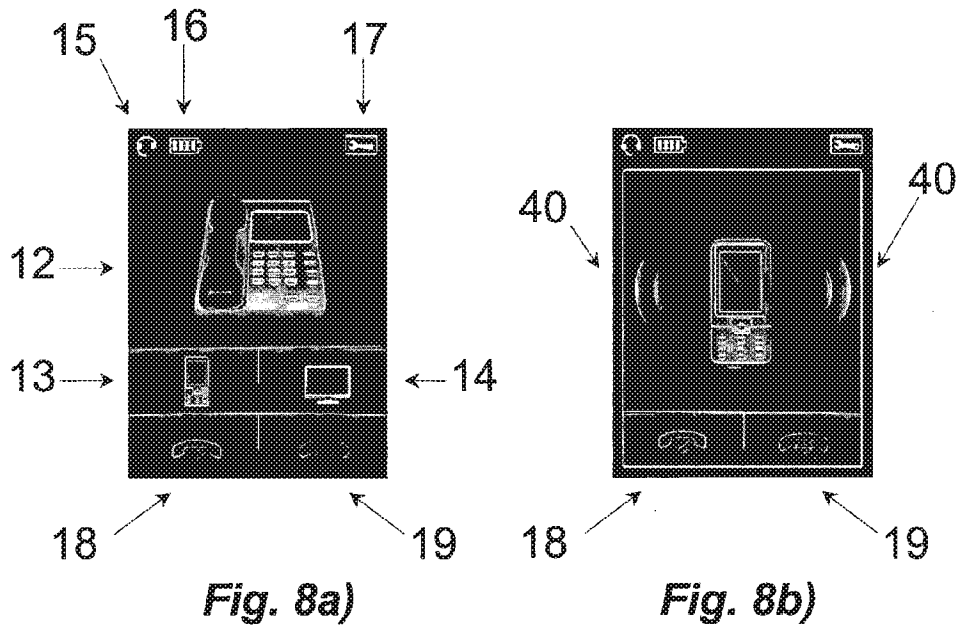


Fig. 7



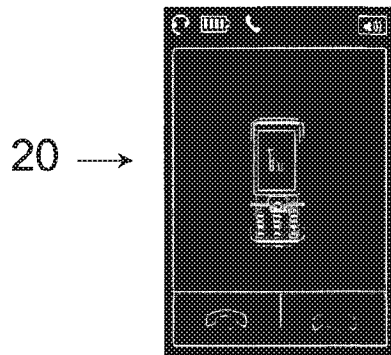


Fig. 8e)

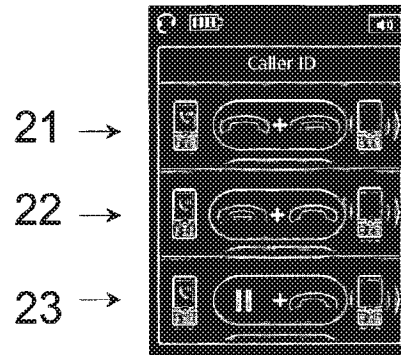


Fig. 8f)

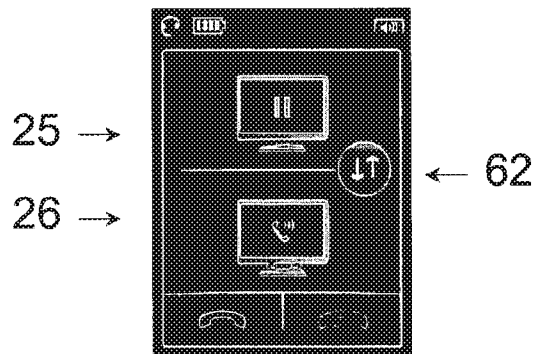


Fig. 8g)

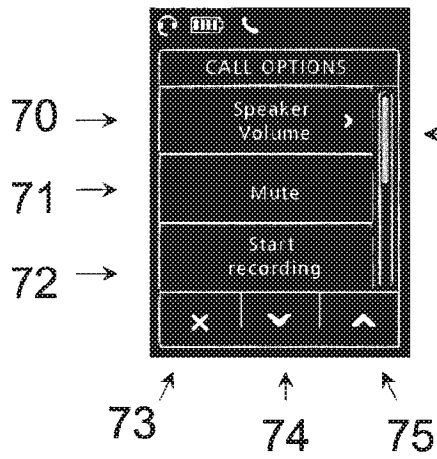


Fig. 9a)

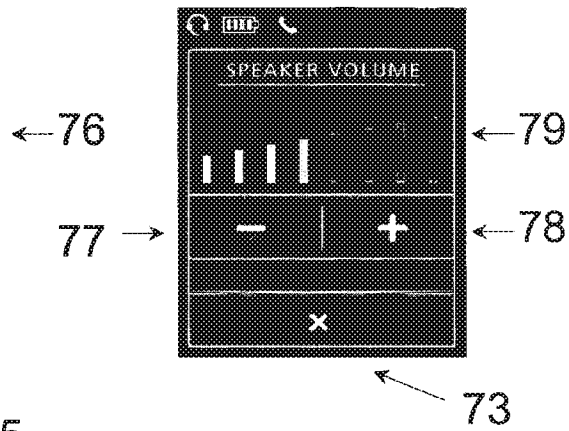


Fig. 9b)

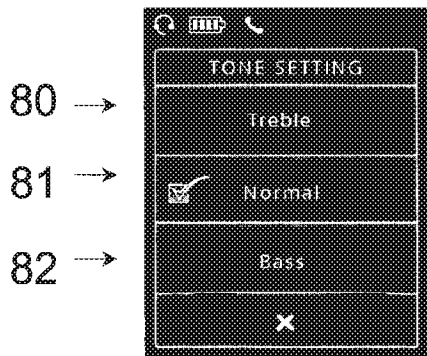


Fig. 9c)

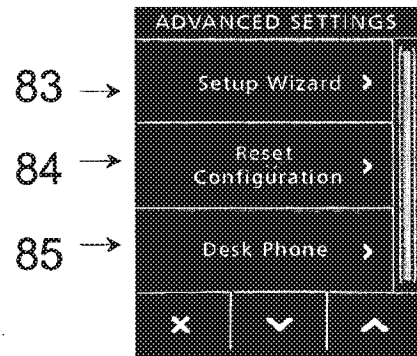
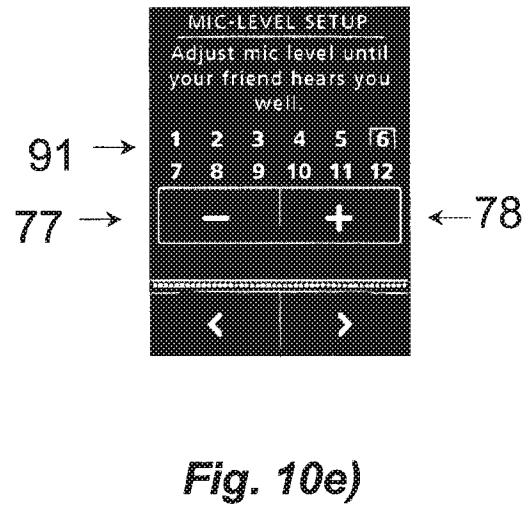
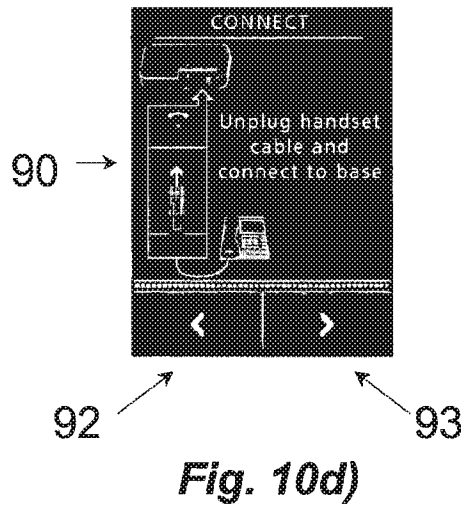
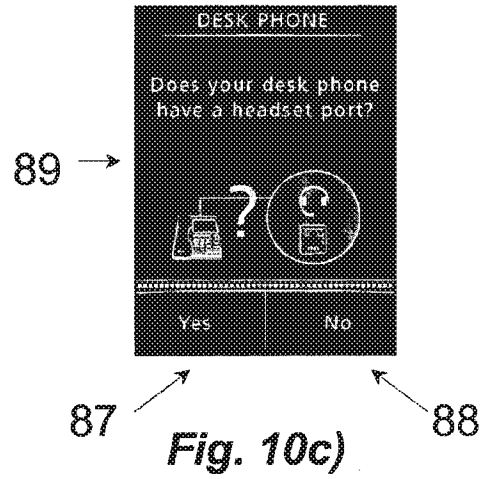
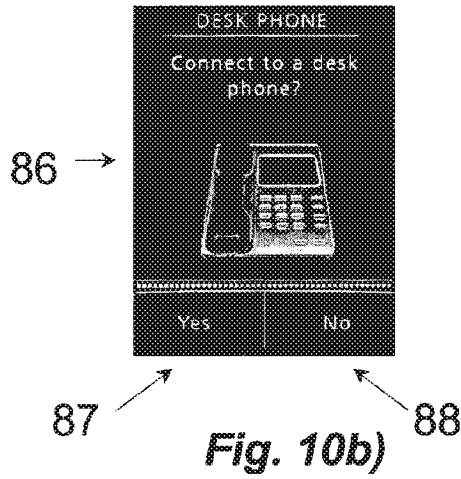


Fig. 10a)



INTERNATIONAL SEARCH REPORT

International application No
PCT/DK2009/000014

A. CLASSIFICATION OF SUBJECT MATTER		
INV. H04M1/04	H04M1/60	H04M1/725
		H04L12/56
		H04W88/02
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
H04M H04L H04W		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GN NETCOM: "GN 9350 Guide for basic set-up and use" INTERNET CITATION 31 December 2005 (2005-12-31), XP002552129 [retrieved on 2009-10-23]	1-16, 19-20
A	the whole document	17
Y	WO 00/07345 A1 (ERICSSON INC [US]) 10 February 2000 (2000-02-10) page 5, line 18 - page 7, line 19; figure 1 page 8, line 10 - line 21; figure 2 page 9, line 20 - page 10, line 14; figure 3 page 12, line 3 - line 10	1-16, 19-20
	----- -/-	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claims) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2007/143720 A2 (AVAYA TECH LLC [US]) 13 December 2007 (2007-12-13) paragraph [0050] - paragraph [0054]; paragraph [0060] - paragraph [0063]; figure 4 paragraph [0069] - paragraph [0071]; figure 5 -----	5, 7-8, 14
Y	CN 2 575 906 Y (LANGCHAO LEJIN DIGITAL MOBILE [CN]) 24 September 2003 (2003-09-24) figure 1 -----	15
A	EP 1 990 982 A1 (LIN PI-FEN [TW]) 12 November 2008 (2008-11-12) paragraph [0014] - paragraph [0021]; figures 4-6 -----	1, 9-12, 14, 19-20

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0007345	A1	10-02-2000	AU	8675198 A	21-02-2000
WO 2007143720	A2	13-12-2007	US	2008080703 A1	03-04-2008
CN 2575906	Y	24-09-2003	NONE		
EP 1990982	A1	12-11-2008	NONE		

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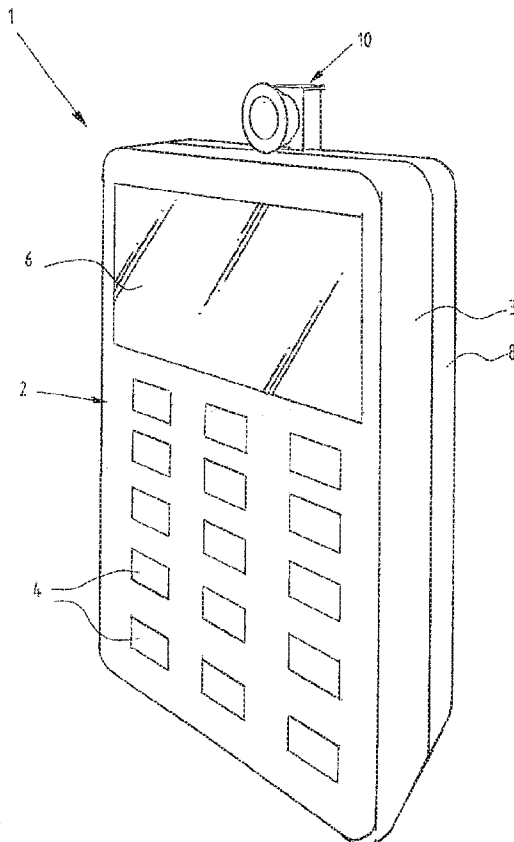
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(54) Title: ACCESSORY COVER FOR A PORTABLE ELECTRONIC DEVICE



(57) Abstract: An accessory for a portable electronic device comprises an outer cover having a power diverter coupleable to a parent power source for powering the portable electronic device, and a charging point associated with the parent power source. The accessory has a dockable accessory, typically an earpiece, that has its own power source. The device has a docking position for locating the earpiece in charging proximity to the charging point to charge the earpiece power source from the parent power source. The ability to charge the accessory in this way allows an accessory that is actively powered. The earpiece can also be wirelessly connected to the device when withdrawn from the docking position for operation.

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ACCESSORY COVER FOR A PORTABLE ELECTRONIC DEVICE

RELATIONSHIP TO EXISTING APPLICATIONS

The present application claims priority from
5 European Patent Application No. 03078761.8 filed
November 26, 2003, the contents of which are hereby
incorporated by reference.

FIELD AND BACKGROUND OF THE INVENTION

10 The present invention relates to a dockable and
wireless accessory for mounting on a portable electronic
device such as a laptop, PDA, cellular telephone, radio,
music player and the like. The accessory may be any
kind of accessory that is useful to have with the
15 device, and includes mono and stereo earphones, pointing
devices such as styluses, and microphones.

Dockable pointing devices for use with tablets on
PDAs and like devices are known. The known pointing
devices fall into two main categories, those that are
20 connected via a wire connection and those that are
wirelessly connected. The devices that are connected via
a wire are often passive devices. That is they do not
have a power source of their own. Rather they work off a
signal transmitted from the device they are working
25 with, hereinafter the parent device. Typically they have
a resonant circuit (charging cycle) with a given resonant
frequency. The parent device transmits a signal at the
resonant frequency. The resonant circuit is thus excited
and a response signal indicates the position of the
30 stylus.

A passive device of this kind gives rise to a
number of disadvantages. The transmitted signal is
relatively strong and thus uses up current, which is
problematic in portable devices. For the same reason the

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signaling can give rise to interference with nearby devices. The above two problems are not fatal when dealing with stylus, which is kept actually in contact with, or extremely close to, a sensing surface when in use. The problems become more of an issue however when
5 contemplating accessories which by their nature are kept further away from the parent device, such as ear pieces.

Consequently, another solution for the wireless accessory is the active device, that is a device having
10 its own internal power source. The accessory thus needs to be charged separately from the main device, and the user may be required to carry several chargers around with him at the same time. Furthermore, with two
separately charged devices, there is twice the risk of
15 disruption of activity due to power loss. That is to say if either the main device or the accessory loses power during the activity, then the connection is disrupted.

US-6,473,630 is representative of a group of patents that describe cellular telephony devices which
20 are specially made to incorporate or to fit an accessory.

The accessory is an active device as discussed above and incorporates its own battery. The cellular telephone is constructed to provide a docking position
25 for the accessory, and when the accessory is inserted into the docking position, then its own accessory battery can be charged from the battery of the cellular telephone. In this case the cellular telephone is
arranged to fit the accessory, instead of the accessory
30 being arranged to fit the telephone. The telephones required a modified initial construction to supply power to the charging node. Such telephones failed to get onto the market however because the cellular telephone makers

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were not prepared to manufacture additional telephone models to fit such accessory.

WO-01/08386 provides an accessory for a mobile telephone. A docking position for the accessory is provided on a separate "cellphone" or dongle unit connectable to an interface at the base of the mobile telephone. Such connection has proven to be vulnerable and susceptible to breakage. Also, the connection of the dongle unit to the base of the telephone should include a power connection as well as a connection for audio data. In most mobile phones however, at least one of these connections is only accessible via the interface to accessories produced by the same manufacturer as the mobile telephone itself.

There is thus a problem of allowing a standard, unmodified cellular telephone to provide support for simultaneously docking and charging of accessories using such a "cellphone" or dongle unit.

There is a widely recognised need for, and it would be highly advantageous to have an arrangement for accessories for portable devices which is devoid of the above limitations.

SUMMARY OF THE INVENTION

According to one aspect of the present invention there is provided an accessory for a portable electronic device, comprising:

an outer cover for replacement of at least part of an outer housing of the portable electronic device;
a charging point associated with said outer cover;
a power diverter for accessing a power line of said electronic device and supplying said power to said charging point;

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a dockable accessory for working with said portable electronic device, said dockable accessory comprising an accessory power source;

5 a docking position for locating said dockable accessory in charging proximity to said charging point through the outer cover, to charge said accessory power source from said power line, thereby enabling said dockable accessory to be actively powered when withdrawn from said docking position for operation.

10 The accessory according to the present invention allows the dockable accessory to be conveniently located on the device when not in use, and to be therefore always at hand. Also it allows a standard, unmodified cellular telephone to provide support for docking and
15 charging of accessories. I.e., at least part of the outer housing of the portable device of mobile telephone will be replaced by the outer cover of the accessory, providing a docking position for docking of the dockable accessory. Such accessory may be sold separately from
20 the portable electronic device, and allows a standard, unmodified cellular telephone to provide support for docking and charging of accessories.

In a preferred embodiment, said power diverter is an insert to a SIM card slot of the portable electronic
25 device, having a mounting for placing a SIM card thereon, and configured to relay power and data connections to a SIM card on said mounting and power to said charging point. This allows the dockable accessory to be connected to and charged from any standard
30 portable electronic device, independent from limitations regarding connections for power or audio data on an external interface of the device.

In a further preferred embodiment, said power diverter is a link for connecting an external power port

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of said mobile electronic device to said charging point. This also allows the dockable accessory to be connected to and charged from any standard portable electronic device, independent from limitations regarding
5 connections for power or audio data.

In a further preferred embodiment, said power diverter is a connector for placing over said parent power source to connect said parent power source to said charging point.

10 Preferably, the docking position is located on the outer cover, said outer cover including an outer cover power source connected to said power diverter, the outer cover power source being adapted for charging said dockable accessory. Thus the accessory - including the
15 outer cover and the dockable accessory - can be sold separate from the electronic device, wherein replacing at least part of the outer housing thereof renders the accessory suitable for any kind of electronic device.

According to a further aspect, the present
20 invention provides a portable electronic device, comprising an accessory as described above.

Such accessory mounted on a portable electronic device allows a standard, unmodified cellular telephone to provide support for docking and charging of
25 accessories.

Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. The materials, methods,
30 and examples provided herein are illustrative only and not intended to be limiting.

Implementation of the method and system of the present invention involves performing or completing certain selected tasks or steps manually, automatically,

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or a combination thereof. Moreover, according to actual instrumentation and equipment of preferred embodiments of the method and system of the present invention, several selected steps could be implemented by hardware
5 or by software on any operating system of any firmware or a combination thereof. For example, as hardware, selected steps of the invention could be implemented as a chip or a circuit. As software, selected steps of the invention could be implemented as a plurality of
10 software instructions being executed by a computer using any suitable operating system. In any case, selected steps of the method and system of the invention could be described as being performed by a data processor, such as a computing platform for executing a plurality of
15 instructions.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is herein described, by way of example only, with reference to the accompanying
20 drawings. With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of the preferred embodiments of the present invention only. The embodiments are presented in order
25 to provide what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for a
30 fundamental understanding of the invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the invention may be embodied in practice.

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Further advantages and features of the electronic device of the present invention will be elucidated with reference to the annexed figures, in which:

fig. 1 shows a perspective view of the front of a
5 cellular telephone having docking positions for docking an accessory;

fig. 2 shows a perspective view of the rear of the device of fig. 1 in a first preferred embodiment;

fig. 3 shows a perspective view of the rear of the
10 device of fig. 1 in a second preferred embodiment;

fig. 4 shows a perspective view of the front of a headset element according to the present invention in a preferred embodiment; and

fig. 5 shows a perspective view of the rear of the
15 headset element of fig. 4.

fig. 6 shows a front view of a mobile telephone presently on the market, equipped with an accessory according to the present invention;

fig. 7 shows the back of the mobile telephone of
20 fig. 6;

fig. 8 illustrates the use of a dummy card to divert the power supply from a SIM card slot, in accordance with a preferred embodiment of the present invention;

25 fig. 9 is a simplified diagram of an accessory according to the present invention, comprising an outer cover and a dockable accessory, illustrating the use of a dummy SIM card to divert the power supply from a SIM card slot, in accordance with the preferred embodiment
30 of fig. 8; and

fig. 10 is a simplified diagram of an accessory comprising an outer cover and a dockable accessory, illustrating the use of a slave power source to divert the power supply from the parent power source, in

combination with a connection for audio data, according to a further preferred embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

5 The present embodiments comprise a portable and therefore typically battery powered electronic device on which dockable and actively powered accessories can be releasably mounted for recharging and safe storage. The accessories use their own power sources for operation,
10 for example transmitting, receiving, amplifying and the like. The embodiments provide a way of tapping the power supply of standard types of parent devices so as to make power available at a recharging point incorporated in the docking arrangement for use in
15 recharging the accessory.

The principles and operation of an accessory docking arrangement according to the present invention may be better understood with reference to the drawings and accompanying description.

20 Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of the components set forth in the following description or
25 illustrated in the drawings. The invention is capable of other embodiments or of being practised or carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein is for the purpose of description and should not be regarded as
30 limiting.

Reference is now made to Fig. 1, which is a simplified diagram illustrating a portable electronic device 1 according to a first preferred embodiment of the present invention. Device 1 may be any portable

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electronic device that has accessories and comprises a power source for powering itself, hereinafter referred to as the parent power source so as to distinguish it from power sources in the accessories, which it is intended to charge, as will be explained in greater detail below.

In the shown preferred embodiment the parent portable device is a mobile telephone 2, having a housing 3 provided with several keys 4 and a screen 6. The accessory according to the present invention includes an outer or back cover 8, for replacing at least part of a housing 3 of the electronic device. Outer cover 8 is provided with a docking position for docking of a dockable accessory 10, typically an earpiece. Thus, the accessory according to the present invention includes the outer cover 8 and the dockable accessory or earpiece 10.

The power source is typically a battery, to enable the electronic device to be portable. Outer cover 8 has a charging point 37 (fig. 2) or 54, 56 (fig. 3) for charging the dockable accessory 10. The charging point typically receives power from the parent power source. The accessory, including outer cover 8 and dockable accessory 10, is adapted for working with the portable electronic device 1. The dockable accessory comprises its own accessory power source 30, which is chargeable from the charging point 37. Outer cover 8 has a docking position (indicated by the dash-dotted line in figs. 2, 3) in which the dockable accessory 10 can be located so as to be in charging proximity to the charging point. In this docking position the dockable accessory power source may be charged from the parent power source. Provided that the accessory power source has sufficient capacity the accessory can be actively powered for a

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sufficient period of time to carry out its task, and does not need a wire connection to the portable device 1. The dockable accessory 10 may be returned to the docking position after use for recharging.

5 Typically, the portable electronic device, when internally powered, is exclusively powered by the parent power source. I.e. the parent power source is an exclusive internal power source for the device. Thus it is distinguished from larger devices such as automobiles
10 which have an internal battery but also an alternative internal power source in the form of an internal combustion engine. The portable electronic device may of course be externally powered, for example by connection to a mains electricity supply.

15 The portable device typically comprises an outer housing 3, and the docking position may be a geometrical location system formed into the outer housing. Thus the accessory 10 is shaped to fit firmly into the docking position on the housing 3, and when pressed into
20 position is automatically in charging contact with charging point 37 (fig. 2) or 54, 56 (fig. 3) respectively.

In an alternative embodiment, in place of geometrical location, the docking position makes use of
25 a magnetic location system. Magnets and magnet responsive elements are placed in corresponding positions on the outer housing 3 and on accessory 10, again to locate the accessory firmly against charging point 37. Typically geometric guides built into the
30 housing provide a firm location at the correct position to support the magnets.

It is noted that there are two ways to charge the dockable accessory. One is by making an electrical contact between two contact points. The other is by the

use of inductive coupling, which does not require actual physical contact. Inductive coupling allows charging even when surfaces become lined with dirt or when docking does not align exactly.

5 The accessory preferably also has an outer housing 24. The accessory outer housing 24 is shaped to complement the geometrical shape of the docking position so that the dockable accessory or earpiece can be located therein. In one embodiment, a recess 22 that is
10 arranged in outer cover 8 (fig. 2) forms the docking position.

 The dockable accessory is preferably not physically connected to the parent device when removed from the docking position. Nevertheless it may be required to
15 communicate with the parent device. Any suitable form of wireless communication may be used such as RF communication, or infra-red communication, or ultrasonics, or any kind of magnetic field technology. More specifically, the RF embodiment can be simply and
20 relatively cheaply implemented using off the shelf Bluetooth components.

 In a preferred embodiment, a switch is provided that automatically switches the accessory between a charging and a use mode as it is inserted or removed
25 from the docking position. The switch is typically mechanical and means for example that a driver can simply remove an earphone from his mobile device and place it in his ear without having to carry out any switching or otherwise carry out any activity requiring
30 him to divert his attention from the road. This hook switch function allows an incoming call to be answered by undocking the headset, in the same way as a conventional telephone hook switch.

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In certain cases the accessory may be something that is provided in pairs, such as separate earpieces. In such a case a second docking position can be provided for the second accessory. In other cases two or more
5 unrelated accessories could be provided, such as a stylus and a mono or stereo earpiece.

In a preferred embodiment, the docking position 22 further comprises a data exchange path for direct exchange of data when the accessory is docked. Typically
10 data exchange is carried out via the charging point 37, 54, 56.

A wireless data channel to the accessory may be provided, as an alternative to the above data path for the docked position. The wireless data path may be
15 provided by incorporating a first transceiver into the portable device and a second transceiver into the accessory.

The two transceivers may conveniently be Bluetooth transceivers, so that tried and tested off the shelf
20 components can be used.

In the case of the parent device being a mobile telephone having a SIM card, one convenient way of incorporating the transceiver is by providing a modified SIM card.

25 Returning to the accessories and, in the case of paired earpieces, the sound has to be relayed to both earpieces. There are two ways in which this may be done. The outer cover for replacing part of the outer housing of a parent device, which may be a mobile telephone 1 or
30 a personal music player, has two docking ports 22 for two earpieces 10 respectively. The parent device communicates with only one of the earpieces. The first earpiece then relays the sound, or one of the stereo channels, to the second earpiece.

In an alternative embodiment, the portable device 1 is configured to communicate directly with both of the accessories directly.

The accessories may be stereo earphones, and one of the stereo earphones may include a microphone and a return channel to the portable device. In one embodiment the parent portable device is a digital music player and comprises a stereo music channel to both earphones and a talk channel to one earphone.

10 A typical range of the parent power source capacity is in the range of 0.1Ah to 8Ah, although higher and lower capacities may be contemplated. A hand portable type battery, that is the kind of battery that can be placed within a device and allow the device to remain
15 hand portable, is contemplated. Within that range a capacity of 0.1Ah to 0.5Ah is typical for a cellular telephone. A range 0.5Ah to 3Ah is typical for a personal digital assistant type device and a capacity of 3Ah to 8Ah is typical for a notebook type computer.

20 A typical power range for the accessories, again in terms of battery capacity is 5mAh to 150mAh. Thus certain types of accessories may have capacities in the range of 5mAh to 25mAh, others in the range of 25mAh to 50mAh, and yet others in the range 50mAh to 150mAh.

25 The present embodiments are applicable to hand portable devices in general but larger devices such as devices mobile on a trolley or the like are not excluded. A representative but non-exclusive list of contemplated parent devices is as follows: a cellular
30 telephone, a personal digital assistant, a combination of a personal digital assistant and a cellular telephone, a laptop computer, a personal music player, a personal digital music player, a radio, a digital radio, a portable television set, a tape recorder, a portable

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global positioning device, a digital camera, a digital still camera, a video camera, a digital video camera, a cordless telephone, a DECT cordless telephone, a portable medical monitoring device, an electronic musical instrument, a dictation machine, a midi device, an MP3 device, a game unit, and a portable electronic compass.

A representative but non-exclusive list of accessories is as follows: a mono headset, a stereo headset, a stereo headset for music, mono earpieces, mono earpieces for music, stereo earpieces, stereo earpieces for music, a microphone, a microphone combined with an earpiece, a microphone combined with a headset, a wireless keyboard, a port adapter, a USB port adapter, a pointing device, a mouse, a stylus, a rollerball, a printer, a loudspeaker, a display screen, a camera, an electronic compass, game pieces for a games unit, and a joystick.

In a first preferred embodiment the back cover 8 comprises a plate-like element 20, provided with a substantially V-shaped recess 22 for docking of headset element 10 therein (fig. 2). The headset element 10 comprises an elongate body 24 with a V-shape substantially complementary to the shape of recess 22. Arranged within body 24, and indicated with discontinuous lines, are a microphone 26, electronic circuit 28 comprising an RF-transceiver for transmitting and receiving electromagnetic (RF) signals, battery 30 and loudspeaker 32. Grooves 34 are arranged on the sides of body 24 for mechanically coupling the headset to protrusions 35 on the sides of recess 22. The electrical contacts 36 are arranged at the end of grooves 34. The contacts 36 couple electrically to contacts 37 on the sides of recess 22 for the purpose of providing power to

the headset element. The contacts of the docking means couple to battery-charging circuitry, for instance arranged within element 20. The battery 30 thus recharges when the headset element 10 is docked. At the rear of headset 10 there is arranged a push button 38 for ending a conversation. Element 20 has a thickness in the order of 8 mm, and a height and width corresponding to the height and width of housing 3. It is of course equally possible to arrange the docking means on a side of housing 3 instead of on the rear thereof.

In a second preferred embodiment, the back cover 8 comprises a relatively thin plate element 40 with a thickness in the order of 3 mm (fig. 3). Arranged on element 40 are cams 42, 44, 46, 48 forming a docking position for docking the dockable accessory 10 therebetween. Raised ribs 50, 52 are arranged on the inside of cams 42, 44 for mechanical coupling to grooves 34 of headset 10. On the inside of cams 46, 48 are arranged electrically conducting ribs 54, 56 for electrical coupling to contacts 36. The headset element 10 is the same as shown in fig. 2.

In a practical embodiment, the headset element has a height of about 6 cm and a width from about 1 cm at the microphone 26 to about 1.5 cm at the loudspeaker 32. The shape of body 24 is slightly V-shaped in a front elevation. The rear of body 24, with push button 38, is substantially flat (fig. 5), whereas the front (fig. 4) is slightly curved. The thickness of body 24 is about 2 mm at the microphone, and increases uniformly in the direction of the speaker 32, to about 6 mm. Around loudspeaker 32 there is arranged a conical retaining element 60 of silicone rubber for the purpose of retaining the headset in position in the ear of a user.

Figures 6 and 7 show a practical embodiment, wherein an existing mobile telephone 60, having screen 62, keys 64 etcetera, is equipped with a dockable accessory 66 according to the present invention. The accessory 66 is docked in a docking position, provided by recess 68 in back cover 70.

The back cover including the docking position and the dockable accessory can be sold separately from the mobile telephone. The power connection and audio data connection can than be achieved as described herein below.

Reference is now made to Fig. 8 which shows how the accessory docking system can be applied to a standard GSM cellular telephone. Such a standard GSM telephone 80 is partly shown from the back in a perspective view. A holder 82 is a SIM card holder for holding the telephone's SIM card. The holder 82 is pivotable from the shown open position to a closed position, into the SIM card reader 84. The SIM card reader 84 includes data connections and a power connection to power the SIM card from the telephone's power source. The power source is a phone battery (not shown) that can be placed in battery compartment 86.

The SIM card is not placed in SIM slot 82. Rather, as shown in Fig. 8 and 9, a dummy card 88 is placed in SIM slot 82. The dummy card has connectors 90 for picking up the SIM slot data and power connections, and is connected via cable 92 to a second SIM card reader 93 having a mounting position 94 for holding a standard SIM card 96, so that the dummy card 88 acts as a relay to relay data and power between the SIM card slot and the SIM card.

In addition the dummy card 88 has an extra power out terminal 90 which connects to the docking port. Thus

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the dummy card 88 provides a power supply from the unmodified GSM telephone 80 to the docking position, and the only requirement for the system is to provide an appropriately constructed outer housing, or an
5 appropriately constructed back cover 98.

To enable audio data transfer between the mobile telephone 80 and the dockable accessory, the back cover 98 includes an audio cable extending to an audio plug 102, having connectors 104, that is connectable to an
10 external interface 106 of the GSM telephone 80. The back cover further includes an electrical circuit 108, for controlling the incoming audio data and sending and receiving said audio data to and from the dockable accessory 10.

15 It will be appreciated that the embodiment of Figs. 8 and 9 applies not just to GSM cellular telephones but to any other telephone that has a SIM card and to any telephone that has an internal card mounted in a slot, or has provision, in the form of a slot, for such a
20 card.

Certain mobile telephones have external power connectors, for instance included in the interface 106. In such a case the power supply to the docking position is simply a matter of building, into the outer housing,
25 a connection from the external power connector to the docking position.

Other mobile telephones have neither a SIM card nor an external power connector. In such a case back cover 120 is provided with a connector 122, having power
30 contacts 124, 126 and an electrical wire 128, to take power directly from the battery of the mobile telephone to the housing and the docking position (fig. 10).

Preferably, the back cover 120 includes a back cover power supply 130. In an embodiment, the back cover

power supply is a rechargeable battery. The assembly of back cover 120 having a docking position for accessory 10 and power connector 122 and audio data connector 102 can be fitted to a standard mobile telephone. The
5 battery 130 is charged during charging of the parent power supply of the mobile telephone, and has a capacity at least greater than the battery of the earpiece. Said accessory battery is recharged when in the docking position by the battery 130.

10 We now consider in greater detail the issue of pairing between the cellular telephone and the accessory. In a preferred embodiment Bluetooth or a like wireless protocol is used for communication between the cellular telephone and the device. However, typically
15 with Bluetooth the pairing between the cellular telephone and the earset would be performed by simultaneously putting the two devices into a pairing mode and than choosing a scan option on the telephone menu. At this point the cellular telephone begins to
20 scan for all Bluetooth compatible devices in the vicinity.

If the cellular telephone finds the accessory the user is asked to approve and the two devices are paired.

The disadvantages of this system are:

- 25* It is complicated from the user point of view, especially bearing in mind that users are not necessarily technically minded; users need to operate two device simultaneously;
 - the process is basically manual;
 - 30* In the scan process the cellular telephone in fact finds all compatible devices in an approximately ten meter range;
 - If the pairing is lost at any point, the user has to repeat the entire process.
- 35

A solution that solves the above problems is now described. In a stage the accessory is placed into the docking position. In the present embodiment, every time that the user puts the earset into the docking station
5 an automatic pairing process is carried out, typically involving the two devices mutually recognizing each other, second stage.

When the accessory is inserted into the docking position, the two charging contacts of the accessory
10 receive power from the cellular device and begin charging of the accessory. The two devices recognize the charging status and start the pairing process.

The pairing process itself comprises two embodiments. In a first embodiment the cellular device
15 uses the charging contacts themselves to communicate with the accessory's processor or MCU. In a second embodiment the cellular device uses the Bluetooth RF transceiver on very low power so that only an accessory actually in the docking position can actually receive
20 the pairing signals and run the pairing with the base.

Subsequently the accessory is removed from the port and then the two mutually paired devices communicate.

Reference is now made to fig. 1 which shows a portable electronic device 1 that comprises for instance
25 a mobile telephone 2 having a housing 3. On a front side the housing comprises keys 4 for controlling electronics within the housing, and a screen 6 for displaying information. The electronic device further comprises docking means 8 which are preferably arranged on the
30 rear of housing 3. The device 1 comprises a first transceiver (not shown) for wirelessly transmitting electromagnetic signals, i.e. representing speech signals of the telephone, to a headset element 10. The first transceiver may be arranged within the housing 3,

20

or in docking means 8. The headset element comprises a second transceiver for receiving the signals. When not in use the headset element may be docked onto the docking means. Thus, the assembly of an electronic device with a docking means and headset may conveniently be carried.

Electronic circuit 28 (fig. 2) preferably comprises a protection circuit to prevent short-circuiting and/or overheating of battery 30. Furthermore, the docking means may comprise a circuit to ensure that the telephone battery is not drained externally except by the charging circuit of the headset element, so as to prevent accidental discharge.

In a practical embodiment of the present invention, the first and -second transceiver are 2.4 GHz transceivers, controlled by an embedded compatible microcontroller. An advantage of the 2.4 GHz radio components over for instance Bluetooth is the lower power consumption. For the purpose of confidentiality, the range of the first and second transceiver is limited to about 3 m. Undocked, the headset element uses about 10 mA, and 35 mW. The maximum charging current is about 20 mA. Standby current consumption is about 2 μ A. Further features reducing power consumption include data compression of the electromagnetic signals to a factor of 10%. Data transmission also occurs in bursts, so that the transmission effectively takes up only 20% of the total time of use. Compared to commonly used mobile telephones, the headset element consumes about 5% or less of the telephone battery power and makes little impact on the battery life of the telephone in standby. Other known wireless systems using radio frequencies (RF), such as Bluetooth or transceivers working at a higher or lower frequency, for instance 900 MHz, are

also applicable in combination with the present embodiments.

Transceivers suitable for application with the present invention are for instance the NRF2401 2.4 GHz
5 transceiver with embedded 8051 compatible microcontroller of Nordic VLSI ASA. A description of this transceiver can be found at the website www.nvlsi.no, and is incorporated herein by reference. The docking means receives electrical power from the
10 power supply of the device 1, i.e. the battery of the mobile telephone. The connection to the battery is either direct or indirect, via an interface (not shown) which is generally available on the underside of a mobile telephone, or via power-carrying contacts of a
15 SIM card. The SIM card, a chip card present in GSM phones, normally has six contacts, one of which is a power supply connected to the battery of the telephone, and another contact is ground. The docking means may be connected to the power-carrying contacts of the SIM
20 card, for example by use of the dummy card explained hereinabove with respect to Fig. 4B.

The present embodiments are likewise suitable for electrical devices with or without an internal transceiver. In the first case, the first transceiver is
25 included within the device. In the second case, the assembly of docking means and headset element is sold separately of the mobile telephone. The first transceiver is included in the docking means, and may be powered by direct or indirect connection to the phone
30 battery as described above.

If the first transceiver is included within the docking means, the audio connection from the first transceiver to the device, i.e. the telephone, is made in one of two ways. In a case in which the device

permits direct physical access to an internal audio connection, then such an internal audio connection may be used. Generally however, the audio connection is made via a cable contacting the telephone with a plug via the interface (not shown). The plug may have a male connector for contacting the interface, and a directly corresponding female connector which allows attachment of the telephone to for instance a car charger without interrupting the hands-free function.

10 In a further preferred embodiment, the assembly of docking station and headset element is included in a hands-free set for use in a vehicle. The docking station is included within the hands-free set, wherein the mobile telephone can be arranged on the hands-free set. A user can choose to either pick up the telephone by pushing a button or by undocking the headset element, and thus use the headset for communication.

In yet a further embodiment the assembly of docking means and headset element is suitable for use with a regular or a DECT (Digital Enhanced Cordless Telecommunications) telephone.

The present invention includes charging circuitry, which may be arranged within element 20, 40, 108 of the back cover or within electronic circuit 28 of the headset element. The charging circuitry comprises circuits that increase the voltage of the telephone battery so that the battery of the headset may be charged even when the telephone battery is not fully charged. The charging circuitry also prevents the headset battery being overcharged, for instance by controlling the charging current. For faster charging, the charging current starts at a relatively high level, and decreases as the headset battery becomes more fully charged. The charging circuitry prevents charging when

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the telephone battery is discharged below a predetermined level in case of a fault.

It is expected that during the life of this patent many relevant portable devices and systems with
5 accessories will be developed, and that the technology of the portable power source will also advance, and the scope of the corresponding terms herein, are intended to include all such new technologies *a priori*.

It is appreciated that certain features of the
10 invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention, which are, for brevity, described in the context of a single embodiment, may
15 also be provided separately or in any suitable subcombination.

Although the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications and
20 variations will be apparent to those skilled in the art. Accordingly, it is intended to embrace all such alternatives, modifications and variations that fall within the spirit and broad scope of the appended claims. All publications, patents and patent
25 applications mentioned in this specification are herein incorporated in their entirety by reference into the specification, to the same extent as if each individual publication, patent or patent application was specifically and individually indicated to be
30 incorporated herein by reference. In addition, citation or identification of any reference in this application shall not be construed as an admission that such reference is available as prior art to the present invention.

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CLAIMS

1. An accessory for a portable electronic device, comprising:

5 an outer cover for replacement of at least part of an outer housing of the mobile electronic device;
a charging point associated with said outer cover;
a power diverter for accessing a power line of said electronic device and supplying said power to said
10 charging point;

a dockable accessory for working with said portable electronic device, said dockable accessory comprising an accessory power source;

15 a docking position for locating said dockable accessory in charging proximity to said charging point through the outer cover, to charge said accessory power source from said power line, thereby enabling said dockable accessory to be actively powered when withdrawn from said docking position for operation.

20

2. The accessory for a portable electronic device of claim 1, further comprising a wireless link for connecting to said dockable accessory when withdrawn from said docking position.

25

3. The accessory for a portable electronic device of claim 1, wherein said power diverter is a dummy SIM card, which is insertable into a SIM card holder of the portable device, wherein the dummy SIM card is connected
30 via a cable to a second SIM card reader provided on the outer cover, wherein the power diverter is configured to relay power and data connections to the second SIM card reader on said outer cover and power to said charging point.

4. The accessory for a portable electronic device of claim 1, further comprising a pairing controller for identifying the dockable accessory to enable wireless
5 communication therewith, said pairing controller being adapted to carry out a pairing handshake with said dockable accessory.

5. The accessory for a portable electronic device
10 of claim 4, wherein said pairing controller is configured to carry out said handshake via said charging point.

6. The accessory for a portable electronic device
15 of claim 4, wherein said pairing device is configured to carry out said handshake wirelessly.

7. The accessory for a portable electronic device of claim 1, wherein said power diverter is a link for
20 connecting an external power port of said mobile electronic device to said charging point.

8. The accessory for a portable electronic device of claim 1, wherein said power diverter is a connector
25 for placing over said power source to connect said parent power source to said charging point.

9. The portable electronic device of claim 7 or 8, wherein the docking position is located on the outer
30 cover, said outer cover including an outer cover power source connected to said power diverter, the outer cover power source being adapted for charging said dockable accessory.

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10. The accessory for a portable electronic device of claim 1, wherein said parent power source is an exclusive internal power source therefor.

5 11. The accessory for a portable electronic device of claim 1, wherein said charging proximity is electrical contact.

12. The accessory for a portable electronic device
10 of claim 1, wherein said charging proximity is close proximity to allow inductive coupling.

13. The accessory for a portable electronic device of claim 1, comprising an outer housing, wherein said
15 docking position is a geometrical location system formed into said outer housing.

14. The accessory for a portable electronic device of claim 1, comprising an outer housing, wherein said
20 docking position is a magnetic location system formed into said outer housing.

15. The portable electronic device of claim 13, wherein said accessory also comprises an outer housing,
25 said accessory outer housing being shaped to complement the geometrical shape of the docking position.

16. The accessory for a portable electronic device of claim 1, wherein said dockable accessory is
30 configured to communicate using RF with said portable device.

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17. An accessory for a portable electronic device of claim 1, wherein said accessory is configured to communicate using IR with said portable device.

5 18. An accessory for a portable electronic device of claim 1, wherein said accessory is configured to communicate using ultrasonics with said portable device.

19. An accessory for a portable electronic device
10 of claim 1, wherein said dockable accessory is configured to communicate using magnetic field technology.

20. An accessory for a portable electronic device
15 of claim 1, wherein said dockable accessory is configured to communicate using Bluetooth technology.

21. An accessory for a portable electronic device of claim 1, further comprising a second docking position
20 for a second dockable accessory.

22. The portable device of claim 21, wherein said portable device is configured to communicate directly with both said dockable accessories.

25

23. The portable device of claim 21, wherein said portable device is configured to communicate with a first of said dockable accessories and said first dockable accessory is configured to communicate with
30 said second dockable accessory.

24. The accessory for a portable electronic device of claim 1, wherein said dockable accessory is an earphone.

25. The accessory of claim 24, wherein said earphone further comprises a microphone and a return channel to said portable device.

5

26. The accessory of claim 21, wherein said dockable accessories are stereo earphones.

27. The accessory of claim 26, wherein one of said
10 stereo earphones includes a microphone and a return channel to said portable device.

28. The accessory of claim 26, the portable device being a digital music player and further comprising a
15 stereo music channel to both earphones and a talk channel to one earphone.

29. The accessory of claim 1, wherein said parent power source comprises a capacity in the range of 0.1Ah
20 to 8Ah.

30. The accessory of claim 29, wherein said parent power source has a capacity in the range 0.1Ah to 0.5Ah.

25 31. The accessory of claim 28, wherein said parent power source has a capacity in the range 0.5Ah to 3Ah.

32. The accessory of claim 28, wherein said parent power source has a capacity in the range 3Ah to 8Ah.

30

33. The accessory of claim 1, wherein said dockable accessory power source has a capacity in the range 5mAh to 150mAh.

29

34. The accessory of claim 33, wherein said dockable accessory power source has a capacity in the range 5mAh to 25mAh.

5 35. The portable device of claim 33, wherein said dockable accessory power source has a capacity in the range 25mAh to 50mAh.

36. The portable device of claim 33, wherein said
10 dockable accessory power source has a capacity in the range of 50mAh to 150mAh.

37. The accessory for a portable electronic device of claim 1, said portable electronic device being any
15 one of a group comprising a cellular telephone, a personal digital assistant, a combination of a personal digital assistant and a cellular telephone, a laptop computer, a personal music player, a personal digital music player, a radio, a digital radio, a portable
20 television set, a tape recorder, a portable global positioning device, a digital camera, a digital still camera, a video camera, a digital video camera, a cordless telephone, a DECT cordless telephone, an electronic musical instrument, a dictation machine, a
25 midi device, an MP3 device, a game unit, and a portable electronic compass.

38. The accessory for a portable electronic device of claim 1, wherein said dockable accessory is any one
30 of a group of devices comprising a mono headset, a stereo headset, a stereo headset for music, mono earpieces, mono earpieces for music, stereo earpieces, stereo earpieces for music, a microphone, a microphone combined with an earpiece, a microphone combined with a

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headset, a wireless keyboard, a port adapter, a USB port
adapter, a pointing device, a mouse, a stylus, a
rollerball, a printer, a loudspeaker, a display screen,
a camera, an electronic compass, game pieces for a games
5 unit, and a joystick.

39. The accessory for a portable electronic device
of claim 1, wherein said docking position further
comprises a data exchange path for direct exchange of
10 data when said accessory is docked.

40. The accessory for a portable electronic device
of claim 1, wherein said data exchange path uses a same
connection used for said charging.

15

41. The accessory for a portable electronic device
of claim 1, wherein a data channel to said dockable
accessory is provided by incorporating a first
transceiver into said outer cover and a second
20 transceiver into said dockable accessory.

42. The accessory for a portable electronic device
of claim 42, wherein said first and second transceivers
are Bluetooth transceivers.

25

43. The portable electronic device of claim 42,
wherein said portable electronic device is a mobile
telephone having a SIM card reader and wherein said
first transceiver is incorporated via a dummy SIM card.

30

44. Portable electronic device, provided with an
accessory according to any of claims 1-43.

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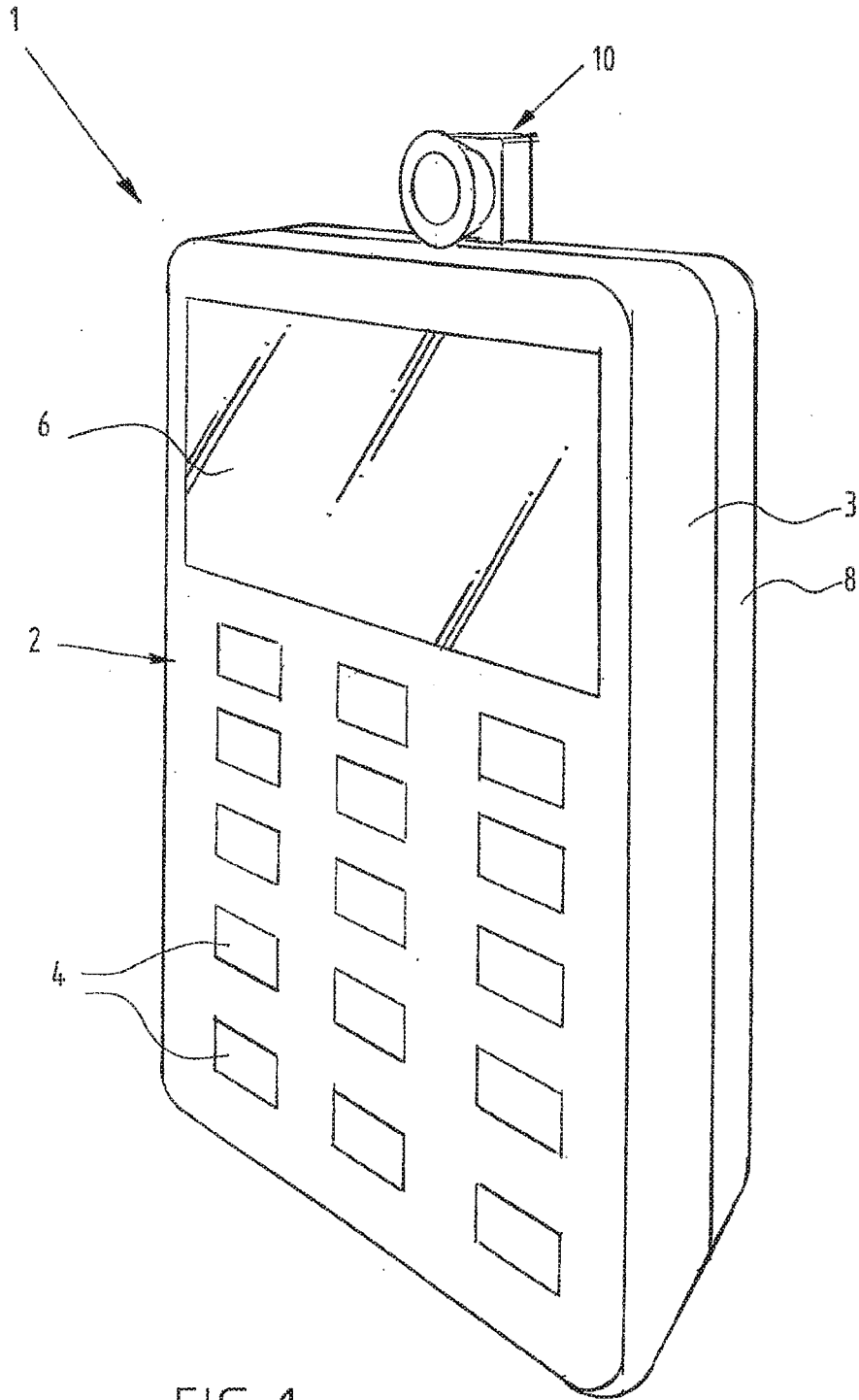


FIG. 1

2/8.

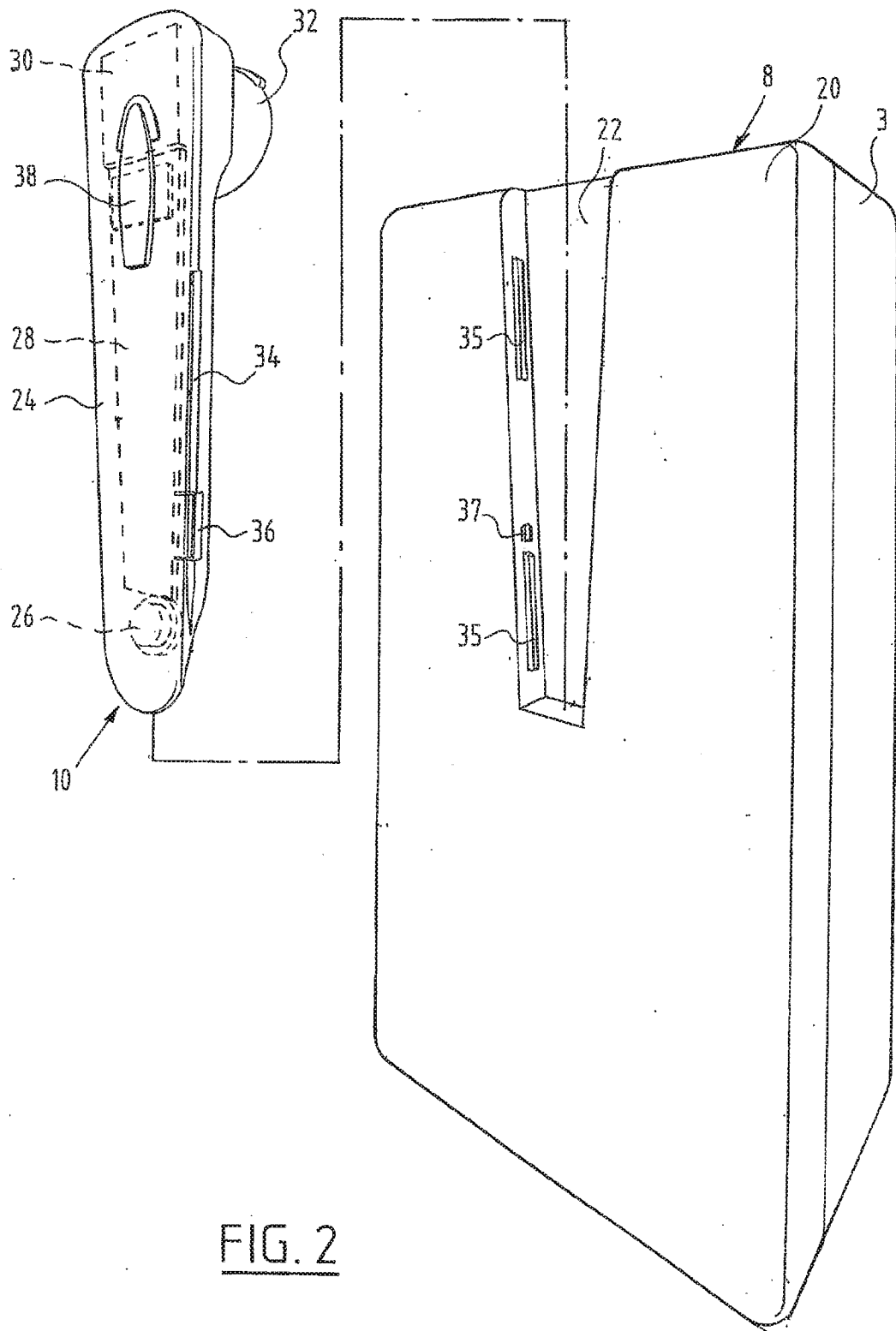
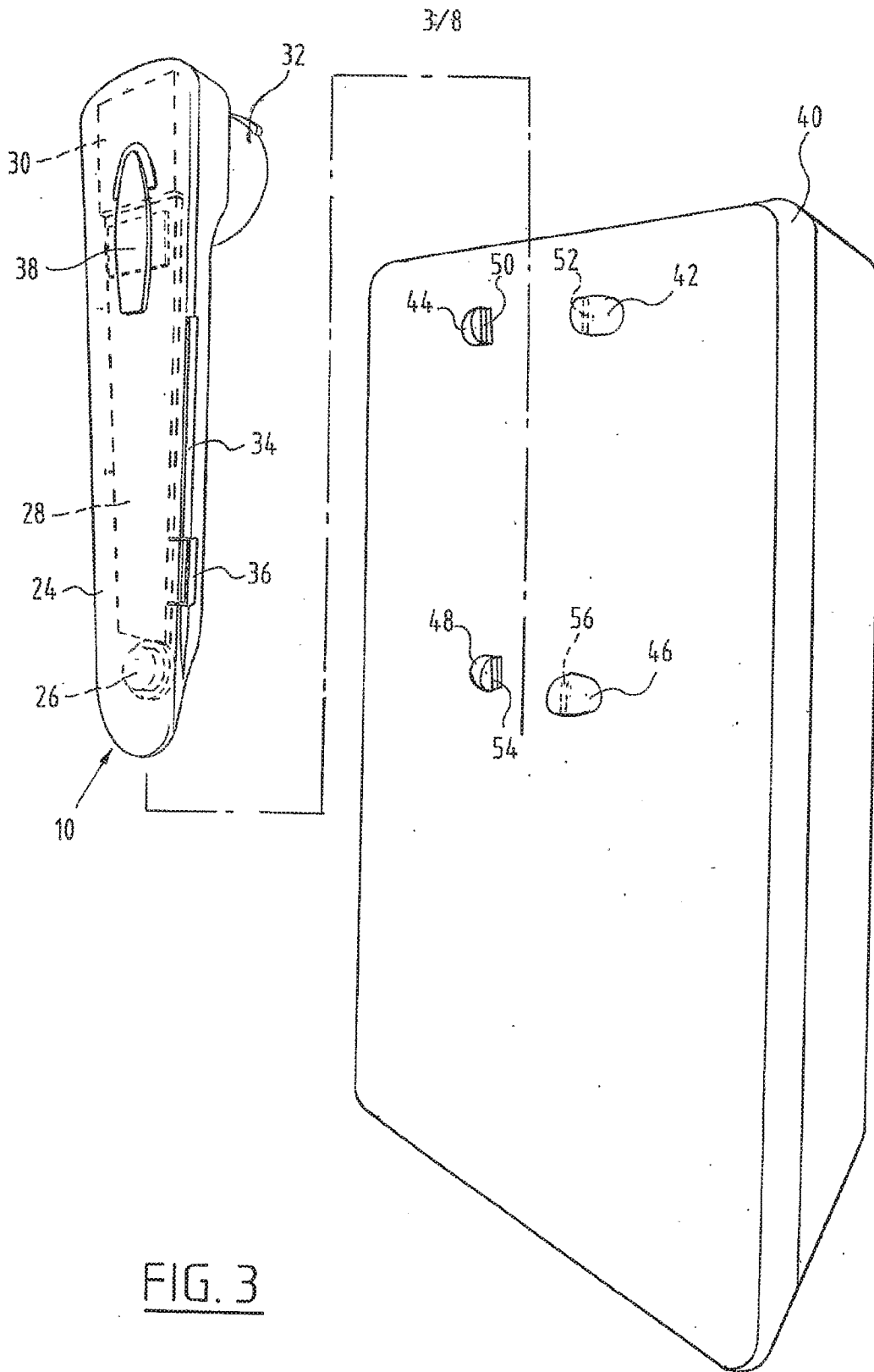


FIG. 2



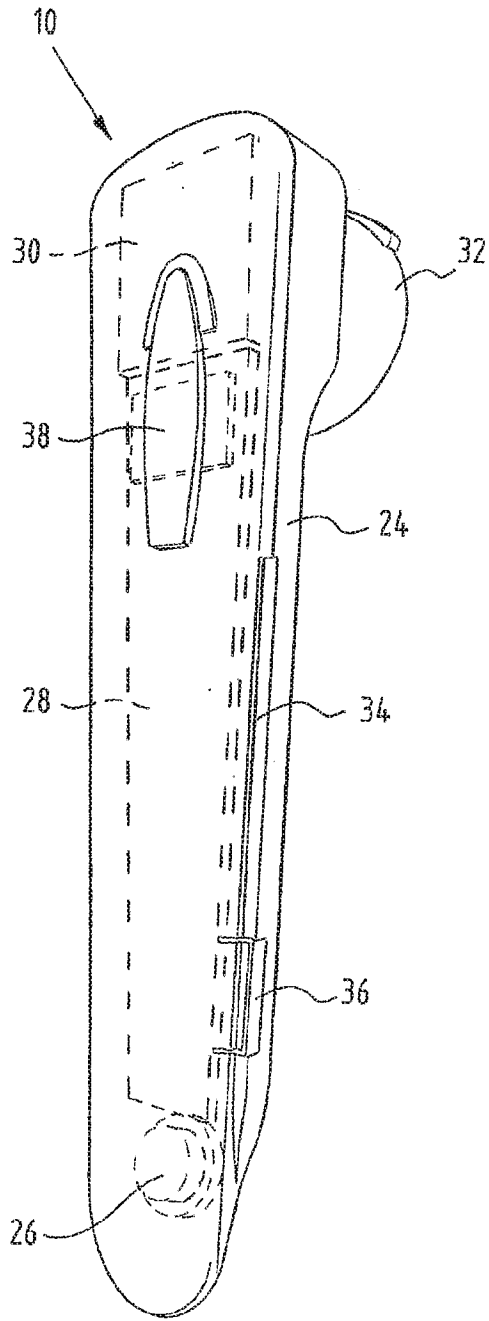


FIG. 5

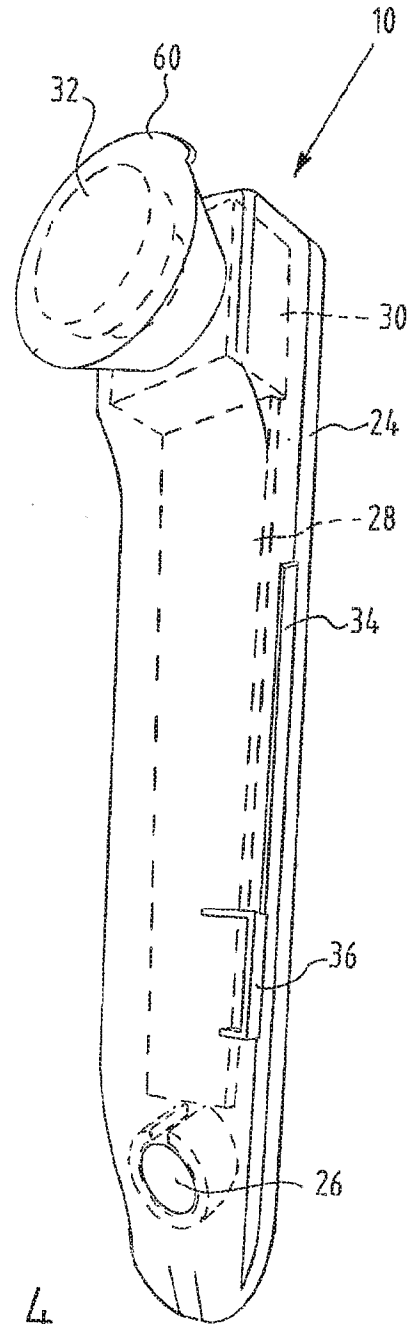


FIG. 4

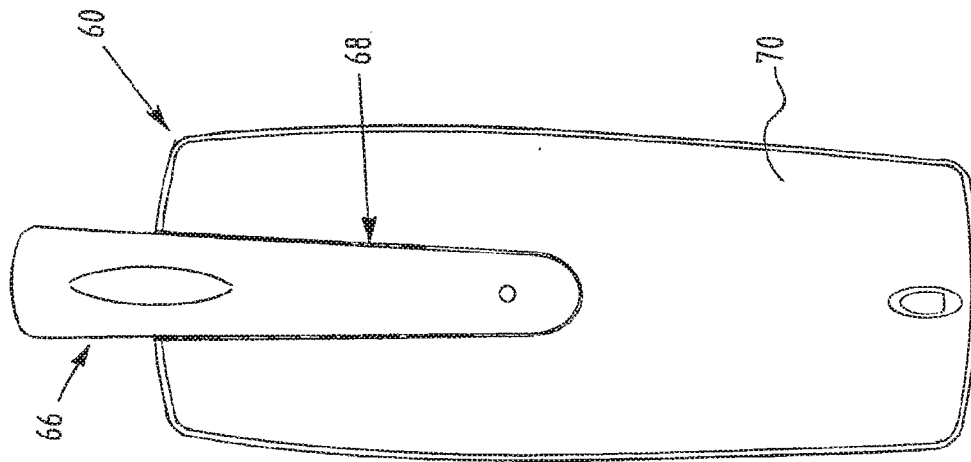


FIG. 7

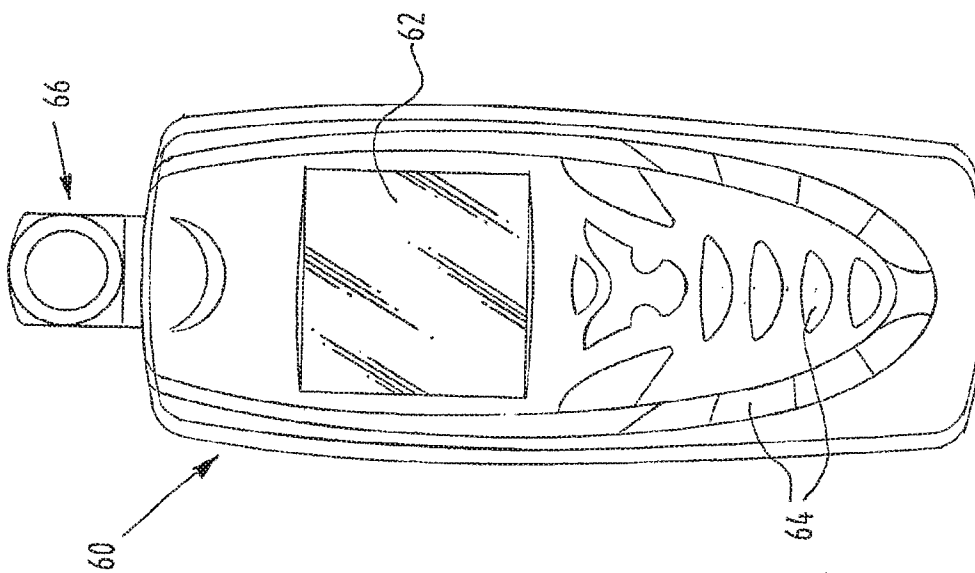


FIG. 6

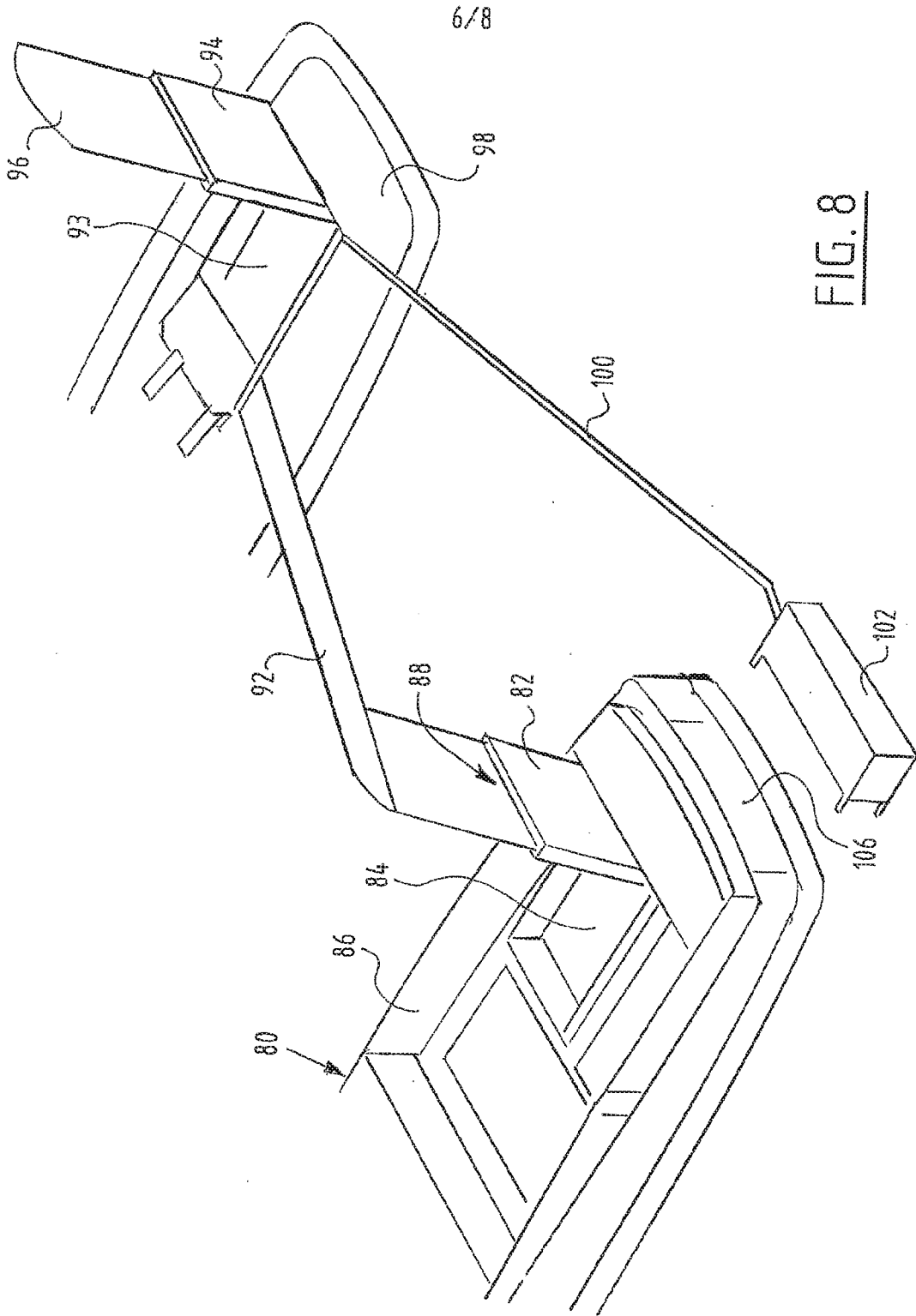


FIG. 8

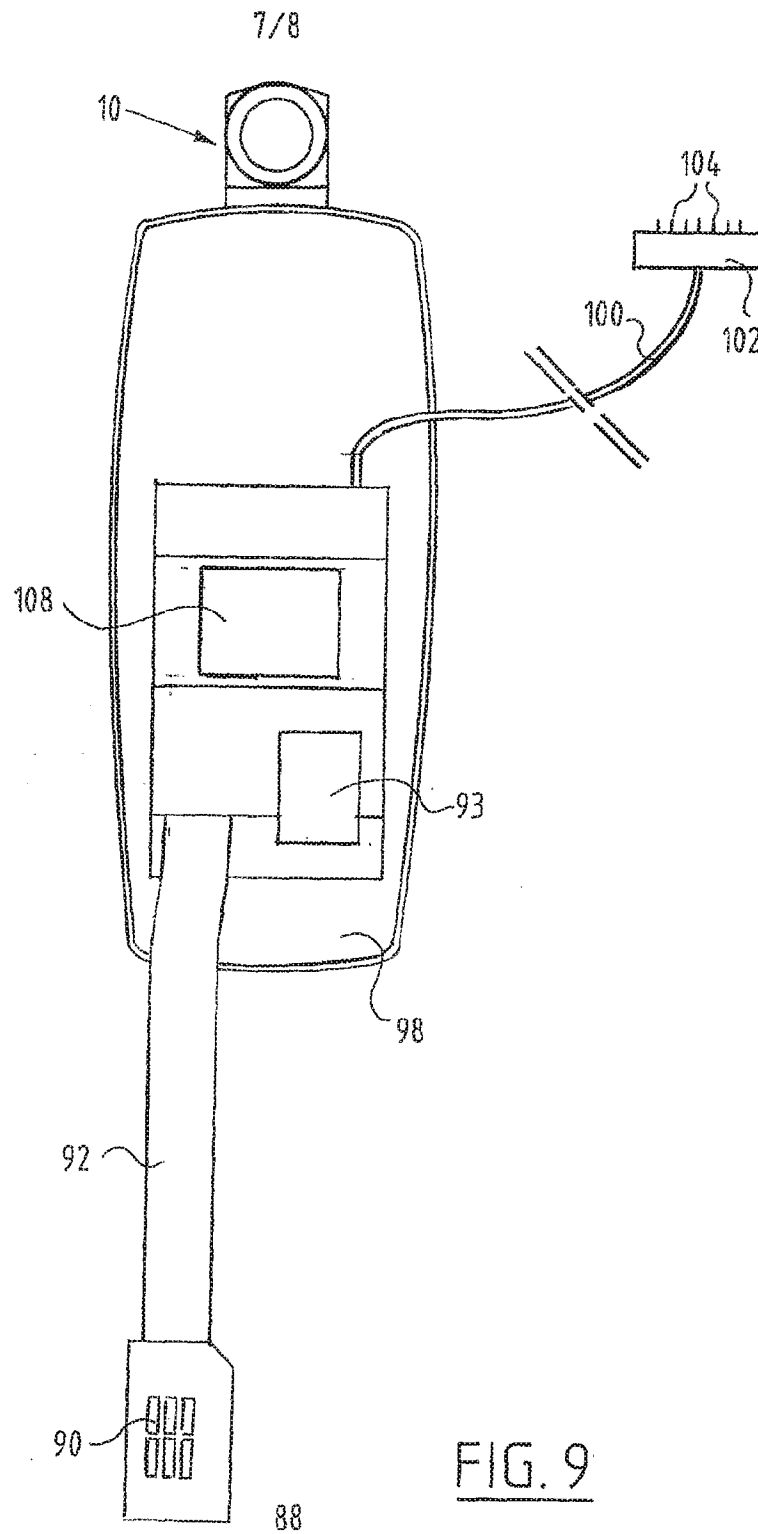


FIG. 9

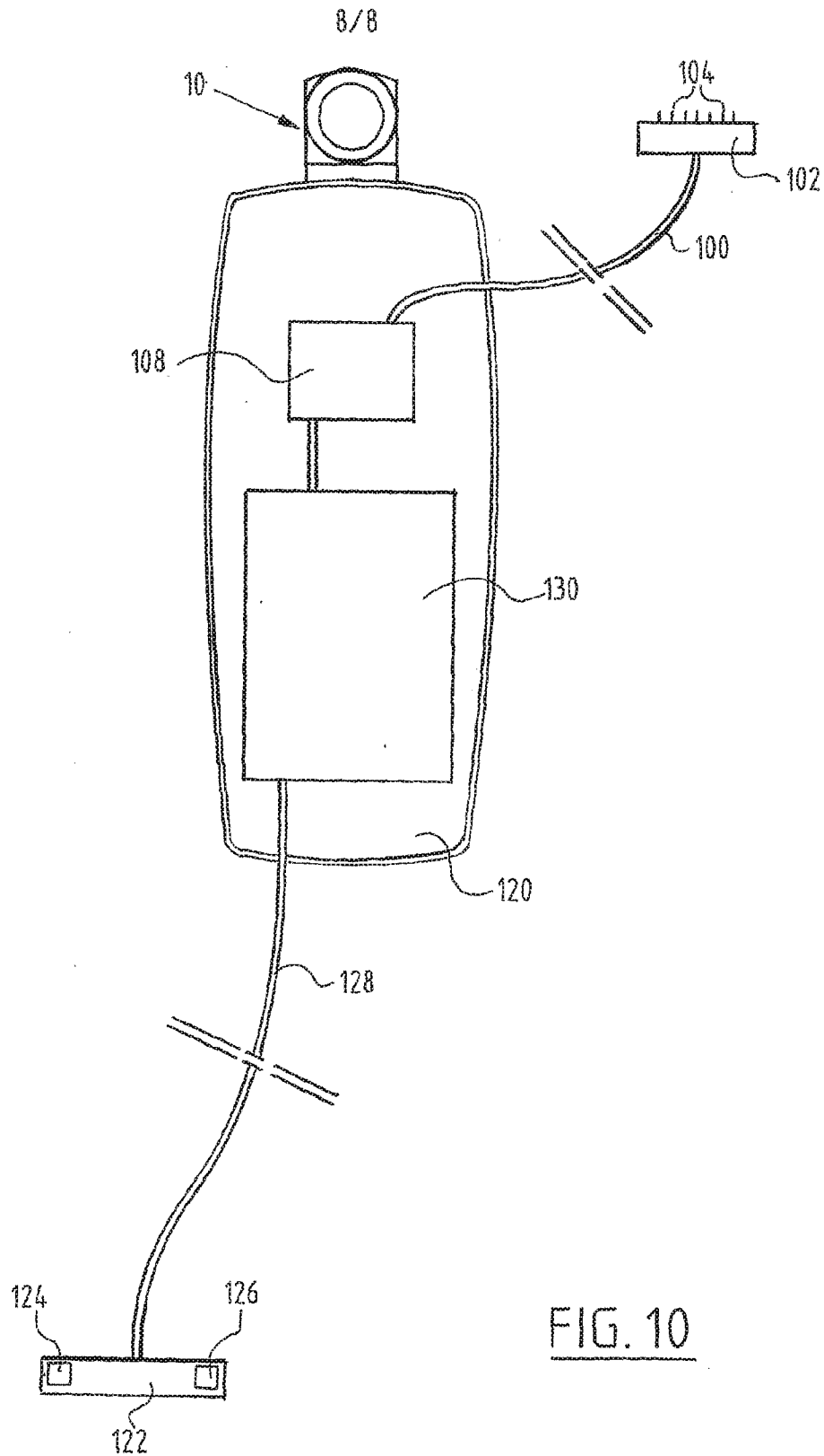


FIG. 10

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/013498

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H04M1/05 H04M1/60 H04M1/725 H04M1/60 H04M1/05

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	EP 1 381 205 A (SONY ERICSSON MOBILE COMMUNICATIONS AB) 14 January 2004 (2004-01-14) paragraph '0028! paragraph '0030!; figure 3 paragraphs '0033!, '0034!; figure 5	1, 2, 4-11, 16-20, 24, 25, 29-39, 41, 42, 44
P, Y	----- -/--	12-15, 39

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
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Date of the actual completion of the international search 14 April 2005	Date of mailing of the international search report 21/04/2005
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Name and mailing address of the ISA European Patent Office, P.B. 5518 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer de Biolley, L
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/013498

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/08386 A (CENTRAL RESEARCH LAB LTD ;WATERHOUSE JOHN HOWARD (GB)) 1 February 2001 (2001-02-01)	12,39
A	page 1, line 1 - page 2, line 4; figures 1-3 page 4, lines 25-30	1,2,20, 24,25, 27,37-44
Y	US 5 943 627 A (KIM SEONG-SOO ET AL) 24 August 1999 (1999-08-24)	13,15
A	column 5, line 38 - column 6, line 32; figures 4,9-11 column 9, line 25 - column 10, line 3	1-44
Y	US 2002/168939 A1 (UDAGAWA MASAMICHI ET AL) 14 November 2002 (2002-11-14) paragraphs '0051!, '0052!; figure 4c paragraph '0029! paragraphs '0041!, '0042!	14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP2004/013498

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1381205	A	14-01-2004	EP 1381205 A1 14-01-2004
			AU 2003246374 A1 02-02-2004
			WO 2004008724 A1 22-01-2004
WO 0108386	A	01-02-2001	AU 4588900 A 13-02-2001
			WO 0108386 A1 01-02-2001
US 5943627	A	24-08-1999	KR 212686 B1 02-08-1999
			KR 153636 Y1 02-08-1999
			CN 1176569 A 18-03-1998
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			JP 2918510 B2 12-07-1999
			JP 10107881 A 24-04-1998
US 2002168939	A1	14-11-2002	WO 02093338 A1 21-11-2002

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: Michael R. Christensen
Knobbe, Martens, Olson & Bear, LLP
2040 Main Street, 14th Floor
Irvine, California 92614
United States of America

Date of mailing
(day/month/year) 11 JUL 2016

Applicant's or agent's file reference:
PNN.005WO

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.
PCT/US16/25936

International filing date
(day/month/year) 04 April 2016 (04.04.2016)

Applicant PINN, INC.

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes, 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide, International Phase*, paragraphs 9.004 - 9.011.

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. With regard to any protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
 the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
 no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide, National Chapters*.

Within 19 months from the priority date, the applicant may request that a supplementary international search be carried out by a different international Searching Authority that offers this service (Rule 45bis.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide, International Phase*, paragraphs 8.006-8.032.

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Mail Stop PCT, Attn: ISA/US
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Facsimile No. 975-273-8309

Authorized officer
Shane Thomas
PCT Helpdesk: 571-272-4300
Telephone No. PCT 030 571-272-7774

Form PCT/ISA/220 (July 2014)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PNN.005WG	FOR FURTHER ACTION		see Forms PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US16/25936	International filing date (<i>day/month/year</i>) 04 April 2016 (04.04.2016)	(Earliest) Priority Date (<i>day/month/year</i>) 03 April 2015 (03.04.2015)	
Applicant PINN, INC.			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

I. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed.

a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (see Box No. II).

3. **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 4A

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US16/25936

A. CLASSIFICATION OF SUBJECT MATTER IPC(B) - H04M 1/60, 1/725 (2016.01) CPC - H04M 1/6066, 1/0256 According to International Patent Classification (IPC) or to both national classification and IPC.		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC(B) - H04M 1/60, 1/725, G06F 13/00, 1/26 (2016.01) CPC - H04M 1/6066, 1/0256, 1/72569, 1/7253, 1/72533, G06F 1/1632, 1/266 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google/Google Scholar, EBSCO Discovery Service, IEEE Keywords: personal, media, player, station, wireless, earbud, earphone, dock, base station, mobile, smartphone		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2014/0295758 A1 (PEDERSEN, T) 02 October 2014; paragraphs [0012], [0013], [0036], [0039], [0044].	1, 2
Y	US 2011/0141357 A1 (PRICE, P et al.) 16 June 2011; paragraphs [0006], [0043], [0044].	1, 2
Y	US 2010/0245585 A1 (FISHER, R et al.) 30 September 2010; figures 5 and 6, paragraphs [0016], [0089], [0130].	1, 2
Y	US 2014/0116085 A1 (LAM, B) 01 May 2014; figure 4D; paragraph [0127], [0179].	2
A		3, 4
A	US 2006/0166715 A1 (ENGELEN, J et al.) 27 July 2006; figure 1, paragraph [0078].	1-4
A	US 2013/0206612 A1 (CHUN, J) 15 August 2013; figures 8 and 9; paragraph [0032].	1-4
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search.		Date of mailing of the international search report.
05 June 2016 (05.06.2016)		17 JUL 2016
Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300		Authorized officer Shane Thomas PCT helpline: 571-273-4500 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (January 2015)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: Michael R. Christensen
Knobbe, Martens, Olson & Bear, LLP
2040 Main Street, 14th Floor
Irvine, California 92614
United States of America

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year)		11 JUL 2016
Applicant's or agent's file reference PNN.005WO		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/US16/25936	International filing date (day/month/year) 04 April 2016 (04.04.2016)	Priority date (day/month/year) 03 April 2015 (03.04.2015)
International Patent Classification (IPC) or both national classification and IPC IPC(8) - H04M 1/60, 1/725 (2016.01) CPC - H04M 1/6066, 1/0256		
Applicant PINN, INC.		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No: 571-273-8300	Date of completion of this opinion 05 June 2016 (05.06.2016)	Authorized officer Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US16/25936

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US16/25936

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability: citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-4	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	3-4	YES
	Claims	1-2	NO
Industrial applicability (IA)	Claims	1-4	YES
	Claims	NONE	NO

2. Citations and explanations:

Claim 1 lacks an inventive step under PCT Article 35(3) as being obvious over US 2014/0295758 A1 to Pederson, T. (hereinafter "PEDERSEN") in view of US 2010/0245585 A1 to Fisher, R. et al. (hereinafter "FISHER") and in further view of US 2011/0141357 A1 to Price, P. et al. (hereinafter "PRICE").

As per claim 1, PEDERSEN discloses a personal wireless media station in communication with a paired mobile computing device of a user for playing sound (a docking station and wireless headset (personal wireless media station; playing sound) may be used as a music player and are paired to a mobile phone (mobile computing device); paragraphs [0012], [0036]), the personal wireless media station comprising: a base station comprising an information display (a headset base or docking station (base station) has a touch display information display; paragraph [0035]), a base station speaker, a wireless module, a base station connector and a docking bay (the docking station has a speaker, a Bluetooth transceiver (wireless module), contact terminals (connector), and a headset cradle (docking bay); paragraphs [0012], [0039], [0044]); the wireless headset comprising a body configured to dock to the docking bay or undock from the docking bay (the wireless headset fits into the headset cradle; paragraph [0039]); and the headset connector and the base station connector form electrical contact with each other (when cradled, the wireless headset connector and docking station connector establish electrical contact; paragraph [0038]); wherein the personal wireless media station is configured to play sound through the base station speaker when the wireless headset is in a docked state in which the wireless headset is docked to the docking bay (when the docking station and wireless headset are used as a speakerphone, sound is played through the docking station speaker when the wireless headset is in the cradle (docked state); paragraph [0013]), wherein the personal wireless media station is configured to play sound through the headset speaker when the wireless headset is in an undocked state in which the wireless earbud is undocked from the docking bay (when the wireless headset is removed (undocked state) from the docking station cradle, a transceiver link is established between the wireless headset and the docking station for bi-directional transmission of sound through the headset (through the headset speaker); paragraph [0039]). However, PEDERSEN fails to disclose wherein the wireless headset is a wireless earbud; wherein the headset connector is an earbud connector; wherein the headset speaker is an earbud speaker; displaying data based on communication with the paired mobile computing device and a wireless earbud comprising an earbud speaker and a earbud connector, wherein when the earbud is docked to the docking bay of the base station, the wireless earbud and the base station form a single integrated body; wherein the personal wireless media station is programmed: to determine a docked-to-undocked change in which the wireless earbud becomes undocked from its docked state; upon determining the docked-to-undocked change, while sound is being played on the base station speaker, to cease playing sound on the base station speaker and to begin playing sound on the earbud speaker, to determine an undocked-to-docked change, in which the wireless earbud headset becomes docked from its undocked state, and upon determining the undocked-to-docked change, while sound is being played on the earbud speaker, to cease playing sound on the earbud speaker and to begin playing sound on the base station speaker.

FISHER discloses wherein the wireless headset is a wireless earbud (Bluetooth earpiece 30 (wireless headset; wireless earbud) has an earbud protrusion; figure 5, paragraph [0130]); wherein the headset connector is an earbud connector (Bluetooth earpiece 30 has a connector 82 (earbud connector); figure 6, paragraph [0130]); wherein the headset speaker is an earbud speaker (Bluetooth earpiece 30 has a speaker 46 (earbud speaker); figure 6, paragraph [0130]); displaying data based on communication with the paired mobile computing device (the headset has a display and is paired to a cell phone (mobile computing device) through which it can display a video feed (displaying data based on communication); paragraphs [0016], [0089]), and a wireless earbud comprising an earbud speaker and a earbud connector (a Bluetooth earpiece 30 (wireless earbud) has an earbud protrusion containing a speaker 46 and a connector 82; figure 6, paragraph [0130]), wherein when the earbud is docked to the docking bay of the base station, the wireless earbud and the base station form a single integrated body (the Bluetooth earpiece 30 docks to the camera/phone module 25 (base station) to form an integrated body as shown in figures 5 and 6; figures 5 and 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed in PEDERSEN to include wherein the wireless headset is a wireless earbud; wherein the headset connector is an earbud connector; wherein the headset speaker is an earbud speaker; displaying data based on communication with the paired mobile computing device and a wireless earbud comprising an earbud speaker and a earbud connector, wherein when the earbud is docked to the docking bay of the base station, the wireless earbud and the base station form a single integrated body, as taught by FISHER, for the benefits of utilizing the common headset form of the earbud, providing a means for visual display of for ease of selecting and controlling media content, and providing a sleek, compact and attractive means for storing the earbud when not in use.

Continued Within the Next Supplemental Box

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US16/25936

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claim 1 is objected to under PCT Rule 66.2(a)(ii) as containing the following defect in the form or contents thereof:

Claim 1 contains the text "to determines". This appears to be a typographical error. For the purposes of this opinion, the above cited text has been best understood to read "to determine".

Claim 1 contains the text "a undocked-to-docked change". This appears to be a typographical error. For the purposes of this opinion, the above cited text has been best understood to read "an undocked-to-docked change".

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US16/25936

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 2 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 2 is indefinite for the following reason:

In claim 2 there is a lack of antecedent basis for the limitations, "the docking state". For the purposes of this opinion, as best understood, the limitation "the docking state" has been interpreted to read, "a docking state" to restore antecedent basis, clarity, and continuity with the specification.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US16/25836

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Continued from Box V: Citations and Explanations.

PRICE discloses wherein the personal wireless media station is programmed: to determine a docked-to-undocked change in which the wireless earbud becomes undocked from its docked state (a television (personal wireless media station) controlled by a processing element (programmed) is aware of when the wireless headphones with earpieces (earbud) are docked or undocked (docked-to-undocked change; undocked from its docked state); paragraphs [0006], [0043]); upon determining the docked-to-undocked change, while sound is being played on the base station speaker, to cease playing sound on the base station speaker and to begin playing sound on the earbud speaker (when the wireless headset is undocked while the television is in use (sound is being played on the base station speaker), the headphone dock routes sound to the headset earpieces (begin playing sound on the earbud speaker) and the television (base station) speakers are muted (cease playing sound on the base station speaker); paragraphs [0006], [0043], [0044]); to determine an undocked-to-docked change in which the wireless earbud headset becomes docked from its undocked state (the television is aware of when the wireless headphones with earpieces are docked or undocked (undocked-to-docked change; docked from its undocked state); paragraph [0006]), and upon determining the undocked-to-docked change, while sound is being played on the earbud speaker, to cease playing sound on the earbud speaker and to begin playing sound on the base station speaker (when the wireless headphones with earpieces are in use (sound is being played on the earbud speaker) and are docked (undocked-to-docked change) due to a "low battery" message on the screen, the television sends audio only to the internal speakers (cease playing sound on the earbud speaker); paragraph [0044]); it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed in PEDERSEN to include wherein the personal wireless media station is programmed: to determine a docked-to-undocked change in which the wireless earbud becomes undocked from its docked state, upon determining the docked-to-undocked change, while sound is being played on the base station speaker, to cease playing sound on the base station speaker and to begin playing sound on the earbud speaker to determine an undocked-to-docked change in which the wireless earbud headset becomes docked from its undocked state, and upon determining the undocked-to-docked change, while sound is being played on the earbud speaker, to cease playing sound on the earbud speaker and to begin playing sound on the base station speaker, as taught by PRICE, for the benefits of providing for user convenience by providing a means for automatic switching of the audio between the base station speakers and the earbud when the earbud is docked or undocked from the base station.

Claim 2 lacks an inventive step under PCT Article 33(3) as being obvious over PEDERSEN in view of FISHER and in further view PRICE and in further view of US 2014/0116055 A1 to Lam, B. (hereinafter "LAM").

As per claim 2, a combination of PEDERSEN, FISHER, and PRICE discloses the personal wireless media station of Claim 1. However, PEDERSEN fails to disclose wherein the wireless ear bud comprises a head portion, a waist portion and an ear portion, the ear portion configured to be inserted into the user's ear to provide sound, wherein the ear bud connector is provided on the waist portion such that the earbud connector is in electrical contact with the base station connector when the wireless earbud is in a docking state. LAM discloses wherein the wireless ear bud comprises a head portion, a waist portion and an ear portion, the ear portion configured to be inserted into the user's ear to provide sound playback (a wireless earphone (wireless ear bud) has a base 428 (head portion), a more narrow portion 416 (waist portion), and an in-ear portion 420 for transmitting sound into a user's ear canal; figure 4D, paragraphs [0127], [0179]), wherein the ear bud connector is provided on the waist portion such that the earbud connector is in electrical contact with the base station connector when the wireless earbud is in a docking state (electrical contacts 426 a & b (ear bud connector) on the more narrow portion connect (electrical contact) for charging when the wireless earphone is inserted (docking state) into the battery pendant (base station); figure 4D, paragraph [0127]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed in PEDERSEN to include wherein the wireless ear bud comprises a head portion, a waist portion and an ear portion, the ear portion configured to be inserted into the user's ear to provide sound, wherein the ear bud connector is provided on the waist portion such that the earbud connector is in electrical contact with the base station connector when the wireless earbud is in a docking state, as taught by LAM, for the benefits of providing an ergonomic earbud design with an efficacious and efficient means of simultaneously docking and electrically connecting to the base station.

Continued Within the Next Supplemental Box.