NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

CARUCEL INVESTMENTS L.P.,
Appellant

v.

KATHERINE K. VIDAL, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

CARUCEL INVESTMENTS L.P.,
Appellant

v.

UNIFIED PATENTS, LLC,
Appellee

KATHERINE K. VIDAL, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2021-1731, 2021-1734, 2021-1735, 2021-1736, 2021-1737

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2019-01079, IPR2019-01101, IPR2019-01102, IPR2019-01103, IPR2019-01105, IPR2019-01573.

CARUCEL INVESTMENTS L.P.,
Appellant

v.

KATHERINE K. VIDAL, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2021-1911, 2021-1912, 2021-1913, 2021-1914

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2019-01298, IPR2019-01404, IPR2019-01441, IPR2019-01442, IPR2019-01635, IPR2019-01644.

Decided: December 26, 2023

BRIAN T. BEAR, Spencer Fane LLP, Kansas City, MO, argued for appellant. Also represented by ANDY LESTER, Oklahoma City, OK; ERICK ROBINSON, Houston, TX; R. SCOTT RHOADES, Warren Rhoades LLP, Arlington, TX.

DEBRA JANECE MCCOMAS, Haynes and Boone, LLP,

Dallas, TX, argued for appellee. Also represented by RAGHAV BAJAJ, Austin, TX; ANGELA M. OLIVER, Washington, DC; MICHELLE ASPEN, ROSHAN MANSINGHANI, Unified Patents, LLC, Chevy Chase, MD.

MICHAEL TYLER, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor. Also represented by PETER J. AYERS, ROBERT MCBRIDE, FARHEENA YASMEEN RASHEED. Also represented by PETER JOHN SAWERT in 2021-1911, 2021-1912, 2021-1913, 2021-1914.

Before DYK, SCHALL, and STARK, *Circuit Judges*.

STARK, *Circuit Judge*.

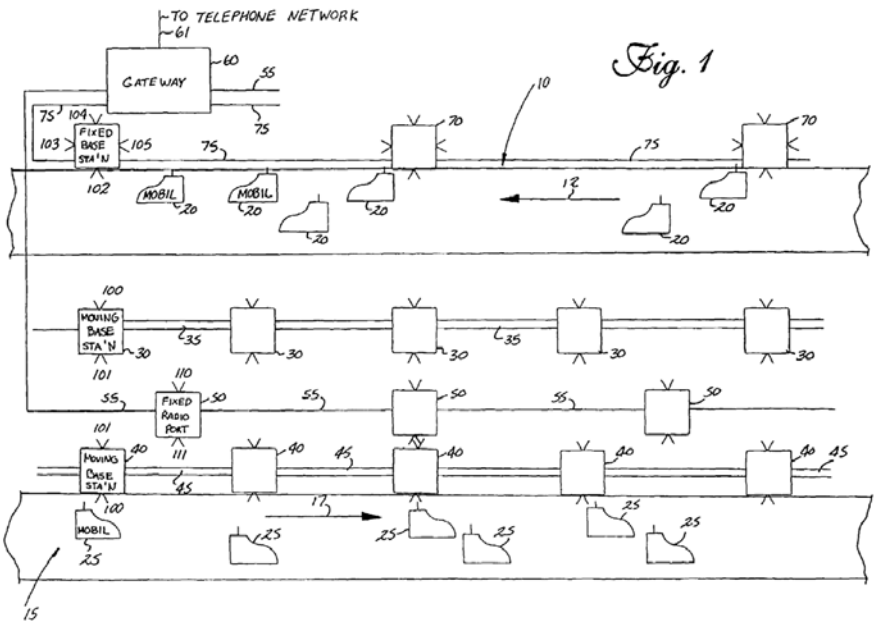
Carucel Investments L.P. ("Carucel") appeals the final written decisions of the Patent Trial and Appeal Board ("Board") holding that certain claims of U.S. Patent Nos. 7,221,904 ("'904 patent"), 7,848,701 ("'701 patent"), 7,979,023 ("'023 patent"), and 8,718,543 ("'543 patent" and, together with the '904, '701, and '023 patents, the "Carucel patents") are unpatentable as obvious. For the reasons provided below, we affirm.

I

A

The Carucel patents, each entitled "mobile communication system with moving base station," share substantially identical specifications. The patents disclose a mobile communication system that "employs moving base stations moving in the direction of flow of traffic moving along a roadway." '904 patent, Abstract. These "moving base stations" then "communicate with a plurality of fixed radio ports connected by a signal transmission link to a gateway office which, in turn, is connected to the wire line network." *Id.* This general configuration of the various

elements of the invention is illustrated in Figure 1 of the Carucel patents, reproduced below, which depicts 1) "mobile units 20 traveling on a first roadway 10," 2) "[a] plurality of moving base stations 30 [which] are disposed along one side of the roadway 10 . . . [and which] may be moved by means of a rail 35, or other suitable conveying device which may include an automotive vehicle travelling on the roadway, in the same direction as the traffic flow on the roadway 10," and 3) "a plurality of fixed radio ports 50 which are connected . . . to a telephone office connected to the wire line telephone network and referred to as a . . . gateway office 60 [which] forms the interface between the mobile telecommunication system and the wire line telephone network." *Id.* at 3:66-4:28.



Illustrative claim 22 of the '904 patent recites:

> 22. An apparatus adapted to move in accordance with a movement of a mobile unit moving relative to a plurality of fixed radio ports, the apparatus comprising:

> a receiver adapted to receive a plurality of signals, each of the plurality of signals transmitted from each of the plurality of fixed radio ports within a frequency band having a lower limit greater than 300 megahertz;
>
> a transmitter adapted to transmit, within the frequency band, a resultant signal to the mobile unit in accordance with at least one of the plurality of signals; and
>
> a processor adapted to maximize an amount of transferred information to the mobile unit by evaluating a quality of each of the plurality of signals transmitted from the plurality of fixed radio ports.

B

Carucel brought patent infringement lawsuits against Volkswagen Group of America, Inc. ("Volkswagen") and Mercedes-Benz USA, LLC ("Mercedes-Benz") in the U.S. District Court for the Northern District of Texas, asserting all four Carucel patents. Volkswagen and Mercedes-Benz then filed petitions for several *inter partes* review ("IPR") proceedings of all of the Carucel patents, which were instituted by the Board. A third-party organization, Unified Patents, Inc. ("Unified"), also obtained institution of an IPR of certain claims of the '023 patent.

In their petitions seeking institution of IPRs, Volkswagen and Mercedes-Benz set out various obviousness combinations, based on (as pertinent to here) primary prior art references U.S. Patent Nos. 5,559,865 ("Gilhousen865"), 5,519,761 ("Gilhousen761"), and 5,276,686 ("Ito").[1] Gilhousen865 and Gilhousen761, which share

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[1] Unified's grounds for unpatentability were obviousness combinations involving primary references U.S. Patent Nos. 5,422,934 ("Massa") and 4,748,655

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