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Heacock et al.

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(54) **BINOCULAR HEAD MOUNTED DISPLAY SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Related U.S. Application Data

(63) Continuation of application No. 08/133,518, filed on Oct. 7, 1993, now abandoned.

(51) **Int. Cl.⁷** **G09G 5/00**

(52) **U.S. Cl.** **345/8; 345/7**

(58) **Field of Search** 345/7, 8, 9; 358/88, 358/92; 359/13, 630, 631, 632, 633, 466, 472

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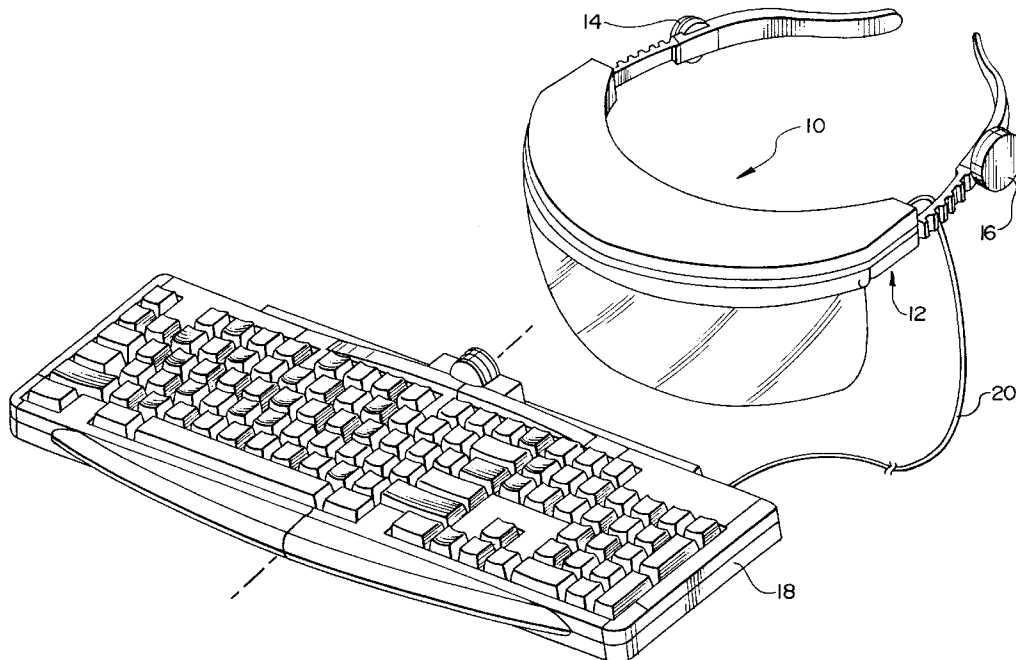
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(57) **ABSTRACT**

A binocular head mounted display unit utilizing a single display and binocular optical system is shown for projecting an enlarged image of displayed information in the direct line of sight and central field of view of each of the user's eyes, while maintaining the user's peripheral vision free from obstruction to allow the user to selectively focus on the virtual image or not. The binocular optical system directs the user's eyes inward at an angle that is natural for a person viewing an object at a distance that is less than infinity. Further, the binocular optical system automatically compensates for variations in the interpupillary distances of various users, wherein those variations may be as great as one inch. This head mounted display unit is suitable for a variety of applications, including virtual reality applications, as well as a display for a compact portable computer.

45 Claims, 15 Drawing Sheets



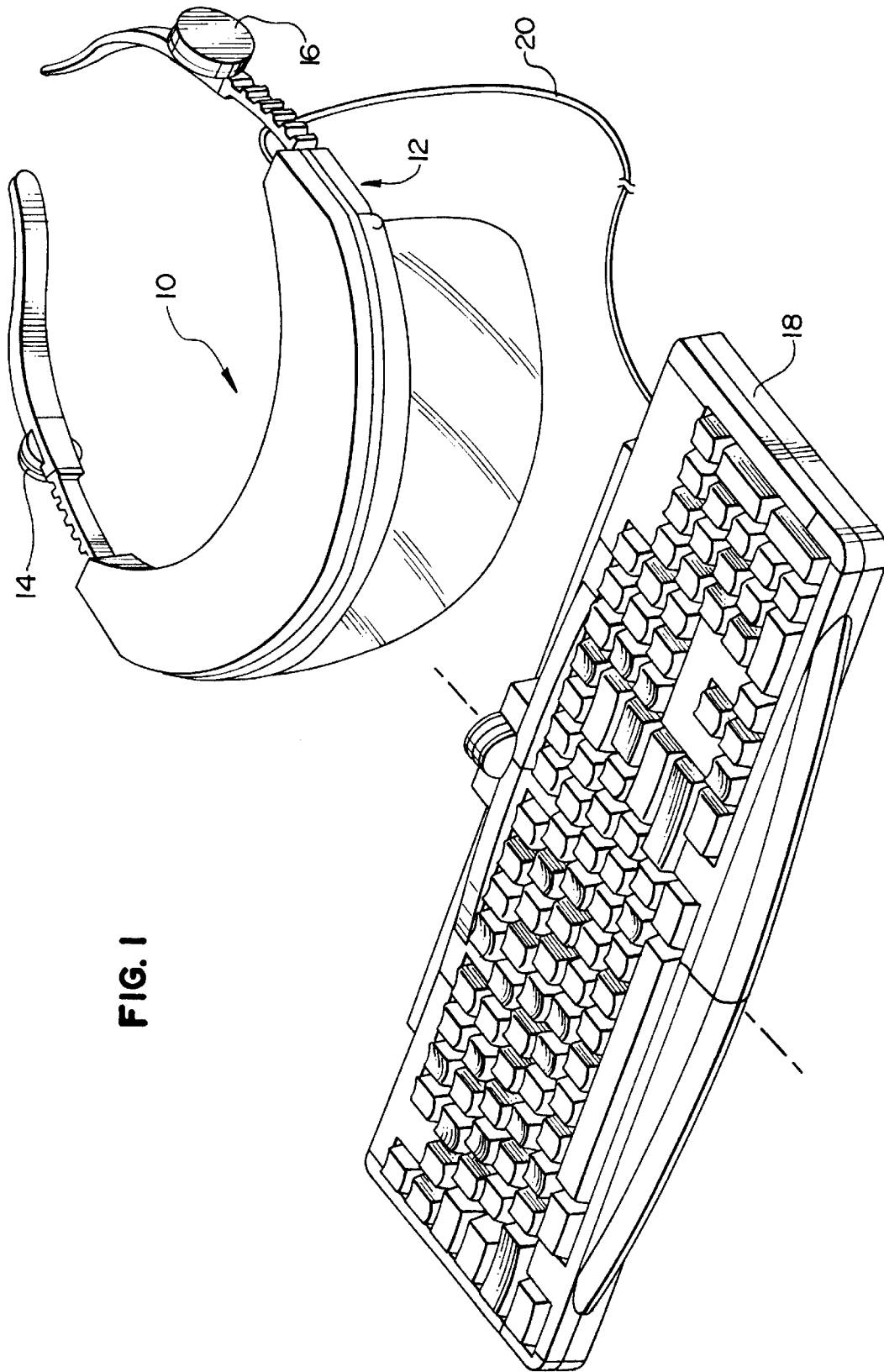
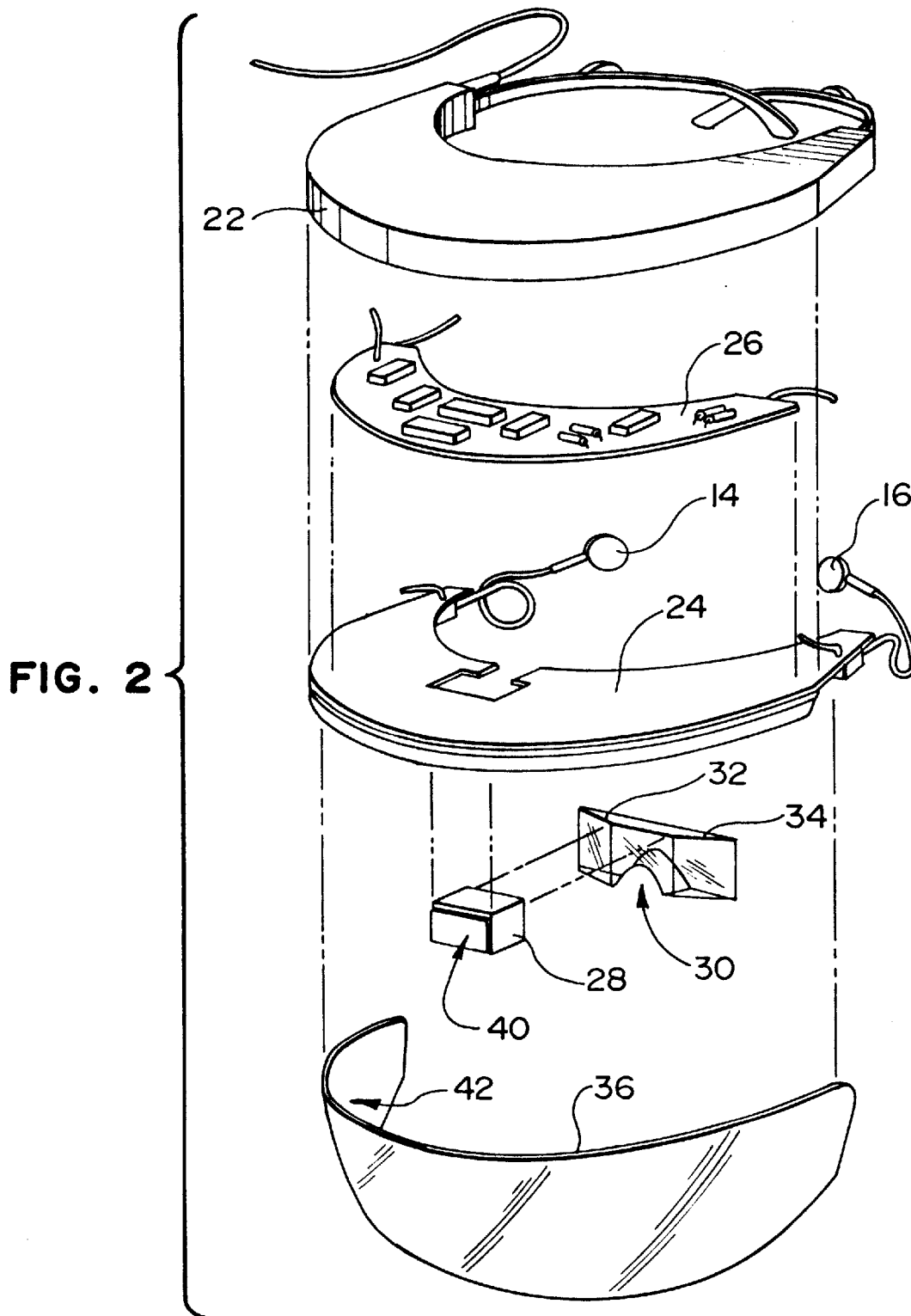
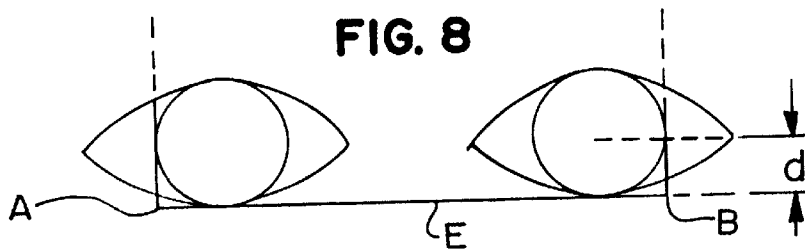
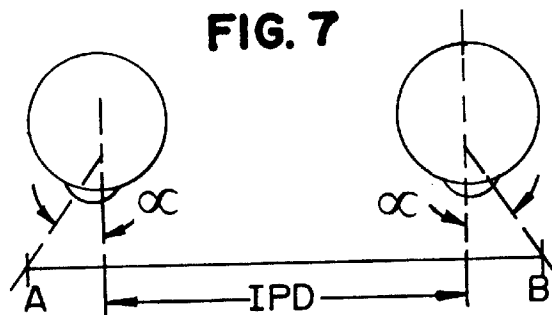
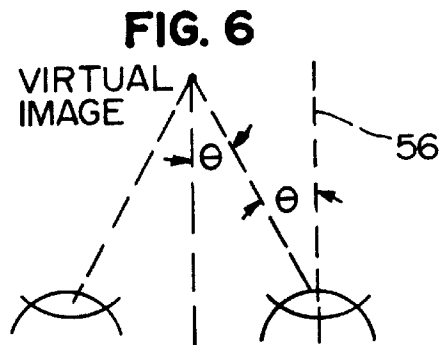
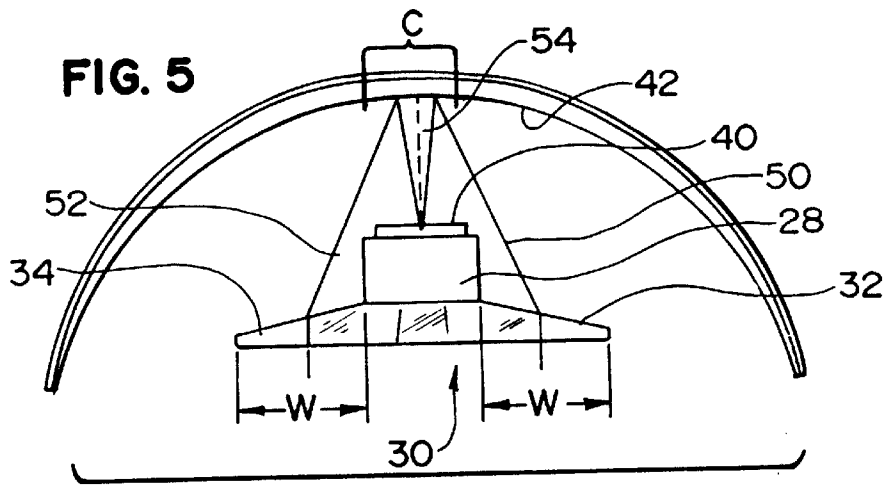


FIG. 1





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