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# United States Patent [19]

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Schofield et al.

[45] Date of Patent: **Sep. 23, 1997**

[54] **REARVIEW VISION SYSTEM FOR VEHICLE INCLUDING PANORAMIC VIEW**

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[73] Assignee: **Donnelly Corporation**, Holland, Mich.

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[21] Appl. No.: **445,527**

[22] Filed: **May 22, 1995**

### Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 23,918, Feb. 26, 1993, Pat. No. 5,550,677.

[51] Int. Cl.<sup>6</sup> ..... **B60Q 1/00**; G09F 9/00

[52] U.S. Cl. .... **340/461**; 340/435; 340/903; 348/118; 348/148

[58] Field of Search ..... 340/435, 436, 340/901, 903, 461; 348/118, 148

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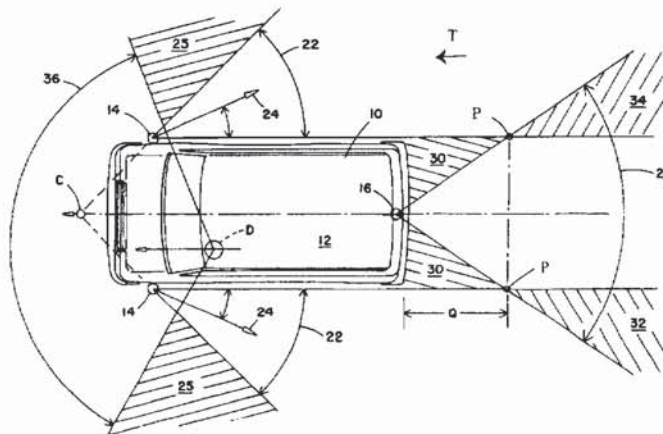
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### [57] ABSTRACT

A rearview vision system for a vehicle includes at least one image capture device directed rearwardly with respect to the direction of travel of the vehicle. A display system displays an image synthesized from output of the image capture device. The display system is preferably contiguous with the forward field of view of the vehicle driver at a focal length that is forward of the vehicle passenger compartment. A plurality of image capture devices may be provided and the display system displays a unitary image synthesized from outputs of the image capture devices which approximates a rearward-facing view from a single location, such as forward of the vehicle.

**54 Claims, 7 Drawing Sheets**



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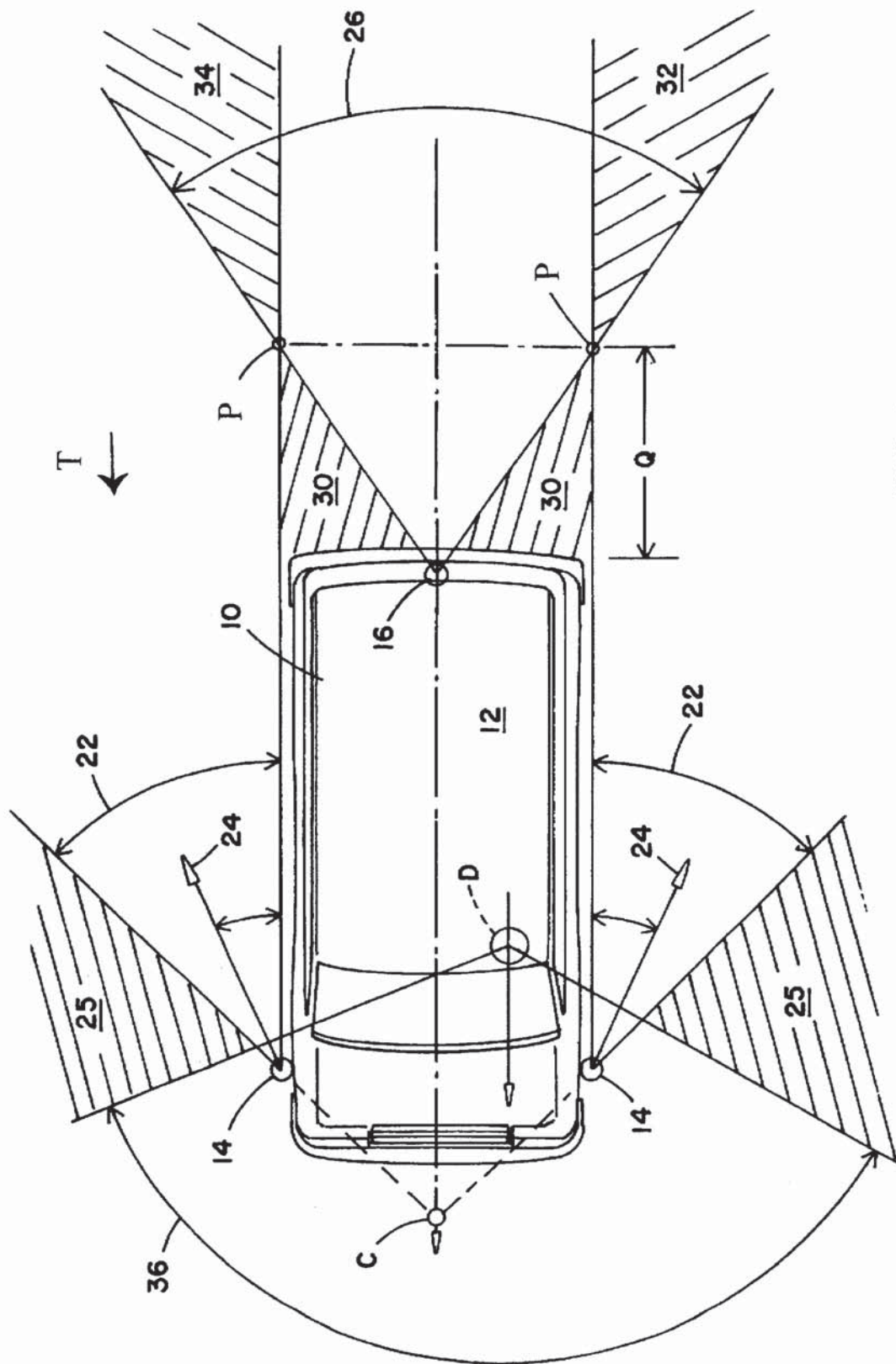


FIG. 1

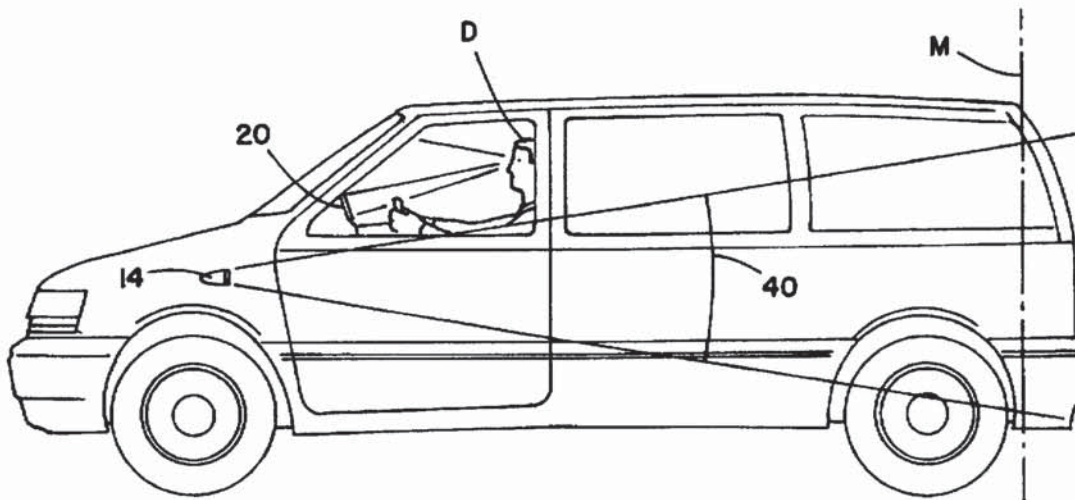


FIG. 2

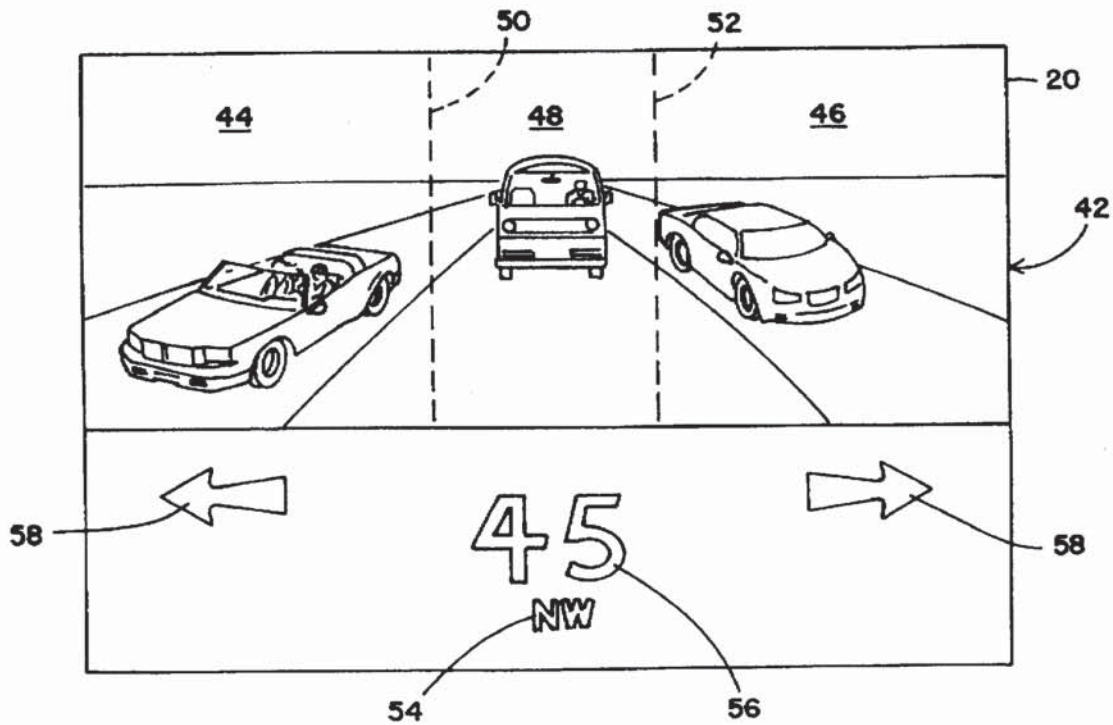


FIG. 3

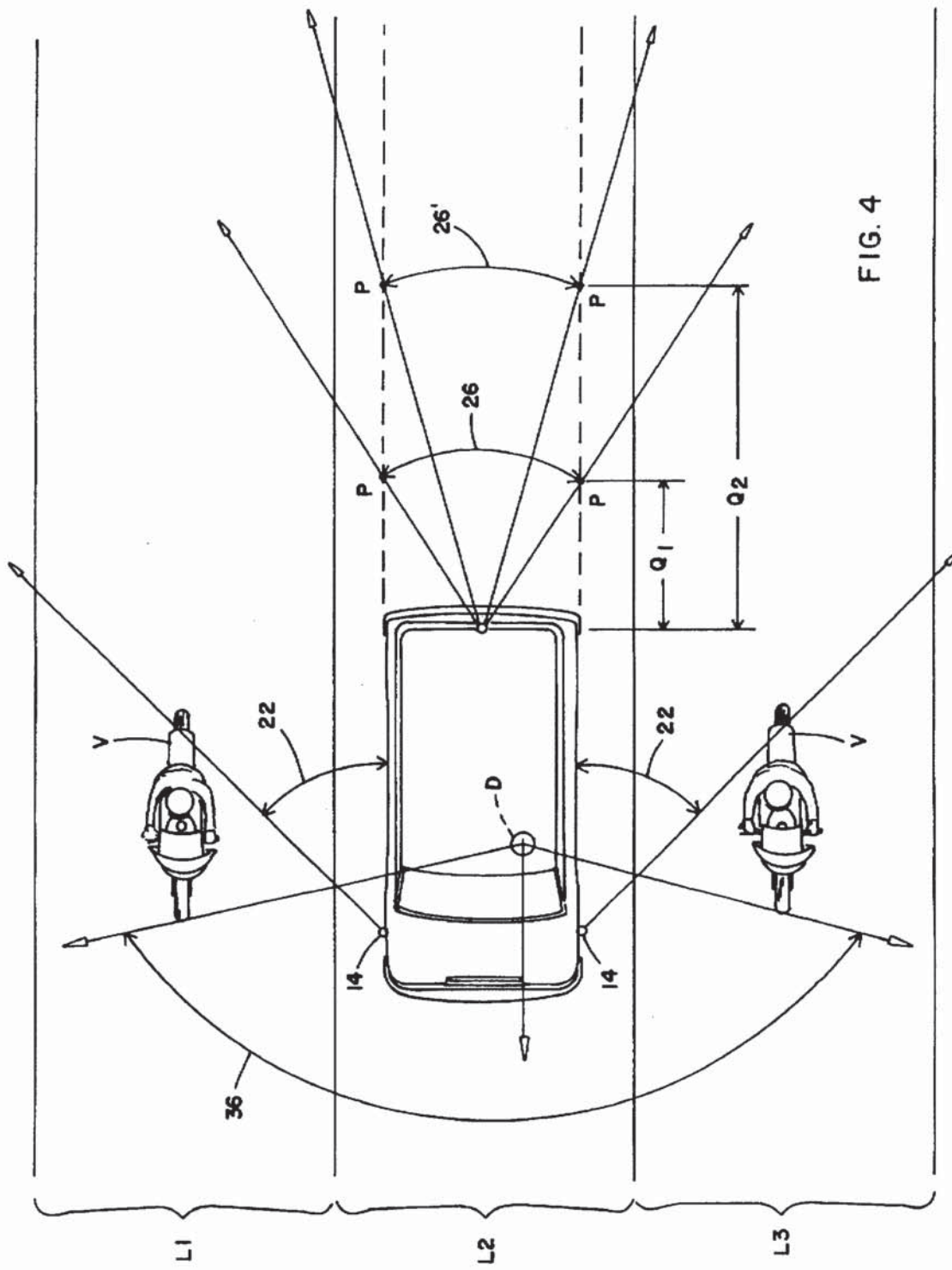


FIG. 4

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