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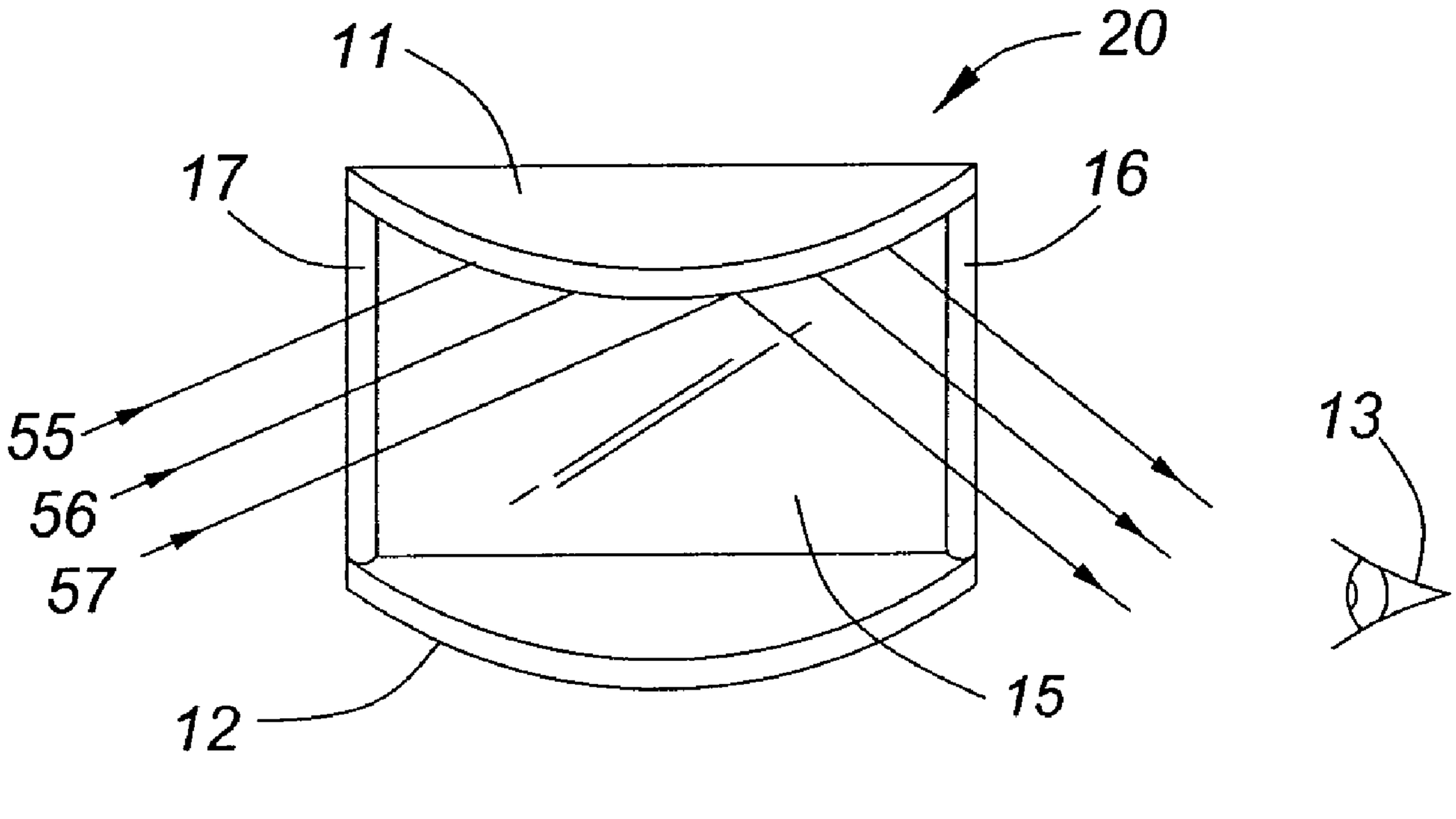
(54) Titre : ENSEMBLE A MIROIR DE SAISIE D'IMAGE SANS DISTORSION
(54) Title: DISTORTION FREE IMAGE CAPTURE MIRROR ASSEMBLY



(57) Abrégé/Abstract:
A distortion free image capture mirror assembly, and more particularly one which can be associated with side view mirrors for use by drivers on all type of vehicles. The distortion free image capture mirror assembly includes a support or housing, a distortion free mirror, and image channeling horizontal surfaces in the form of an image channeling awning disposed above the distortion free mirror, and an image channeling sill mounted below the distortion free mirror. In addition, side beams to the right and left sides of the distortion free mirror are provided. The two horizontal surfaces will serve to eliminate distracting background view and direct or channel the image from the critical blind spot area with a clear non-distorted view toward the driver.

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ABSTRACT OF THE DISCLOSURE

A distortion free image capture mirror assembly, and more particularly one which can be associated with side view mirrors for use by drivers on all type of vehicles. The distortion free image capture mirror assembly includes a support or housing, a distortion free mirror, and image channeling horizontal surfaces in the form of an image channeling awning disposed above the distortion free mirror, and an image channeling sill mounted below the distortion free mirror. In addition, side beams to the right and left sides of the distortion free mirror are provided. The two horizontal surfaces will serve to eliminate distracting background view and direct or channel the image from the critical blind spot area with a clear non-distorted view toward the driver.

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DISTORTION FREE IMAGE CAPTURE MIRROR ASSEMBLY

TECHNICAL FIELD

The object of this invention is to provide for a distortion free image capture mirror assembly, and more particularly one which can be associated with side view mirrors for use by drivers on all type of vehicles.

BACKGROUND OF THE INVENTION

Many drivers have had a close call at the "Blind Spot ", the area where cars or other vehicles are not typically visible in a rear-view mirror or a side view mirror. My prior US patent 5,594,594 shows an approach for dealing with this problem. Other prior art is set forth in the foregoing patent. However, when the various designs of the prior art are implemented they tend to have distracting background views, and fail to channel the image from the critical blind spot area with a clear non-distorted view towards the driver.

OBJECTS AND SUMMARY OF THE INVENTION

An important object of this invention is to provide a device for viewing the blind spot which is simple and inexpensive to implement to give a driver a greater degree of safety.

More particularly, it is an object of the present invention to provide a distortion free image capture mirror assembly which will serve to eliminate distracting background views and direct or channel the image from the critical blind spot area with a clear non-distorted view toward the driver.

The present invention is an image capture mirror assembly including a distortion free mirror and image channeling flaps above and below the mirror, the flaps being almost any shape imaginable, for example: rectangular, circular, triangular, elliptical, etc.

Generally speaking, the present invention may be considered as providing a distortion free image capture mirror which may be used with an automotive side view mirror for capturing an image from an area representing a blind spot for a driver of a vehicle fitted with the distortion free image capture mirror, the distortion free image capture mirror comprising a relatively flat background mirror, an image channeling awning disposed above the background mirror with respect to an intended use orientation of the distortion free image capture mirror and an image channeling sill mounted below the background mirror with respect to the intended use orientation, portions of the image channeling awning and the image channeling sill extending away from the background mirror for such a distance as to in use eliminate a distracting background view and channel an image from the blind spot area towards the driver to provide a clear non-distracted view, the awning including an obtuse angle with the background mirror.

These two horizontal surfaces and two side beams for image channeling will serve to eliminate distracting background view and direct or channel the image from the critical blind spot area with a clear non-distorted view toward the driver.

The image channeling awning, sill, and/or beams can be augmented with bright colors inside and around the edges. They can be made with non-reflecting light weight materials such as plastic, rubber, tile, aluminum, durable cardboard, light metal etc.

The objects set forth above and other objects and advantages of the present invention will be more fully understood after a consideration of the following detailed description taken in conjunction with the accompanying drawings in which preferred modes of the present invention are illustrated.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1A shows a first embodiment of the distortion free image capture mirror assembly of this invention.

FIG. 1B shows a second embodiment of the distortion free image capture mirror assembly of this invention.

FIG. 1C shows a third embodiment of the distortion free image capture mirror assembly of this invention.

FIG. 1D shows a fourth embodiment of the distortion free image capture mirror assembly of this invention.

FIGS. 2A and 2B shows side and top views, respectively, of a first mounting assembly supporting the third embodiment adjacent a typical side view mirror of an automobile.

FIG. 2C shows a perspective view of the first mounting assembly carrying an embodiment of this invention similar to that shown in FIG. 1B, but without the beam at the apex of the triangles.

FIG. 2D shows a top view of the second mounting assembly carrying a fifth embodiment of the distortion free image capture mirror assembly of this invention, this embodiment having the semi-heart shaped awning and sill of FIGS 1C and 1D, but not having the swivel posts.

FIG. 2E shows a top view of the modified second mounting assembly carrying a sixth embodiment of the distortion free image capture mirror assembly of this invention, this embodiment having a semi-circular shaped awning and sill.

FIG. 2F shows a top view of the modified second mounting assembly carrying a seventh embodiment of the distortion free image capture mirror assembly of this invention, this embodiment having a rectangular shaped awning and sill.

DETAILED DESCRIPTION

A distortion free image capture mirror assembly of this invention is shown in FIG. 1A. This assembly, which is indicated generally at 20, is provided with a distortion free mirror 15, which is a regular plain mirror made from glass, plexiglass, acrylic or other material with a distortion free reflecting surface. The light ray lines 55, 56, 57, which indicate the direction of the light traveling from the blind spot area, get reflected by the distortion free mirror 15 and then exit toward the driver eyes 13. A panoramic view of the blind spot is therefore achieved. The image rays can enter at any angle and likewise get reflected by the distortion free mirror 15. On top of the distortion free mirror 15 is an image channeling awning 11 and at the bottom is an image channeling sill 12. On the right side of the mirror 15

is a beam 16 and on the left side is a beam 17. The surfaces of the image channeling awning 11, image channeling sill 12, and beams 16 and 17 can be a glass fabrication, or it can be replaced with light weight materials such as plastic, rubber, aluminum, tile, durable cardboard, light metal etc. These surfaces will serve to eliminate distracting background views and direct or channel image from the critical blind spot area toward the driver. The shape of image channeling awning 11 and sill 12 can assume an infinite numbers of forms ranging from rectangular, triangular, circular, etc., limited only by the imagination. Bright colors inside and around the edges can be employed, either with reflecting or with non-reflecting material. The image channeling structures 11, 12, 16, and 17 can be provided with light sources with adjustable brightness or intensity, or bright colors with thick liquid substance, or paint materials, that's contained or sealed inside a glass, plastic or clear materials housing unit.

FIG. 1B is shown an alternate embodiment of a configuration of an image capture mirror assembly 30 which will also operate according to FIG. IA. There is shown a shelter box 10 of the image capture mirror assembly 30 including distortion free mirror 15, the shelter box including top and bottom image channeling flaps 11 and 12 of a triangular shape, the assembly 30 also including beams 16 and 17 on the right and left sides, and at the front is a further apex beam 18. The triangular flaps can have angles ranging from 35° up to and including 70°. The two front surface of triangular shelter box unit flaps 11 and 12 can have different combination of angles such as one side with 45° and another side with 30°. To achieve the optical image from the blind spot area an image would enters from the one-side of the shelter box opening, get reflected from the distortion free mirror 15 and exit the other side of the shelter box. Beams 16 and 17 act as side support beams as well as angles beams and the front apex beam 18 serves to eliminate distracting background views and to allow the eyes to focus and capture the image instantly. Beams 16, 17, 18 and the surrounding image channeling structures 11, 12 can incorporate light or laser sources with adjustable brightness or intensity for nighttime use. It may apply to other shapes besides the triangle mentioned here.

FIG. 1C shows an alternate embodiment of configuration which will operate according to FIG. 1A. This image capture mirror assembly, which is indicated generally at 21, includes a base assembly or housing 35 which supports a distortion free mirror 15, a sill 12 on the bottom, on the right side a beam 16, and on left side a beam 17, all of which are fixed to the housing 35 in any conventional manner, for example by glue, epoxy or paste. On the top of the assembly 15, 12, 16, and 17 is awning 33 which has individual up and down adjustment. Thus, a swivel post 31 is adapted to provide rotational movement with tightening knob 38. The image capture mirror assembly 21 is designed for mounting near the side view mirror or below the side view mirror, on mid-size vehicles up to and including commercial vehicles.

FIG. 1D. shows a semi-heart shaped configuration of the flaps of an image capture mirror assembly 40 which will operate according to FIG. 1A, the image capture mirror assembly 40 including a housing 45. On the back of the housing is distortion free mirror 15, and on top is awning 43 which is connected to the housing via a swivel post 48 with tightening knob 47. At the bottom is sill 44 which is connected to the housing via a swivel post 49 and tightening knob 47. As can be seen, both the awning and the sill have individual up and down adjustment. On the right side is a beam 16 and on left side is a beam 17, which beams are secured to the housing 45. Image capture mirror assembly 40 is designed to be employed in all positions.

FIGS. 2A and 2B show side and top views of the image capture mirror assembly 21 on top of a typical side view mirror 6. On the rear of the housing 35 is a support plate 64. In the middle of support plate 64 is ball joint 61, and screws 68, which are connected to auxiliary arm attachment unit 66, which has two ball joint holding plates 67, two sliding plates 62, and two bolts 65 for locking the position of the plates 62. A further ball joint 61 is at the bottom, and is connected to inverted J shaped clamp 59, with two screws 69 serving as the tightening mechanism. This style is ideal for thick or thin areas of metal panel on the door of a vehicle. This method of attachment is from the inside of the vehicles.

FIG. 2C shows the triangle configuration of the image capture mirror assembly 30 illustrated in FIG. 1B carried by an auxiliary arm attachment unit 66,

and inverted J shaped clamps 59. This assembly will mount on a vehicle in the same manner at the assembly shown in FIGS. 2A and 2B.

FIG. 2D. shows the semi-heart shape configuration of the image capture mirror assembly 40 of the designs shown in FIG. 1D. This mirror assembly has a support plate 72 connected via ball joint 71 and screws 73 to a telescoped arm attachment unit 76, with the locking pin 78 and the tightening knob 74 in the middle for lock in position, and bolts 75 is connected between telescoped arm unit 76 and J shaped clamp 59.

FIG. 2E shows a semi-circle configuration of image capture mirror assembly 50. On the back of housing 72 is ball joint 71 and screws 73, which connect to telescoped arm attachment unit 76 with the locking pin 78, which operate according FIG. 2D. A clip on attachment unit 79, including bolts 75 and screws 77, and C-shaped clips 80 which have a rubber pad or soft material which contacts the vehicle body. This method of attachment is preferred where there is little or no metal area of anchoring. This attachment is from the outside of the vehicles.

FIG. 2F. shows a rectangular configuration of an image capture mirror assembly 60, which will operate according to FIG. 1 and a telescoped arm attachment unit 76, which will operate according to FIG. 2E.

FIG. 2C to FIG. 2F show just some of the possible design shapes of this invention. The auxiliary attachment units shown above are just some samples of attachment units and many other styles of attachment units can be incorporated or employed with this invention.

A typical side view mirror housing can be modified to incorporate the image capture mirror assembly of this invention, either above or below the conventional side view mirror. Thus the housing for the conventional side view mirror can be modified to incorporate the image capture mirror assembly of this invention. It would be adjustable in all direction and hence can be tilted up or down or side ways as is known. Alternatively, the image capture mirror assembly could be positioned on top of side view mirror of a motorcycle.

As can be seen from the above, the mirror will provide a better image of the blind spot. In addition, the "awning" will prevent the accumulation of snow or sleet on the mirror.

What is claimed is:

CLAIMS:

1. A distortion free image capture mirror which may be used with an automotive side view mirror for capturing an image from an area representing a blind spot for a driver of a vehicle fitted with the distortion free image capture mirror, the distortion free image capture mirror comprising a relatively flat background mirror, an image channeling awning disposed above the background mirror with respect to an intended use orientation of the distortion free image capture mirror and an image channeling sill mounted below the background mirror with respect to the intended use orientation, portions of the image channeling awning and the image channeling sill extending away from the background mirror for such a distance as to in use eliminate a distracting background view and channel an image from the blind spot area towards the driver to provide a clear non-distracted view, the awning including an obtuse angle with the background mirror.

2. A distortion free image capture mirror as claimed in Claim 1, further comprising a housing which supports the background mirror, the awning and the sill.

3. A distortion free image capture mirror as claimed in Claim 1, wherein one of the awning and the sill is adjustable.

4. A distortion free image capture mirror as claimed in Claim 1, wherein both the awning and the sill are adjustable.

5. A distortion free image capture mirror as claimed in Claim 1, wherein both the awning and the sill are semi-heart shaped.

6. A distortion free image capture mirror as claimed in Claim 1, comprising side beams provided on the right side and the left side of the background mirror.

7. A distortion free image capture mirror as claimed in Claim 1, wherein the surfaces of the awning and sill have light reflectors or materials which glow in the dark.

8. A distortion free image capture mirror as claimed in Claim 1, wherein the surrounding edges of the awning and sill are augmented with bright colors.

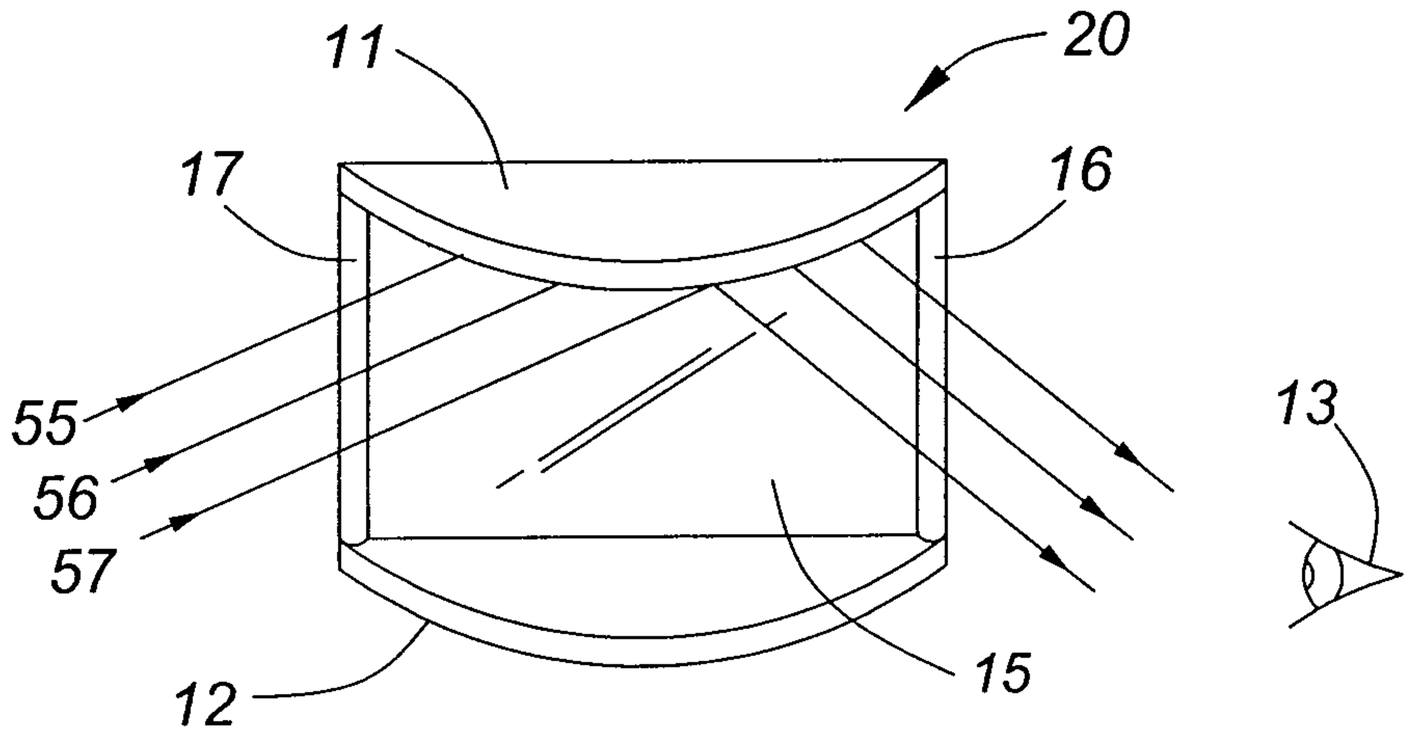


FIG. 1A

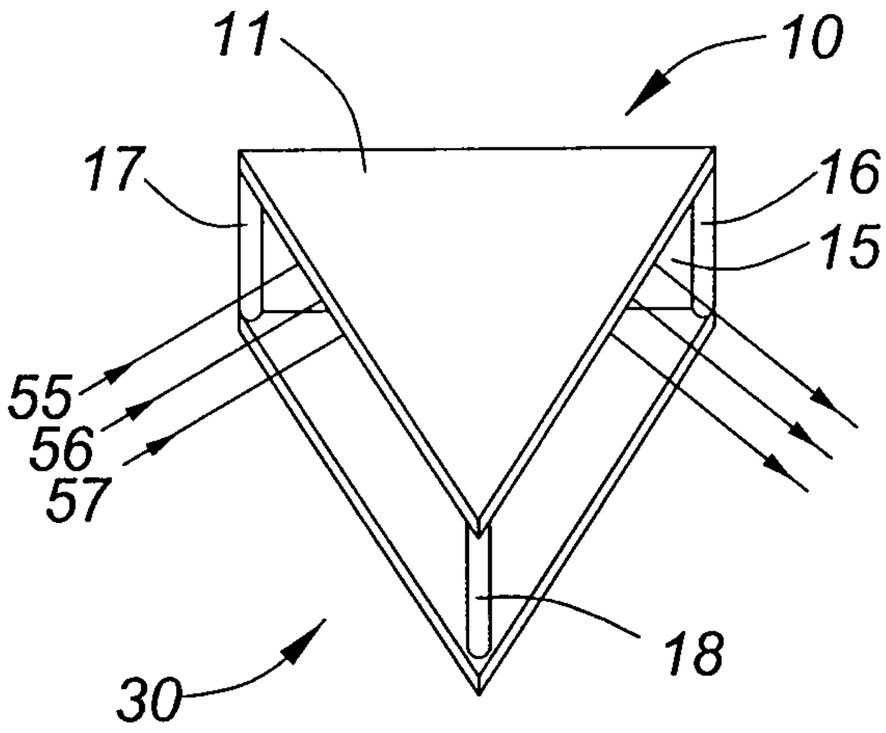


FIG. 1B

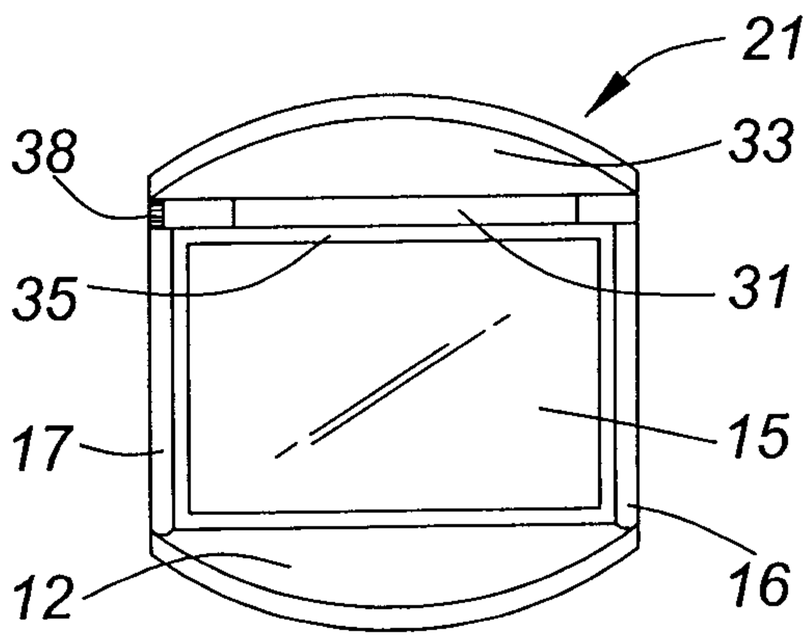


FIG. 1C

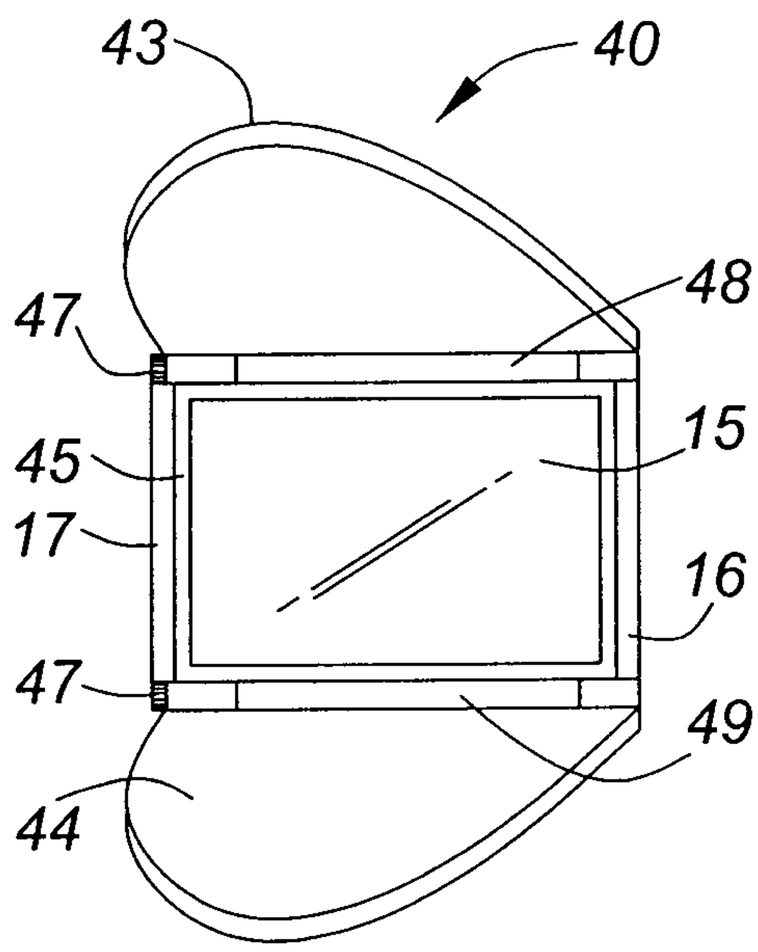


FIG. 1D

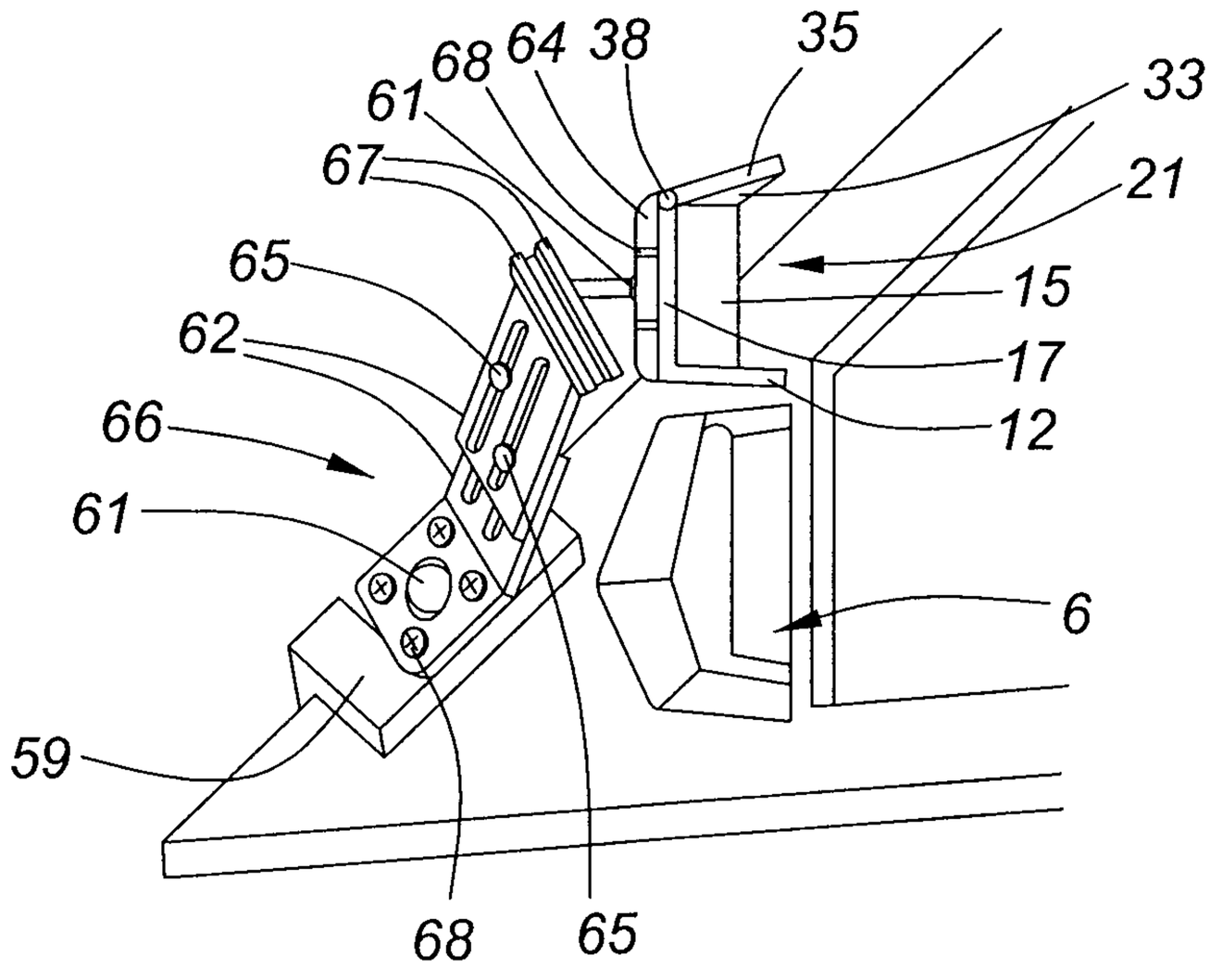


FIG. 2A

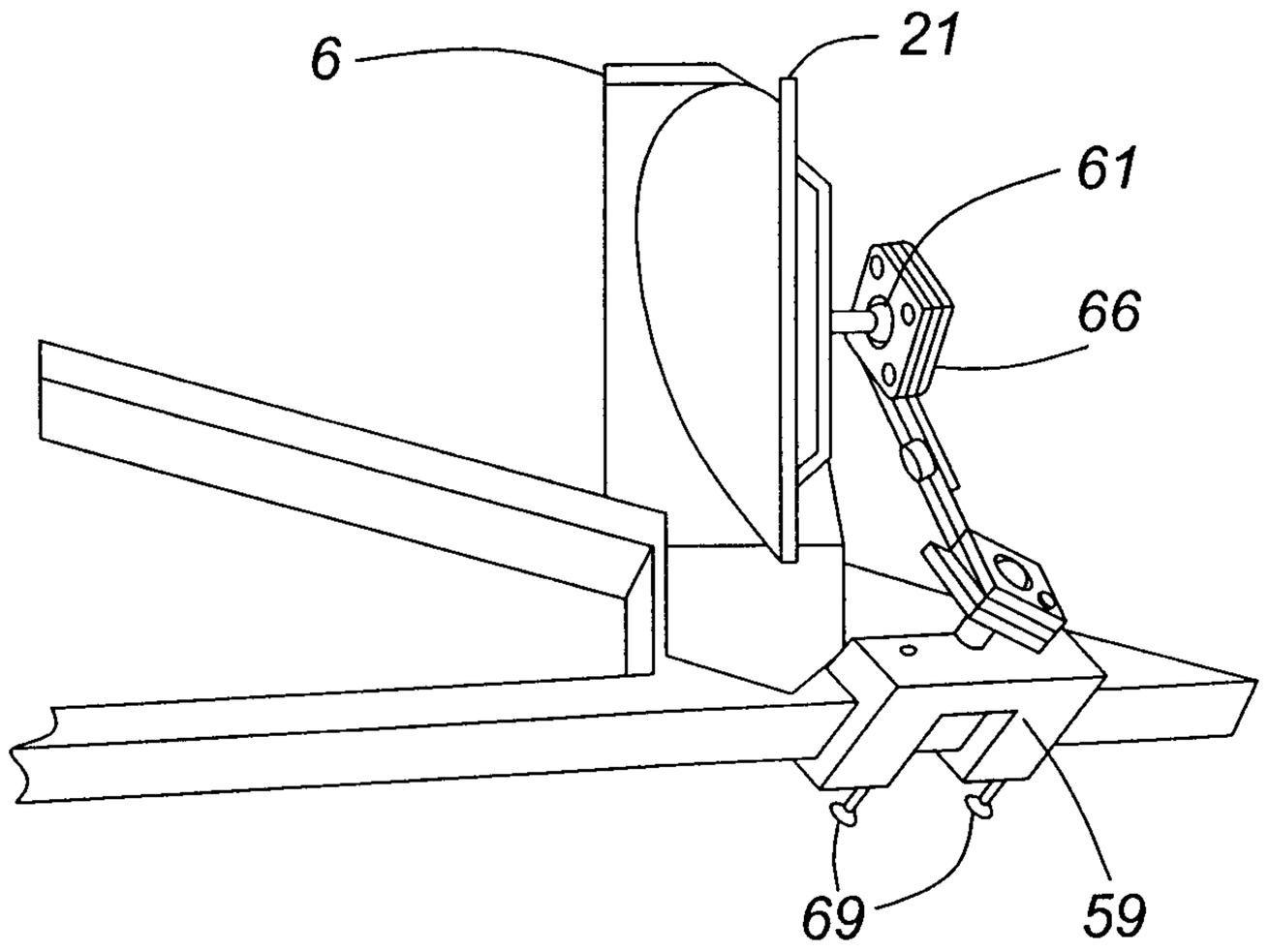


FIG. 2B

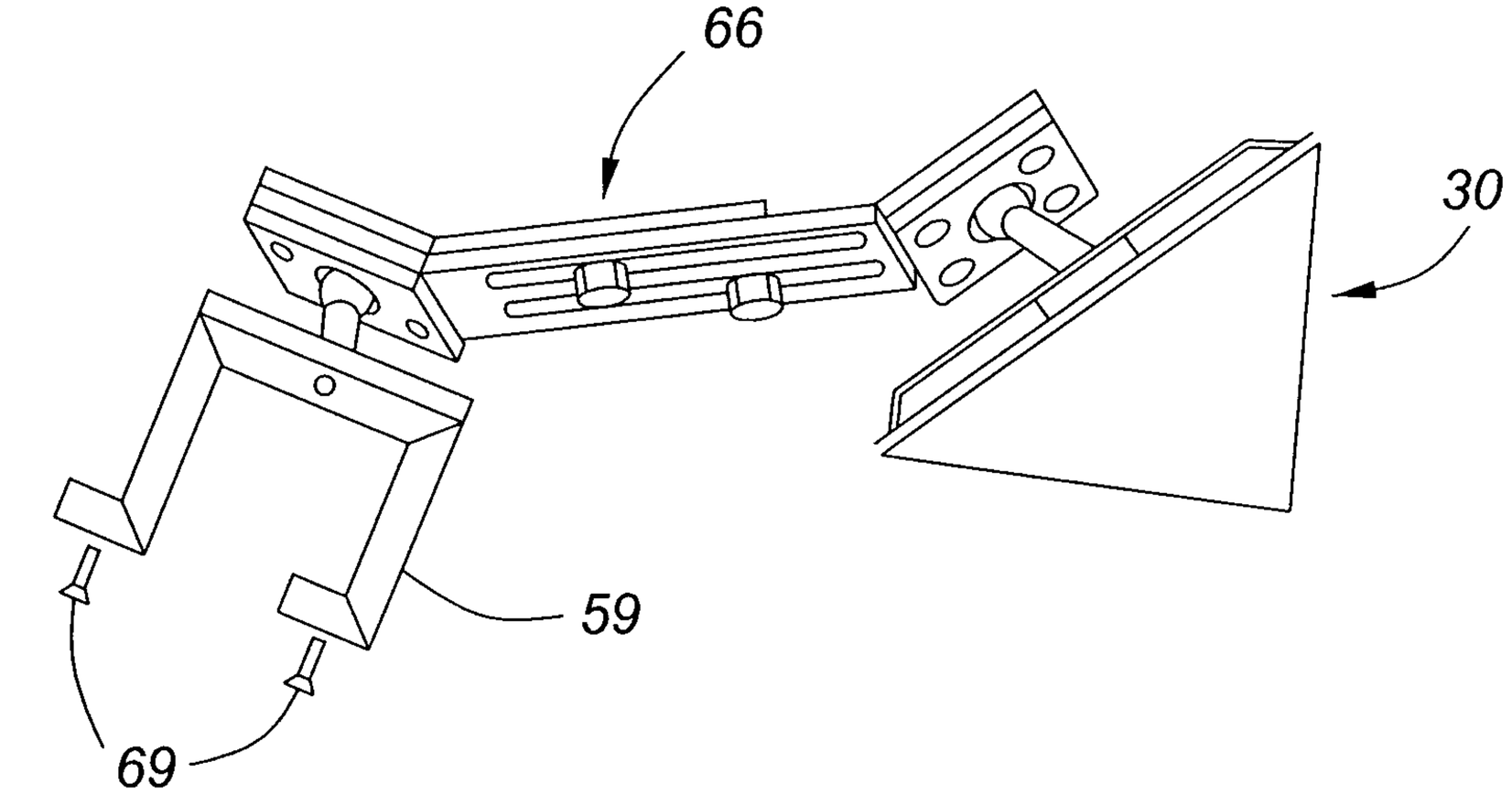


FIG. 2C

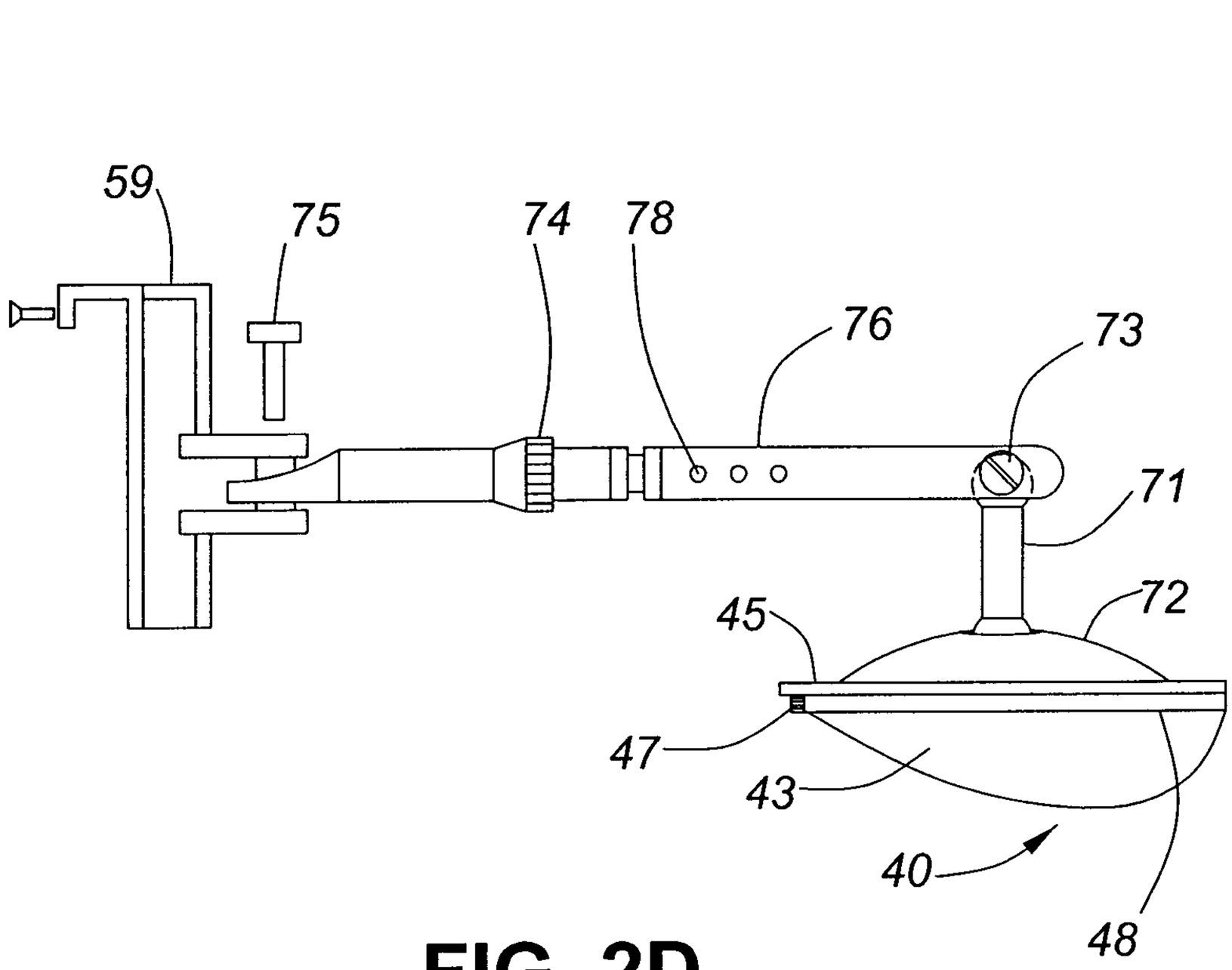


FIG. 2D

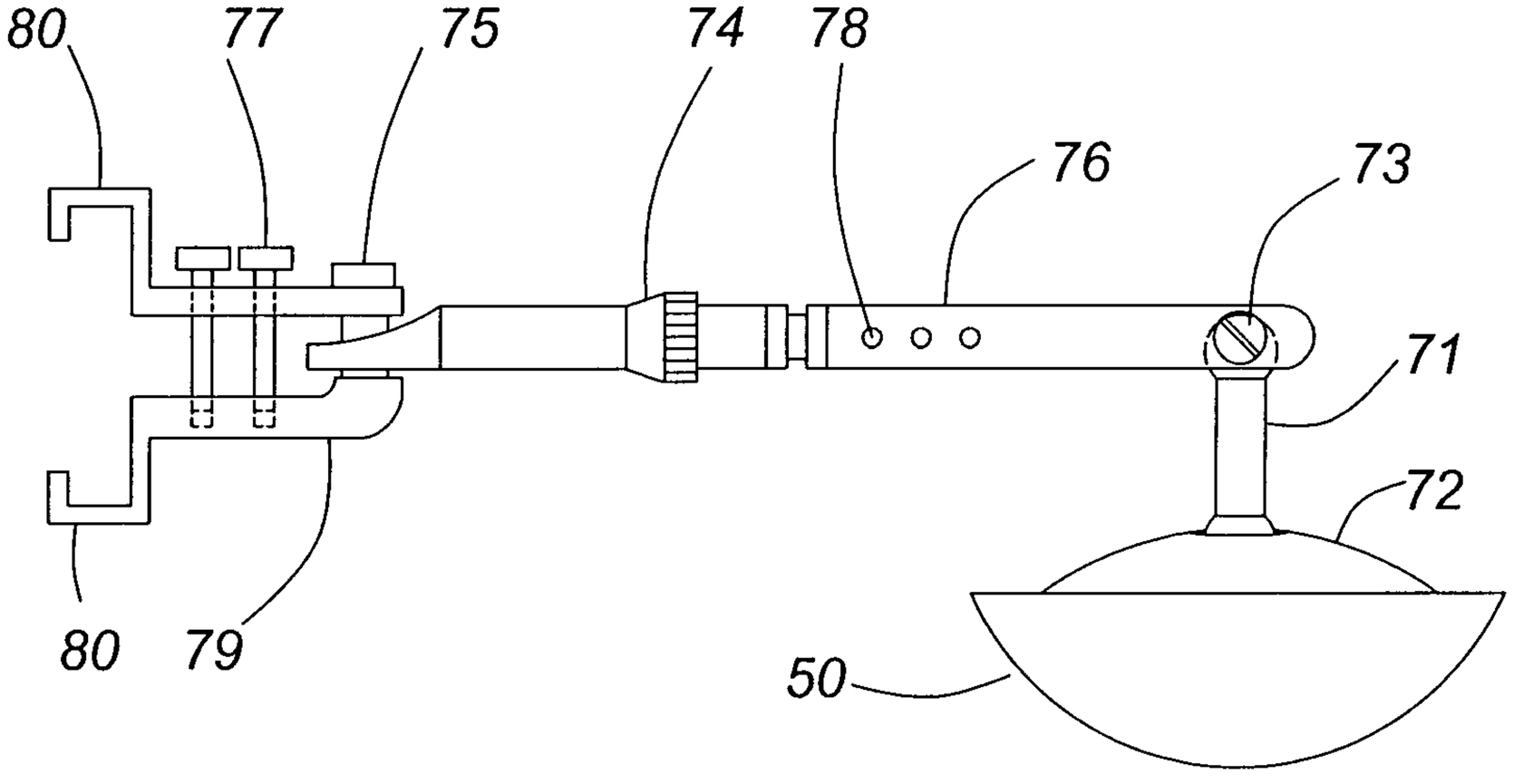


FIG. 2E

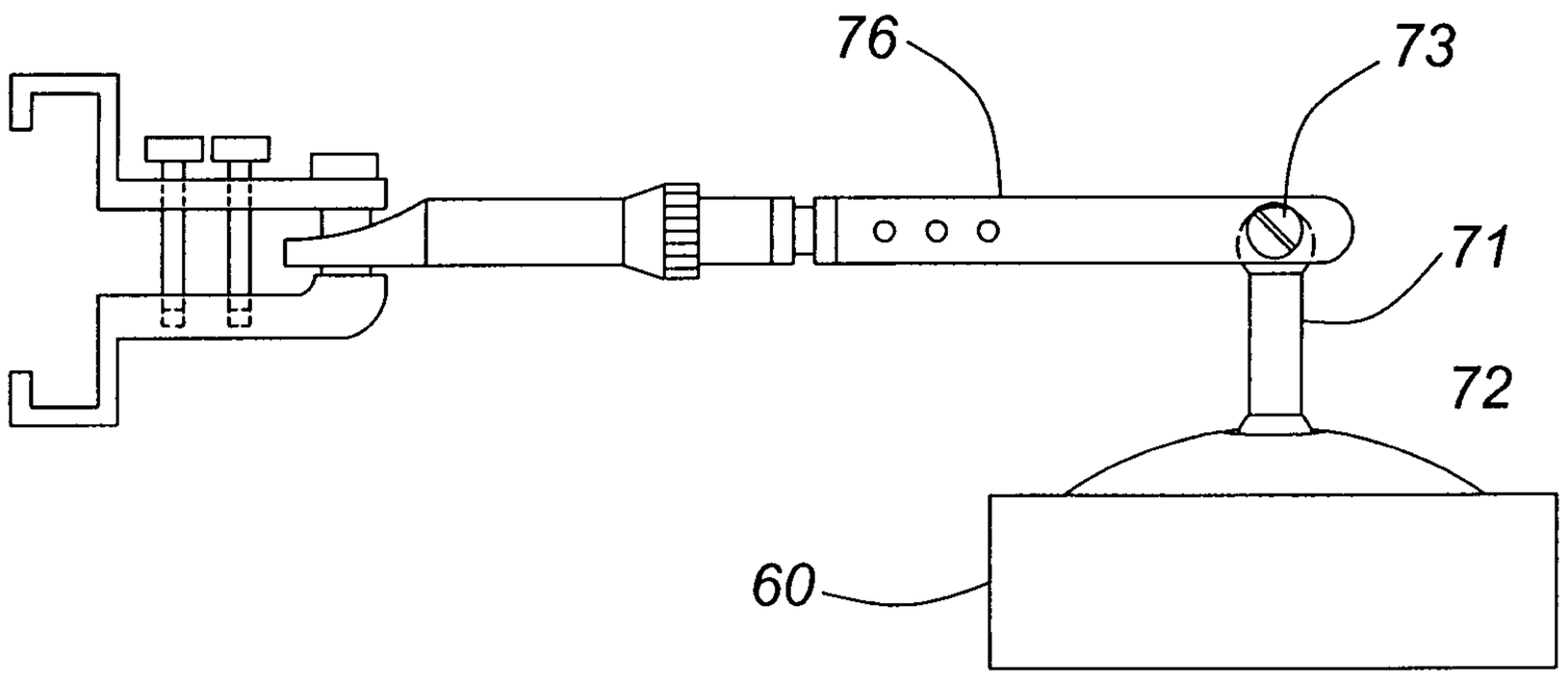
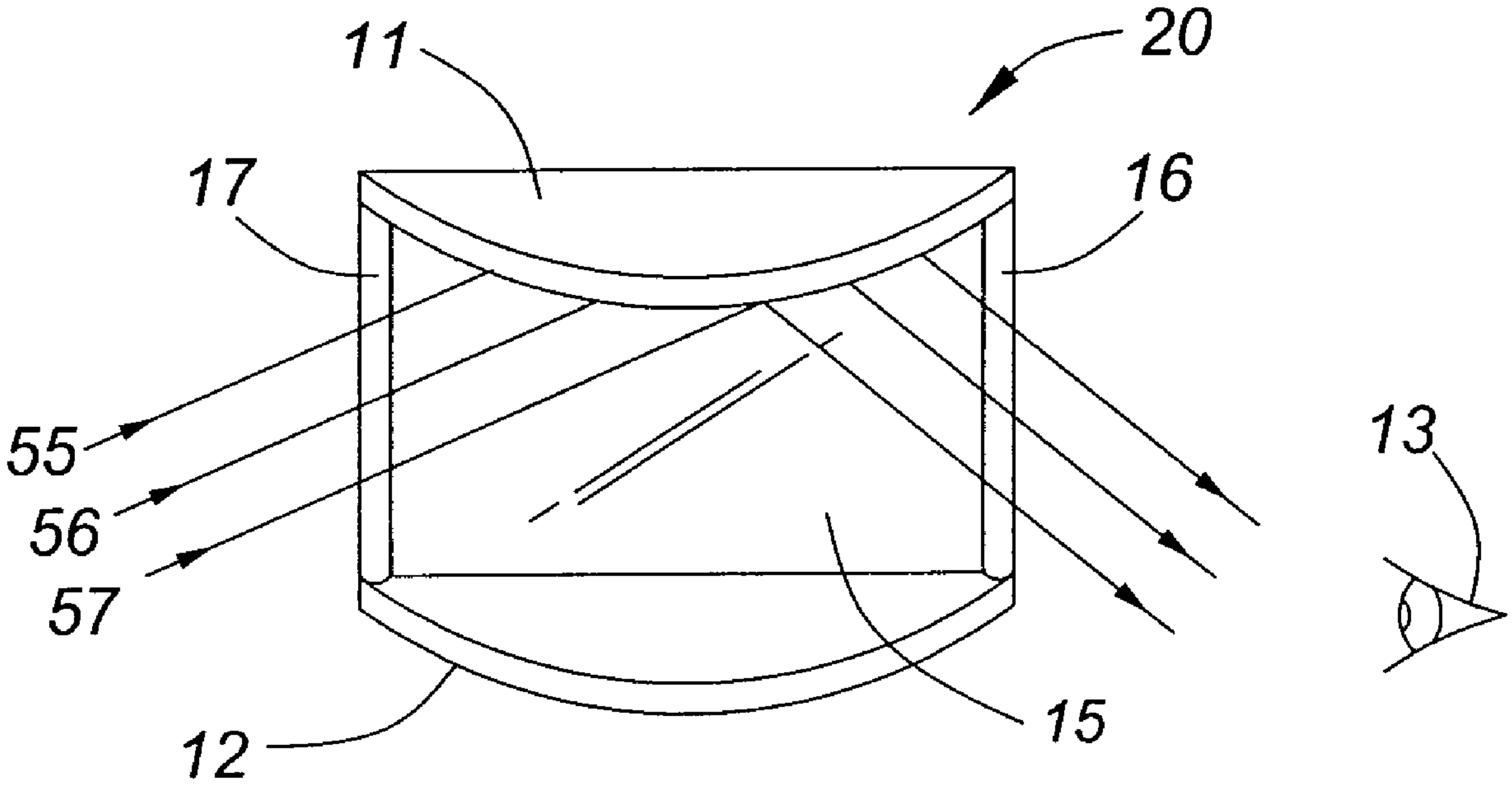


FIG. 2F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