Jan. 3, 1956 M. N. ANDERSON 2,729,316

FRAME CONSTRUCTION

Filed Jan. 19, 1953

Fig. 1.

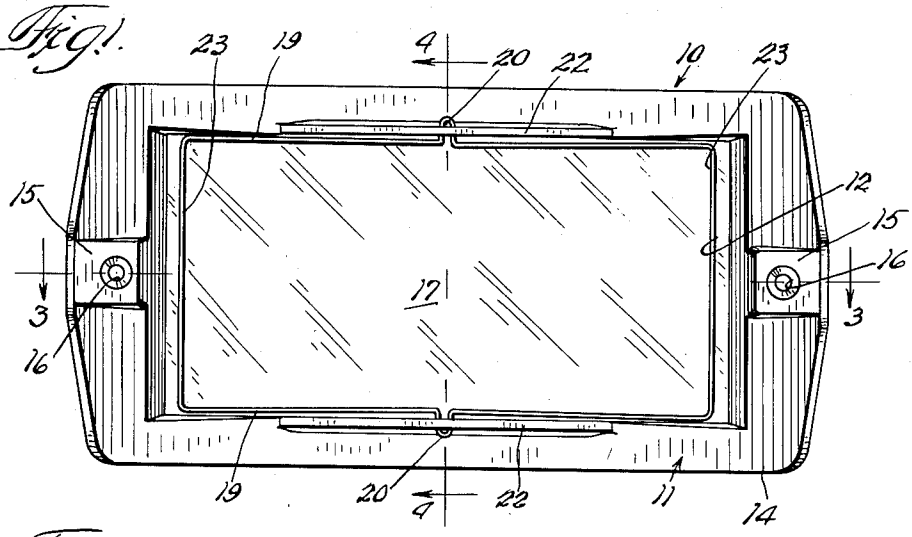


Fig. 2.

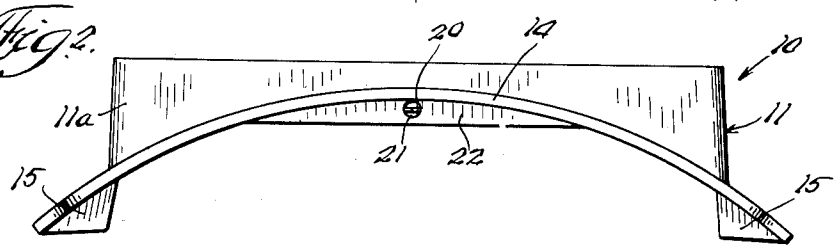


Fig. 3.

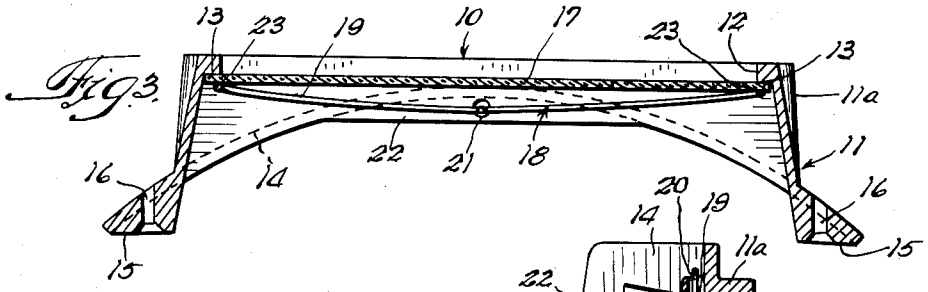


Fig. 5.

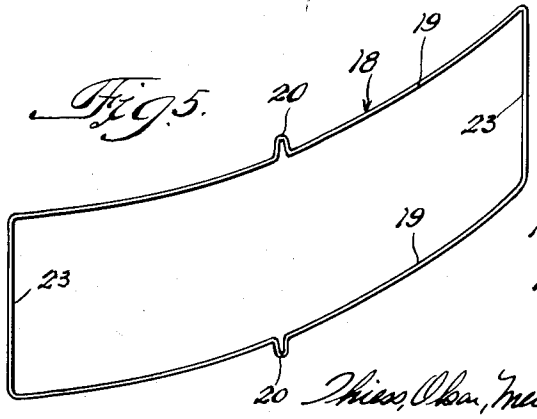
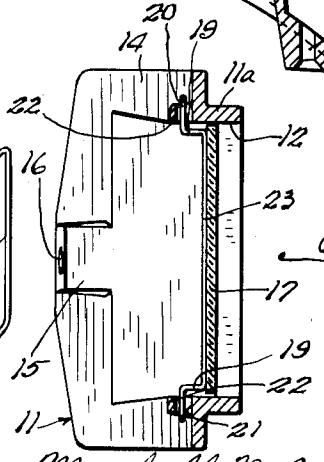


Fig. 4.



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FRAME CONSTRUCTION

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Application January 19, 1953, Serial No. 332,004

4 Claims. (Cl. 189—78)

This invention relates to a frame construction and more particularly to a means for resiliently holding a removable panel in a relatively fixed position within a frame member.

It is one of the objects of this invention to provide a frame construction having a minimum number of separate parts which may be readily assembled or disassembled with respect to one another.

It is a further object of this invention to provide a frame construction which is simple in design, effective in operation, and inexpensive to produce.

Further and additional objects will appear from the description, accompanying drawings, and appended claims.

In accordance with one embodiment of this invention a frame construction is provided comprising a frame member having an aperture of predetermined shape formed therein and having a portion of the aperture-defining edge of said frame member in the form of a ledge. Removably mounted within said frame member and in registration with the aperture formed therein is a panel of substantially the same shape as said aperture and which is adapted to rest against said ledge. Detachably mounted on said frame member is a bowed skeletal element of substantially the same shape as said panel and having portions thereof yieldably engaging said panel and urging the latter against the frame member ledge.

For a more complete understanding of this invention, reference should be made to the drawings wherein:

Figure 1 is a back elevational view of the frame construction;

Fig. 2 is a top plan view of the frame construction shown in Fig. 1;

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken along line 4—4 of Fig. 1; and

Fig. 5 is a perspective view of the panel-holding element, alone.

Referring now to the drawings and more particularly to Fig. 1, a frame construction **10** is shown which, in this instance, is adapted to be mounted on the protective mask of a welder's helmet, not shown. The frame construction **10** comprises a frame member **11** formed of a durable stiff material, such as plastic. The frame member **11** has an aperture **12** formed therein of a predetermined shape and size, which, in this instance, is shown to be rectangular, however, it is not limited to this particular shape. Portions **13** of the aperture-forming edge of the frame member **11**, which, in this instance, are one pair of opposing sides, are in the form of ledges; the function of which will be described more fully hereinafter. The frame member **11** is provided with an outwardly projecting flange **14** which extends about the entire outside periphery of the frame member. The flange **14**, as seen in Fig. 2, is bowed so as to conform to the contour of the protective mask of the welder's helmet against which it engages when mounted thereon. The mask is provided with an opening to receive the portion **11***a* of the frame member disposed forward of the flange **14**. A second

frame, not shown, of substantially the same shape as flange **14** is used in conjunction with frame member **11**, when mounting the latter in place on the mask, to effect sandwiching of the mask therebetween. Formed in flange **14** and disposed on opposite sides of aperture **12** are a pair of embossments **15** each of which is provided with a countersunk opening **16** which is adapted to receive fastening screws or bolts, not shown; the latter being used for securing the frame member **11** to the protective mask of the welder's helmet.

Positioned within the frame construction **10** and in registration with the aperture **12** thereof is a panel **17**, which is substantially the same shape as the aperture **12** and has the narrow ends thereof adapted to rest against the ledge portions **13** of the frame member, as seen more clearly in Fig. 3. The panel **17** may be of a transparent or translucent material depending upon the type of device the frame construction is mounted on.

The panel **17** is held in place against the ledge portions **13** by a resilient holding element **18**, see Fig. 5, formed of wirelike material and which is shaped to delineate an area of substantially the same shape as panel **17**, namely a rectangle. The longer sides **19** of the element **18**, in this instance, are substantially parallel and are bowed a slight amount in the same direction. Substantially centrally positioned on each of the longer sides **19** is an outwardly extending nub **20** which is adapted to engage the frame member **11** and hold the element **18** in place. The frame member **11** is provided with a pair of lug pieces **22** disposed behind flange **14** and on opposite sides of aperture **12**, as seen in Figs. 1 and 2. Each lug piece **22** is provided with an opening or socket **21** in which one of the nubs **20** of element **18** is adapted to seat. As noted in Fig. 3, the openings **21** are spaced behind the panel **17** a predetermined amount so that when the element **18** is mounted within the frame, the narrow sides **23** of the element will yieldably contact the narrow marginal edge portions of the panel and cause the element **18** to be flexed toward an unbowed position, as seen in Fig. 3. Thus the element **18** urges the panel against the ledge portions **13**. The element **18** is readily positioned within the frame member **11** by inserting one of the nubs **20** within one of the openings **21** and then flexing the long side **19** of the element toward the other side **19** until the other nub **20** slips under the adjacent lug piece and snaps into engagement with the other opening **21**.

While the frame construction, in this instance, is shown adapted for use primarily in conjunction with a welder's helmet, it is to be understood, of course, that the shape of the frame member **11** and the aperture **12** formed therein may be varied in accordance with the type of device on which it is mounted.

Thus it will be seen that a frame construction has been provided which is simple, yet durable, in construction, is easily assembled or disassembled, and provides an effective means for holding the removable panel in relatively fixed position with respect to the frame member.

While a particular embodiment of this invention is shown above, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A device of the class described comprising a frame member having an aperture formed therein and a ledge portion formed in circumjacent relation with respect to said aperture, said frame member being provided with a pair of sockets spaced from a plane formed by said ledge and on opposite sides of said aperture, a panel of substantially the same configuration as said aperture remov-

ably mounted on said frame member intermediate said ledge and a pair of sockets, said panel being in registration with said aperture and having the marginal edge portion on one surface of said panel resting against said ledge, and a skeletal nonplanar resilient element of substantially the same configuration as said panel being provided with a pair of oppositely disposed outwardly extending protuberances releasably seated within said pair of sockets, said element, when the protuberances thereof are seated within said sockets, being flexed toward a planar position and segments of said element resiliently contact the opposite surface of the marginal portion of said panel and urge said panel into positive abutting engagement with said ledge.

2. An element for use in resiliently urging the marginal portion of a panel against a ledge formed in a frame member and delimiting an aperture provided in the latter, said element comprising a resilient wirelike nonplanar body delimiting an aperture of substantially the same configuration as the aperture formed in such a frame member, said body being provided with a pair of oppositely disposed outwardly extending protuberances releasably affixable to the frame member, said body, when in affixed relation with the frame member, being flexed toward a planar position and portions of said body disposed on opposite sides of a line connecting said protuberances resiliently contacting the marginal portion of the panel and maintaining the frame member and panel in assembled relation.

3. An element for use in resiliently urging the marginal portion of a panel against a ledge formed in a frame member and delimiting an aperture provided in the latter, said element comprising a resilient wirelike body bowed in one direction and delimiting an aperture of substantially the same configuration as the aperture formed in such a frame member, and a pair of oppositely disposed outwardly projecting protuberances positioned substantially centrally on the bowed side portions of said body, said protuberances being releasably affixable to the frame member, said body, when in affixed

relation with the frame member, being flexed toward an unbowed position and portions of said body spaced from said protuberances resiliently contacting the marginal portions of the panel and maintaining the frame member and panel in assembled relation.

4. A device of the class described comprising a frame member having an aperture formed therein and a ledge portion formed in circumjacent relation with respect to said aperture, said frame member being provided with a pair of open end sockets disposed on opposite sides of said aperture and spaced from a plane formed by said ledge, the open ends of said sockets being opposite one another, a panel of substantially the same configuration as said aperture removably mounted on said frame member intermediate said ledge and pair of sockets, said panel being in registration with said aperture and having the marginal edge portion on one surface of said panel resting against said ledge, and a resilient skeletal element removably mounted on said frame member for resiliently urging said panel into abutting engagement with said ledge and retain said frame member and panel in assembled relation; said element including a wirelike concavo-convex body delimiting an aperture of substantially the same configuration as said frame member aperture and having the concave side of said body adjacent said panel, and a pair of outwardly projecting oppositely disposed protuberances provided on the portions of said body spaced the greatest distance from said panel, said protuberances being removably seated in said frame member sockets, said body being flexed toward a planar position, when said protuberances are seated in said sockets, and having portions of said body yieldably contacting the opposite surface of said panel.

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