

Sept. 25, 1934.

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1,974,432

SHIELD FOR OBSERVATION OPENINGS

Filed Sept. 20, 1933

2 Sheets-Sheet 1

Fig. 1.

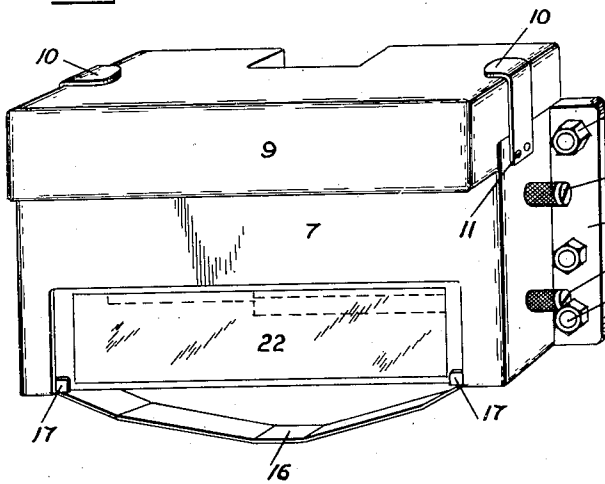


Fig. 3.

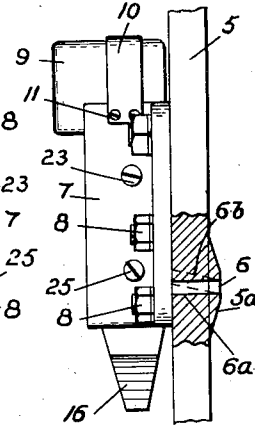
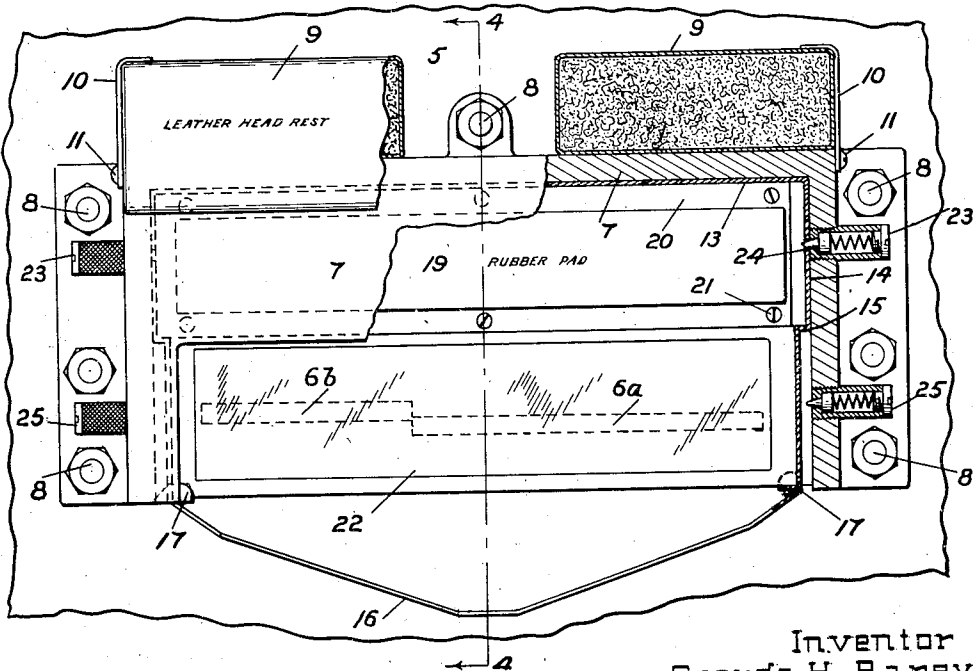


Fig. 2.



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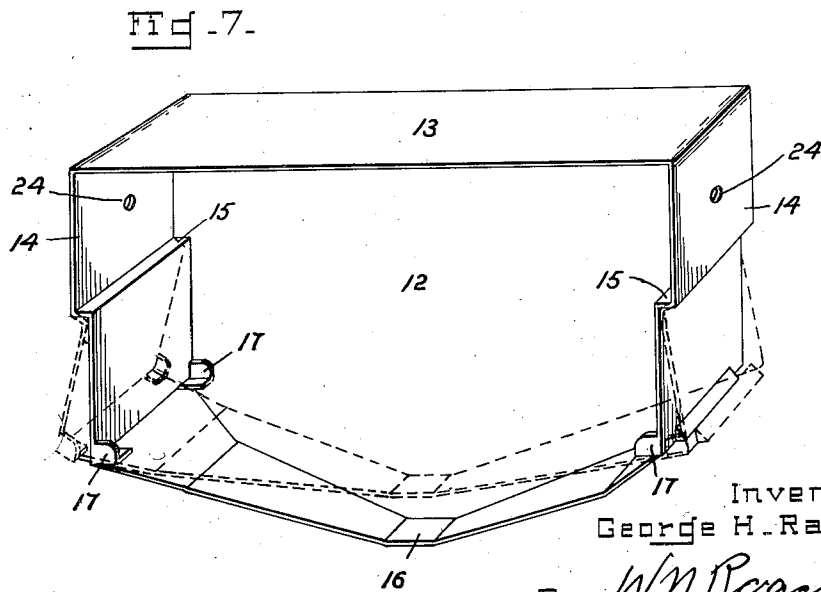
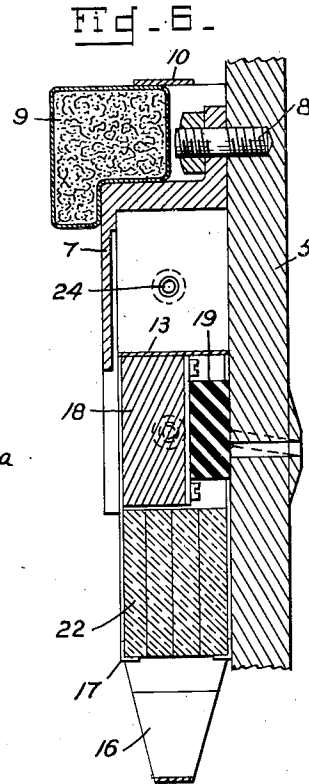
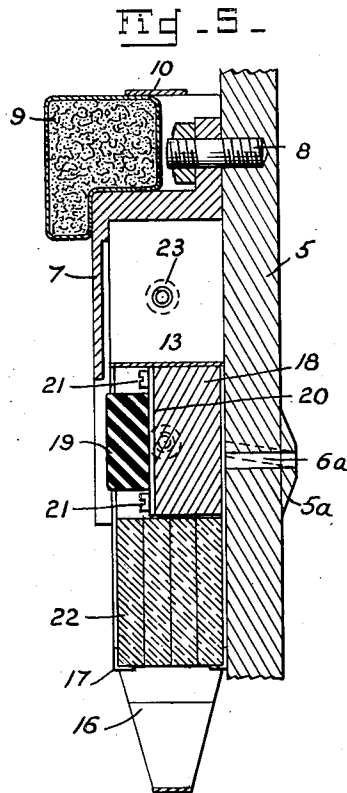
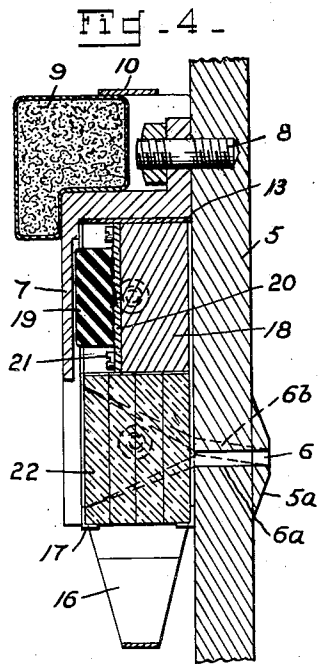
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SHIELD FOR OBSERVATION OPENINGS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SHIELD FOR OBSERVATION OPENINGS

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Application September 20, 1933, Serial No. 690,229

4 Claims. (Cl. 89—36)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

5 This invention relates to a shield for observation openings.

Where occupants of a chamber or compartment are subject to gun-fire or gas attacks it is customary to provide slits or openings whereby they may observe with minimum exposure. In the case of armored vehicles and tanks it has been found that a large number of eye injuries occur due to the splash of the metal of the bullet.

10 The principal object of the invention is to provide a novel shield which includes a transparent portion and an armoring and sealing portion. These portions are mounted so that they may be readily moved into line with the sight opening in a wall member.

20 To these and other ends, the invention consists in the construction, arrangement and combination of elements described hereinafter and pointed out in the claims forming a part of this specification.

25 A practical embodiment of the invention is illustrated in the accompanying drawings, wherein:
Fig. 1 is a perspective view of the improved shield and its mounting.

30 Fig. 2 is a view in front elevation with parts broken away.

Fig. 3 is a view in side elevation of the entire unit.

35 Fig. 4 is a longitudinal sectional view on the line 4—4 of Fig. 2 and showing the transparent portion in line with the sight opening.

Figs. 5 and 6 are similar views showing other positions of adjustment of the auxiliary frame, and

40 Fig. 7 is a perspective view of the movable auxiliary frame.

Referring to the drawings by characters of reference, there is shown a support 5 which is the wall of a chamber or compartment. The wall is provided with a sight opening which in the preferred form consists of a relatively wide slot 6. A portion 6a of the slot is generally perpendicular to the support to afford a distance view while a portion 6b is inclined to afford a close view. The outer side of the support adjoining the slot is provided with inclined surfaces 5a to protect the sight opening against the splash from bullet.

45 A main frame 7 extending about three sides of the slot 6 is attached to the support by means of bolts 8. A head rest 9 of a resilient material is held onto the upper part of the main frame by

means of clips 10 secured by screws 11 to the sides of the main frame. The main frame 7 co-operates with the support in forming a socket in which an auxiliary frame 12 (Fig. 7) may be inserted.

50 The auxiliary frame 12 is formed of a thin flexible metal and includes a top 13, sides 14—14 that are offset inwardly as at 15 intermediate their height, and an arched or bowed bottom 16 constituting a handle. Stirrups 17—17 are provided on the lower ends of the sides 14.

A relatively thick metal guard plate 18 is carried in the upper part of the auxiliary frame, being supported on the offsets 15. On one side of the guard plate there is a gasket or rubber pad 19 which is preferably vulcanized to a thin plate 20 that is attached to the guard plate by means of screws 21. The pad 19 is of sufficient dimensions so that it may be used to close the sight opening 6 (Fig. 6).

75 A laminated glass plate 22 is carried in the lower part of the auxiliary frame, being supported on the stirrups 17. The plate 22 may be readily inserted and removed from the auxiliary frame by exerting pressure on the handle 16 to cause the sides 14 of the frame to spread apart as indicated in dotted lines in Fig. 7.

80 In the position of adjustment shown in Fig. 4 the auxiliary frame is inserted all the way into the main frame so that the glass plate 22 is positioned opposite the sight opening 6 and an observer may look through the sight opening. In this position the auxiliary frame is held by means of a pair of plungers 23—23 mounted in the opposite sides of the main frame and engaging in apertures 24—24 in opposite sides of the upper part of the auxiliary frame.

85 When it is desired to secure protection against the entry of bullets the auxiliary frame is grasped by its handle 16 and pulled downwardly until the apertures 24—24 are engaged by a second set of plungers 25—25 mounted in the main frame below the plungers 23. In this position of adjustment (Fig. 5) the guard plate 18 is in line with and covers the sight opening.

90 When it is desired to prevent the entry of gas through the sight opening, the auxiliary frame is removed from the main frame, reversed, and then reinserted until engaged by the lower set of plungers 25 to position the rubber pad 19 over the sight opening as shown in Fig. 6.

95 It will be noted that the glass plate 22 is of a thickness equalling the combined thickness of the guard plate 18 and pad 19 so that the auxiliary

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frame may be moved upwardly from either of the positions of adjustment of Figs. 5 and 6.

I claim:

1. In a shield, a support having a sight opening, a main frame secured to the support and extending on opposite sides of the sight opening, an auxiliary frame of flexible metal movable in and out of the main frame, said auxiliary frame including a top, sides with inwardly directed offsets intermediate their height and with stirrups on the lower ends, and an arched bottom constituting a handle, a guard plate in the upper part of the auxiliary frame and supported on the offsets of the sides, a pad on one side of the guard plate, a transparent plate in the lower part of the auxiliary frame and supported on the stirrups, and plungers carried by the main frame and adapted to selectively engage the auxiliary frame in positions with the guard plate and transparent plate in line with the sight opening.

2. In a shield, a support having a sight opening, a main frame secured to the support and extending on opposite sides of the sight opening, an auxiliary frame of flexible metal movable in and out of the main frame, said auxiliary frame including a top, sides with inwardly directed offsets intermediate their height and with stirrups on the lower ends, and an arched bottom constituting a handle, a guard plate in the upper part of the auxiliary frame and supported on the offsets of the sides, a transparent plate in the lower part of the auxiliary frame and supported

on the stirrups, and plungers carried by the main frame and adapted to selectively engage the auxiliary frame in positions with the guard plate and transparent plate in line with the sight opening.

3. In a shield, a support having a sight opening, a main frame secured to the support and extending on opposite sides of the sight opening, an auxiliary frame of flexible metal movable in and out of the main frame, said auxiliary frame including a top, sides with inwardly directed offsets intermediate their height and with stirrups on the lower ends, and an arched bottom constituting a handle, a guard plate in the upper part of the auxiliary frame and supported on the offsets of the sides, a transparent plate in the lower part of the auxiliary frame and supported on the stirrups, and means for supporting the auxiliary frame in positions with the guard plate and transparent plate in line with the sight opening.

4. In a shield, a support having a sight opening, a main frame secured to the support, an auxiliary frame movable in and out of the main frame, a guard plate in the upper part of the auxiliary frame, a pad on one side of the guard plate, a transparent plate in the lower part of the auxiliary frame, and means for supporting the auxiliary frame in positions with the guard plate and transparent plate in line with the sight opening.

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