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ACOUSTIC FRAME GLASS MOUNTING

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FIG. 1.

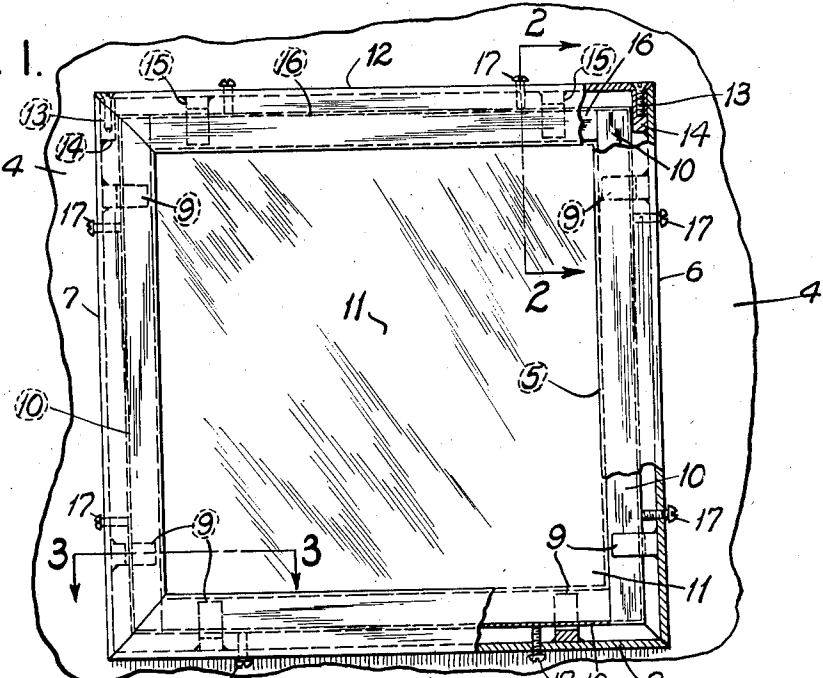


FIG. 2.

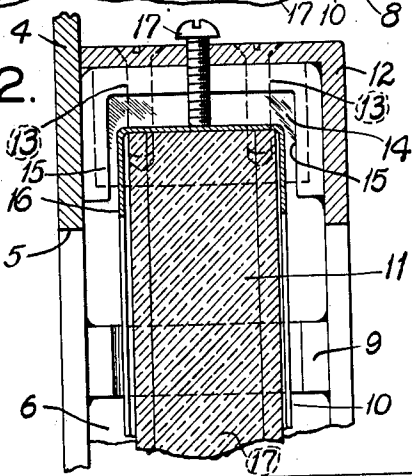
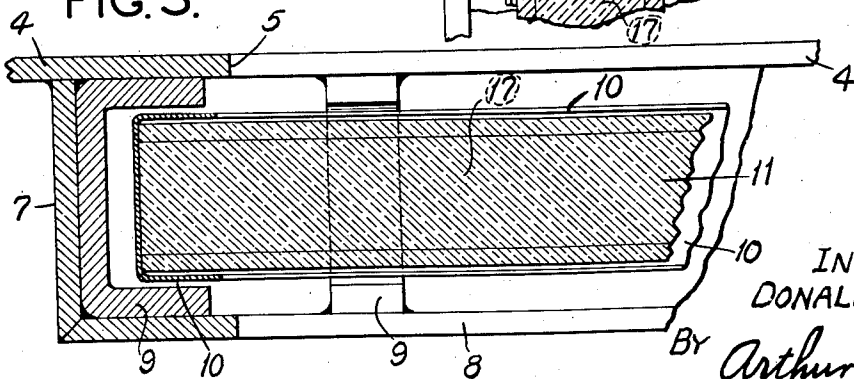


FIG. 3.



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ACOUSTIC FRAME GLASS MOUNTING

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4 Claims. (Cl. 20—1.01)

The invention herein disclosed is an acoustic frame glass mounting.

In banks or other institutions, where money or valuables are kept and where it is necessary to admit the general public, the danger from hold up is great. The teller or representative of the bank or other such institution must be visible to the customer and the customer must be visible to the teller. They must be able to converse with each other in ordinary conversational tones. The teller must be protected from the bullet shot of a bandit. In order to accomplish these purposes, the wall, or portion of it, is made of glass, which although thick is sufficiently translucent to permit the teller and customer or bandit to see each other. This bullet resisting glass varies in thickness commercially between one and one-eighth and two and one-eighth inches. Obviously such glass interposes a great resistance to the passage of sound waves. Without an opening in the wall between the teller and the customer, the sound passage is impeded to such an extent that no conversation can be carried on between the teller and customer. To make such a conversation possible conventionally, a hole is placed in the glass through which the sound may pass. This method is unsatisfactory, because it requires the speaker and listener, who are on opposite sides of the glass, to be directly in front of the hole in the glass and extremely near to it.

Furthermore a protection for the teller behind or in front, but preferably behind the hole in the glass, must be provided in the form of a bullet proof or bullet resisting plate. This impedes the sound and makes the construction costly.

The specific object of this invention is to mount the bullet resisting glass in a frame in such a manner that the sound may pass around the glass between the glass and frame, thereby obviating the necessity of perforating the glass in order to speak through it, and obviating the necessity, therefore, of a shield behind the perforation in the glass plate.

Furthermore in the invention herein disclosed, the glass plate acts as a sounding board for deflecting the sound laterally to the edge of the plate around its edges to the obverse side of the glass. By means of the mounting herein described, the glass is held rigidly in spaced relationship, in a steel frame, with the inner edges of the frame. The sound passes through the lateral spaces between the frame and glass.

The frame is preferably made of steel, but may be made of other metal or of wood, concrete, marble, etc. The mounting means for the glass

are preferably welded to the frame and are so shown in the drawing. Obviously, screws or bolts may be used for this jointure means, but welding is preferable.

By the structure, herein described, the bullet resisting glass is positioned in sliding engagement in the mounting means. Means are also provided for adjusting the glass in position relative the mounting means. The mounting means are so positioned and the glass and frame are of such relative size that the space between the glass and frame is not externally visible. These lateral spaces are too small to permit the insertion of a hand or pistol. Glass of conventional thickness is shown in the drawing.

The structure herein described may be easily and cheaply manufactured and lends itself readily to multiple production.

Within the mounting means are provided structures which hold the glass in such a manner that if a bullet pierces the glass, it is not thereby shattered at its edges, so as to produce a disengagement of the glass from the mounting means.

With these and other objects in view, my invention has relation to certain novel features of construction and arrangement of parts that will be hereinafter more fully described, pointed out in the claims and illustrated in the drawing, in which

Fig. 1 is a front elevation showing a portion of the wall in which my device is positioned and showing the portion of the device in section.

Fig. 2 is an enlarged fragmental sectional elevation on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged sectional plan view on the line 3—3 of Fig. 1.

Numeral 4 designates the wall in which my device is positioned. In the wall 4 is formed the rectangular opening 5, which is preferably square and is so shown in the drawing.

Numeral 6 designates one lateral channel and numeral 7 designates a second lateral channel. Numeral 8 designates a lower channel. The ends of the channels 6, 7 and 8 are beveled at an angle of forty-five degrees. To the lower channel 8 at one end is welded the second lateral channel 7 and to the other end of the lower channel 8 is welded the lateral channel 6. The three channels, thus far described, form the three sides of a square. The inner sides of the square portion, thus far described, are of the same length as the sides of the rectangular opening 5. The channels 6, 7 and 8 are welded to the wall 4 so that the edges of the channels not in contact with the wall 4 will come flush with the edges of the rec-

tangular opening 5. Numerals 9 designate U shaped spacing elements, which are of such size as to fit into the channels 6, 7 and 8 snugly. Two U shaped spacing elements 9 are provided for each of the channels 6, 7 and 8. The U shaped spacing elements 9 are positioned near the ends of the channels 6, 7 and 8.

Numerals 10 designate supporting plates. One supporting plate is provided for each of the channels 6, 7 and 8. The supporting plates 10 are U shaped in cross section and of such size as to fit snugly in frictional engagement in the U shaped spacing elements 9.

Numeral 11 designates a plate of bullet resisting glass, which is of such size and thickness that it may be slid into the supporting plates 10. The bottom of the square plate of glass 11 rests in the supporting plates 10, which rest on the U shaped spacing elements 9, which are welded into the lower channel 8.

In order to form a top for the device, the top channel 12 is provided. The top channel 12 is of the same length, width and shape as the channels 6, 7 and 8. In order to secure the top channel 12 to the lateral channels 6 and 7, screws 13 are provided, which pass through holes in the upper surface of the top channel 12 and are positioned in threaded engagement in tapped holes formed in lugs 14, which are welded to the top inner surfaces of the lateral channels 6 and 7.

By the structure described, it will be seen that the plate of bullet resisting glass 11 is firmly secured in the supporting plates 10, which in turn are held by frictional engagement rigidly in the U shaped spacing elements 9, which in turn are welded to the channel elements 6, 7 and 8. Obviously U shaped elements 15 of the same size and shape as the U shaped spacing elements 9 are welded to the inner surface of the top channel 12 near its ends.

By the structure recited, it will be seen that the supporting plates 10 are held in spaced relationship with the channels 6, 7, 8 and 12, that is there is no direct physical contact between the supporting plates 10 and the channels 6, 7, 8 and 12.

In the top channel 12 is also positioned a supporting plate 16. Since the plate of bullet resisting glass 11 comes in contact only with the supporting plates 10 and 16, the plate of glass 11 is held in spaced relationship relative the channels 6, 7, 8 and 12. In order to adjust the plate of bullet resisting glass 11 tightly within the supporting plates 10, the set screws 17 are provided. The set screws 17 are in threaded engagement in tapped holes in the channels 6, 7, 8 and 12. There are two such set screws for each channel. They are positioned near the ends of the channel, so as not to come in contact, however, with the

U shaped spacing elements 9. The set screws 17 are of sufficient length so that when the entire structure is assembled, as has been described, the inner ends of the set screws will come in contact with the outer surfaces of the supporting plates 10. It will be seen that by tightening the set screws 17 that the supporting plates 10 will be tightened around the plate of bullet resisting glass 11.

In operation when the sound of the voice strikes the plate of bullet resisting glass 11, it is deflected laterally along the outer surface of the glass until it reaches the outer portion of the supporting plates 10 and is forced to pass around and behind and over the supporting plates 10 and outwardly to the rear of the plate of glass 11. A conduit for the passage of the sound is made between the supporting plates 10 and 16 and the channels 6, 7 and 8. By the method outlined, a minimum amount of resistance is interposed into the path of the sound in its travel.

What I claim is:

1. In a device of the character described a frame, a mounting, a plate of bullet resisting glass, said glass secured in said mounting and said mounting secured in said frame, so that there will be no physical contact between said glass and said frame, and lateral means for positively adjusting said glass in operative position in said mounting.

2. In a device of the character described a frame formed of channels, U shaped spacing elements secured in the channels of said frame, supporting plates secured in frictional engagement in said U shaped spacing elements, a plate of bullet resisting glass positioned in sliding engagement in the supporting plates, the upper channel of said frame secured by screws to the lateral channels of said frame, set screws in threaded engagement in the channels of said frame, with their inner ends in frictional engagement with said supporting plates.

3. In a device of the character described, a frame, a mounting, a plate of bullet resisting glass secured in said mounting, and lateral means for adjustably and tightly securing the said glass in said mounting.

4. In a device of the character described, a frame formed of channels, U shaped spacing elements secured in the channels of said frame, supporting plates secured in frictional engagement in said U shaped spacing elements, a plate of bullet resisting glass positioned in sliding engagement in the supporting plates, set screws in threaded engagement in the channels of said frame with their inner ends in frictional engagement with said supporting plates.

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