Oct. 16, 1956 N. NELSSON 2,766,856

ACCESS PANEL CONSTRUCTION

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Fig. 1.

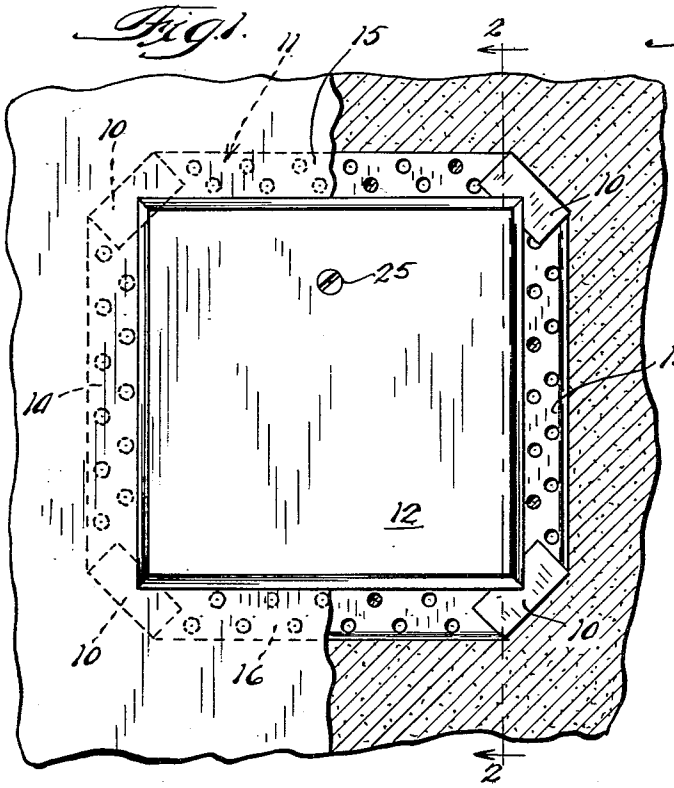
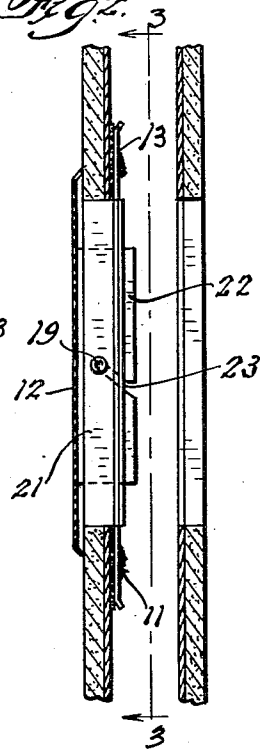


Fig. 2.



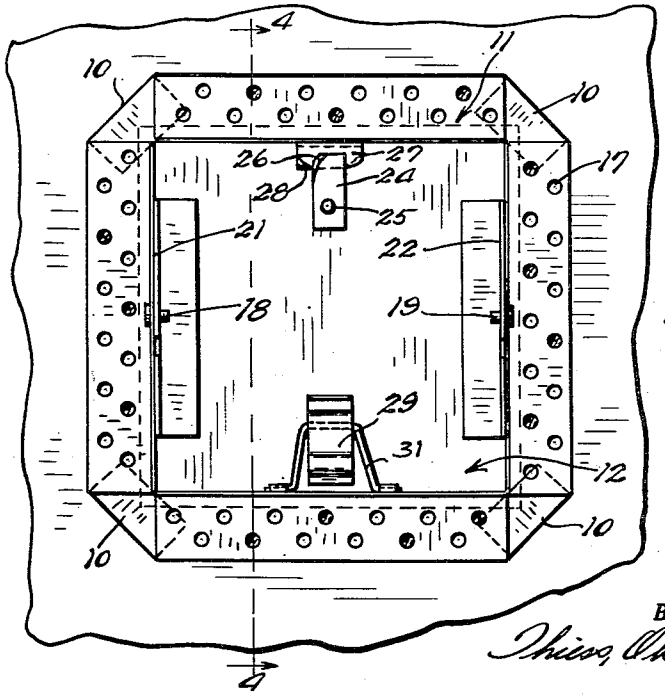


Fig. 3.

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Fig. 4.

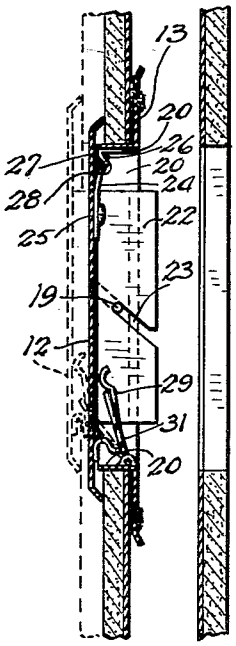


Fig. 5.

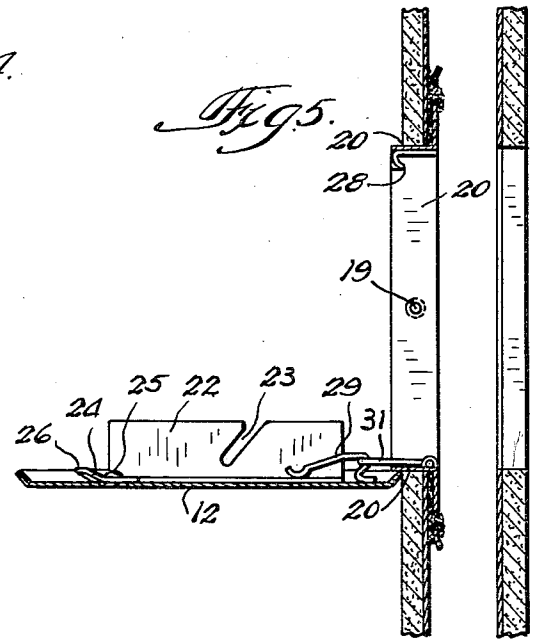


Fig. 6.

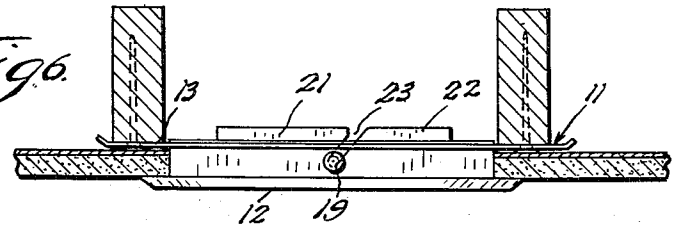
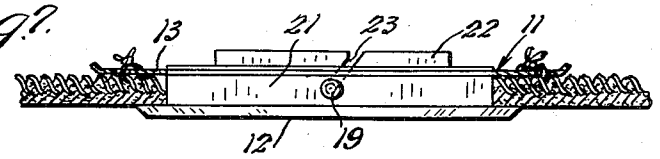


Fig. 7.



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ACCESS PANEL CONSTRUCTION

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Application August 2, 1952, Serial No. 302,354

8 Claims. (Cl. 189—46)

The present invention relates to an access panel construction and has special reference to such a construction having a frame defining an opening for permanent connection to a wall or ceiling and a removable panel member fitting thereover to close the opening.

More particularly, this invention relates to an access panel construction in which the panel member is mounted on a frame with the rear surface of said panel contacting the outer wall surface about said opening. The panel automatically adjusts itself to irregularities and variations in the thickness of the plaster wallboard or other surfacing material.

Access panels are commonly employed in buildings to provide entry to various inner spaces, such as concealed storage spaces, plumbing connections and valves, areas containing electric light switches, panel boxes, etc., crawl spaces, ventilators and others.

The access panel construction of the present invention may be readily installed during construction of a building or in buildings already constructed. When installed with the panel member in place it is substantially flush with the exposed wall or ceiling on which employed so as to blend therewith and be substantially unnoticed.

The panel is so mounted on its frame that it will adjust itself to a wide range of wall surface thicknesses and to irregularities in the exposed wall surfaces. This may be accomplished by forming opposed ribs or flanges on the rear face of said panel adjacent the sides thereof, with diagonal slots therein for engaging pins extending inwardly from opposite sides of the frame. The slots slope inwardly from the rear edges of the flanges and upwardly so that when the panel is inserted on its frame in a wall the weight thereof aids in holding it tightly against the wall surfaces surrounding the opening to be closed.

A lock or latch is preferably provided at the upper end of the panel member and the adjacent frame portion to hold the panel on its frame with the rear face of the panel against the wall surface. A safety catch may also be employed which permits the panel member to be swung outwardly while maintaining it connected to its frame. The catch also permits the panel to be entirely removed from the frame when desired.

The frame and panel members are preferably rectangular as the openings in walls and ceilings are commonly of this shape. The panel member must be at least slightly wider than the width of the opening and substantially longer than the length of the opening to insure that the panel member will completely cover the opening irrespective of the position of the pins in their slots which in turn depends largely upon the thickness of the wall or ceiling surfacing material.

An object of the present invention is to provide an access panel construction in which the panel supported by a frame adjusts itself to irregularities and variations in thickness of the surfacing material thereabout.

Another object is to provide such a construction in

which the weight of the panel urges it against the surrounding wall surface.

A further object is to provide a panel construction of the above type having locking means for holding the panel in proper position on its frame with the panel member engaging the surrounding wall surface.

A still further object is to provide an access panel having a safety catch to prevent accidental detachment of the panel member from its frame when it is opened.

An additional object is to provide such a construction in which the panel may be readily and entirely removed from its frame.

Still another object is to provide an inexpensive access panel construction which may be readily installed in either new or old constructions.

Further objects and advantages will be apparent from the following description and claims when considered with the accompanying drawings, in which:

Fig. 1 is a front elevational view of an access panel construction embodying the present invention positioned in a wall or ceiling with part of the surfacing material broken away;

Fig. 2 is a side elevational view of the panel construction shown in Fig. 1 taken along the lines 2—2 of Fig. 1;

Fig. 3 is a rear elevational view of the access panel construction shown in Fig. 1;

Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 4 with the panel member in open position but secured to the frame member by a safety catch;

Fig. 6 is a side elevational view of the access panel construction secured to the joists in a ceiling during construction of the building; and

Fig. 7 is a view similar to Fig. 6 of the access panel construction secured to metal lath in a ceiling during construction of the ceiling.

Referring more particularly to Figs. 1–5 there is shown an access panel construction embodying the present invention installed in a wall. The panel construction comprises a frame 11 and a closure panel 12. The frame, which is preferably rectangular in shape, may be made of angular sheet metal of sufficient length to form the four sides. The angular sheet metal preferably has a relatively wide web and a relatively narrow flange at right angles thereto. In forming the frame a suitable angle member has its relatively wide web severed at the proper points to form the four sides. It is then bent inwardly into a rectangle of suitable size consisting of opposite side webs 13 and 14 and opposed end webs 15 and 16 lying in substantially a common plane. The open corners formed by the bending may have metal straps 10 welded thereacross. The resulting frame has the wide webs lying in substantially a common plane with the narrow flanges 20 extending in one direction from the inner edges thereof.

The size of the frame is such that the flanges will fit within the opening to be closed adjacent the sides of the opening, and the webs of the frame will overlie the rear sides of the plaster, wallboard or other surfacing material about the openings. The wide webs of the frame are preferably provided with openings 17 to facilitate attaching the frame to the rear side of a wall about an opening.

The panel member 12 is formed from a sheet of suitable material such as metal, and is slightly wider than the distance between the side flanges and substantially longer than the distance between the end flanges of the frame. This permits the frame to cover the opening defined by the flanges although it may be moved a substantial distance upwardly or downwardly with respect thereto. In describing the frame, the sides are those

portions which are vertical when a frame is installed in a wall and the ends designate the top and bottom portions when so installed. The same designations are used even though the construction may be employed in a ceiling or other partition.

The peripheral edges of the panel are preferably beveled toward the rear as shown particularly in Figs. 4 and 5. This beveling may be slight and need not be much more than 1/16 inch in depth. However, it strengthens the edges, improves the appearance and also results in better contact between the edges and the wall surface.

Pins **18** and **19** extend inwardly from the flanges **20** at opposite sides of the frame. The panel **12** is provided with rearwardly extending flanges **21** and **22** having slots **23** extending forwardly from the rear edges thereof and sloping upwardly as illustrated in Figs. 2 and 4. The slots are of a size to fit the pins **18** and **19** on the frame **11**.

A lock or latch is preferably provided on the upper ends of the panel and frame. The latch is adjustable so that it will serve to hold the panel on its frame and against the wall or ceiling surface whether the pins **18** and **19** are in the innermost portions of the slots **23** or spaced therefrom. One form of lock that may be employed, is shown in Figs. 3, 4 and 5. It comprises a locking bar **24** secured adjacent one end to a pivot member such as a screw **25**, so that it may be rotated from the front of the panel. The free end of the bar **24** is bent rearwardly as shown at **26**. The frame also is provided with a cooperating locking member **27** extending downwardly from the top with one side **28** sloping rearwardly for cooperation with the sloping portion of the dog **26**. Due to the cooperating sloping edges of the locking members, the panel may be locked tightly against the flange of the frame or spaced a distance therefrom.

In order to prevent dropping of the panel from its frame, particularly when it is employed in a ceiling, a safety catch is provided. This may consist of a leaf spring **29** secured such as by welding to the rear face of the panel **12** adjacent the lower end thereof. The spring **29**, shown in Figs. 3, 4 and 5, is shaped so that it is spaced from the panel throughout its length, except adjacent its rearwardly curved free end which is resiliently maintained against the panel. A wire shackle **31** may be pivotally mounted on the lower flange of the frame. For this purpose portions of the flange may be struck up providing slots for the ends of the shackle. The slots are somewhat oval and the terminating ends of the shackle are preferably bent slightly toward the looped portion so as to provide a snap action tending to hold the shackle forwardly toward the panel or rearwardly therefrom, out of the way. As shown in Fig. 5 when the panel is disconnected from the frame by unlocking the latch **24** and removing the slotted flanges **21** and **22** from the pins **18** and **19**, the panel will still be supported by the safety catch.

The present access panel may be employed in either new or old constructions. Where a building is already erected, a suitable opening is made in the walls and the frame **11** is inserted therethrough and then positioned with the forward sides of the frame web engaging the rear sides of the wall surface, as shown particularly in Figs. 1, 2, 4 and 5, and the flanges extending forwardly adjacent the sides of the opening. The web is then preferably secured to the wall by any suitable means such as tape, adhesive or cement.

After the frame has been secured in place, the panel is positioned over the opening by inserting the slots **23** over the pins **18** and **19**. The weight of the panel causes it to fit tightly against the exposed wall surfaces about the openings. In this position the pivot **25** is rotated to lock the panel in place against the wall surface. If it is desired to entirely remove the panel from the frame such as for decorating or any other purpose, the panel may be moved to disconnect the shackle **31** from the spring member **29**.

To insert the panel construction in a building being erected, the frame may be nailed to the joists or studs, as shown in Fig. 6, or it may be tied by wire to the rear face of metal lath.

When the panel construction is employed in a ceiling as illustrated in Figs. 6 and 7, it operates in exactly the same way as when employed in a wall, except that the panel must be urged tightly against the surface surrounding the opening instead of relying to some extent upon gravity to effect such result.

The present panel construction may be readily and inexpensively constructed and installed. The panel will adjust itself to wall materials of various thicknesses or having somewhat irregular surfaces. When properly positioned the panel may be securely locked in place and when removed the safety catch prevents it from accidentally dropping down from the frame. The panel may be decorated similarly to the wall surrounding the opening, and when positioned appears as a part of the wall itself.

While a particular embodiment of this invention has been illustrated and described, 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. An access panel construction for closing an opening in a structural surfacing material comprising a frame and a panel member movable generally endwise with respect to said frame, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and inwardly projecting pins at opposite sides thereof, said panel member being larger than said openings and having rearwardly extending fixed portions at the opposite sides with slots extending inwardly from the rear edges thereof and sloping toward one end of said panel for fittting over said pins.

2. An access panel construction for closing an opening in a structural surfacing material comprising a frame and a panel member movable generally endwise with respect to said frame, cooperating latching members on said frame and panel members adjacent corresponding ends thereof, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and a flange extending forwardly from said rear portion for fitting in said opening adjacent the sides thereof, said flange having inwardly projecting pins on opposite sides, said panel member being larger than said opening and having rearwardly extending fixed portions on opposite sides with slots extending inwardly from the rear edges thereof and sloping toward the latch end of said panel for receiving said pins therein, said latching members cooperating to latch said panel member to said frame when said pins are positioned at various locations in said slots within a predetermined distance of the inner ends thereof.

3. An access panel construction for closing an opening in a structural surfacing material comprising a frame and a panel member movable generally endwise with respect to said frame, cooperating latching members on said frame and panel members adjacent corresponding ends thereof, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and a flange extending forwardly from said rear portion for fitting in said opening adjacent the sides thereof, said flange having inwardly projecting pins on opposite sides, said panel member being larger than said opening and having rearwardly extending fixed portions on opposite sides with slots extending inwardly from the rear edges thereof and sloping toward the latch end of said panel for receiving said pins therein, at least one of said latch-

ing members having a rearwardly sloping contact portion to permit said latching members to be actuated to latch said panel member to said frame when the pins are positioned at various locations in said slots within a predetermined distance from the inner ends thereof.

4. An access panel construction for closing an opening in a structural surfacing material comprising a frame and a panel member movable generally endwise with respect to said frame, cooperating latching members on said frame and panel members adjacent corresponding ends thereof, said frame having a substantially flat rear portion for engaging the rear side of said surfacing material about said opening and a flange extending forwardly from said rear portion and fitting in said opening adjacent the sides thereof, said flange having inwardly projecting pins on opposite sides, said panel member being larger than said opening and having rearwardly extending portions on opposite sides with slots extending inwardly from the rear edges thereof and sloping toward the latch end of said panel for receiving said pins therein, said latching members cooperating to latch said panel member to said frame when said pins are positioned at various locations in said slots within a predetermined distance of the inner ends thereof, and a safety catch comprising an elongated member secured at one end to the rear side of the opposite end of said panel member and extending inwardly therefrom in generally spaced relation to said panel member, and a shackle attached to said frame for being positioned between said catch member and the panel member therebeneath.

5. An access panel construction for closing an opening in a structural surfacing material comprising a frame for being positioned in said opening and a panel member larger than said opening, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and inwardly projecting pins at opposite sides thereof, said panel member being movable toward and away from said frame while being maintained substantially parallel to the rear portion of said frame and having rearwardly extending portions at opposite sides with slots extending inwardly from the rear edges thereof and sloping toward one end of said panel for sliding over said pins to guide said panel during movement thereof with respect to said frame.

6. An access panel construction for closing an opening in a structural surfacing material comprising a frame for being positioned in said opening and a panel member larger than said opening, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and inwardly projecting pins at opposite sides thereof, said panel member being movable toward and away from said frame while being maintained substantially parallel to the rear portion of said frame and having fixed rearwardly extending portions at opposite sides with slots extending inwardly from the rear edges

thereof and sloping toward one end of said panel for sliding over said pins to guide said panel during movement thereof with respect to said frame.

7. An access panel construction for closing an opening in a structural surfacing material comprising a frame for being positioned in said opening and a panel member larger than said opening, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and inwardly projecting pins at opposite sides thereof, said panel member being movable toward and away from said frame while being maintained substantially parallel to the rear portion of said frame and having rearwardly extending portions at opposite sides with slots extending inwardly from the rear edges thereof and sloping toward one end of said panel for sliding over said pins to guide said panel during movement thereof with respect to said frame, and a safety catch for permitting limited movement of said panel while parallel to the rear portion of said frame and also pivotal movement of said panel with respect to said frame, said catch comprising an elongated member secured to one end of said panel member on the rear side thereof and extending inwardly therefrom in general spaced relation, and a shackle attached to said frame and releasably connected to said catch member.

8. An access panel construction for closing an opening in a structural surfacing material comprising a frame for being positioned in said opening and a panel member larger than said opening, said frame having a rear portion for engaging the rear side of said surfacing material about said opening and inwardly projecting pins at opposite sides thereof, said panel member being movable toward and away from said frame while being maintained substantially parallel to the rear portion of said frame and having rearwardly extending portions at opposite sides with slots extending inwardly from the rear edges thereof and sloping toward one end of said panel for sliding over said pins to guide said panels during movement thereof with respect to said frame, and cooperating latching members on said frame and panel members adjacent corresponding ends thereof for latching said panel member to said frame when said pins are positioned at various locations in said slots within a predetermined distance of the inner ends thereof.

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