

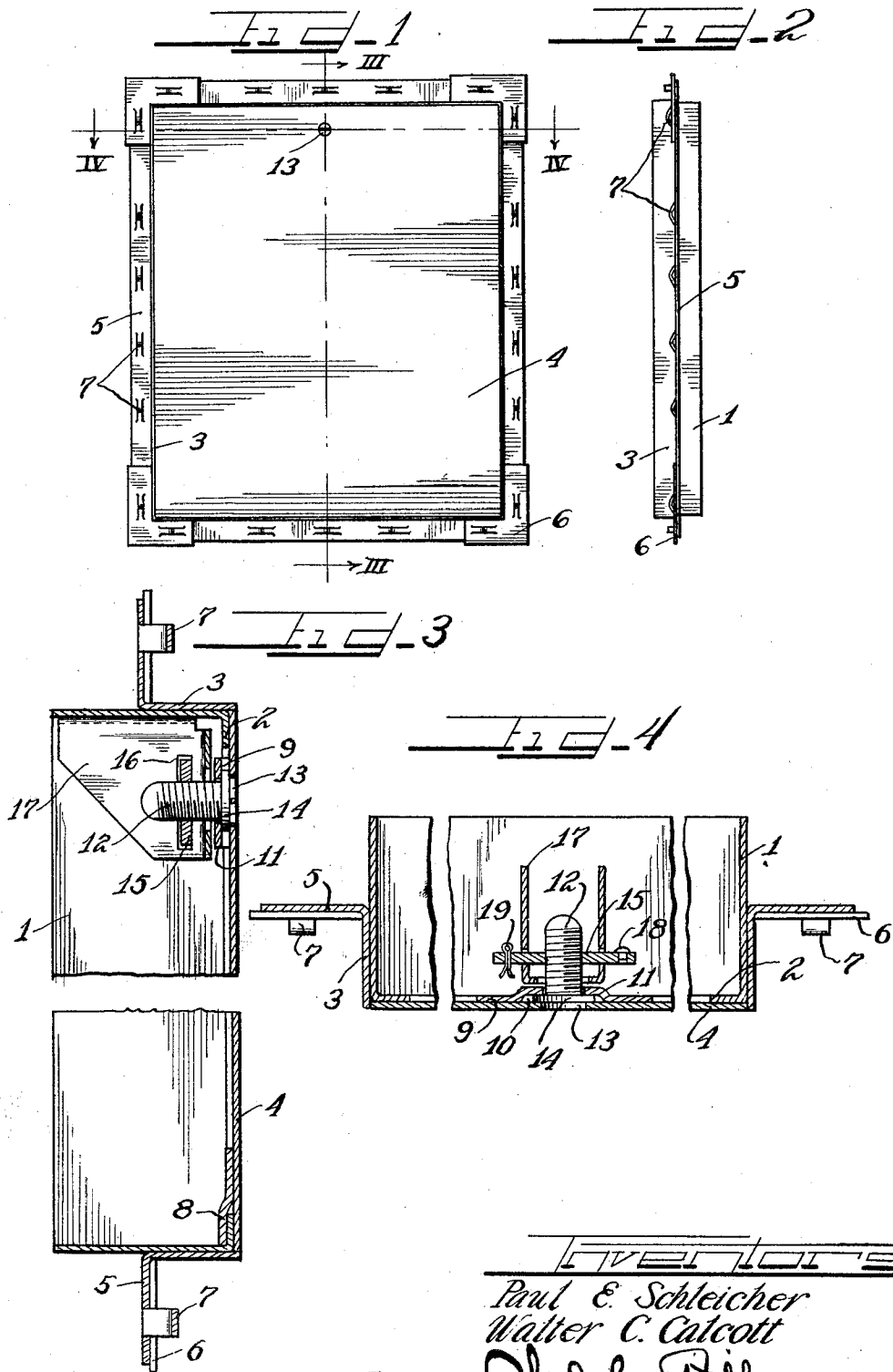
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ACCESS STRUCTURE

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UNITED STATES PATENT OFFICE

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ACCESS STRUCTURE

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To eliminate fire hazards in the use of wood bucks and the inconvenience of the old fashioned panel door for closing wall openings leading to plumbing and pipe fittings or connections, and to reduce the cost of both material and installation, this invention has been devised to provide an improved type of all-metal access panel adapted to be readily installed in hollow tile walls or in wood frame walls to provide a flush finish with the panel door provided with an improved back up screw attachment for securing the panel door in position and for removing the same without the use of projecting knobs or handles.

It is an object of this invention to provide an all-metal access panel provided with plaster grabs or expanded straps to obviate cracking or crazing of the plaster.

It is also an object of this invention to provide a metal access panel, the metal frame of which is adapted to receive a flush panel door provided with an improved back up screw attachment for securing the panel door in position in a frame or removing the panel door from said frame.

It is a further object of this invention to provide a metal access panel including a metal frame and a metal panel door with said frame having mounted therein a floating nut with which a back up screw associated with the access panel door is adapted to coact to permit the panel door to be mounted in a flush position without any projecting knobs or handles for handling the panel door.

It is furthermore an object of this invention to provide an all-metal access panel having a flanged frame provided with plaster grabs, said frame being provided with an inner stop flange against which a panel door is adapted to seat to be held in position by means of a clip fastener and a back up screw device eliminating the need of any projecting parts on the outer surface of the panel door.

It is an important object of this invention to provide an all-metal access panel of improved and simplified construction including a frame and an interfitting removable panel door with said door being equipped with an improved attachment for securing the panel door in a flush position within the frame without the use of any projecting supports and permitting ready removal of the panel door from the frame without damaging the wall in which said panel is mounted.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

The invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is a front elevation of an improved access panel embodying the principles of this invention.

Figure 2 is a side elevation of the access panel.

Figure 3 is an enlarged longitudinal detail section of the access panel taken on line III—III of Figure 1 with the back up screw illustrated in elevation.

Figure 4 is an enlarged fragmentary transverse detail section taken on line IV—IV of Figure 1 with the back up screw shown in elevation.

As shown on the drawing:

The improved access panel comprises a metal inner frame 1 having the front margins of the walls thereof bent inwardly at right angles to provide a stop flange 2. Rigidly secured around the front portion of the inner frame 1 is an outer frame 3 constructed of sheet metal and positioned so that the front edge thereof projects beyond the stop flange 2 of the inner frame 1 to provide a pocket or recess for the reception of a removable plate or panel door 4 which is also constructed of sheet metal. The sheet metal door 4 is of a thickness sufficient to fill the pocket or recess so that the outer or front

surface of the panel door is flush with the outer or front edge of the outer frame 3, as clearly illustrated in Figures 3 and 4.

The rear margins of the walls forming the outer frame 3 are bent outwardly at substantially right angles to form an outer frame flange 5, the ends of the four members of which are connected at the corners by angular corner plates 6 which are secured in place by brazing or spot-welding or any other suitable means. Struck from or expanded out of the metal forming the outer frame flange 5 and the corner plates or brackets 6 are plaster grabs or projecting loops or straps 7 adapted to be covered or embedded with plaster and serving to prevent cracking or crazing of the plaster which is applied around the outer frame 3 in front of the outer frame flange 5 with the outer surface of the plaster and the outer or front edge of the outer frame 3 flush with one another.

For the purpose of securing the panel door 4 in position to close the access panel outer frame 3, the lower portion of the inner face of the panel door 4 has rigidly secured thereto parallel to the lower edge thereof a clip fastener or a deflected bracket plate 8, the lower margin of which is offset from the inner surface of the panel door 4 as clearly illustrated in Figure 3 to permit the offset portion of the clip fastener to be removably engaged over the lower horizontal member forming a part of the stop flange 2 of the inner frame 1, thereby affording an arrangement for holding the lower end of the panel door seated in the pocket provided in the outer frame 3 with the inner surface of the panel door abutting against the stop flange 2 of the inner frame 1.

For the purpose of locking the panel door 4 in its seated position flush with the outer surface of the plaster wall, said panel door has rigidly secured on the inner surface near the upper end thereof a metal strap plate 9, the middle portion of which is deflected to provide a recess 10.

The deflected portion 11 of the bracket or strap 9 is provided with an opening through which a threaded shank 12 of a back up screw bolt projects. The back up screw bolt is provided with a slotted head 13 the inside of which is provided with a retaining flange 14 which is positioned in the opening or pocket 10 provided in the deflected or convex portion 11 of the retaining strap 9, as clearly illustrated in Figure 4. It will thus be noted that the back up bolt is rotatably supported in position with the threaded shank portion thereof projecting rearwardly to permit the same to be threaded through a floating nut 15 which loosely projects through opening 16 provided in a U-shaped housing or bracket 17 which is secured on the inner surface of the top member of the inner frame 1. The floating nut 15 is adjustably supported in position in the housing

or bracket member 17 and is prevented from being disengaged therefrom by means of a rivet 18 and a cotter pin 19.

When the panel door 4 is to be mounted in place, the lower edge is first engaged in the outer frame 3 with the clip fastener 8 engaged over the lower horizontal member of the stop flange 2 after which the upper end of the panel door is moved toward the stop flange 2 until the back up screw shank 12 is brought into engagement with the floating nut 15. A screw driver may then be engaged in the slotted head 13 of the back up screw to rotate the same so that the threaded shank 12 is threaded through the floating nut 15 thereby drawing the panel door tightly into the pocket or recess of the outer frame 3 in tight-seating engagement against the stop flange 2 of the inner frame 1. The shiftable mounting of the floating nut 15 permits positive alignment of the connected parts.

With the head 13 of the back up bolt rotatably engaged in the panel door 4 as described, it will be noted that no projections in the form of knobs or handles or the like are necessary on the outer surface of the panel door so that an entirely smooth finished surface of the access panel is provided flush with the surface of the wall in which the access panel is mounted. To remove the panel door 4 from the access panel frame, it is only necessary to rotate the back up screw by means of a screw driver or other suitable tool causing the screw to thread outwardly through the floating nut 15, thereby moving the upper end of the panel door away from the access panel frame to permit the same to be readily engaged and removed from the access panel frame without any danger of damage to the wall or the decorations thereof.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted hereon otherwise than is necessitated by the scope of the appended claims.

We claim as our invention:

1. An access structure comprising an inner frame, a stop flange formed thereon, an outer frame rigidly engaged around said inner frame and projecting beyond the stop flange to provide a receiving pocket, a panel door seated in said outer frame pocket and abutting said stop flange, a fastener secured on the inner surface of the panel door for engaging over the stop flange to hold one end of the door panel connected in position, and means mounted on the panel door and a back-up screw in said inner frame for releasably locking the panel door in place.

2. An access structure comprising an inner frame, an inwardly directed stop flange formed therein, an outer frame engaged

around said inner frame and projecting beyond the stop flange, an outwardly directed flange formed on said outer frame, plaster grabs formed on the outer frame flange, a panel door seated in said outer frame against the inner frame stop flange, means on said panel door for engaging the inner frame stop flange, a back up screw rotatably supported on the panel door, and a floating nut mechanism supported in said inner frame for co-action with the back up bolt for releasably holding the panel door in position flush with the outer edge of the outer frame.

3. An access structure comprising a pair of rigidly interfitting frames offset with respect to one another to provide a receiving pocket, a panel door removably engaged in said receiving pocket, a floating nut supported in one of said frames, and a back up screw bolt rotatably supported by the panel door for co-action with said floating nut to releasably lock the panel door in position.

4. An access structure comprising a frame, an outwardly projecting flange thereon, plaster grabs struck from said flange, a closure panel for said frame, and means on the inner side of the closure panel coacting with the frame for removably holding the closure panel in position flush with the front edge of said frame.

5. An access structure comprising a pair of rigidly connected interfitting frames, flanges integrally formed on said frames and projecting in opposite directions with one of said frames projecting beyond the flange of the other of said frames to provide a receiving pocket, a closure panel removably engaged in said receiving pocket, a retaining member engaged on said closure panel for co-action with the flanges of one of said frames, a floating nut member supported in one of said frames, and a rotatable back up screw bolt device rotatably supported in the closure panel for co-action with the floating nut for retaining the closure panel in position and furthermore serving as a means for pushing the closure panel out of said frame when the back up screw bolt is released.

6. An access structure comprising an inner frame, a stop flange integrally formed thereon, an outer frame rigidly secured around said inner frame and projecting beyond said stop flange, a flange integrally formed on said outer frame plaster retaining means formed on the flange of said outer frame, a closure panel removably engaged in said outer frame and seating against the stop flange of said inner frame, a fastener secured on the inner face of said closure panel for engagement with the stop flange of said inner frame, a bracket mounted in said inner frame, a floating nut supported by said bracket, and a back up screw bolt device rotatably supported on the inner side of said closure panel and accessible from the exterior

of the closure panel to coact with the floating nut to draw the closure panel into closed position when rotated in one direction and acting to push the closure panel outwardly upon rotation of the screw bolt member in an opposite direction.

In testimony whereof, we have hereunto subscribed our names at Gary, Lake County, Indiana.

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