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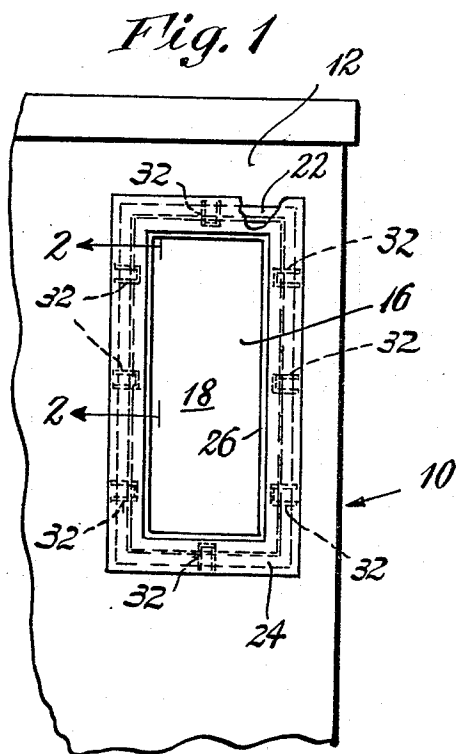
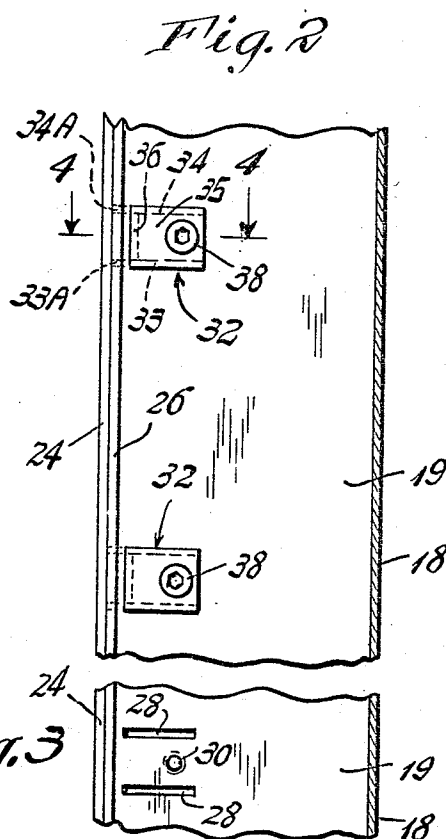
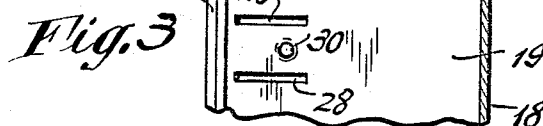
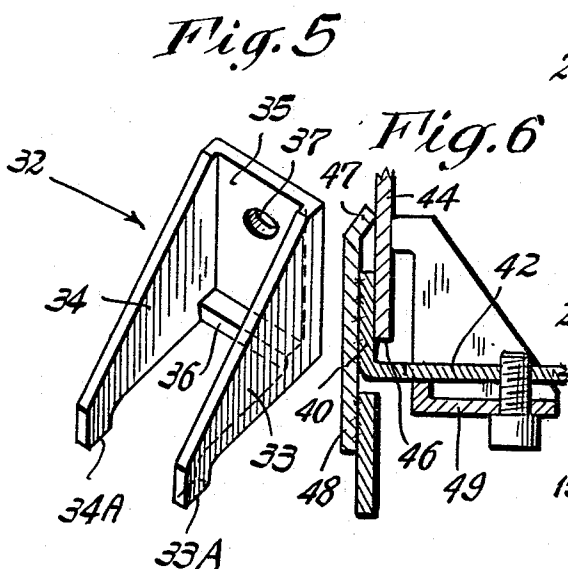
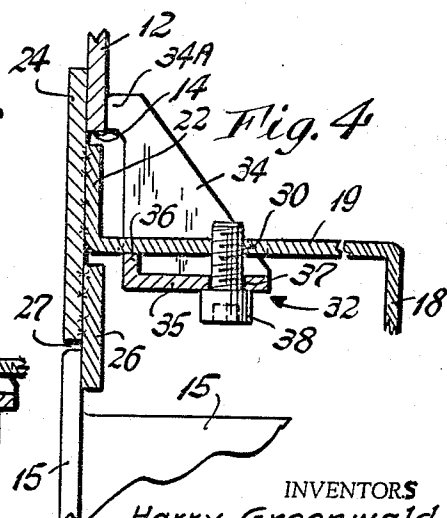
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3,276,834

CABINET PANEL LOCK

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2 Sheets-Sheet 1



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Fig. 7

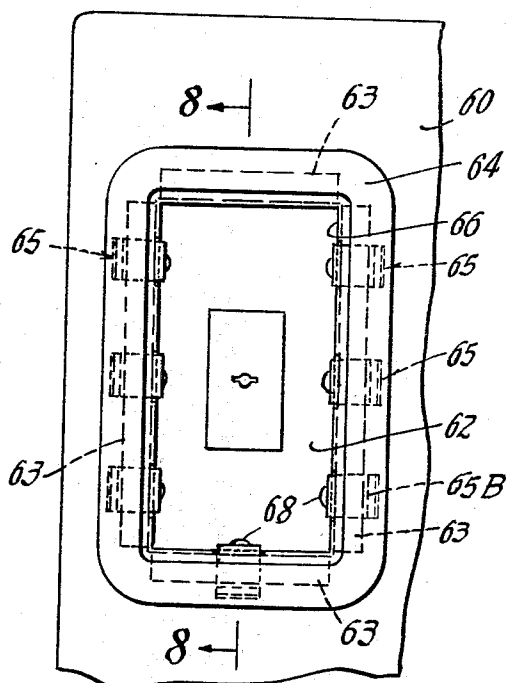


Fig. 9

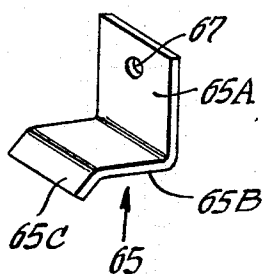
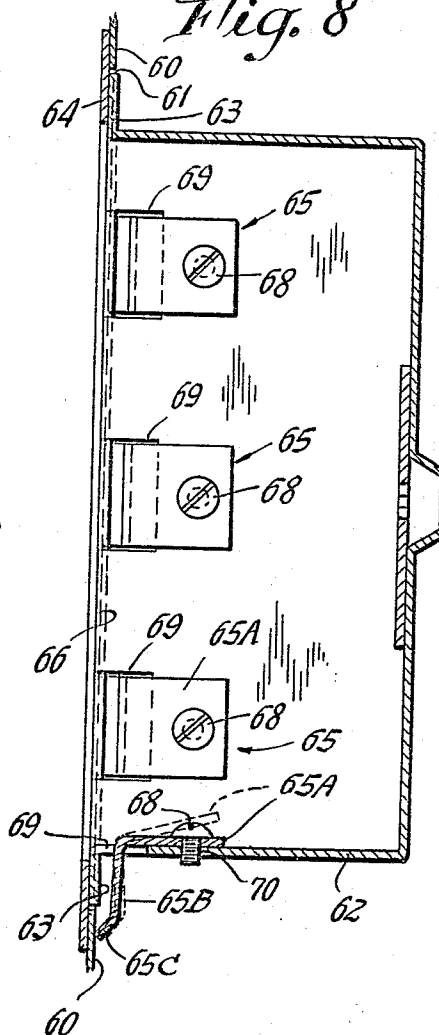


Fig. 8



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3,276,834

CABINET PANEL LOCK

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3 Claims. (Cl. 312-242)

This invention relates in general to a cabinet construction, and more specifically to a cabinet panel lock whereby a receptacle adapted to be received in an opening formed in a wall panel portion of the cabinet may be detachably secured thereto from the inside of the receptacle in which access for the assembly thereof is had through the same opening adapted to receive the receptacle.

The cabinet of a coin-operated vending machine or the like is usually provided with an opening adapted to receive a meter housing in which the coin meter for operating the machine is housed. Heretofore, in the assembly of such vending machine cabinets, an access opening was usually provided in either the top or rear of the cabinet to provide access to effect the assembly of the meter housing to the main cabinet of the machine. Upon completion of the assembly of the meter housing to the cabinet, the access opening would then have to be closed with suitable closure. Because of the prior known constructions required an auxiliary access opening, the fasteners by which the same was secured were therefore exposed and subject to tampering. Furthermore, the installation of such vending machines in a building or the like is such that the access opening by which access to the meter box housing is had were frequently obstructed or backed against a wall therefore rendering access to the meter box for repair or maintenance difficult, if not impossible in many instances.

It is therefore an object of this invention to provide an improved cabinet panel lock whereby a receptacle or housing for a coin meter or the like is detachably secured to a wall portion of the cabinet from access provided by the opening adapted to receive the receptacle.

Another object is to provide in a vending machine cabinet construction a meter housing which is rendered detachably secured to the wall portion of the cabinet from the inside of the receptacle with access thereto being had through the opening adapted to receive the same.

Still another object is to provide an improved clamping assembly which permits the connecting a receptacle disposed within an opening in a panel wall to the back side of the panel wall by access had through the opening therein and from the inside of the receptacle.

Still another object is to provide in a vending machine a meter housing in which access for the assembly thereof is had only when the meter panel and money box housed within the meter housing is removed.

Still another object is to provide in a vending machine a meter housing assembly in which the means for securing the same are concealed within the assembly thereof.

The foregoing objects and other features and advantages are attained in a cabinet construction, as for example, the cabinet of a vending machine or the like wherein the cabinet is provided in a panel wall having an opening for accommodating a meter housing. Essentially, the meter housing comprises a receptacle having a back wall portion and a forwardly extending circumscribing side wall to define an open front box which is sized to be received within the opening. A front flange is connected to the forward end of the circumscribing side walls to define a frame for the receptacle, the frame having its marginal portions disposed in overlying relationship with the peripheral marginal portion of the panel defining the opening. Means circumferentially spaced about the pe-

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riphery of the receptacle or meter housing are provided whereby the meter housing may be detachably secured to the back side of the adjacent cabinet panel wall portion from the inside of the receptacle.

In accordance with this invention, the fastening means for detachably securing the meter housing to the panel wall portion is specifically constructed so that access to the fastening means is had through the same opening adapted to receive the receptacle. This is attained by providing a clamp assembly having a leg portion adapted to extend through an opening or slot formed in the circumscribing side wall of the receptacle so the end of the leg is adapted to engage the back side of the panel to wedge the panel between it and the front frame of the receptacle. The clamp is also provided with a laterally extending web portion which is spaced from the inside wall of the receptacle by a pivot or fulcrum in a manner to pivot the clamp relative to the side wall of the receptacle. Means in the form of a screw fastener or the like is provided for securing the web portion of the clamp to the side wall of the receptacle. The arrangement is such that force exerted by the leg portion of the clamp against the wall of the cabinet to secure the housing is rendered proportional to the torque applied to the screw fastener.

A feature of this invention resides in meter housing assembly wherein the meter housing is detachably secured to the back side of a cabinet panel wall portion in a manner wherein the fastening means are concealed within the inside of the meter housing in the operative position thereof.

Another feature of this invention resides in the provision of a relatively simple clamping means that is specifically constructed and arranged so as to vary the holding force of the clamp in proportion to the amount of torque applied to a screw fastener for securing the clamp to the meter housing.

Another feature of this invention resides in the provision in which the clamp and screw assembly adapted to secure a meter housing to a cabinet wall portion of a vending machine are hidden within the meter housing and rendered accessible only when the meter panel and money box of the meter are removed.

Another feature of this invention resides in a meter housing construction which can be suitably modified for specific application without altering or varying the basic construction thereof.

Another feature of this invention resides in a housing assembly wherein the means for securing the housing to a cabinet construction is had through the same opening adapted for receiving the housing thereby avoiding the necessity of having additional access through which such assembly was heretofore required.

Other features and advantages will become readily apparent when considered in view of the drawings in which:

FIGURE 1 illustrates fragmentary front elevation view of the meter housing assembly of the instant invention as applied to the cabinet of a vending machine or the like.

FIGURE 2 in the fragmentary detail elevation view, shown in section, of the meter housing assembly taken along line 2-2 of FIG. 1.

FIGURE 3 is a sectional view similar to that of FIG. 2, but with the clamping means removed.

FIGURE 4 is a sectional plan view taken through line 4-4 of FIG. 2 to illustrate the details of construction of the clamping assembly.

FIGURE 5 is a detail perspective view of the clamp means of the instant invention.

FIGURE 6 is a slightly modified form of the invention.

FIGURE 7 is a front view of a modified form of the invention.

FIGURE 8 is a sectional view taken along line 8-8 of FIG. 7.

FIGURE 9 is a detail perspective view of the clamp means used in the construction of FIGS. 7 and 9.

Referring to the drawings, there is shown in FIG. 1, a fragmentary portion of a cabinet construction in which the panel lock assembly of the instant invention is incorporated. The cabinet construction of FIG. 1 may comprise for example the cabinet 10 of a coin vending machine in which the front panel 12 thereof is provided with an opening 14 adapted to receive the meter housing 16 in which a coin meter 15 for rendering the machine operative is housed.

As shown, the coin meter housing or receptacle 16 comprises an open front box defined by a back wall portion 18 circumscribed by a forwardly extending side wall 19 to define an open front housing 16. If desired, the leading ends of the circumscribing side wall 19 may be laterally turned outwardly to define a circumscribing flange 22. Referring to FIG. 4, the outer periphery of the flange 22 is sized so that the same may be received within the opening 14 in the panel 12 of the cabinet 10. A circumscribing frame 24 is suitably connected to the circumscribing flange 22 of the meter housing 16 by any suitable means, as for example, spot welding, or the like. As shown in FIGS. 1 and 2, the width of the circumscribing frame 24 is such that the outer marginal portion thereof overlies the marginal edges of the opening 14 in the panel 12 so that the frame 24 is disposed in abutting relationship with the front panel 12 in the assembled position in which the receptacle 16 is disposed within the opening 14 of the cabinet 10. A circumscribing back stop frame 26 may be connected to the rear of the frame 24 to circumscribe the inner periphery thereof. Thus as best seen in FIGS. 1 and 4, an annular recess 27 is defined about the inner periphery of the frame member 24. Accordingly the front panel 15A of a coin meter 15 when assembled is disposed within the recess 27 so as to be flush with the frame member 24.

In accordance with this invention the novel clamping means or assembly 32 is provided for detachably securing the meter housing or receptacle 16 to the back side of the front wall panel 12 of the cabinet 10 in a manner whereby access to the clamping means 32 is had from the inside of the receptacle 16 and through the same opening 14 adapted to receive the same. This is attained by a novel clamping assembly 32 which comprises in the illustrated embodiment of a substantially U-shaped member having opposed leg portions 33 and 34 interconnected by a web portion 35. Accordingly, the side walls 19 of the meter housing or receptacle 16 is provided with a plurality of complementary pairs of slotted openings 28, which are circumferentially spaced about the side walls 19 of the housing. The arrangement is such that the complementary pairs of slotted openings 28 are adapted to receive the opposed leg portions 33 and 34 of the clamping assembly as best seen in FIG. 4. The free end of the respective leg portions 33, 34 of the clamp assembly are provided with abutments 33A and 34A. The arrangement is such that in the assembled position, the abutments 33A, 34A of clamp assembly 32 extend through the slotted openings 28 and are disposed in engagement with the backside of the front panel 12 immediately adjacent the opening 14 defined therein.

Referring to FIGS. 4 and 5, the web portion of the clamp assembly is provided with an intumed flange 36 which defines a fulcrum about which the clamp 32 may pivot, as will be described. Accordingly, in the assembled position, the web portion 35 is spaced from the adjacent side wall 19 of the receptacle 16. The web portion 35 is also provided with an aperture 37 disposed between slots 28 and which is arranged in axial alignment with a threaded or tapped opening 30 formed in the side wall 19 of the receptacle 16. As best seen in FIG. 4, the aperture 37 in the web 35 of the clamp 32 is provided with a diameter which is slightly larger than the di-

ameter of a screw or bolt fastener 38 adapted to be received therein.

In accordance with this invention the screw or bolt fastener 38 detachably secures the clamp 32 to the housing 16 in a manner wherein the housing is secured to the front panel 12 from the inside thereof. Accordingly, it will be noted that as the screw fastener or bolt 38 is screwed into the threaded aperture 30, that the torque applied thereto will cause the web portion 35 of the clamp to pivot inwardly toward the side wall 19 of the housing, and thereby causing the abutments 33A, 34A on the end of the leg portions 33, 34 to be urged tightly against the wall 12 of the cabinet 10. Thus the greater the applied torque on the bolt, the more securely the front panel 12 is wedged between the front frame 24 and the abutments 33A and 34A of clamp 32. With the construction thus described, it will be readily apparent that the attachment of the meter housing 16 to the front wall panel 12 is facilitated simply by applying the required torque to the respective screw fastener 38, access to which is had only through the front opening of the housing 16, and opening 14 through which the meter housing or receptacle 16 is received.

Accordingly, the coin meter 15 is then suitably secured or locked in a well known manner to the back stop or frame 26 circumscribing the opening in frame 24. Thus in the assembled position, it will be noted that all the bolts or fasteners 38 and clamps 32 by which the meter housing is detachably secured to the front panel 12 of the vending machine cabinet 10 are concealed behind the coin meter 15. Thus, accessibility of the clamping means 32 and screws 38 securing the same cannot be had until the meter panel 15A and associated money box are removed therefrom.

In accordance with this invention, if desired the flange portion 40 of a modified meter housing assembly 42 may be extended so as to overlie the front wall panel 44 of a cabinet, thus providing the marginal portions about the opening 46 in panel 44 with a double thickness. Accordingly, in this form of the invention the outer edge 47 of the framing 48 about the meter housing 42 may be laterally bent rearwardly to conceal the flange 40 of the meter housing 42. In all other respects, the clamp assembly 49 is similar to that hereinbefore described.

FIGURES 7 to 9 illustrate a modified form of the invention. In this form, the front panel 60 of the cabinet is provided with an opening 61 adapted to receive the meter housing 62. As shown, the meter housing 62 comprises an open front box having laterally bent flange portions 63 which are arranged to abut against the back side of a frame 64 that circumscribes the opening 63. In this form of the invention, the clamping means 65 for detachably securing the meter housing or receptacle 62 to the back side of the cabinet by access through the opening 66 of the meter housing 62 is attained by plurality of resilient clamps 65. As best seen, the respective resilient clamps 65 comprise an angled member having its respective leg portions 65A, 65B disposed so as to define an angle A therebetween. An angle A of 100 degrees has been found to work satisfactory, as will be hereinafter described. Accordingly, one leg 65A of the clamp is provided with an aperture 67 for receiving a fastener 68 by which the same is secured to the housing 62. The other leg 65B is provided with an angularly bent end portion 65C which in the operative position is arranged to engage the back side of the cabinet panel 60.

Circumferentially spaced about the opening 66 of the meter housing 62 in the side walls thereof are a plurality of spaced slotted holes 69. The arrangement is such that in the assembled position, the leg 65B of each clamp 65 is extended through the slotted opening 69 of the meter housing 62. With the leg 65B of the respective clamp 65 extended through the respective openings 69, a fastener 68 such as a screw, bolt, or the like is threaded through opening 67 of the clamp and a com-

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plementary hole 70 in the meter housing 62 to tension the clamp 65. As best seen in FIG. 8, it will be observed that as leg 65A of the clamp 65 is tightened by the turn of the screw to secure it to the wall of the meter box, the other leg portion 65B is urged against the back side of the cabinet panel 60. Accordingly, the inherent resiliency of the clamp material firmly secures the meter housing in place, as seen in FIG. 8. In this manner, and as previously described with reference to FIGS. 1 to 6, the meter housing 62 can be secured to the back side of the front panel 60 by access attained through the opening 66 of the housing 62.

While the instant invention has been described with reference to particular embodiments thereof, it will be readily appreciated and understood that variations and modifications thereof may be made without departing from the spirit or scope of the invention.

What is claimed is:

1. For use in a cabinet having an opening formed in a panel wall thereof:

- (a) a receptacle having a wall portion whereby said receptacle is adapted to be received in said opening of said panel wall,
- (b) said receptacle wall portion having a pair of slots formed therein and an aperture disposed between said slots,
- (c) and means permitting attachment of said receptacle to said panel wall through said opening,
- (d) said latter means including a clamp construction comprising:
- (e) a substantially U-shaped member having opposed leg portions and an interconnecting web portion, said leg portions being adapted to be extended through said slots,
- (f) means defining a fulcrum connected to said web portion along an edge portion disposed between said leg portions, said fulcrum spacing said web from the inside of said wall portion of said receptacle,
- (g) and said web portion having an opening therein disposed in alignment with said aperture,
- (h) and a fastener adapted to be inserted through said aligned aperture and opening to secure the clamp to said housing and whereby the applied torque therein causes said leg portions to be urged toward said panel wall.

2. For use in a cabinet having an opening in a wall portion thereof:

- (a) a receptacle having a laterally extending flange adapted to be detachably received in said opening whereby the flange of said receptacle overlies the marginal portions of the wall about said opening,
- (b) said receptacle having a pair of slots formed in the side walls thereof with screw hole disposed between said pairs of slots,
- (c) and a clamping means for detachably connecting said receptacle to the back surface of said cabinet wall adjacent said opening,
- (d) said clamping means including a bracket having opposed leg portions adapted to extend through said pair of slots,

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- (e) a web interconnected between said leg portions,
 - (f) said web having an edge portion adapted to define a fulcrum therefor and an aperture therein disposed in alignment with said screw hole,
 - (g) and a fastener extending through said aperture in said web and said aligned screw hole to define a means for effecting the operation of said clamping means whereby said cabinet wall is wedged between the leg portions of said clamp and said flange of said receptacle.
3. For use in a cabinet having an opening formed in a wall panel thereof:
- (a) a receptacle having circumscribing side wall and a back wall interconnected between said side wall portions to define an open front box,
 - (b) said receptacle being sized to be received within said opening,
 - (c) a front flange connected to the side wall portion of said receptacle to define a front frame therefor,
 - (d) said front frame being adapted to overlie the marginal portions of said opening formed in said panel in the assembled position of said receptacle,
 - (e) and means for securing said receptacle to the wall of said cabinet from the inside of said receptacle,
 - (f) said means including a clamp having a pair of opposed leg portions and an interconnecting web disposed therebetween,
 - (g) said side wall of said receptacle having pairs of slotted openings circumferentially spaced therearound,
 - (h) each of said pairs of openings being adapted to receive the opposed leg portions of said clamp,
 - (i) said leg portions of said clamp having their respective end portions disposed adjacent the back side of said cabinet wall panel adjacent the marginal portions of said opening therein,
 - (j) said web having an intumed portion for spacing the same from the side wall of said receptacle,
 - (k) and a fastener adapted to extend through an aperture formed in said web to secure the clamp to the side wall of said receptacle whereby the tightening of said fastener from the inside of said receptacle causes said clamp to pivot about said intumed portion to fulcrum the ends of the opposed leg portions tightly against the back side of the cabinet wall panel to tightly wedge the cabinet wall panel between the front flange and the leg portions of said clamp.

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