United States Patent

[11] 3,620,404

[72] Inventor **Joseph C. Grasso**
New York, N.Y.

[21] Appl. No. **882,207**
[22] Filed **Dec. 4, 1969**
[45] Patented **Nov. 16, 1971**

[73] Assignee **Accessory Specialties, Inc.**
New York, N.Y.

[54] **FASTENER ASSEMBLY FOR MOUNTING OF WALL-RECESSED CABINETS AND SIMILAR FIXTURES**
1 Claim, 4 Drawing Figs.

[52] **U.S. Cl.** **220/18,** 52/36, 174/48, 174/58, 220/3.5, 220/3.7, 312/242
[51] **Int. Cl.** **B65d 25/24**
[50] **Field of Search** 220/3.5, 3.6, 3.7, 8, 18; 174/48, 53, 57, 58, 66; 312/242; 52/36

[56] **References Cited**

UNITED STATES PATENTS

1,015,455	1/1912	Neesham	220/8
1,850,292	3/1932	Skelly	220/18
2,288,637	7/1942	Mauro	220/18
2,297,862	10/1942	Bachmann	220/3.6
2,482,651	9/1949	Burt	220/89 A X
2,752,217	6/1956	Simon	220/3.6 X
2,877,505	3/1959	Stephens	220/8 X
3,388,706	6/1968	Muirheid	220/8 X

Primary Examiner—Joseph R. Leclair
Assistant Examiner—James R. Garrett
Attorney—Daniel P. Chernoff

ABSTRACT: A fastener assembly, for securing a cabinet into a subframe previously installed in a masonry wall opening, in the form of a flexible spring clip hooking into one of the notches on a serrated anchorplate, with one of said fastener elements being secured by pop rivets to each outer side surface of said cabinet and the other fastener element being affixed to corresponding locations on the inner side surfaces of said subframe.

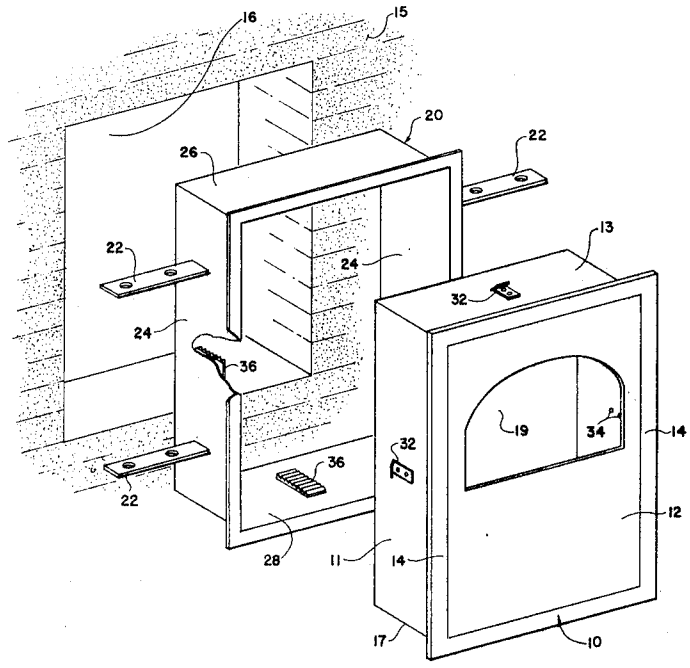
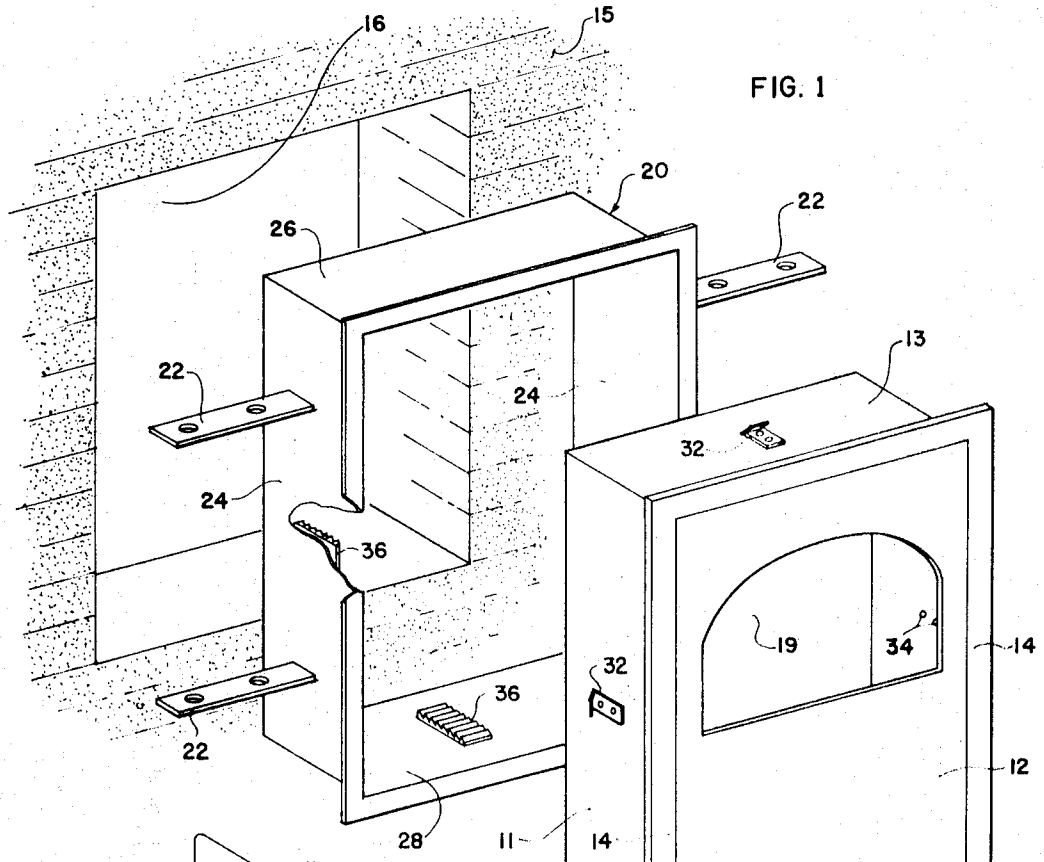


FIG. 1



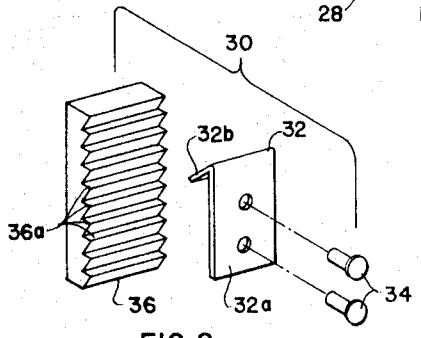


FIG. 2

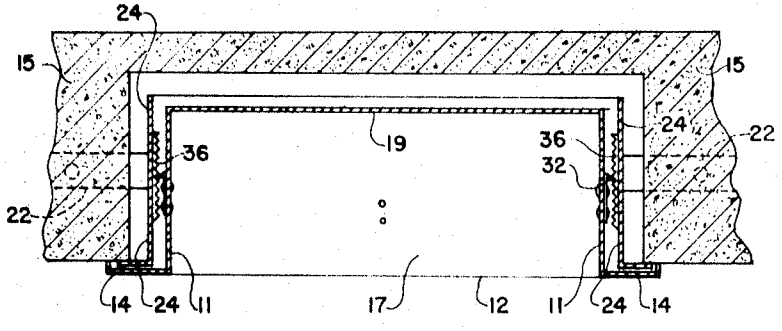


FIG. 3

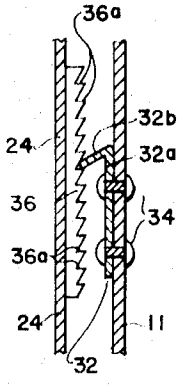


FIG. 3A

FASTENER ASSEMBLY FOR MOUNTING OF WALL-RECESSED CABINETS AND SIMILAR FIXTURES

BACKGROUND OF THE INVENTION

This invention relates to a fastener assembly for the ready mounting of wall-recessed cabinets and similar-type fixtures into a subframe previously installed in a wall opening.

It has heretofore been conventional to recess-mount cabinets and similar fixtures into masonry walls by either framing the opening with wood or installing a subframe, similar to a door frame, into the wall opening, typically at the time of erection of the wall structure, and thereafter at a later time installing the cabinet fixture to the subframe or wood frame with conventional fastener means such as rivets, screws anchor bolts or the like. The difficulty experienced in utilizing this prior art assembly technique is that considerable time and labor must be expended at the installation site to position and align the fastener rivets or bolts into predrilled holes formed into the cabinet sides, and thereafter to drive the fasteners into engagement with the subframe member and wall. Also, errors caused by improper measurements may necessitate the reworking of the wood frame and the tile walls at considerable expense. Further, the fact that the fasteners must be inserted and driven from the interior of the cabinet frequently results in an awkward and thus time-consuming installation procedure as the screwdriver or other work tool must be positioned and used in a cramped or near-inaccessible location inside the cabinet walls. Not infrequently the fixture is chipped, dented or otherwise damaged by uncontrolled slippages of the work tool as the workman struggles to press and secure the fastener in the cramped confines of the cabinet. Accordingly, a real need exists for a fastener assembly for securing securing a fixture to a subframe in a wall-recessed installation which provides rapid, easy, permanent and theft-resistant mounting of the fixture.

SUMMARY OF THE INVENTION

The present invention utilizes a novel fastener assembly for recess-mounting of the cabinetlike fixture into a masonry wall, in the form of a flexible spring clip hooking into one of the notches on a serrated anchorplate, with one of the fastener elements being secured by pop rivets to each outer side surface of the cabinet fixture and the other fastener element being affixed to corresponding locations on the inner side surfaces of the previously installed cabinet subframe. The factory prearrangement and installation of the fastener elements in pair groupings at the respective locations on the cabinet and subframe surfaces insures that automatic alignment and rapid mounting of the cabinet into the wall-recessed subframe member can be effected at the job site by the simple expedient of inserting the fixture inside the subframe opening and pushing it inward to the desired depth.

The spring clip and anchor fastener combination functions as a ratchet-and-pawl mechanism to engage and permanently secure the cabinet fixture to the subframe by permitting only unidirectional relative movement between the two members so as would more tightly nest the one into the other. Moreover, the placement of the fasteners on all four side surfaces of the cabinet provides an automatic centering action on the positioning of the fixture inside the subframe opening, as well as serving to more equally distribute the fastener stress over the walls of the fixture.

Once inserted in the subframe opening to the desired depth the cabinet fixture is rigidly and permanently held therein. However, in the event it later becomes necessary or desirable to remove the cabinet from the wall-recessed subframe to permit repair or replacement of the former, this can readily be accomplished by using a chisel or screwdriver, together with a hammer, to knock off, from the interior of the cabinet, the heads of the pop rivets securing those elements of the fastener pair assembly which are affixed to the sides of the fixture, thereby disengaging the cabinet member from its fasteners and permitting it to be slid out from the subframe.

It is therefore a principal objective of the present invention to provide a new and improved fastener means for mounting a cabinet or similar-type fixture into a wall or a wall-recessed subframe.

The foregoing and other objectives, features and advantages of the present invention will be more readily understood upon consideration of the following detailed description of the invention, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of an illustrative wall-recessed cabinet installation utilizing the fastener assembly of the present invention.

FIG. 2 is an exploded perspective view of an exemplary embodiment of the fastener assembly of the present invention.

FIG. 3 is a top sectional view showing the cabinet fixture of FIG. 1 as installed.

FIG. 3A is an enlarged detail view of a portion of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the Figures, there is shown a conventional rectangular cabinet fixture **10**, exemplarily in the form of a paper toilet seat cover dispenser, having sidewalls **11**, top wall **13**, bottom wall **17** and backwall **19**. As depicted in FIG. **3** the fixture is designed for recess-mounting in a masonry wall **15** with the body of the container fitting inside the wall and only the front face **12** and a marginal flange portion **14** protruding forwardly beyond the confines of the wall surface.

As illustrated in the exploded view of FIG. **1** and in the sectional view of FIG. **3**, the fixture is configured to nest inside a rectangular subframe member **20** which in turn nests inside a wall opening **16** of appropriate dimensions formed in the wall **15**. The subframe **20** is provided with a pair of perforated masonry anchors **22** on each jamb or vertical side surface **24** for securing the member inside the wall opening. Typically the installation of the subframe member **20** inside the wall opening **16** would be made at the time of construction of the masonry wall, although it could be installed at a later time in which case other suitable fastener means might be utilized in lieu of the anchors **22** to provide a secure mounting of the subframe member to the wall.

It will be understood that thus far the description has related to purely conventional aspects of the cabinet-fixture configuration and installation procedure which are well known to the art and form no part of the present invention.

Attached to the outside of each of the four side surfaces (i.e., sidewalls **11**, top wall **13** and bottom wall **17**) of the cabinet fixture is a spring-finger element **32** which together with an associated serrated anchorplate element **36** form the novel fastener assembly combination **30** (FIG. **2**) of the present invention. The spring **32** is comprised of a base portion **32***a* which is secured to the side surface, preferably by pop rivets **34** for ready dismantling of the fastener assembly if needed, and an angled projecting leg portion **32***b*. The spring element **32** in each instance is positioned on the related side surface with the angled leg **32***b* projecting forwardly at an acute angle toward the face panel **12** and away from the backwall **19**.

At corresponding positions on the inside of the sidewall surfaces (i.e., jambs **24**, top wall **26** and bottom wall **28**) of the subframe member **20** are positioned and affixed the mating anchorplate elements **36**. The anchors are in the form of a rectangular plate having a flat bottom surface for securing by soldering, adhesive or other suitable fastening means to the surface of the subframe sidewall, and a serated top surface. The serrations are arranged as a row of sawtooth ridges **36***a* oriented parallel to the front edge of the respective sidewall surface of the subframe. The teeth **36***a*, as illustrated in FIG. **3A**, are biased (i.e., angled) rearwardly so as to function as a unidirectional ratchet surface to engage the pawllike finger **32***b* of the spring element **32**.

The engagement between the two fastener elements **32** and **36** is such as to permit easy insertion of the cabinet fixture into the subframe as the respective spring finger tips **32***b* depress and slide over the sloping leading surfaces of the sawteeth **36***a* of the associated anchorplates. Then, when the desired insertion depth is reached with the fixture completely nestled inside the subframe, the tips of each of the spring fingers fall into the nearest notch and lock against the right-angled trailing surfaces of the adjacent anchor teeth so as to secure the fixture firmly in a rattleproof manner and prevent its withdrawal from the subframe mounting.

To provide a secure mounting with equalized distribution of fastening stress over the four sidewall surfaces of the fixture it is usually desirable to employ at least one spring clip-anchorplate assembly on each of the respective sidewall surfaces. This also serves to provide an automatic self-centering alignment of the fixture as it is inserted inside the subframe for mounting. Thus, for the typical cabinet fixture of approximately square dimensions, four of the fastener assemblies of the present invention would be used. In cases where the fixtures were unusually large or narrow, additional fasteners would be employed on some or all of the sidewall surfaces.

It will be recognized by those skilled in the art that the elements of the fastener assembly could, with ready modification, be interchanged, with the spring clip **32** being affixed to the subframe and the serrated anchor **36** mounted to the fixture sidewall, so as to provide the pawl-and-ratchet-locking action for the installation in a manner similar to that of the preferred embodiment described herein.

The terms and expressions which have been employed in the foregoing abstract and specification are used therein as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding equivalents of the features shown and described, or portions thereof, it being recognized that the scope of the invention is defined and limited only by the claims which follow.

What is claimed is:

1. A quick mounting assembly for theft-resistant installation of a cabinetlike fixture in a wall opening comprising:

a. a subframe having a set of four sidewalls for holding said fixture, said subframe including subframe-fastening means for securing said subframe in said wall opening independently of said fixture prior to the installation of said fixture;

b. a fixture having a set of four sidewalls for nesting within said four mating sidewalls of said subframe;

c. a fixture-fastening means for holding said fixture in said subframe, said fixture-fastening means comprising pairs of mating fastener acutely one element of each pair being affixed to the inner surface of each of said four sidewalls of said subframe and the other element of each pair being affixed to a corresponding mating clip on the outer surface of each ratchet-and-pawl said four sidewalls of said fixture, so that upon insertion of said fixture in said subframe the holding forces between said fixture and said subframe are distributed among said four pairs of external and

d. one of each pair of said fastener elements comprising a flexible spring clip having a base portion and an acutely angled projecting finger portion, and the other mating element of each pair comprising a serrated anchorplate formed of a plurality of sawtooth ridges, said sawtooth ridges being angled with respect to said spring clip so as to provide a unidirectional ratchet-and-pawl mechanism automatically engaged by insertion of said fixture inside of said previously secured subframe and, when so engaged, preventing withdrawal of said fixture from said subframe, said fastener elements being shielded from external manipulation by the respective walls of said subframe and fixture so as to prevent subsequent disengagement of said elements and withdrawal of said fixture from said subframe by an unauthorized person.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,620,404 Dated November 16, 1971

Inventor(s) Joseph C. Grasso

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 1, Line 33 Delete "securing" (double inclusion)

Rewrite subparagraph (c) of claim 1, as it appears at Col. 4, lines 10-20, to read as follows:

--c. a fixture fastening means for holding said fixture in said subframe, said fixture fastening means comprising pairs of mating fastener elements, one element of each pair being affixed to the inner surface of each of said four sidewalls of said subframe and the other element of each pair being affixed to a corresponding mating location on the outer surface of each of said four sidewalls of said fixture, so that upon insertion of said fixture in said subframe the holding forces between said fixture and said subframe are distributed among said four pairs of walls; and--

Signed and sealed this 23rd day of May 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents