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CABINET HANGER

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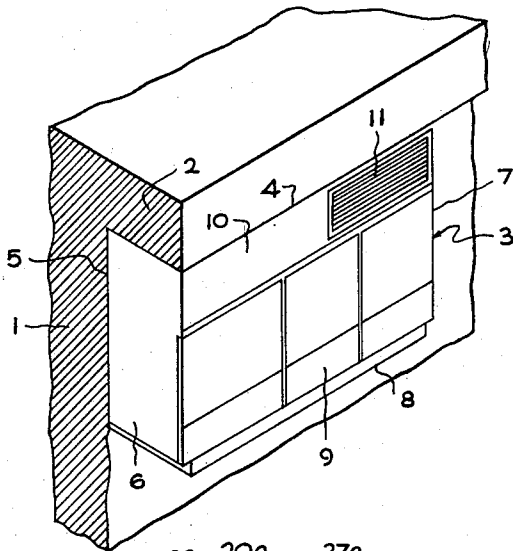


FIG. 1

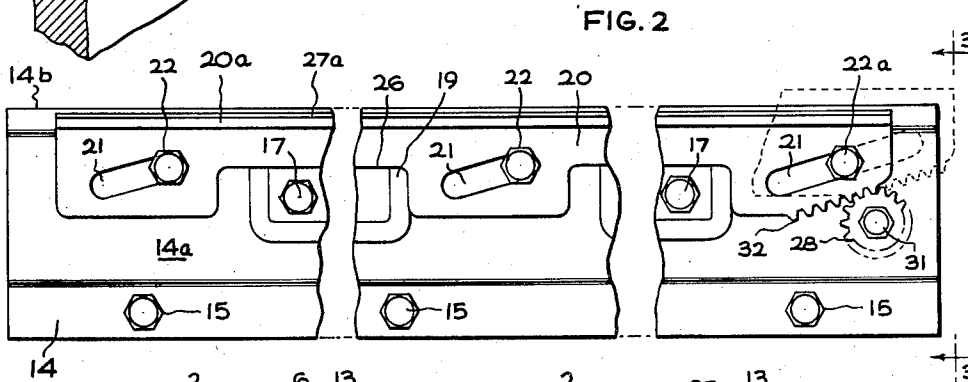


FIG. 2

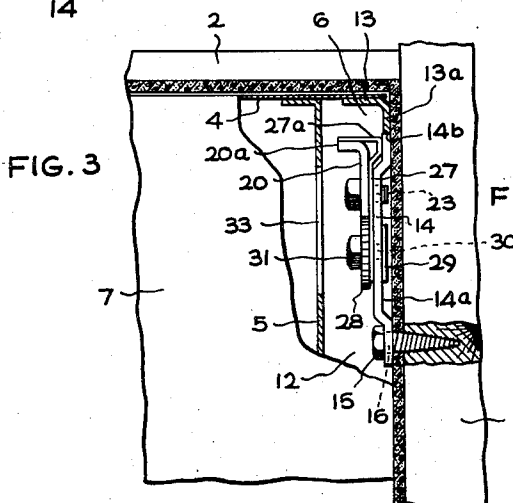


FIG. 3

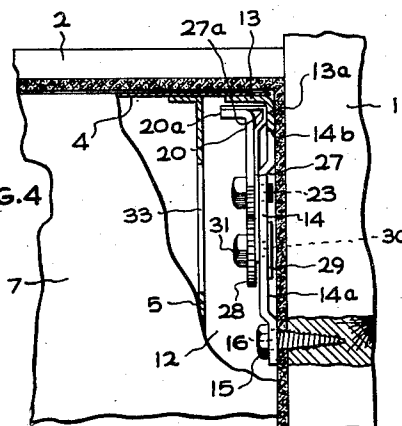


FIG. 4

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CABINET HANGER

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6 Claims. (Cl. 312-245)

My invention relates to cabinet structures and more particularly to the means for supporting a cabinet structure on a wall.

Storage cabinets in which household utensils, food, etc., are to be stored are generally attached by some convenient means to the upper part of the vertical side wall in a room. In this position, the cabinet affords a convenient access to its contents. Preferably doors are provided on the front of the cabinet. In many present-day wall structures it is common to find an overhanging outwardly extending wall portion along the upper part of the wall and these storage cabinets are therefore located or hung on the wall beneath this wall extension. Where there is no such extension the cabinets are hung beneath the ceiling. Where wall cabinet hangers to which the cabinet rear is attached have been used, the overhanging wall extension or the ceiling, if no wall extension is present, limits the upper movement of the cabinet as it is being hung as the cabinet is preferably located adjacent the extension or ceiling. The hangers commonly used require sufficient head room so that the cabinet can be brought up and over the hanger arrangement and lowered into supporting position thus producing a space or gap between the underside of the extension or ceiling and the top of the cabinet. This is not only unsightly but generally requires that some type of stuffing or paneling be employed to close this narrow opening and prevent the entrance of dust and other foreign matter.

Accordingly, an object of my invention is to provide a new and improved wall hanger for supporting a cabinet structure in contact with an overhanging wall extension or the ceiling.

Another object of my invention is to provide a new and novel arrangement for removably supporting a cabinet on a wall with the cabinet top substantially flush with the wall extension or ceiling.

Still another object of my invention is to provide a new and improved hanging arrangement for removably supporting a cabinet structure on a wall beneath a ceiling member in which the cabinet supporting means can be operated from the front of the cabinet to permit the cabinet to be hung on wall spaces where access and cabinet movement is greatly restricted.

A still further object of my invention is to provide a new and novel arrangement for supporting a cabinet structure from a wall which is simple in construction and which provides a rugged, conveniently installed assembly capable of supporting cabinet structures of substantial weight and varied dimensions while presenting a pleasing outward appearance.

In carrying out my invention, I provide a cabinet support member which is attached to the wall on which the cabinet is to be hung. At the rear of the cabinet, I provide positioning means which cooperate with the support member to position the cabinet in the desired position on the support member. The support member is also provided with a locking slide arrangement which may be operated from the front of the cabinet through its interior

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to lock the cabinet positioning means into engagement with the support member.

The novel features which I believe to be characteristic of my invention are set forth with particularity in the appended claims. My invention, however, both as to its organization and method of operation may be best understood by reference to the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a perspective view of a cabinet structure and its associated wall structure on which my invention is used;

Fig. 2 is a broken away elevation view of the wall hanger of my invention;

Fig. 3 is a sectional view enlarged taken substantially along line 3-3 of Fig. 2 showing the hanger of my invention in the unlocked position; and

Fig. 4 is a view similar to that of Fig. 3 showing my invention in the locked position.

Referring now to Fig. 1, I have shown a suitable type of cabinet structure, with which my novel cabinet hanger is used supported by the hanger on a wall. More specifically, I have shown a vertical wall 1 having an overhanging wall extension or ceiling member. Although I have shown a wall extension 2, my invention is not limited to such an extension and the extension 2 can be eliminated and be represented by the ceiling. The particular type of cabinet structure to which I preferably apply my invention is a wall refrigerator 3 arranged to be supported on the wall 1 directly beneath the ceiling member 2. It should be understood that although I preferably show my novel hanger in conjunction with the wall refrigerator 3, and type of cabinet structure of similar configuration may be employed and my invention is not necessarily restricted to the cabinet structure shown. For example, a wall cabinet commonly found in households for the storage of utensils, etc., may be employed.

The wall refrigerator 3, is arranged for the storage of foodstuffs at low temperature similar to the domestic type of household refrigerator. The refrigerator 3 is of generally rectangular configuration having a top wall 4, an inwardly displaced rear wall 5 (shown in Fig. 3), a pair of side walls 6, 7, a bottom wall 8 and a front wall containing a plurality of pivotably mounted doors 9 which permit access to the interior of the wall refrigerator food storage compartment. The upper portion of the refrigerator front wall is additionally provided with a panel 10 which may be made removable if desired. The panel 10 contains a louvered removable cover portion 11 at one end as shown in Fig. 1. Behind the panel 10 and cover portion 11 is a compartment, as is well understood, in which the refrigeration machinery of my refrigerator 3 is mounted. This machinery is used for refrigerating the food storage compartment behind the doors 9 in a manner conventional to refrigerating apparatus of the type shown.

Referring now to Fig. 3, the rear wall 5 is extended a short distance inwardly from the top wall 4, bottom wall 8 and side walls 6, 7 to form a recessed compartment 12 in the rear of the refrigerator cabinet 3. This compartment 12 is arranged to accommodate the mechanism of my novel cabinet hanger when the cabinet 3 is in the hanging position. Along the rear edge of the top wall 4 and suitably secured thereto as by welding, I provide an L-shaped bracket 13. This bracket preferably extends substantially the full width of the cabinet. The bracket 13 has a downwardly depending flange or leg 13a the lower edge of which is arranged substantially parallel to the rear edge of the top wall 4.

The storage cabinet or wall refrigerator 3 of Fig. 1 is

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arranged to be hung on a wall support member which is separately mounted on the wall 1 prior to the hanging of the cabinet. More specifically, I have shown in Fig. 2 an elongated plate or support member 14 which is arranged to be secured to the wall 1. My support member 14 comprises a rectangular plate formed with a raised center portion 14a and an upper edge 14b lying adjacent to the wall 1. This support member 14 is suitably arranged for mounting on the wall 1 by means such as screws 15 inserted through spaced openings 16 (shown in Fig. 3) arranged along its lower portion. The support member 14 is additionally secured to the wall 1 by means of a plurality of screws 17 inserted through a spaced opening (not shown) located along its upper portion. The raised portion 14a of the support member 14 is flattened at spaced intervals to provide concave portions 19 in which are located the spaced screw openings. Thus the flat rear surfaces of the support member 14 formed by the portions 19 contact the wall 1 when the member is placed against the wall. When the mounting screws 15 and 17 are inserted into their respective openings and screwed into the wall 1, the plate or support member 14 is securely attached to the wall.

In order to securely hold the cabinet 3 to the support member 14, I have provided an L-shaped locking slide 20 having a flange portion 20a extending along the upper edge of the slide. The slide 20 is associated with the support member 14 and contains a plurality of spaced, parallel, angularly-disposed slots 21 along its lower portion. In order to mount the locking slide 20 on the support member 14, guide machine bolts 22 are inserted through the slots 21 and threaded into corresponding threaded openings 23 (shown in Fig. 3) in the support member 14. It will be noted that as viewed in Fig. 2 the bolt at the extreme right is numbered 22a and should be distinguished from the remaining bolts 22 in a way to be explained hereinafter. By suitable means such as bushings (not shown) which encompass part of the shank of bolts 22 lying within the slots 21, the inner movement of the head of bolts 22 as they are threaded inwardly is arrested by the bushings striking member 14 before the bolt heads abut the slide 20. This prevents the bolt heads from coming into contact with the slide 20 and thus impeding the movement of the slide. Although I have provided an extended bushing around each of the bolts 22, the bushing used with the bolt 22a at the extreme right of the slide 20 is provided with an unextended bushing (not shown) which permits the bolt head as it is threaded inwardly to be moved into engagement with the slide.

As shown in Fig. 2, portions of the locking slide 20 have been removed at spaced intervals along the slide between the slots 21 providing notches 26 which permit access to the upper mounting screws 17. Thus when the locking slide 20 is loosely assembled on the support member 14, the slide flange portion 20a is substantially aligned parallel with the upper edge 14b of the plate 14 and the bolts 22 lie in the upper end of the slots 21 as shown in Fig. 2.

Referring now again to Fig. 3, I have also provided an L-shaped holding member 27 having a formed corner portion 27a which is secured by suitable means such as welding to the rear of the locking slide 20. The holding member 27 is of substantially the same length as the locking slide 20 and is provided with slots and notches (not shown) which correspond to the slots 21 and notches 26 of the slide when the holding member is attached to the slide. As shown in Fig. 3, the corner portion 27a of the holding member 27 abuts the upper flat portion of the wall support member 14 when the slide 20 is in the position of Fig. 2.

In order to move the locking slide 20 into locking position, I mount a pinion gear 28 on the support member 14 by means of a freely rotatable rivet 29 inserted within an opening 30 in the member 14. The pinion 28

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is arranged to be fixedly rotated with the rivet 29 by any convenient means such as a keyway by means of a nut 31 attached to the end of the rivet shaft.

Referring now again to Fig. 2, the locking slide 20 contains on its lower edge at the end adjacent the pinion 28 an angularly disposed rack 32 which meshes with the teeth of the pinion 28. It will be seen in Fig. 2 that the angle of the rack 32 is the same as that of the slots 21 in the slide 20 so that the rack extends parallel to the slots.

In the operation of my invention, the support member 14 and its associated locking slide 20, having been assembled together by means of the bolts 22, are mounted on the wall 1 by means of screws 15 and 17 in the position shown in Fig. 3 beneath the ceiling member 2. It will be noted in Fig. 3 that the top edge 14b of the support member 14 is positioned at such a distance from the underside of the ceiling member 2 that when the cabinet 3 is placed against the wall 1 with the downwardly depending leg 13a of bracket 13 which is attached to the cabinet top wall 4 resting on the edge 14b, the cabinet top wall 4 is positioned substantially flush with the underside of the ceiling member 2. This top wall 4 is thus substantially parallel with the ceiling member 2 and there is no space between the top wall and ceiling member underside. It will also be noted in Fig. 3 that at this time the support member 14 and slide 20 fit neatly within the recess 12 in the rear of the cabinet 3 the depth of which is defined by the wall 5.

When the locking slide 20 is in the position of Figs. 2 and 3, wherein the bolts 22 are arranged in the upper end of slots 21, the flange 20a of the locking slide 20 and corner portion 27a of holding member 27 are adjacent the upper edge 14b of plate 14 and the weight of cabinet 3 is supported by the engagement of its bracket 13 and the support member 14. It is therefore necessary to lock the bracket 13 in this position or otherwise the cabinet 3 would fall forward with the bracket 13 slipping off the support member edge 14b. I therefore provide a locking arrangement which locks the bracket 13 into its position of Fig. 3. More specifically, my locking slide 20 can be moved upwardly so as to securely lock the cabinet 3 in the supported position. As shown in Fig. 4, I provide an opening 33 in the cabinet rear wall 5 which, when the machinery compartment louvered partition 11 is removed, permits access to the pinion nut 31 and the extreme right, locking guide bolt 22a on the support member 14.

By means of a suitable tool, such as a ratchet or socket wrench inserted through the opening 33 in the cabinet rear wall 5, the pinion 28 is rotated by means of its associated nut 31 in a clockwise direction. As the rack 26 on the locking slide 20 is meshed with the pinion 28, the pinion drives the locking slide 20 up and to the right to the dotted line position of Fig. 2. This movement is guided by the bolts 22 or by the bolts within the oblique or angularly disposed slots 21 spaced along the locking slide 20.

When the locking slide 20 moves upwardly, the corner portion 27a of holding member 27 rides up the inside of leg 13a of the cabinet positioning bracket 13 into the position of Fig. 4 to hold the bracket 13 on the upper edge 14b of the support member 14 and consequently the cabinet 3 firmly against the wall 1. Thus, it will be seen, that the weight of the cabinet 3 is substantially supported on the support member 14 and the cabinet is prevented from falling outwardly off the top edge 14b of the support member 14.

As the pinion 28 is freely rotatable, the removal of the operating socket wrench would normally allow the locking slide 20 to move back to its position of Fig. 2 unless some means to retain it in place are provided. The opening 33 in the cabinet rear plate 5 is sufficiently large to permit access also to the head of the locking bolt 22a. Therefore, bolt 22a is rotated by an appropriate tool such as a socket wrench to tighten the bolt head and

its associated washer against the locking slide 20 to hold the slide firmly in its locking position.

Thus it will be seen that I have provided an improved hanger for attaching a cabinet to a vertical wall having an overhanging wall extension or ceiling in such a way that the top of the cabinet is substantially flush with the underside of the ceiling member. With my hanging arrangement, there is no need for access to the hanger from either the sides of the cabinet or the bottom as by means of a small opening in the rear wall of the cabinet the hanger may be easily manipulated through the cabinet interior to lock the cabinet in its proper position. Where the wall on which a cabinet is to be hung contains an overhanging wall extension or ceiling member, and whereas prior hanging arrangements always produced a small gap between the ceiling member and the cabinet top which accumulated foreign particles and was unsightly, I have eliminated this defect in my easily installed, inexpensive, hanger arrangement which rigidly fixes a cabinet to a wall with the cabinet top wall directly against the underside of the ceiling member.

In accordance with the patent statutes, I have described what at present is considered to be the preferred embodiment of my invention; however, it should be obvious to those skilled in the art that various modifications may be made therein without departing from my invention, and I, therefore, aim in the appended claims to cover all such changes and modifications that fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A support structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall, said support member having an upwardly extending edge adjacent to said wall, a downwardly depending flange mounted on the rear of said cabinet top wall, said flange having a bottom edge which cooperates with said upwardly extending edge of said support member to position said cabinet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with one side of said flange adjacent said wall, a locking slide loosely mounted on said support member, said locking slide movable into locking engagement with the other side of said flange thereby to prevent horizontal movement of said flange member away from said wall, said rear wall of said cabinet having an opening adjacent at least a portion of said support member, and means on said support member accessible through said opening in said rear wall to move said locking slide into locking position and means also accessible through said opening in said rear wall to retain said locking slide in locking engagement with said bracket member.

2. A supporting structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall and having a substantially horizontal upper edge adjacent said wall, a downwardly depending flange mounted on the rear edge of said cabinet top wall, said flange having a substantially horizontal lower edge arranged to abut said support member edge thereby to position said cabinet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with one side of said flange adjacent said wall, a locking slide loosely mounted on said support member, said locking slide movable toward said ceiling member into an abutting engagement with inwardly facing side of said flange, thereby to prevent horizontal movement of said flange away from said wall, said rear wall of said cabinet having an opening adjacent at least a portion of said support member, means on said support member accessible through

said opening in said rear wall to move said locking slide into locking engagement with said flange and means also accessible through said opening in said rear wall to retain said locking slide in locking engagement with said frame.

3. A support structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall, said support member having an upwardly extending edge adjacent said wall, a downwardly depending flange mounted on the rear of said cabinet top wall, said flange having a downwardly extending edge which cooperates with said upwardly extending edge of said support member to position said cabinet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with the outwardly facing side of said flange adjacent said wall, a locking slide associated with said support member with the upper edge of said locking slide and support member in substantially parallel relationship, a plurality of spaced, angularly-disposed, slots on said locking slide, a plurality of bolt means on said support member, each of said bolt means extending through one of said slots to position said slide on said support member, said rear wall of said cabinet having an opening adjacent at least a portion of said support member, means on said support member accessible through said opening in said rear wall to move said locking slide upwardly into locking engagement with said flange thereby to prevent horizontal movement of said flange away from said wall, said bolt means slidable within said slot so as to maintain said locking slide upper edge parallel to said support member upper edge, and means to retain said locking slide in locking position.

4. A support structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall, said support member having an upwardly extending edge adjacent said wall, a downwardly depending flange mounted on the rear of said cabinet top wall, said flange having a downwardly extending edge which cooperates with said upwardly extending edge of said support member to position said cabinet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with said flange adjacent said wall, a locking slide associated with said support member, a plurality of spaced, angularly-disposed slots on said locking slide, a plurality of bolt means on said support member, each of said bolt means extending through and slidable in one of said slots to position said slide on said support member, an angularly-disposed rack on said locking slide, a rotatable pinion on said support member next to said rack, said rear wall of said cabinet having an opening adjacent said support member, said pinion accessible through said opening in rear wall of said cabinet to move said locking slide upwardly into locking engagement with said flange thereby to prevent horizontal movement of said flange away from said wall, and means to retain said locking slide in the locking position.

5. A support structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall, said support member having an upwardly extending edge adjacent said wall, a downwardly depending flange mounted on the rear of said cabinet top wall, said downwardly depending flange having a downwardly extending edge which cooperates with said upwardly extending edge of said support member to position said cabinet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with the flange adjacent said wall, a locking slide associated with said support member, a plu-

ality of spaced, angularly-disposed slots on said locking slide, a plurality of bolt means on said support member, each of said bolt means extending through and slidable in one of said slots to position said slide on said support member, said rear wall of said cabinet having an opening therein adjacent said support member, means on said support member accessible through said opening in said rear wall of said cabinet to move said locking slide upwardly into locking engagement with said flange thereby to prevent horizontal movement of said flange away from said wall and one of said bolt means accessible through said opening in said rear wall of said cabinet and engageable with said locking slide to retain said locking slide in the locked position.

6. A support structure for flush mounting upon a wall having an overhanging ceiling member a storage cabinet having a rear wall displaced inwardly from the top and side walls of said cabinet, comprising a support member arranged to be attached to said wall, said support member having an upwardly extending edge adjacent said wall, a downwardly depending flange mounted on the rear of said cabinet top wall, said flange having a downwardly extending edge which cooperates with said upwardly extending edge of said support member to position said cab-

inet adjacent said wall with said cabinet top wall substantially flush with the underside of said ceiling member and with said flange adjacent said wall, a locking slide associated with said support member, a plurality of spaced, angularly-disposed slots on said locking slide, a plurality of bolt means on said support member, each of said bolt means extending through and slidable in one of said slots to position said slide on said support member, an angularly-disposed rack on said locking slide, a rotatable pinion on said support member next to said rack, said rear wall of said cabinet having an opening adjacent said pinion, said pinion accessible through said opening of said rear wall to move said locking slide upwardly into locking engagement with said flange thereby to prevent horizontal movement of said flange away from said wall and one of said bolt means accessible through said opening in said rear wall and engageable with said locking slide to retain said locking slide in a locked position.

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