

Oct. 22, 1963

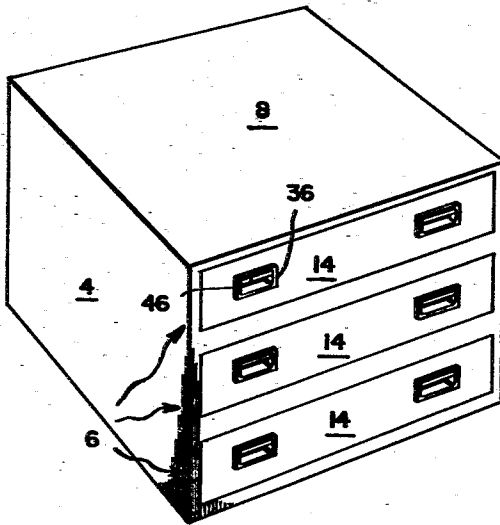
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3,107,958

DRAWER-PULL AND LATCH ASSEMBLY

Filed Nov. 13, 1961

2 Sheets-Sheet 1



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FIG. 1.

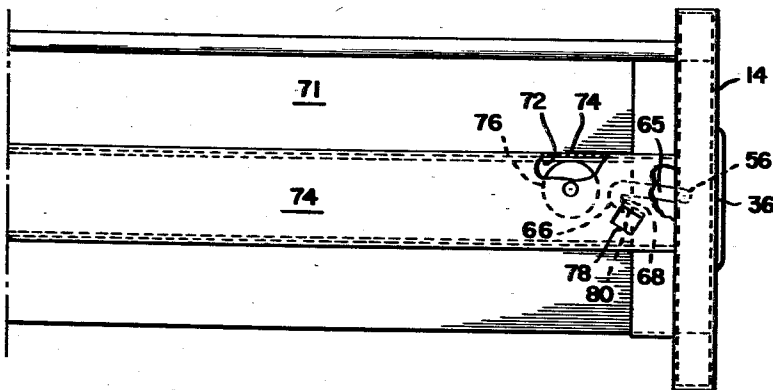


FIG. 6.

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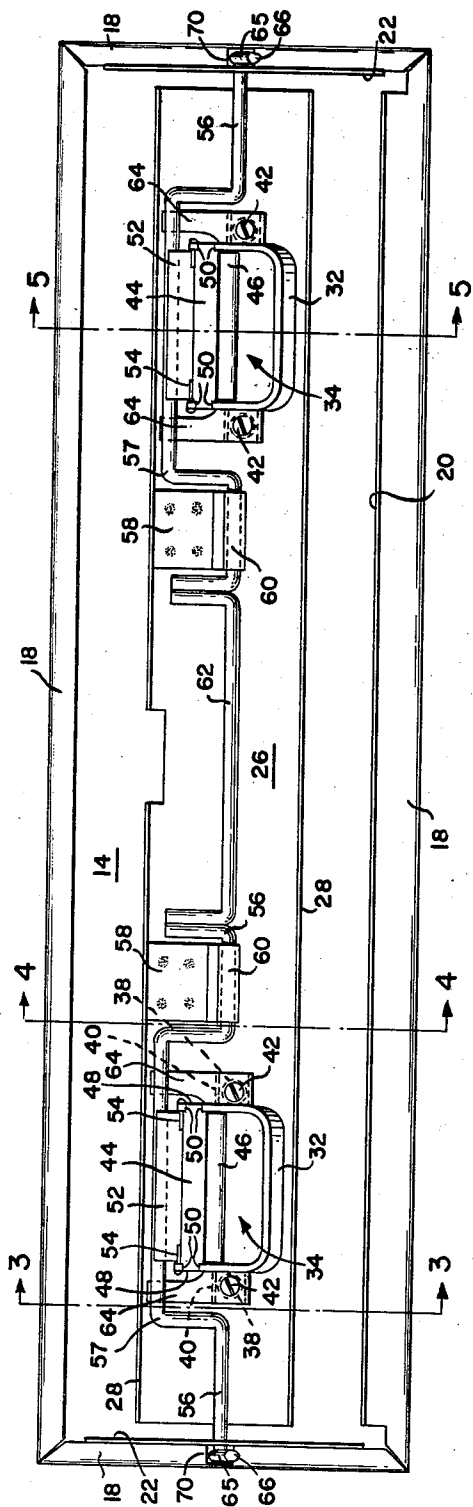


FIG. 2

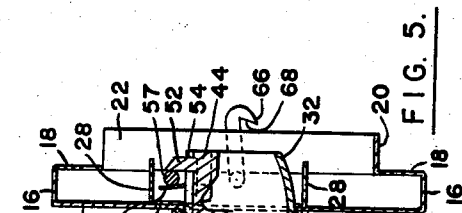


FIG. 5.

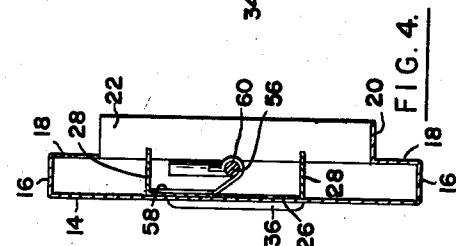


FIG. 4.

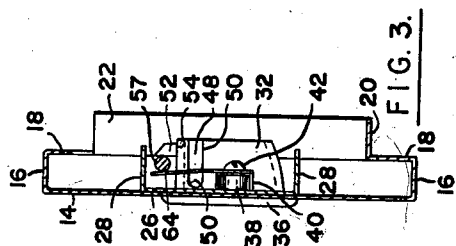


FIG. 3.

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DRAWER-PULL AND LATCH ASSEMBLY

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The invention relates to an improved drawer-pull and latch assembly.

It is an object of the invention to provide a drawer-pull and latch assembly which combines simplicity and economy of construction, a neat and pleasing appearance, and ease of manual operation.

Further objects and advantages of the invention will become apparent from the following description, read in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a cabinet structure embodying the invention;

FIGURE 2 is an elevation of the back of a front drawer panel;

FIGURE 3 is a vertical section taken as indicated by lines 3—3 in FIGURE 2;

FIGURE 4 is a vertical section taken as indicated by lines 4—4 in FIGURE 2;

FIGURE 5 is a vertical section taken as indicated by lines 5—5 in FIGURE 2; and

FIGURE 6 is a side view of a drawer and its associated track member, illustrating the coaction therebetween.

In FIGURE 1 there is illustrated in perspective a cabinet 2 having sides 4, drawers 6 and a top 8. Each drawer has a front panel 14, and for further details of the drawer structure reference will be made to FIGURES 2 to 5. (These figures show the front panel assembly as disassociated from the cabinet and from the rest of the drawer structure.)

The front panel 14 preferably is constructed of a fairly heavy sheet metal and has its margins turned horizontally as indicated at 16 and thence backwardly as indicated at 18. In the case of the side and lower drawer portions, the remaining edges are directed as indicated at 20 and 22 to provide extensions adapted for connection to the drawer sides and bottom.

At the back of the panel 14 there is secured thereto as by spot welding or the like, a channel 26 having its horizontally directed legs indicated at 28. For each drawer-pull there is provided in the panel 14 and channel 26 a pair of aligned openings 30 (FIGURE 5), and in such openings there is received a drawer-pull body 32. Each body 32 is in the form of a generally U-shaped wall defining a central opening 34, and has an ornamental front trim portion 36 overlapping the front of panel 14 adjacent its associated openings 30. Integral with the body 32, and also extending through openings in panel 14 and channel 26, are lugs 38. Body 32 is held in position, with its trim portion 36 against the front of panel 14, by means of a U-shaped clip 40 straddling each lug 38 and a screw threaded through the clip into the lug 38. Thereby the legs of each clip 40 are pressed against the back of the drawer panel as represented by channel 26.

Reciprocable within each body 32 is a drawer-pull member 44, which has a handgrip provided by a downwardly turned front lip 46 adapted to be acted upon by the fingers of a person using the drawer. Means for guiding member 44 in its reciprocation relative to body 32 comprise a narrow key 48 at each side of the member and slidably received in a corresponding groove 50 in body 32 (FIGURE 3). Member 44 has an upwardly

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directed abutment-extension 52 across its entire width, and small pins 54 extending inwardly from the sides of body 32 limit movement of the drawer-pull member 44 inwardly (i.e., toward the right in FIGURES 3 and 5).

As evident in FIGURE 2 a shaft 56, referred to hereafter as the latch rod, is associated with each drawer-pull and is journaled for rotation about its main axis by means comprising a plate 58 spot welded to channel 26 and having a free end 60 bent to receive the latch rod. The aligned inner ends of latch rods 56 are mechanically interconnected by a rod 62 welded, braised or otherwise connected thereto. Thus the spaced rods 56 and the intermediate rod 62 constitute in effect a single shaft, in that rotation of one latch rod 56 is transmitted to the other. Each latch rod has an offset crank arm 57 which is acted upon by a pair of leaf springs 64, each spring 64 being clamped between a screw 42 and its associated clip 40 (FIGURE 3). Thus each latch rod 56 is urged in a clockwise direction (in FIGURE 3) by springs 64, but this rotation is limited by engagement of its crank arm 57 with abutment-extension 52. To move member 44 outwardly (i.e., to the left in FIGURES 3 to 5), its latch rod 56 must be rotated in opposition to the action of springs 64. The outer end of each latch rod 56 is turned at a right angle to form a latch arm 65. Arm 65 has a hook defined by an outer camming surface 66 and an inside angularly directed latching portion 68. The arm 65 extends rearwardly through an opening 70 cut in the panel margin 18.

Referring to FIGURE 6, the front panel 14 is shown with the drawer sides 71 connected thereto. Secured to each side 71 is a channel having its legs 72 protruding therefrom. Within the cabinet structure a track is provided by a channel 74 having its legs straddling the channel legs 72, the upper of which rests upon a roller 76 rotatably connected to channel 74. Thus the opening and closing movements of the drawer to the right and left, respectively in FIGURE 6, involve a guiding of the drawer within channel tracks 74. It will be understood that each track 74 is stationarily mounted within the cabinet housing, usually by means of a cabinet side 4 (FIGURE 1). An abutment 80 adapted for cooperation with the hook of a latch arm 65 is provided by cutting out the channel track 74 as indicated at 78, and bending the tab inwardly to define the abutment 80. Abutment 80 is so positioned that when the drawer moves inwardly the camming surface 66 rides upwardly along the abutment 80 until the inside of the hook drops over the abutment under the influence of springs 64.

It may be noted that normally, i.e., when both drawer-pull members 44 are in their fully inner positions and crank arms 57 are urged by springs 64 into engagement with abutment-extensions 52, the hooks of latch arms 65 are below the upper edges of abutments 80.

Reviewing the operation of the aforescribed assembly, when the drawer is closed the hook of each latch arm 65 engages its abutment 80 to prevent opening of the drawer, as shown in FIGURE 6. Only a very slight clockwise rotation of a latch arm 65 (as viewed in FIGURE 6), however, is necessary to lift it from engagement with the abutment 80 and thereby permit opening of the drawer. This releasing action may be effected by operation of either of the drawer-pull members 44 shown in FIGURE 2. That is, by placing the fingers behind the lip 46 of either of the drawer-pull members 44 and pulling outwardly thereon its associated latch rod 56 is rotated clockwise (again in FIGURE 6, but counterclockwise in FIGURES 3, 4 and 5) by a drawer-pull abutment 52.

This rotation of latch rod 56 may be very slight, but it is sufficient to rock the latch arm hook out of engagement with abutment 30. Because the rocking of latch rod 56 in the direction to effect release of the drawer is in opposition to the influence of springs 64, as soon as both drawer-pull members 44 are released the latch arm 65 will be returned to its FIGURE 5 position, wherefore when the drawer is again closed the camming surface 66 will engage the abutment and ride upwardly until it drops over its upper edge. It is significant to note that by virtue of the interconnecting rod 62 between the spaced latch rods 56, the manual operation of either drawer-pull member 44 will effect the releasing action of the latch arm 65 at both sides of the drawer.

Among the advantages of the aforescribed structure is that, as previously mentioned, the drawer may be unlatched by a very small relative movement of one or both of the drawer-pull members 44. Latches at both sides of the drawer may be released by either one of the drawer-pulls. The drawer-pull structure is in effect flush with the front of the drawer panel, in that it projects therefrom only to the extent of the trim portion 36. The assembly presents a very neat appearance.

Certain variations from the specifically disclosed structure will be evident to those skilled in the art. For example, although two drawer-pulls have been illustrated in the drawings, it is evident that only one drawer-pull may be provided in certain cases, for example on a drawer of short width. If it is desired that a drawer should be opened only by the action thereon with both hands, the intermediate rod 62 may be omitted, whereby the latch rod arms at opposite sides of the drawer must be operated independently by their associated drawer-pull members. Although a latch is illustrated at each side of the drawer, a latch at only one side may be satisfactory. In such case either one or two drawer-pulls may be provided to operate this single latch.

Various other departures from the specifically disclosed embodiment of the invention may be made without departing from the scope thereof as defined by the following claims.

What is claimed is:

1. In combination with a cabinet structure including at least one drawer having a front panel, an assembly comprising a shaft extending horizontally adjacent and along the back of said front panel, means mounting said shaft on said panel for rotation about its horizontal axis, latch means positioned at the side of said drawer and connected to said shaft so as to unlatch upon rotation of said shaft in one direction, resilient means biasing said shaft in the opposite direction to latch said latch means, said front panel having an aperture extending there-through, a drawer-pull member, means mounting said drawer-pull member within said aperture for movement in a purely linear path transverse to the plane of said front panel, crank means connected to said shaft for rotating said shaft about said horizontal axis, and lost motion connecting means connecting said drawer-pull member to said crank means so that movement of said drawer-pull member along said linear path rotates said shaft in said first direction against the biasing force of said resilient means and unlatches said latch.

2. The combination according to claim 1 wherein the front end of said drawer-pull member terminates in a lip portion forming a handgrip, said lip portion being substantially coplanar with the front surface of said panel when said latch means is in latched condition.

3. The combination according to claim 1 wherein said lost motion connecting means include an abutment on said drawer-pull member extending behind said crank means so that forward movement of said drawer-pull member along said path rotates said shaft so as to unlatch said latch means.

4. The combination as claimed in claim 1 wherein said means for mounting said drawer-pull member includes a

body member mounted in said aperture, said body member having a pair of slots extending parallel to the direction of said path, and a pair of projections carried by said drawer-pull member slidably received in said slots.

5. The combination as claimed in claim 1 wherein said means for mounting said drawer-pull member include a body member mounted in said aperture, the frontal portion of said body member being substantially coplanar with the front surface of said panel, said body member having a pair of slots extending parallel to the direction of said path, a pair of projections carried by said drawer-pull member slidably received in said slots, said drawer-pull member terminating in a frontal portion forming a handgrip, said frontal portion of said drawer-pull member being substantially coplanar with the frontal portion of said body member when said latch is in latched condition.

6. The combination as claimed in claim 1 wherein said shaft includes horizontally extending end portions and an integral, U-shaped central portion the latter of which forms said crank means.

7. In combination with a cabinet structure including at least one drawer having a front panel, first and second horizontally spaced apertures extending through said panel, first and second drawer-pull members mounted in said first and second apertures for individual movements in purely linear paths transverse to the plane of said panel, first and second shafts extending horizontally along the back of said panel adjacent said first and second apertures, means individually mounting said shafts for rotation about their respective horizontal axes, first and second crank means respectively connected to said first and second shafts, first and second lost motion connecting means respectively connecting said first and second drawer-pull members to said first and second crank means, latch means connected to at least one of said shafts so as to be unlatched upon rotation of the shaft to which said latch means is connected, and a third shaft interconnecting said first and second shafts whereby movement of either of said drawer-pull members along said linear path rotates both of said first and second shafts thereby unlatching said latch means.

8. The combination according to claim 7 wherein said first and second drawer-pull members terminate in frontal portions forming handgrips, said frontal portions being substantially coplanar with the front surface of said panel when said latch means are in latched condition.

9. The combination according to claim 7 wherein said first and second lost motion connecting means include first and second abutments respectively carried by said first and second drawer-pull members, said abutments extending behind said first and second crank means whereby forward movement of either of said drawer-pull members along said linear paths moves the associated abutment into engagement with the respective cam means whereby both of said shafts are rotated to unlatch said latch means.

10. The combination as claimed in claim 7 wherein each of said first and second shafts include horizontally extending end portions and integral, U-shaped central portions forming said crank means, said third shaft being connected at opposite ends to one end portion of each of said first and second shafts.

11. The combination as claimed in claim 7 wherein said means for mounting said first and second drawer-pull members include first and second body members mounted in said first and second apertures, each of said body members having a pair of slots extending parallel to the direction of said linear path, and a pair of projections carried by each of said drawer-pull members slidably received in the respective slots of said body members.

12. The combination as claimed in claim 11 wherein the frontal portions of said body members and said drawer-pull members terminate in respective portions

substantially coplanar with the front surface of said panel
when said latch means are in latched condition.

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