

March 23, 1937.

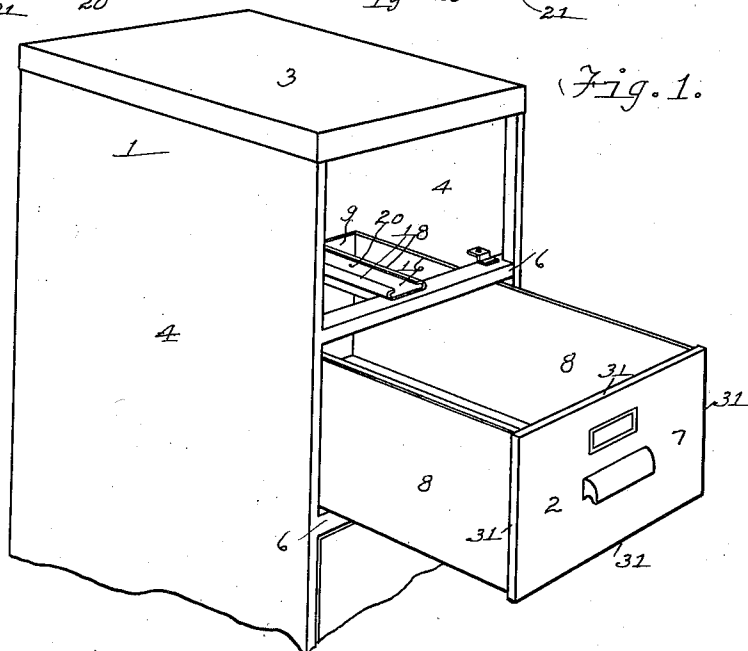
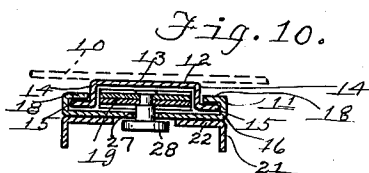
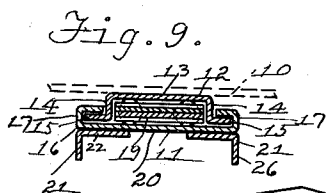
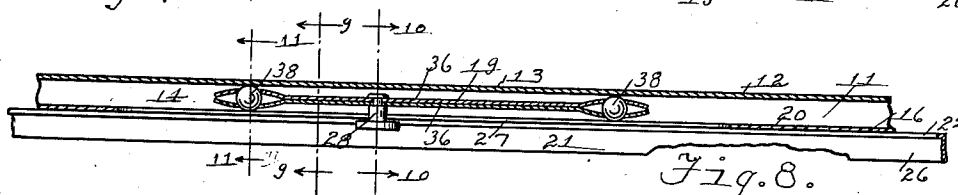
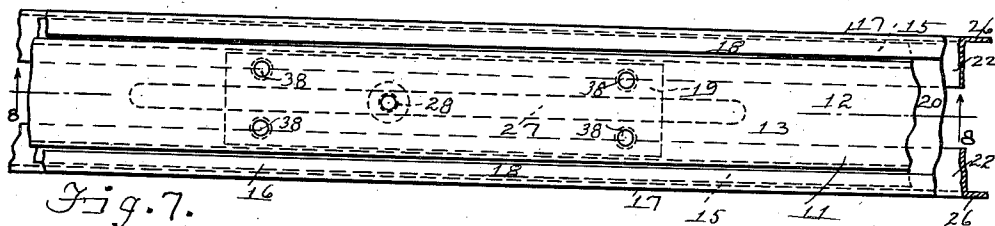
J. CUMMINGS ET AL

2,074,371

DRAWER GUIDE

Filed Sept. 9, 1935

2 Sheets-Sheet 1



Witness:
Geo L. Chapel

INVENTORS
James Cummings
by Edgar H. Sheldon
Rice and Rice
ATTORNEYS.

March 23, 1937.

J. CUMMINGS ET AL

2,074,371

DRAWER GUIDE

Filed Sept. 9, 1935

2 Sheets-Sheet 2

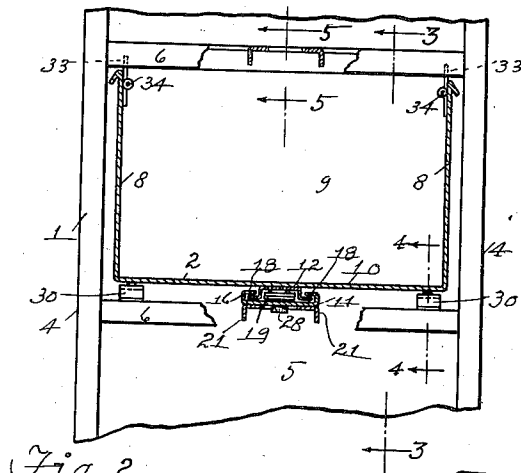


Fig. 2.

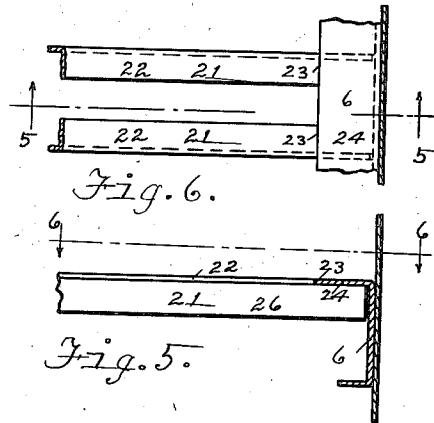


Fig. 6.

Fig. 5.

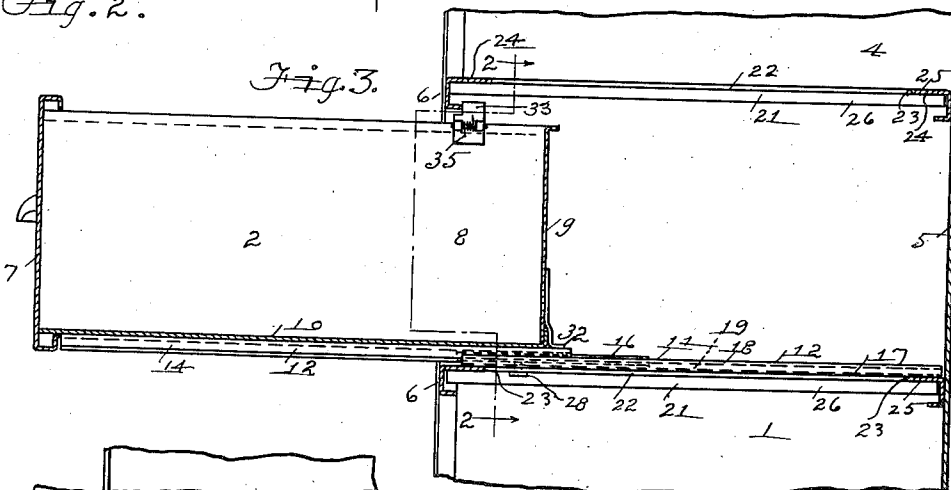


Fig. 3.

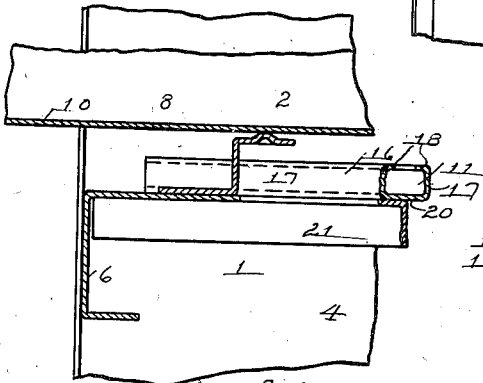


Fig. 4.

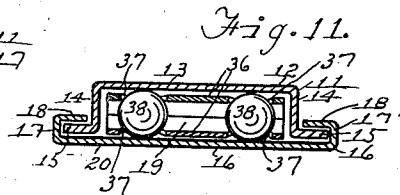


Fig. 11.

Witness:
Geo. L. Chapin

INVENTORS
James Cummings
Edgar H. Sheldon
by Rice and Rice
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,074,371

DRAWER GUIDE

James Cummings, Muskegon Heights, and Edgar
H. Sheldon, Muskegon, Mich., assignors to
E. H. Sheldon and Company, Muskegon, Mich.,
a corporation of Michigan

Application September 9, 1935, Serial No. 39,718

2 Claims. (Cl. 45—77)

The present invention relates to cabinet structures and particularly to drawers thereof; and its object is, generally, to provide an improved structure of that character; and more particularly, to provide an improved slide bearing underneath such a drawer that shall strengthen its bottom and firmly support the drawer with its contents; and further, to provide such a slide bearing which shall so guide the drawer in its sliding movement that no part thereof may contact the cabinet frame although the drawer and its front sufficiently closely fit therein; and further, to provide such a slide bearing whereby the drawer cannot pinch or bind in its sliding movement; and further, to provide such a slide bearing which shall occupy a minimum cross-sectional space, particularly in a vertical direction; and further, to provide such a slide bearing having improved antifriction devices.

These and any other and more specific objects hereinafter appearing are attained by, and the invention finds preferable embodiment in, the illustrative cabinet structure particularly described in the body of this specification and illustrated by the accompanying drawings in which:

Figure 1 is a view in perspective of a cabinet structure, the upper drawer thereof being withdrawn and the lower drawer partially drawn outwardly;

Figure 2 is a vertical sectional view thereof taken on line 2—2 of Figure 3, medial portions of the cabinet's front cross rails being broken away;

Figure 3 is a vertical sectional view of the same taken on line 3—3 of Figure 2;

Figure 4 is a vertical sectional view of portions thereof taken on line 4—4 of Figure 2;

Figure 5 is a vertical sectional view of parts of the same taken on line 5—5 of Figures 2 and 6;

Figure 6 is a horizontal sectional view of said parts taken on line 6—6 of Figure 5;

Figure 7 is a top plan view of parts of said structure illustrating a slide bearing for the drawer;

Figure 8 is a longitudinal vertical sectional view of said parts taken on line 8—8 of Figure 7;

Figure 9 is a transverse vertical sectional view of said parts taken on line 9—9 of Figure 8;

Figure 10 is a transverse vertical sectional view of said parts taken on line 10—10 of Figure 8;

Figure 11 is a transverse sectional view of said parts taken on line 11—11 of Figure 8.

The particular embodiment of the invention chosen for illustration by these drawings com-

prises a cabinet frame designated generally 1 and drawer designated generally 2, both made of sheet metal, although the invention may be embodied in a structure comprising a wooden cabinet frame with wooden drawers. As illustrated, the cabinet frame 1 has a top 3, sides 4, back 5 and horizontal front cross rails 6 between the drawer-receiving cavities; and the drawer 2 has the front 7, sides 8, back 9 and bottom 10. The drawer is supported and guided in its inward-outward movement by a slide bearing designated generally 11 at its bottom 10, said bearing extending medially of said bottom.

This slide bearing 11, made of sheet metal, comprises the following members: the member 12 whose middle portion 13 is mounted as by welding on the under side of the drawer's bottom 10 and whose lateral portions extend first downwardly at 14 and then outwardly at 15; the member 16 whose lateral portions extend first upwardly at 17 adjacent the edges of said outwardly extending portions 15 of member 12, and then inwardly at 18 over said portions 15; and an intermediate third member designated generally 19 slidable in the space between said members 12 and 16. The medial portion 20 of the member 16 is suitably supported on the body of the cabinet frame, as by welding on the spaced parallel angle bars 21 extending forwardly-rearwardly and having inwardly turned flanges 22 whose ends respectively abut at 23 on the edges of the flanges 24 of the front cross rail 6 and of the rear cross rail 25, said bars having also downwardly turned flanges extending under said cross rails 6, 25, these angle bars being united by welding or otherwise with said cross rails, thus providing a very rigid braced construction of the cabinet frame.

The member 16 has in its medial portion 20 slot 27 in which slides the shank of a lug or button 28 fastened to, and extending downwardly from, the intermediate member 19, and the head of said button slides between the mutually adjacent edges of the flanges 22 of the bars 21. This intermediate member has a sliding movement about half that of the member 12 so that the drawer may be drawn to fully opened position.

It will be seen that the drawer is very rigidly supported and its bottom greatly strengthened by this slide bearing 11 extending forwardly-rearwardly under said bottom along its middle, and comprising the three superposed members 12, 16, and 19, two of which have vertically extending flange portions 14, 17 which add greatly

to their rigidity; and that the drawer being thus supported along its center line tends to be balanced against downwardly tipping movement at its sides. In wider or heavily loaded drawers however, it may be found desirable to provide a pair of these slide bearings 11 adjacent their respective sides, and in some cases to provide members 30 on which the drawer's bottom adjacent its sides lightly bears in its sliding movement. It will also be seen that this slide bearing 11 occupies very little space cross sectionally, especially in a vertical direction, being located directly behind the vertically narrow front cross rail 6 of the cabinet frame; also, that several mutually bearing surfaces are provided between the slidable members; that therefore and because this slide bearing 11 is narrow horizontally instead of comprising bearing surfaces widely spaced apart as in cases where drawers slidably bear on the cabinet frame at their widely spaced sides, it will be seen that the drawer will not stick or bind in its sliding movement, but that it is accurately guided along a direct line; and that the drawer may properly fit sufficiently closely in the frame and the edges 31 of its front 7 may thus fit in the mouth of the drawer cavity but not in actual contact therewith so that the drawer may be slid in and out without danger of marring these parts. Furthermore: Considerable inaccuracies of construction may exist in this cabinet structure and considerable deformation by warping, expanding or contracting may occur, especially in wooden structures, without materially effecting the operation of this structure in which the drawer is firmly supported in its middle and is accurately guided by this rigid slide bearing 11.

This slide bearing 11 is so limited in cross-sectional dimensions, both vertically and horizontally, that any possible change in such dimensions caused by expansion or contraction cannot affect the fit of the drawer in the cavity of the cabinet frame.

In manufacturing the cabinet structures equipped with the said slide bearing, ample allowance may therefore be made for distortion caused by atmospheric changes, etc.

The drawer may have a stop 32 limiting its inward movement and a stop 33 to limit its outward movement, this stop 33 being pivoted at 34 on the side of the drawer and urged upwardly to operative position by a spring 35.

This slide bearing is desirably provided with anti-friction devices as follows:

The intermediate member 19 comprises superposed parallel strips 36 united as by welding. The ends of these strips first diverge and then approach each other and have holes 37 extending therethrough as best seen in Figs. 8 and 11. Balls 38 of larger diameter than these holes are held turnably therein, rolling on the members 12 and 16 in the drawer's sliding movements.

The invention being intended to be pointed out in the claims, is not to be limited to or by details of construction and arrangement of the

particular embodiment thereof illustrated by the drawings or hereinbefore described.

We claim:

1. In a structure including a frame and a drawer, a drawer guide comprising: a pair of members mounted on the frame and on the bottom of the drawer respectively each having a flat medial portion, the member which is mounted on the drawer having opposite lateral portions each extending vertically downwardly to space said medial portions apart and then extending horizontally outwardly and the member which is mounted on the frame having opposite lateral portions each extending vertically upwardly at the edge of the adjacent horizontally extending portion of the member mounted on the drawer and then extending horizontally inwardly thereover to connect said members in sliding relation and to hold their medial portions in vertically spaced relation; and a third member extending in the space between the first mentioned and the second mentioned members, parallelly therewith, comprising connected upper and lower plates with spaced portions having pairs of holes therethrough the holes of each pair being adjacent the lateral edges respectively of said third member, and balls held between said spaced portions of the third member bearing in the holes and extending outwardly therefrom into rolling contact with said flat medial portions respectively.

2. In a structure including a frame and a drawer, a drawer guide comprising: a pair of members mounted on the frame and on the bottom of the drawer respectively each having a flat medial portion, the member which is mounted on the drawer having opposite lateral portions each extending vertically downwardly to space said medial portions apart and then extending horizontally outwardly and the member which is mounted on the frame having a slot bearing extending longitudinally thereof and opposite lateral portions each extending vertically upwardly at the edge of the adjacent horizontally extending portion of the member mounted on the drawer and then extending horizontally inwardly thereover to connect said members in sliding relation and to hold their medial portions in vertically spaced relation; and a third member extending in the space between the first mentioned and the second mentioned members, parallelly therewith, comprising connected upper and lower plates with spaced portions having pairs of holes therethrough the holes of each pair being adjacent the lateral edges respectively of said third member, and balls held between said spaced portions of the third member bearing in the holes and extending outwardly therefrom into rolling contact with said flat medial portions respectively, the third member having a downward projection slidably bearing in said slot in the third member's movement.

JAMES CUMMINGS.

EDGAR H. SHELDON.