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2,647,024

DRAWER GUIDE

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FIG. 1.

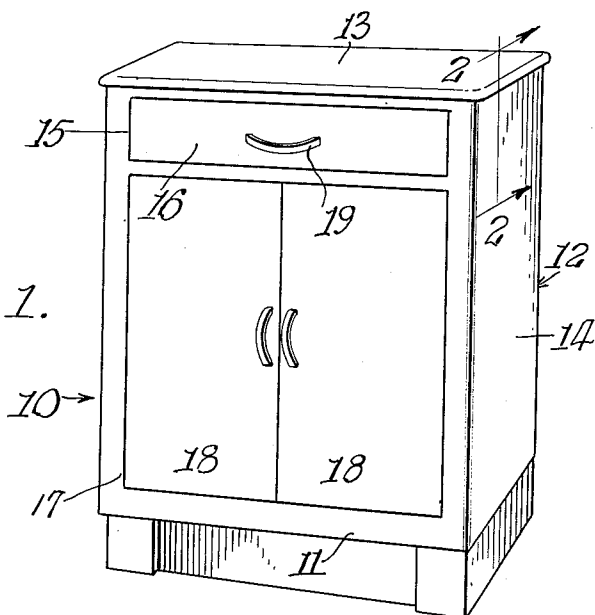


FIG. 2.

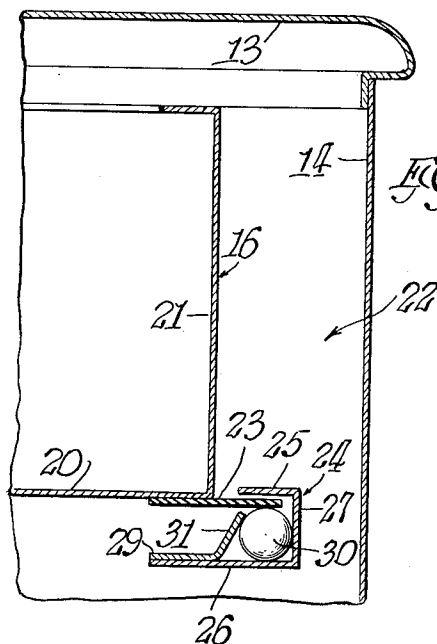


FIG. 3.

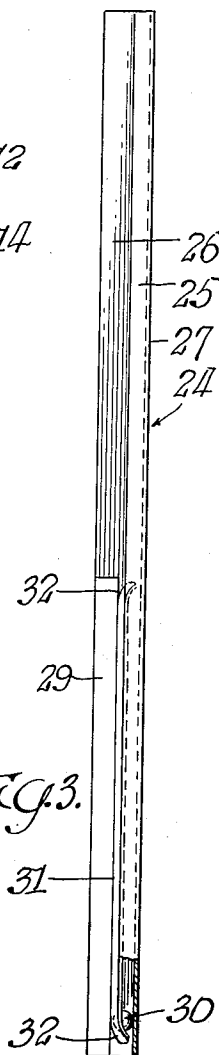
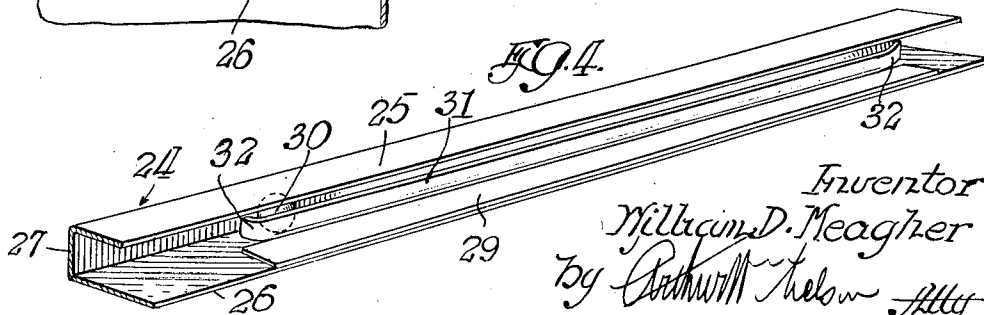


FIG. 4.



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DRAWER GUIDE

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1 Claim. (Cl. 308—3.8)

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This invention relates to improvements in a sliding drawer and rail construction and it consists of the matters herein illustrated and more particularly pointed out in the appended claim.

One of the objects of the present invention is to provide a simple rail construction for a sliding drawer, which is inexpensive to produce and which functions efficiently under all conditions of use.

Another object of the invention is to provide a construction of this kind, wherein the drawer, whether empty or filled, slides easily and without binding upon the rails, and even though the rails are disposed in a plane slightly out of the horizontal due to the unevenness of the floor upon which the cabinet, of which the drawer and rails form a part, may stand.

Also, it is an object of the invention to provide a rail for a sliding drawer, which includes a ball for supporting engagement of a flange on an associated drawer, and which ball is confined against displacement relative to and is limited in rolling movement on the rail to one less than the drawer has in its opening and closing movements.

The above mentioned objects of the invention, as well as others, together with the advantages thereof will more fully appear as the specification proceeds.

In the drawings:

Fig. 1 is a perspective view of a cabinet having a sliding drawer and rail construction therein, embodying the preferred form of the invention.

Fig. 2 is a fragmentary vertical sectional view through one side of parts appearing in Fig. 1, as taken on the line 2—2 and on a scale enlarged over that of Fig. 1.

Fig. 3 is a top plan view of a rail forming a part of the invention, on a reduced scale, a portion thereof being broken away for better illustrative purposes.

Fig. 4 is a perspective view of the front end portion of one of the rails forming a part of the invention as viewed toward the inner side thereof and on a scale enlarged over that of Fig. 3.

The invention is herein illustrated and described as embodied in a sheet metal cabinet, but it is equally capable of use in tables, desks and other articles of furniture having a sliding drawer therein.

Referring now in detail to that embodiment of the invention illustrated in the drawing, 10 indicates as a whole, a sheet metal cabinet of general utility, which includes a front 11, a back 12, a top 13 and sides 14—14, together with a closed bottom that rests upon a suitable base. In the

upper part of the front of the cabinet is an opening 15 for a sliding drawer 16 of a substantial width and below said opening is a second opening 17, with which is associated a pair of hinged doors 18—18 for closing the compartment space of the cabinet below said drawer.

The drawer, in its closed position, extends substantially the full front to rear depth of the cabinet and it is provided at the front with a pull or handle 19, whereby it may be slid between opened and closed positions relative to the cabinet. Said drawer includes a bottom 20 and a side 21, and each side is separated from the associated side 14 of the cabinet by a space 22, as best appears in Fig. 2. Extending outwardly from each lateral margin of the bottom 20 is a flange 23.

In each space 22, adjacent each side 21 of the drawer 16, is located a rail which extends parallel with the associated side of the drawer, and which is supported in any suitable manner from parts of the front and back 11 and 12 of the cabinet. Said rails are structurally the same, but are right and left handed.

Each rail is in the form of a laterally opening sheet metal channel 24 and includes upper and lower flanges 25 and 26 respectively, and a connecting web 27, which is spaced from the associated side of the cabinet.

The upper and narrower flange 25 is disposed in a plane slightly above the plane of the flange 23 on the drawer and the free margin of said flange 25 overhangs the free margin of the associated flange 23. The lower and wider flange 26 has its free margin disposed below the flange 23 and the free edge of said flange 26 is spaced inwardly from the plane of the associated side 21 of the drawer, as best appears in Fig. 2.

At the front end of each rail and secured to the free margin of the lower flange of each rail is a retaining member 29 which has a length approximating half the length of the rail. Between said member and the web of the associated rail is located a ball 30. The bottom of said ball has rolling engagement upon the flange 26 of the rail while the flange 23 of the drawer is engaged upon and is supported upon the top of the ball, as appears in Fig. 2.

The retaining member 29, which is spot welded to the associated flange 26, includes an upwardly and inwardly directed flange 31 of such height as to overhang one side of the ball to a plane above its center. Each end portion of this flange 29 is longitudinally slit to provide a finger 32, which is bent inwardly toward the web of the associated rail. These fingers form stops for en-

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gagement by the ball in its rolling movement upon the associated flange rail.

When the ball is in place in the rail, the outer side of the ball substantially engages the web 27 thereof, while its top extends into a position above the top edge of the flange 31. Thus the ball is confined against escape from the associated rail, but is free to roll longitudinally of the rail within limits as defined by the fingers 32.

Generally the front portion of each drawer is heavier than the rear portion thereof, due not only to the structure thereof, but also because the contents of the drawer is usually disposed more toward the front than toward the back thereof.

Assume that the drawer has been entirely removed from the cabinet and it is desired to replace the same therein. At this time the balls 30 of both rails will be at the front end thereof and up against the front stops 32 of the members 29. When the drawer is again returned to the cabinet, its back end is inserted into the opening 15 with the free margin of its flanges 23 engaged upon the tops of the balls 30 of said rails and under the associated flanges 25 thereof. In this respect it is pointed out the rear free margins of the flanges 23 are easily guided into place upon the top of the balls and as the drawer is pushed inwardly of the cabinet, the top sides of said margins will slide against the bottom surfaces of flanges 25 while the balls move or roll longitudinally rearwardly of the flanges 26 of said rails, the balls supporting the full load of the drawer.

In the rearward or inward movement of the drawer, the balls, while rolling upon the rail flanges 26, will move longitudinally of the rails about half as fast as the drawer and will, therefore, travel only about half the distance of the inward travel or movement of the drawer. This movement of the balls, when the drawer is pulled out of the cabinet, is substantially the reverse of that above mentioned.

With the structure described, the balls have a free and unbound rolling action relative to the rails, under the action of the movement of the drawer, even though the cabinet stands upon an uneven surface.

The rail structure described is indeed simple in construction and can be economically produced in accordance with ordinary sheet metal practice at a cost considerably below drawer slide structures as heretofore designed. The channels 24 and members 29 for both rails are made of

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sheet metal and are counterparts and the right and left handed ones are provided by attaching a member 29 to the proper end of the flange 26 of respective channels.

Each rail and its ball constitutes an element which has advantages wherever employed and each rail may be fully assembled and readily handled and turned into any position without displacement of the ball, as when positioning the rail in and securing it in place in the cabinet.

While in describing the invention I have referred in detail to the form, construction and arrangement of the parts mentioned, the same is to be considered only in the illustrative sense, and therefore I do not wish to be limited thereto except as may be specifically set forth in the appended claim.

I claim as my invention:

As an article of manufacture, a drawer supporting rail embodying therein a sheet metal channel member having upper and lower flanges connected along one side by a web, a ball having rolling movement longitudinally upon said lower flange, a sheet metal member extending longitudinally of and shorter than said rail and having a portion secured flatwise to the free margin of the lower flange and a second and integral portion extending upwardly and inwardly of the rail and overhanging one side of the ball above its center and confining the same against upward displacement relative to said lower flange, end parts of said second portion of said member being separated from the first mentioned portion and bent laterally toward said web and limiting the length of rolling movement of said ball upon said lower flange.

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