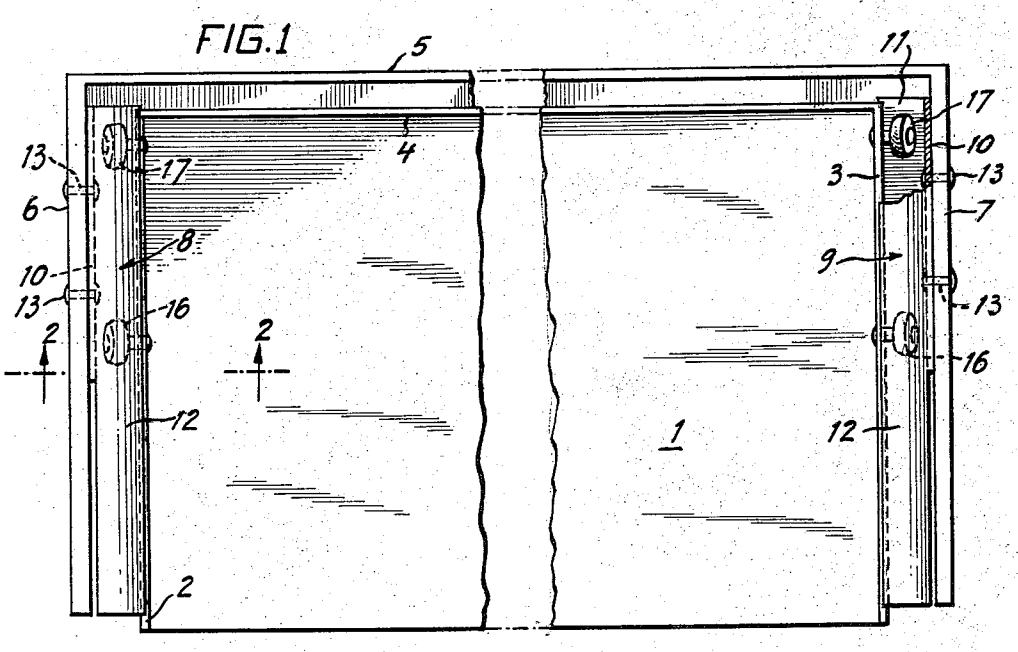
June 25, 1963 P. FREDERICK 3,095,250

ROLLER DRAWER SUSPENSION DEVICE

Filed Aug. 11, 1961

FIG. 1



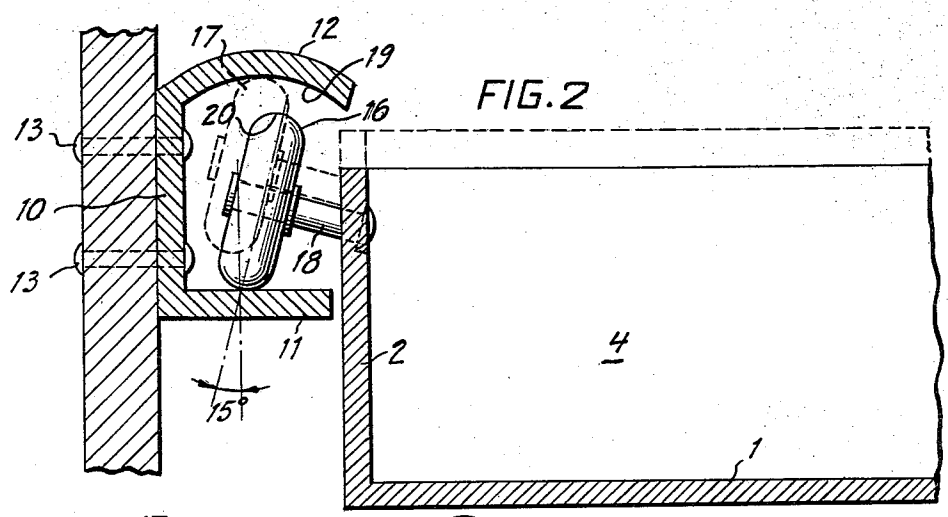


FIG. 2

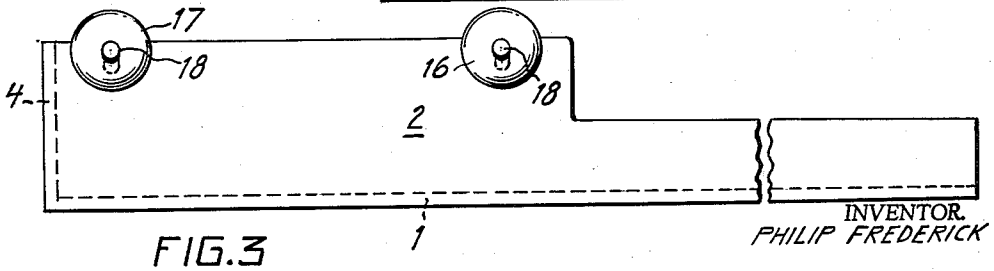


FIG. 3

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ROLLER DRAWER SUSPENSION DEVICE

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The present invention is directed to cabinets having pull drawers, such as filing cabinets, and more particularly to cabinets having relatively wide drawers.

In cabinets of this type it is difficult to pull the drawers out for access because, due to the width thereof, the drawer tends to jam by becoming cocked, since it is almost impossible to exert a uniform pulling force all along the width of the drawer. Attempts have been made to so mount the drawer on rollers at the sides of the drawer to minimize the chances of jamming thereof. But such rollers as previously proposed, due to the manner of mounting in the cabinet, were unable to adequately guide the drawer to eliminate this defect.

Accordingly the present invention seeks to overcome the difficulties encountered in prior constructions of the type above referred to, it being among the objects of the invention to provide a roller mounting which will effectively prevent jamming of the drawer during manual operation thereof.

It is also among the objects of the invention to provide a structure of the type described which is simple, which has few parts, is economical to manufacture and which may be manipulated with a minimum of force.

In practicing the invention, the drawer is provided at the rear portion with a pair of rollers at each side thereof, said rollers operating in suitable rails attached to the cabinet. A clearance is provided between the edge of the rollers and the rails so that the diameter of the rollers is less than the vertical distance between the top and bottom of the rails. The rails have an upper flange which is arced convexly on a relatively large radius and the rim of the rollers is arced on a lesser radius than the upper flange. The lower flange is usually horizontal, although it may be concavely arced if desired. The rollers are mounted on the drawer at an acute angle to the lower flange so that the planes passing through each of the pairs of rollers converge inwardly and upwardly to meet above the drawer. Usually the angle is relatively small.

When the drawer is opened or closed by pulling or pushing on one side or unequally on both sides (rather than equally), the curved upper flange of the rails exerts a corrective force on the rollers as they rotate. This causes the rollers, which make line contact with the upper flange, to climb up the curve a short distance before being urged back into their proper position. The additional clearance between the rollers and the rails comes into play and permits the movement without jamming.

The invention is more fully described in conjunction with the accompanying drawing constituting a part hereof and in which like characters indicate like parts, and in which—

FIG. 1 is a fragmentary top plan view of a cabinet having the present invention incorporated therein;

FIG. 2 is an enlarged vertical cross-sectional view of one of the pair of rails in association with other essential elements of the new structure, and

FIG. 3 is a side view of one form of drawer adapted for use in the present structure.

With reference to the drawing, the drawer consists of a bottom **1** which is wide compared to its depth. It has a pair of sides **2** and **3** and a back **4**. It may have shelf dividers and may be of a different construction. The cabinet itself may be of usual construction and is here shown as having a vertical back **5** joined to sides **6** and **7**. Rails **8** and **9** each consists of a vertical portion **10** (FIG. 2), and has a lower flange **11** at about right angle to portion **10**. An upper flange **12** is convexly arched. Rivets **13** or other attachment hold portion **10** fixed to the cabinet.

At the rear of the drawer on each side thereof is a front roller **16** and a rear roller **17**. The rollers are mounted on stub shafts **18** anchored in sides **2** and **3** of the drawer. As seen in FIG. 2, the diameter of the rollers is substantially less than the vertical distance between the upper and lower flanges. The radius of curvature **19** of upper flange **12** is larger than the radius of curvature **20** of the rollers, thereby providing a line contact between the rollers and the upper flange. The rollers are at about 75° to flange **11**.

Although the invention has been described with a single specific embodiment, numerous variations in the details may be made within the scope of the invention. For instance, portion **10** need not be vertical but may be inclined. The acute angle between the rollers and the lower flange may be altered to a substantial degree. Lower flange **11** may be arced concavely to a limited extent while remaining generally horizontal. The mounting of the rollers, the shape of several elements, and the materials of construction may be those known in the art.

The essence of the invention is that the rollers bear on only one of the flanges and when a skewing force is encountered, the curvature of either or both flanges urges the rollers back into line. The gap between the rollers and the lower flange permits the rollers to ride on the curved portion; the gap narrows but the rollers do not jam. The side component of force due to the curved portion of the flange causes the rollers to move back into their normal operating positions.

What is claimed is:

1. In a cabinet having at least one drawer, a pair of rails on opposite sides of said cabinet, rollers mounted on the sides of said drawer and engaging said rails, the improvement which comprises an upstanding wall on each of said rails adapjed to be attached to said cabinet, a lower flange on said rails extending inwardly therefrom, an upper flange on said rails extending inwardly, a forward roller and a rear roller on each side of said drawer, the diameter of said rollers being substantially less than the distance between said flanges, said lower flange being substantially horizontal, the plane passing through said rollers forming an acute angle with the inward portion of said lower flange.

2. A cabinet according to claim 1 characterized in that said angle is about 75°.

3. A cabinet according to claim 1 characterized in that said upper flange is convexly arced.

4. A cabinet according to claim 1 characterized in that said wall is substantially vertical.

5. A cabinet according to claim 1 characterized in that said lower flange is flat.

6. A cabinet according to claim 1 characterized in that said rollers are mounted in the upper part of said drawers.

7. A cabinet according to claim 1 characterized in that said rollers are mounted in the upper part of said rollers at the rear thereof.

8. A cabinet according to claim 3 characterized in that the rim of said rollers is arched, the radius of curvature of said upper flange being greater than that of said rollers.

References Cited in the file of this patent

UNITED STATES PATENTS

1,974,147	Bittorf	Sept. 18, 1934
2,773,357	Canter	Dec. 11, 1956

FOREIGN PATENTS

327,508	Great Britain	Apr. 10, 1930