July 12, 1932. A. C. KENNEDY 1,866,853

ROLLER BEARING DRAWER GUIDE

Filed Feb. 12, 1930

FIG. 1.

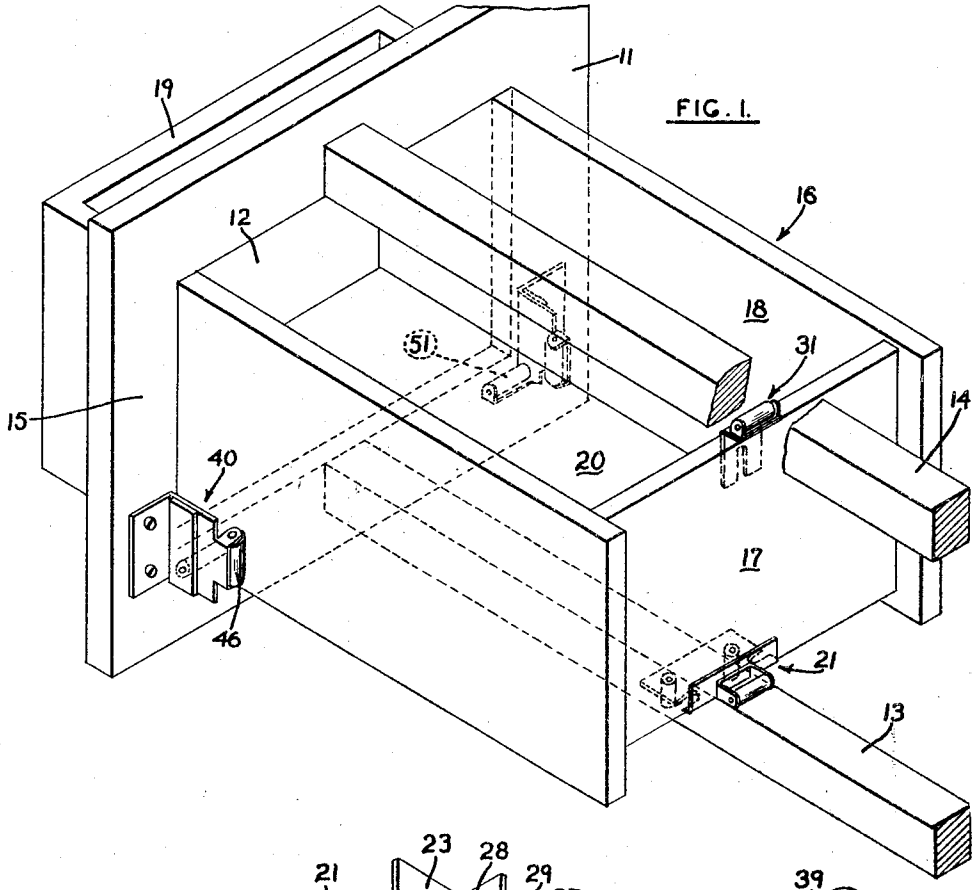


FIG. 2.

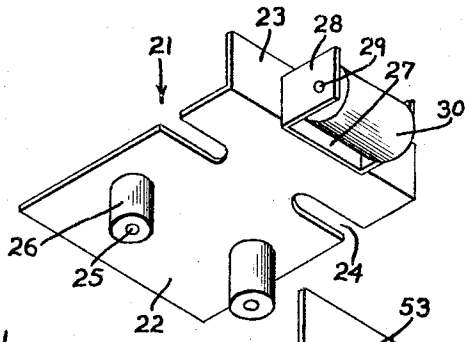


FIG. 3.

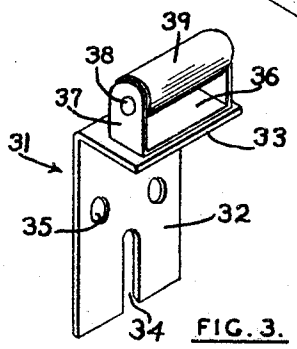


FIG. 4.

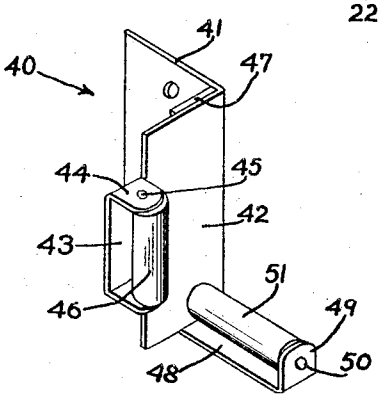
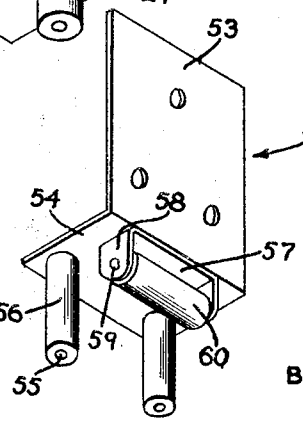


FIG. 5.



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UNITED STATES PATENT OFFICE

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ROLLER BEARING DRAWER GUIDE

Application filed February 12, 1930. Serial No. 427,798.

My invention pertains to roller bearing drawer guides and the construction of drawers utilizing such guides.

In the installation of sets of drawers in built-in features, it is customary to reduce the guide bars for the drawers and have single fixed bars at the bottom and top of the drawer. In the ordinary practice the drawers are made to have a rubbing contact with these guide bars, but with such construction the drawers cannot be maintained properly aligned and considerable friction has to be overcome to operate the drawer and frequently they become so much out of alignment as to jam and prevent operation.

An object therefore of my invention is the employment of roller bearing guide elements to cooperate with the guide bars. These elements are preferably attached to the inner part of the drawer and guide the drawer on both the upper and lower guide bars. This construction maintains the rear part of the drawer always in proper alignment with the drawer opening in the face of the fixture.

In this connection another detailed object and feature of my invention is forming a roller guide for the bottom rear part of the drawer, such guide having a plate or the like attachable to the back part of the drawer and this plate has a single roller operating on a horizontal axle, the roller bearing on the top of the lowermost guide bar and there being two vertical rollers on vertical studs engaging opposite sides of this lower guide bar. Such construction therefore supports the inner pair of drawers slightly above the guide bar and the drawer is guided both as to lateral and to a certain extent vertical displacement. Cooperating with this I preferably use an upper guide roller secured to the upper inner part of the drawer and bearing against the upper guide bar. This roller is mounted on a horizontal axle and thus with the lower horizontal roller restricts up and down motion of the inner part of the drawer and reduces the friction of movement.

Another object and feature of my invention is the employment of guide rollers secured inside of the wall fixture having the drawer opening and positioned to engage the opposite sides and the opposite lower edge of the drawer. Thus at the drawer opening in the fixture, the drawer is guided to reduce frictional resistance when passing through the drawer opening and the rollers facilitate the sliding action of the drawer as well as maintaining the drawer properly centered.

My invention is illustrated in the accompanying drawing, in which,

Fig. 1 is a perspective view of a drawer in the drawer guides, taken from the inward part of the drawer;

Fig. 2 is a perspective view of one form of the guide roller mounting to engage the bottom guide bar;

Fig. 3 is a perspective view of the roller mounting to engage the upper guide bar;

Fig. 4 is a perspective view of one of the guide roller mountings to engage the side and the lower edge of the drawer;

Fig. 5 is a perspective view of a modified form of lower guide roller mounting to engage the lower bar.

In the drawing, a section of a wall fixture is designated by the numeral 11. This may be a construction having a series of drawers therein and the drawer opening is indicated by the numeral 12, such opening being shown as rectangular. There is a lower guide bar 13 and an upper guide bar 14 extending inwardly from the inside face 15 of the fixture 11. These are illustrated as being rectangular as is the ordinary custom. The drawer designated generally at 16 has an inner end 17, opposite side walls 18, a front 19 and a bottom 20.

The lower roller mounting to engage the lower guide is indicated particularly in Fig.

2 and designated by the numeral 21. This is shown as having a flat plate 22 with an upward flange 23, there being if desired a pair of slots 24 for securing screws. A pair of vertical studs 25 depending from the plate 22 have vertical rollers 26 thereon and secured to the flange 23 there is a bent strap 27. This strap has one portion secured to the flange 23 and has ears 28. An axle 29 extends between these ears and on this axle there is a rotatable roller 30. This mounting for the rollers is secured on the rear board 17 and on the bottom of the drawer, in which case the plate 22 fits against the bottom 20 of the drawer and the flange 23 against the back board 17.

The vertical rollers 26 engage opposite sides of the lower guide bar 13 and the roller 30 engages the upper surface of this bar. This construction holds the bottom of the drawer with a sufficient clearance above the guide bar to allow free sliding.

The bearing mounting to engage the upper guide bar 14 is illustrated in Fig. 3 and designated generally by the numeral 31. This has an angle plate with a vertical section 32 and a horizontal section 33. The vertical section has a slot 34 and perforations 35 to be engaged by screws or securing devices. A U-shaped strap 36 has a portion secured to the horizontal section 33 and upstanding ears 37 with an axle 38 between the ears and the roller 39 on the axle. This is secured to the inner board 19 of the drawer and preferably with the vertical plate section 32 on the inside of the drawer and with the section 33 resting on the top edge of the board 17. This brings the roller 39 into engagement with the undersurface of the upper guide bar 14.

The side and bottom bearing mounting illustrated in Fig. 4, is designated generally by the numeral 40. This has an angle plate with a flat side 41 with screw hole perforations therethrough and is designed to fit against the inner surface of the fixture 11 having the drawer opening. There is an inwardly bent section 42 which has an extension 43 in alignment with the portion 42 and with laterally turned ears 44 with a pin 45 therethrough and on this pin there is a roller 46. In addition there is a strap 47 welded or riveted to the portion 42 of the angle. This strap has an underneath bent portion 48 with a single upturned ear 49, there being a pin 50 between this ear and the portion 42 of the angle with the roller 51 operating on the pin 50.

There are two of these units mounted on the inside of the fixture 11 as illustrated in Fig. 1 so that the roller 46 comes in contact with the outside of the side board 18 of the drawer adjacent the lower portion of this side board and with the roller 51 extending underneath the drawer and operating on the under surface of the drawer. These pairs of rollers on opposite sides of the drawer hold the drawer centered in a vertical and horizontal manner in regard to the opening 12 and prevent lateral shifting of the drawer and reduces the friction of operation.

In Fig. 5 I illustrate a construction alternative to that of Fig. 2, for operating on the lower guide bar. This roller mounting is designated generally by the numeral 52 and has a vertical plate 53 with holes for screws therein and a horizontal extension 54. The extension fits underneath the drawer and the vertical plate 53 on the outside of the board 17. There are a pair of vertical pins 55 depending from the portion 54, each pin having a roller 56 thereon. In addition a U-shaped strap 57 having ears 58 is secured to the undersurface of the portion 54, and a pin 59 therethrough with a roller 60. When this construction is utilized the vertical rollers 56 engage opposite sides of the guide bar 13 and the roller 60 operates on the upper surface of this guide bar.

Various changes may be made in the principles of my invention without departing from the spirit thereof as set forth in the description, drawing and claims.

I claim:

1. A device as described, comprising in combination a fixture having a drawer opening with upper and lower central guide bars extending inwardly from the opening, a drawer mounted to slide through said opening and between the bars, a roller mounting secured to the inner and lower edge of the drawers having a pair of vertical rollers to engage opposite sides and a horizontal roller to engage the top of the lower guide bar and a roller mounting secured to the upper edge of the inner end of the drawer engaging the lower side of the upper guide bar and roller mountings secured to opposite sides of the drawer opening on the fixture, each having a vertical and a horizontal roller, the vertical rollers engaging the sides of the drawer and the horizontal rollers the lower edge of the drawer, the roller mounting on the fixture comprising an angularly bent plate with one side secured to the fixture and the other side having a U-shaped roller mounting with a pin mounting the vertical roller, and a strap secured to one part of the plate and extending inwardly under the drawer and having a horizontal pin mounted in the horizontal roller.

2. A roller mounting for drawers, comprising an angularly bent plate having a vertical and a horizontal section, the vertical section being adapted to be secured to the vertical inner end of a drawer and the horizontal section to fit underneath the drawer, a pair of vertical pins secured to the horizontal portion and having vertical rollers thereon, and a U-shaped frame secured to the horizontal portion of the plate and having a horizontal

roller thereon, said rollers being adapted to engage on opposite sides and the top of a guide bar underneath the drawer.

3. A roller mounting for drawers, comprising a plate having a vertical and a horizontal portion, the vertical portion fitting on one side of the inner end of the drawer and the horizontal portion on the upper end of the drawer, a U-shaped frame on the horizontal portion having a horizontal roller mounted therein, the said roller being adapted to engage the lower surface of an upper guide bar over a drawer.

4. A roller mounting for drawers, comprising an angularly bent frame having a first portion to attach to a fixture inside of a drawer opening and a second portion having a U-shaped frame with a vertical roller mounted therein, a strap secured to the second portion and bent at right angles thereto inwardly and having a horizontal roller mounted between an upturned portion of the strap and the second portion of the plate, said rollers being adapted to engage the side and the underedge of a drawer respectively.

5. A device as described comprising in combination a fixture having a drawer opening with a lower central guide bar extending inwardly from the opening, a drawer mounted to slide through said opening, a roller mounting secured to the inner and lower portion of the fixture on each side adjacent the drawer opening, said roller mountings having a vertical roller to engage the sides of the drawer and horizontal rollers to engage underneath the edge of the drawer, whereby the drawer is guided on both sides and underneath at the edges, and a third roller mounting having an angular plate secured to the bottom and to the inner end of the drawer, said plate having a pair of depending pins with rollers thereon to engage on opposite sides of the guide bar, and also having a pair of depending ears with a horizontal roller mounted therebetween to engage the upper edge of the guide bar.

6. A device as described comprising in combination a fixture having a rectangular drawer opening, a drawer mounted to slide through said opening, a roller mounting secured on each side of the fixture adjacent the drawer opening, each mounting having an angular plate with one side secured to the fixture and the other side parallel to a side of the drawer, the side adjacent the drawer having a pair of ears with a vertical roller to engage the side of the drawer, a frame connected to the same side and extending underneath the drawer and having a horizontal roller to engage the lower edge of the drawer whereby the drawer is supported on both sides and guided on both sides.

7. A device as claimed in claim 6, a horizontal guide bar extending from the said fixture below the opening inwardly and parallel to the under side of the drawer, a third roller mounting formed of an angular plate with one side secured to the bottom and the other secured to the inner side of the drawer, a pair of vertical rollers extending downwardly from the under side of the plate to engage opposite sides of the bar, and a pair of ears extending downwardly from the under side of the plate and having a horizontal roller to engage the top of the bar.

In testimony whereof I have signed my name to this specification.

ALBERT C. KENNEDY.