Oct. 14, 1941. S. G. WOGULIS 2,258,667

ROLLER BEARING MOUNTING FOR DRAWERS AND THE LIKE

Filed June 22, 1940

Fig. 3.

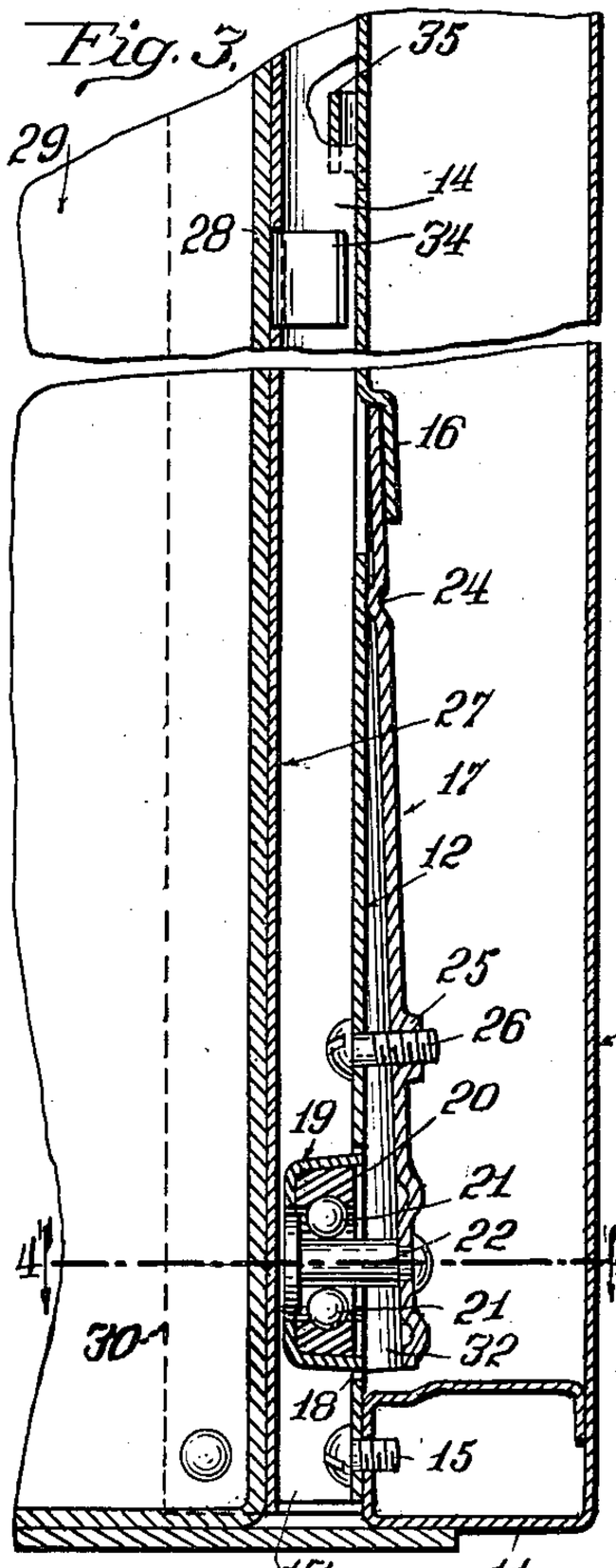


Fig. 1.

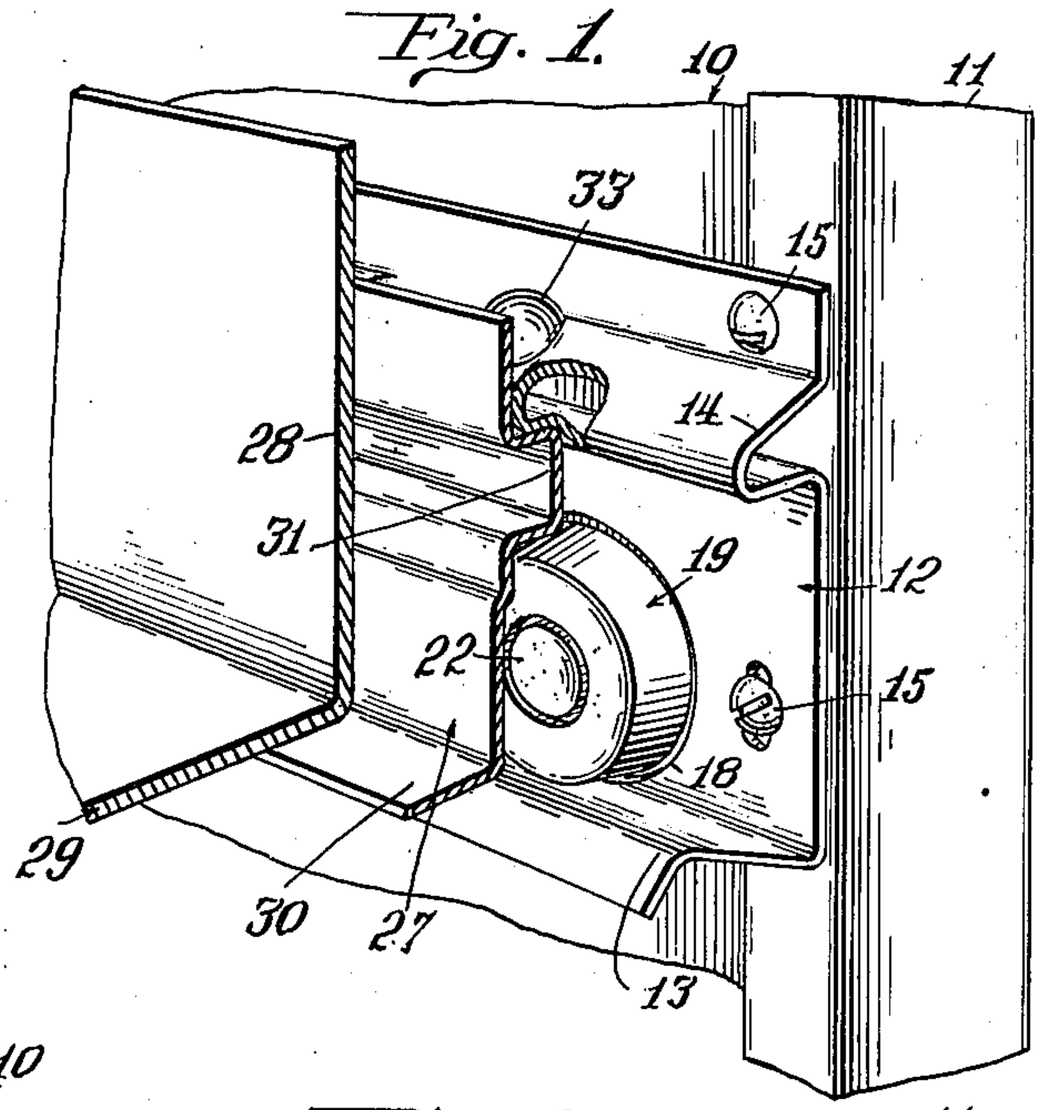


Fig. 2.

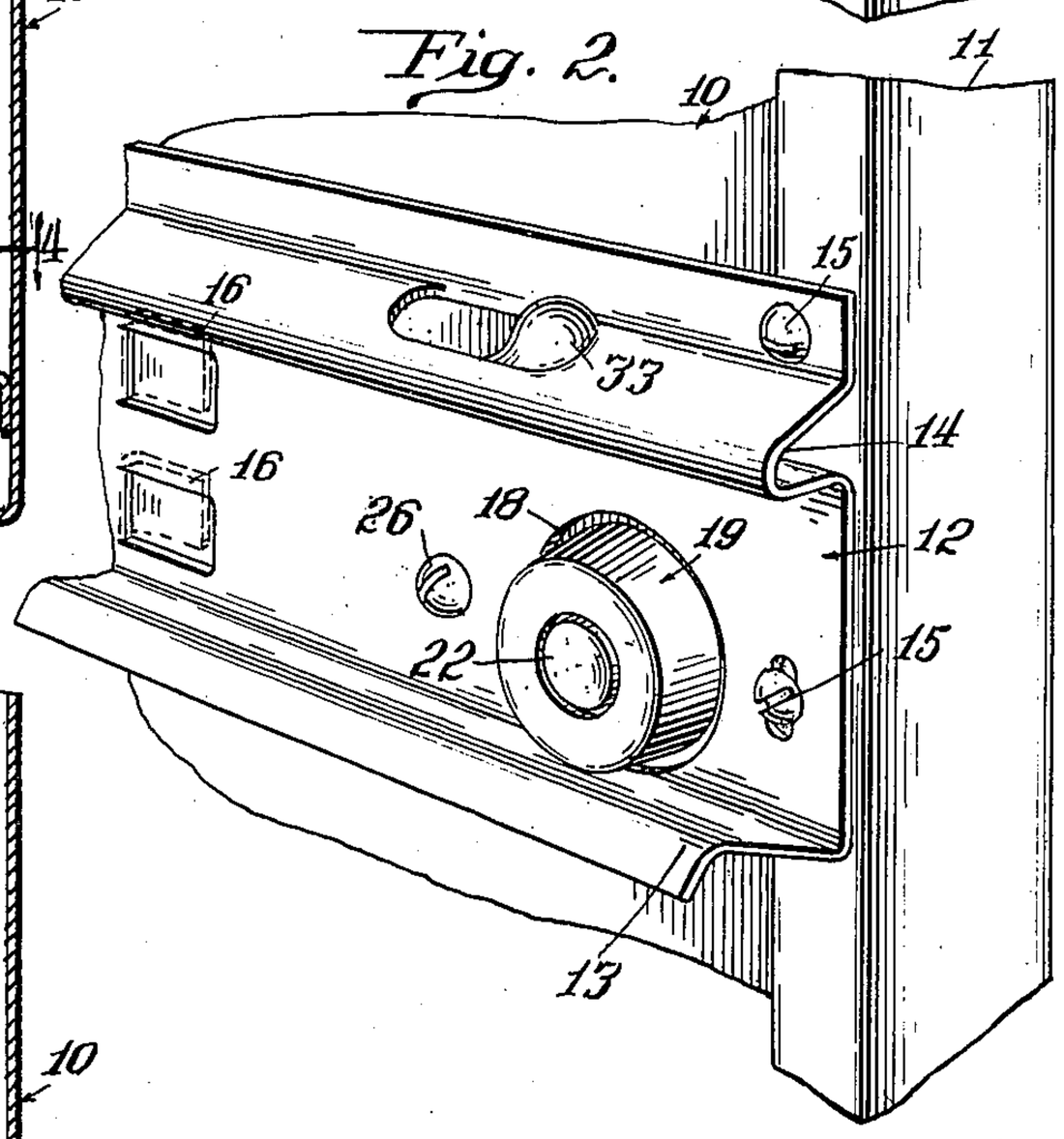
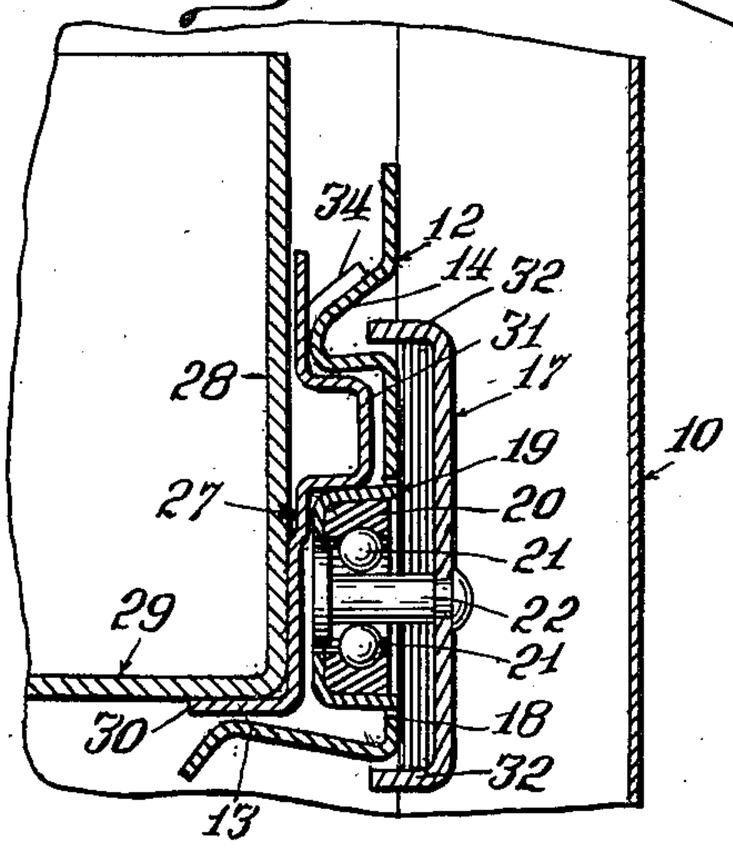


Fig 4.



Inventor
Stanley G. Wogulis,
By George Heidemann
Attorney

Patented Oct. 14, 1941

2,258,667

UNITED STATES PATENT OFFICE

2,258,667

ROLLER BEARING MOUNTING FOR DRAWERS AND THE LIKE

Stanley G. Wogulis, Geneva, Ill., assignor to Modern Steel Equipment Company, Geneva, Ill., a corporation of Illinois

Application June 22, 1940, Serial No. 341,880

10 Claims. (Cl. 45—77)

My invention relates to a roller bearing mounting which, although adaptable to other uses, is more especially adapted for use in connection with the metal drawers of metal cabinets employed in domestic kitchens and has for its object the provision of an easily operable antifriction bearing for the cabinet drawers as well as a readily adjustable bearing adapted to compensate for any undue play between the drawers and the cabinet walls.

The invention also for its object the provision of a thrust bearing which may be regulated and the desired amount of tension on the drawer obtained for the purpose of controlling the movement of the drawer.

The object and advantages of my invention will all be readily comprehended from the following detailed description of the accompanying drawing, wherein:

Figure 1 is a detail perspective view of a portion of one wall of a cabinet provided with my improved bearing and a portion of a drawer and trackway; the forward end of the drawer and trackway being broken away to disclose the bearing.

Figure 2 is a perspective view of a portion of the cabinet side wall and drawer guideway and bearing with drawer removed.

Figure 3 is a horizontal sectional view through the cabinet side wall with the roller bearing and one side of a drawer.

Figure 4 is a cross-sectional view taken on the line 4—4 of Figure 3.

My invention relates to a bearing and guideway for the metal drawers of sheet metal cabinets; and although the invention is especially designed for kitchen cabinets, it is apparent that the invention is adaptable to other uses.

In the particular exemplification the forward portion of one side wall of a cabinet is shown at 10, made of sheet metal and bent into the box-like or column forming portion 11. Disposed horizontally on the inner side of the wall 10 is a bearing holding track or guideway 12 consisting of a preshaped metal strip formed with a flange 13 along its lower longitudinal margin and with a longitudinally extending shoulder portion 14 at a slight distance from the upper longitudinal edge of the strip. The forward end of the strip is shown secured to the column portion 11 of the cabinet by means of screws 15; it being understood that the rear end of the strip or trackway is also secured in place so as to maintain the trackway in horizontal position. The lower flange 13 and the shoulder 14 are sufficiently spaced apart to provide a channel therebetween for reception of the roller bearing and the guideway which is attached to the drawer, as will be hereinafter described.

The track forming strip 12 at a predetermined distance from its forward end preferably is provided with vertically spaced partially severed portions which are bent inwardly toward the rear side of the track strip to provide a pair of off-set tongues 16, 16 whereby the rear end of the bearing carrying metal plate 17 is clamped in place as shown in Figure 3; and the forward end of the track strip 12 is provided with an opening 18 for passage of the roller bearing 19 therethrough.

The roller bearing 19 is of cup-shape and interiorly provided with a race-way 20 for the ball-bearings 21 which are held in place by the pin 22 provided at its outer end with a head while the inner end is reduced and secured to the metal plate 17; the bottom or inner vertical face of the cup-shape bearing 19 being provided with a hole somewhat larger than the head of the pin 22 so as to be out of frictional engagement with the pin 22.

The metal plate 17, adjacent its inner end, is provided with a transverse crimp 24 to provide a fulcrum point for the metal plate whereby the forward or roller carrying end of the metal plate is normally forced away from the track member 12; while the forward end of the metal plate a short distance from the roller bearing has an opening punched therein so as to leave sufficient metal, as at 25, to effect screw-threaded relation with the set-screw 26 which loosely extends through a hole in the track member 12. As is apparent from the construction shown in Figure 3, the forward end of metal plate 17 may be positioned close to or farther away from the track member 12 upon suitable rotation of set-screw 26 and thereby control the extent to which the roller bearing 19 extends through the track member and hence into lateral relation with the vertical face of the channeled guide strip 27 secured lengthwisely on the side wall 28 of the drawer 29.

The guide strip 27 is shown provided with an outwardly disposed flange 30 at its lower longitudinal edge which extends beneath the bottom of the drawer 29 and is secured thereto; and this strip, slightly removed from its upper longitudinal edge, is channeled outwardly as shown at 31 to have sliding engagement with the top of the roller bearing 19; the channeled portion 31 fitting between the top of the roller bearing 19 and the outwardly disposed corrugation or shoul-

der 14 of the track member 12, see Figures 1 and 4, so as to support the forward end of the drawer on the roller bearing 19 and provide a non-friction sliding relation between the drawer and the cabinet walls with the weight of the sliding drawer transmitted to the roller bearing.

In order to prevent vertical shifting movement of the forward or roller carrying end of the plate 17, I prefer to flange the upper and lower longitudinal edges of the plate 17 as shown at 32 with the flanges in overlapping relation with the outwardly disposed portions of the track member 12, see Figure 4.

With the guide member 27 flanged at its bottom and the flange 30 secured to the bottom of the drawer 29, it will be noted that smooth uninterrupted surfaces are presented toward the track member 12 and to the roller bearing 19 and easy operation of the drawer is provided.

In the event of too great lateral play between the sides of the drawer and the side walls of the cabinet, the spaced relation between the roller carrying plate 17 and the track member 12 may be altered by properly screwing the set-screw 26 so as to cause the roller 19 to be moved outwardly toward the side of the drawer; the flat surface of the roller bearing 19 and enlarged head of pin 22 thus constituting a thrust bearing adapted to take up the lateral play of the drawer. It it also apparent that the freedom of sliding movement of the drawer may thus be regulated in keeping with the wishes of the user; the axial depth of the roller being such that more or less in and out movement of the bearing may be had and still present sufficient bearing surface for the channeled or shouldered portion 31 of the drawer guide strip 27.

The upper surface of the corrugation or shoulder portion 14 of the track member 12 is shown with an upwardly disposed offset portion 33 (see Figures 1 and 2) adapted to engage a suitable struck-up lug or pin 34 on the rear end of the guide member 27 which prevent the drawer being drawn completely out of the opening in the cabinet; and in order to prevent the drawer, when pushed inwardly, from making forcible contact with the rear wall of the metal cabinet, I prefer to provide the channel portion of the track member 12 with a struck-up portion 35 disposed in the path of the channeled portion 31 of the guide member 27 and thereby prevent further inward movement of the drawer.

I have shown what I believe to be the simplest embodiment of my invention which I have described in terms employed for purposes of description and not as terms of limitation, as structural modifications may be made without, however, departing from the spirit of my invention as defined in the appended claims.

What I claim is:

1. A roller bearing mounting for horizontally slidable drawers comprising an elongated channeled track member adapted to be secured to the side wall of a drawer opening and provided with an opening in the channel portion; a plate secured to the rear side of the track member and provided with a roller bearing adapted to extend through the opening in the track member; adjustable means whereby said plate may be laterally adjusted and the extent of protrusion of the roller bearing through the opening in the track member controlled; and a guide element on the drawer side wall adapted to ride across the top of the roller bearing.

2. A roller bearing mounting for horizontally slidable drawers comprising an elongated channeled track member, the channel adjacent the forward end of the member being provided with an opening; an elongated roller carrying member secured at one end to the rear side of the track member while the roller carrying end of the member is disposed adjacent the opening in the track member to permit the roller to extend through said opening; regulable means disposed through the track member and having adjustable relation with the roller carrying member whereby the position of the roller relative to the outer side of the track member may be controlled.

3. A roller bearing mounting for a horizontally slidable drawer comprising a track member provided with an opening and adapted to be secured to the side wall of a drawer opening; an elongated plate arranged on the rear side of said track member with one end of the plate secured to said track member while the other end of the plate is provided with a roller bearing adapted to extend through said opening in the track member; means whereby the roller carrying end of said plate is normally held in spaced relation with the rear side of the track member; and regulable means disposed through the track member and having controllable relation with said plate whereby the position of the roller bearing relative to said opening in the track member may be laterally adjusted.

4. An antifriction bearing for a horizontally slidable drawer comprising an elongated channeled track member provided with an opening; a metal plate provided on its side adjacent its forward end with a vertically arranged cup-shape roller adapted to pass through said opening while the other end of the plate is secured to the rear side of the track member, the longitudinal edges of the plate being flanged and arranged in overlapping relation with angularly disposed surfaces on the rear side of the track member; regulable means whereby the lateral relation between the roller carrying end of said plate and the rear side of said track member may be controlled; and an elongated guide member adapted to be secured to the side wall of a drawer and formed to ride in the channel of the track member adjacent the side and across the top of said roller.

5. A bearing mounting of the character described for a horizontally slidable drawer comprising an elongated channeled track member provided with an opening and adapted to be secured to the side wall of a drawer opening; a roller carrying member secured to the rear side of the track member with the roller disposed through said opening; regulable means whereby the lateral relation between the two members may be controlled; and an elongated guide member adapted to be secured to the side wall of a drawer and formed to slide in the channel of the track member across the top and adjacent the side of said roller.

6. A mounting for horizontally slidable drawers comprising an elongated track member, adapted to be secured to the side wall of a drawer opening, provided with an opening and an off-set stop surface adjacent the forward end; a roller carrying element secured to the rear side of said member with the roller disposed through said opening; an elongated guide member adapted to be secured to the side wall of a drawer and formed to slide across the top and adjacent

the side of the roller to support the drawer and to receive lateral thrusts.

7. A mounting for horizontally slidable drawers comprising an elongated track member, adapted to be secured to the side wall of a drawer opening, provided with an opening and an offset stop surface adjacent the forward end; a roller carrying element secured at the rear side of said member with the roller disposed through said opening; an elongated guide member adapted to be secured to the side wall of a drawer, formed to slide across the top and adjacent the side of the roller to support the drawer; and regulable means whereby the lateral relation between the roller and said guide member may be controlled.

8. A mounting for horizontally slidable drawers comprising a pair of complementary members, one of said members being adapted to be secured to the side wall of a drawer opening while the other member is adapted to be secured to the side wall of a drawer; the first mentioned member being provided with offset stop surfaces and having an opening adjacent its outer end; a roller mounted at the rear side of the first mentioned member and disposed through said opening into supporting relation with the second mentioned member; and means whereby the relation between said second mentioned member and the roller may be controlled.

9. A roller bearing mounting comprising a horizontally disposed channeled track member adapted to be secured to the side wall of a drawer opening; an elongated plate secured at one end to the channel portion of said track member while the free end is provided with a laterally vertically disposed roller, the roller carrying end being yieldingly spaced from the track member; a guide element, adapted to be secured to the side wall of a horizontally movable drawer, provided with a laterally disposed shoulder formed to extend between the upper flange of the track member channel and the top of said roller to prevent vertical movement of the drawer and to ride on the roller; and adjustable means whereby lateral thrust bearing relation between the roller and the guide element may be regulated.

10. A roller bearing mounting for horizontally slidable drawers comprising a horizontally disposed channeled track member adapted to be secured to the side wall of a drawer opening, the base of the channel portion being provided with an opening; a roller carrying member, yieldingly secured to the track member, provided with a roller disposed through said opening and rotating about a horizontal axis, the side of the roller being adapted to provide a lateral thrust bearing for the drawer; the sides of the drawer being provided with outwardly disposed shoulders adapted to extend into the channel of the track member and to ride on said roller; and regulable means whereby the thrust bearing relation between the sides of the rollers and the drawer may be regulated.

STANLEY G. WOGULIS.