July 16, 1957 C. F. WOLTERS 2,799,541

ROLLER RETAINING MEANS FOR DRAWER SUSPENSION

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FIG. 1

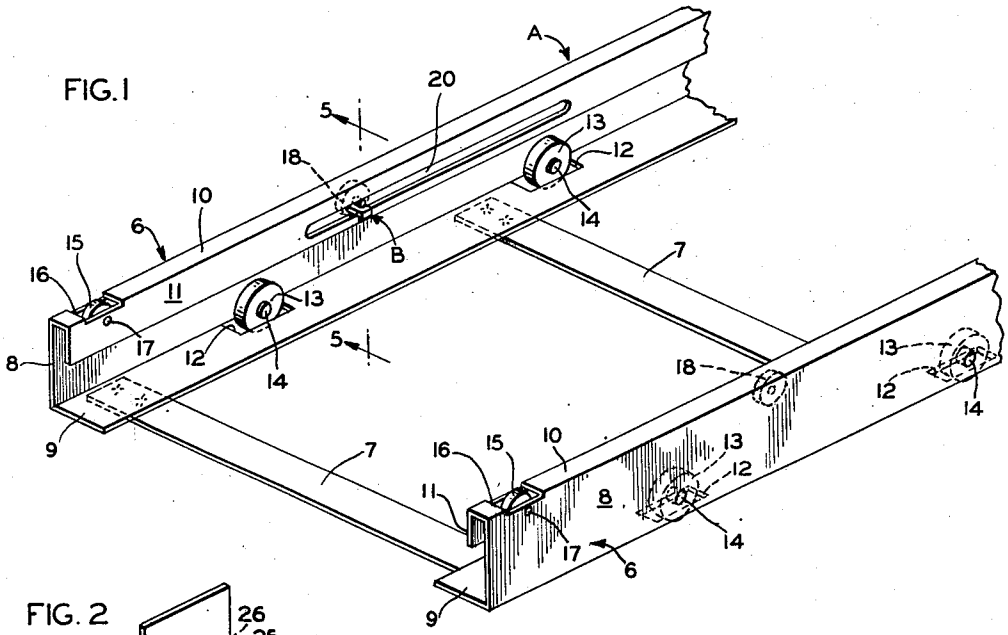
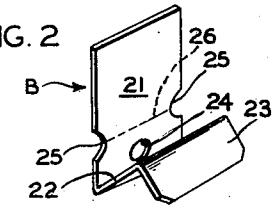


FIG. 2



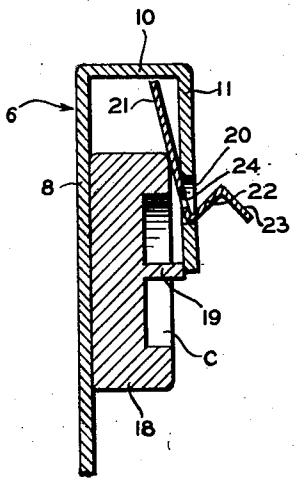


FIG. 3

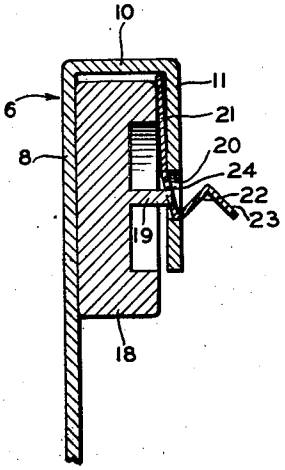


FIG. 4

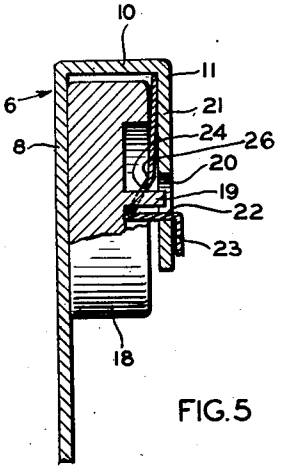


FIG. 5

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ROLLER RETAINING MEANS FOR DRAWER SUSPENSION

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6 Claims. (Cl. 308—3.8)

This invention relates generally to filing cabinets of the drawer type and more specifically to an improved retaining means for traveling rollers used in drawer suspensions of such cabinets.

Drawer filing cabinets as manufactured today usually include traveling rollers which are mounted for longitudinal movement within the channel members of the drawer suspensions. These movable or traveling rollers have heretofore been retained within the channel members of the drawer suspensions entirely by a short stub axle which projects sidewardly from the roller and through a longitudinal slot in a flange of the channel members. While this method of retaining the traveling rollers in the channel members is extremely simple and inexpensive from a manufacturing viewpoint, it has certain objectionable disadvantages in that the conventional stub axles are extremely short and therefore have a tendency to become accidentally disengaged from the slots. This condition occurs whenever the slotted flange of the channel member is unduly flexed or sprung away from the roller during operation of the drawer allowing the short stub axle to leave the slot and the traveling roller to become disengaged from the channel member.

One object of the present invention is to provide means for eliminating all danger of accidental displacement or loss of traveling rollers from the channels of drawer suspensions used in drawer filing cabinets.

The invention further contemplates the provision of a longer axle for the traveling roller and a retaining means for the roller which is of simple one-piece design; economical to manufacture; and capable of being quickly, conveniently and permanently installed.

Various other objects and features of the invention will become apparent from the following detailed description relating to the accompanying drawing, wherein one form of the invention is illustrated.

The essential characteristics of the invention are summarized in the claims.

In the drawing:

Fig. 1 is a fragmentary perspective view of the rear portion of a conventional file drawer suspension embodying the present invention.

Fig. 2 is an enlarged perspective detail of the roller retaining means before installation, and

Figs. 3, 4 and 5 are enlarged vertical cross sections taken through the center line of one of the improved traveling rollers and its retaining means at a point along the channel member as indicated by the line 5—5 in Fig. 1 to illustrate the method of assembling the improved traveling roller and its retaining means within the channel member of a drawer suspension.

In the embodiment of the invention as illustrated and which shows a preferred construction, the rear portion of a conventional drawer suspension is indicated generally by reference character A in Fig. 1. Such drawer suspension usually comprises a pair of parallel channel members 6 which are joined to one another in spaced relation

by a pair of cross bars 7. Each channel member 6 of the drawer suspension usually comprises an outer vertical main flange 8, a lower horizontal flange 9 inwardly directed from the lower end of flange 8, an upper horizontal flange 10 inwardly directed from the top of flange 8, and an inner vertical flange 11 which depends from the upper horizontal flange 10 and is parallel with the outer vertical main flange 8.

The lower horizontal flange 9 of channel member 6 is usually provided with a pair of apertures 12 through which the lower portion of fixed rollers 13 project. Each fixed roller 13 is rotatably journalled upon an axle 14 which is suitably mounted on main flange 8 as clearly shown in Fig. 1. The rear end of channel members 6 is provided with a fixed roller 15 the upper portion of which projects through an aperture 16 in the upper horizontal flange 10. Each fixed roller 15 is similarly rotatably journalled on an axle 17 which is mounted in the vertical inner flange 11 and outer main flange 8.

In addition to the three fixed rollers just described for each channel member 6, conventional drawer suspensions heretofore have included a traveling roller having a short stub axle which rolls within a longitudinal slot 20 formed in the inner vertical flange 11. To assemble this type of traveling roller with its associated channel member the vertical flange 11 is sprung away from the main flange 8 to permit the short protruding stub axle to enter and engage the walls of slot 20. However, as previously mentioned this method of retaining the traveling roller within its channel between the vertical flanges 8 and 11 is objectionable due to the fact that the short axle has a tendency to become accidentally disengaged from the slot 20 during operation of the drawer suspension.

The description thus far has described the usual and well known construction of file draw suspensions and reference will now be made to the improved traveling rollers and novel retaining means therefor forming the subject matter of the present invention.

To insure against accidental loss or disengagement of the traveling roller 18 from its channel member 6 the present invention contemplates the provision of a longer roller axle 19 in cooperation with a new and novel retaining means, the latter being generally indicated by reference character B in Fig. 2. The length of roller axle 19 is greatly increased according to the present invention by recessing the roller 18 as indicated by reference character C in Fig. 3 without causing the free end of the axle to project any further beyond the axle side of the roller than heretofore.

Referring now to Fig. 2 the roller retaining means B for each traveling roller 18 preferably comprises a sheet metal strip bent upon itself to form three portions indicated by reference numerals 21, 22 and 23 respectively. As shown in Fig. 2 portion 21 is provided with a hole or aperture 24 adapted to receive axle 19 of traveling roller 18 in a manner presently described. Portion 21 of roller retaining means B is further provided with opposed notches 25 to facilitate bending substantially along the dotted line 26 shown in Fig. 2 during assembly in the following manner.

When inserting the traveling roller 18 into its associated channel member 6, portion 21 of retaining member B is inserted through the elongated slot 20 as clearly shown in Fig. 3. Roller 18 is next inserted between the flanges 8 and 11 and by slightly springing the lower end of flange 11 to the right as viewed in Fig. 3 the protruding end of axle 19 will clear or pass the end of flange 11. With roller 18 and its retaining means B in the position shown in Fig. 3 upward pressure upon the roller 18 causes portion 21 to bend along the line 26 and as the periphery of the roller approaches the upper horizontal flange 10

axle 19 enters the hole or aperture 24 in portion 21 and slot 20 as clearly illustrated in Fig. 4.

When roller 18 assumes the position shown in Fig. 4, portion 23 of retaining member B is then forced inwardly, by sharply hitting it with a hammer, until it is adjacent the outer surface of flange 11 as shown in Fig. 5. As portion 23 is driven against flange 11 portion 21 of retaining member B is reversely bent along the line 26 and portion 22 is driven into recess C until it is substantially parallel with axle 19. The greater part of axle 19 now projects beyond the aperture 24 but its free end is substantially within the slot 20 as clearly shown in Fig. 5.

It will now be clear that when portion 23 is forced inwardly so as to lie parallel with the outer surface of flange 11 (Fig. 5) axle 19 of roller 18 is journalled within the aperture 24 thus preventing the roller 18 from becoming accidentally disengaged from its channel member in the event flange 11 is sprung away from flange 8 sufficiently to withdraw axle 19 from slot 20 during operation of the drawer. In other words should flange 11 be accidentally sprung away from flange 8, during operation of the drawer suspension, the traveling roller 18 can not be disengaged from its channel member 6 due to the fact that its axle 19 projects well beyond the aperture 24 in retaining member B as clearly shown in Fig. 5 and in order for the roller to become disengaged from its channel it will be necessary to draw portion 23 away from flange 11 to free the axle from the aperture.

It will now be apparent from the foregoing detailed description of the retaining member B that disengagement of the traveling roller 18 from its channel member 6 no longer depends upon the engagement of axle 19 with slot 20. Instead the roller is retained within its channel member solely by engagement of axle 19 with retaining member B, and as the roller travels longitudinally within its channel member the retaining member B is caused to follow since axle 19 is journalled within aperture 24 and portion 22 therefore slides along the bottom edge of slot 20 during longitudinal movement of the roller.

While a particular embodiment of the invention has been shown and described, it will be apparent to those skilled in the art of drawer suspension that numerous variations and modifications may be made in the particular construction without departing from the underlying principles of the invention. It is therefore desired, by the following claims, to include within the scope of the invention, all such variations and modifications whereby substantially the results of the invention may be obtained by the use of substantially the same or equivalent means.

The invention claimed is:

1. In a drawer suspension of the type including spaced parallel channel members having an elongated slot in one wall thereof and formed to provide a trackway to receive a travelling roller, means for retaining said roller within said trackway comprising: an axle for said roller projecting laterally therefrom and at its outer end lying in said slot; a plate of metal having an upper portion disposed between the roller and the trackway above the axle, a second portion provided with an aperture to receive said axle and bent inwardly away from said elongate slot, and a third portion projecting horizontally outward from the lower end of said bent portion and resting on the bottom of said elongate slot.

2. In a drawer suspension of the type including spaced parallel channel members having an elongate slot in one wall thereof and formed to provide a trackway to receive a travelling roller, means for retaining said roller within said trackway comprising: an axle for said roller projecting laterally therefrom and at its outer end lying in said slot; a plate of metal having an upper portion disposed between the roller and the trackway above the axle, a second portion provided with an aperture to receive said axle and bent inwardly away from said elongate slot, and a third portion projecting horizontally outward from the lower end of said bent portion and resting on the bottom of said elongate slot, said plate having a fourth portion bent downwardly from the outer edge of the horizontal portion and lying against the outer face of the slotted channel member.

3. In a drawer suspension of the type having a pair of parallel channel members each of which includes parallel inner and outer walls forming a channel member and with an elongate slot in the inner wall in combination with a travelling roller having an axle projecting laterally therefrom with the free end lying in said slotted channel member; said roller having a recess formed in the axle side thereof and concentric with the axle; a plate of stiff metal having an upper portion lying above the axle between the roller and the slotted channel member, an intermediate portion bent inwardly away from said slotted channel member and disposed in said recess and having apertures receiving said axle, and a lower portion bent horizontally from the lower edge of the bent portion and resting upon the lower edge of said slot.

4. In a drawer suspension of the type having a pair of parallel channel members each of which includes parallel inner and outer walls forming a channel member and with an elongate slot in the inner wall in combination with a travelling roller having an axle projecting laterally therefrom with the free end lying in said slotted channel member; said roller having a recess formed in the axle side thereof and concentric with the axle; a plate of stiff metal having an uper portion lying above the axle between the roller and the slotted channel member, an intermediate portion bent inwardly away from said slotted channel member and disposed in said recess and having apertures receiving said axle, and a lower portion bent horizontally from the lower edge of the bent portion and resting upon the lower edge of said slot, said plate having still another portion bent downwardly from the outer edge of the horizontal portion and lying against the outer face of the slotted channel member.

5. In a drawer suspension of the type including spaced parallel channel members having an elongate slot in one of the channel members to provide a trackway to receive a travelling roller, said roller having an axle extending laterally therefrom having its free end lying in said slot, the invention which includes a retaining plate of stiff metal cooperating with said roller and having an upper portion disposed above the axle between the roller and the slotted channel member, an apertured intermediate portion connected to the lower end of the upper portion and weakened along the junction line therebetween, said intermediate portion bent inwardly away from the slotted channel member, a third portion of the plate connected to the lower end of the bent portion and extending horizontally therefrom through the elongate slot in the channel member and resting on the lower edge thereof, said plate having a fourth portion bent downward from the outer end of said horizontal portion and lying against the outer face of the slotted channel member.

6. In a drawer suspension of the type including spaced parallel channel members having an elongate slot in one of the channel members to provide a trackway to receive a travelling roller, said roller having an axle extending laterally therefrom having its free end lying in said slot, the invention which includes a retaining plate of stiff metal cooperating with said roller and having an upper portion disposed above the axle between the roller and the slotted channel member, an apertured intermediate portion connected to the lower end of the upper portion and weakened along the junction line therebetween, said intermediate portion bent inwardly away from the slotted channel member, a third portion of the plate connected to the lower end of the bent portion and extending horizontally therefrom through the elongate slot in the channel member and resting on the lower edge

thereof, said plate having a fourth portion bent downward from the outer end of said horizontal portion and lying against the outer face of the slotted channel member, said roller having a recess on its lateral side from which the axle projects and in which the bent portion of the retaining plate is disposed.

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