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SLIDE SUSPENSION

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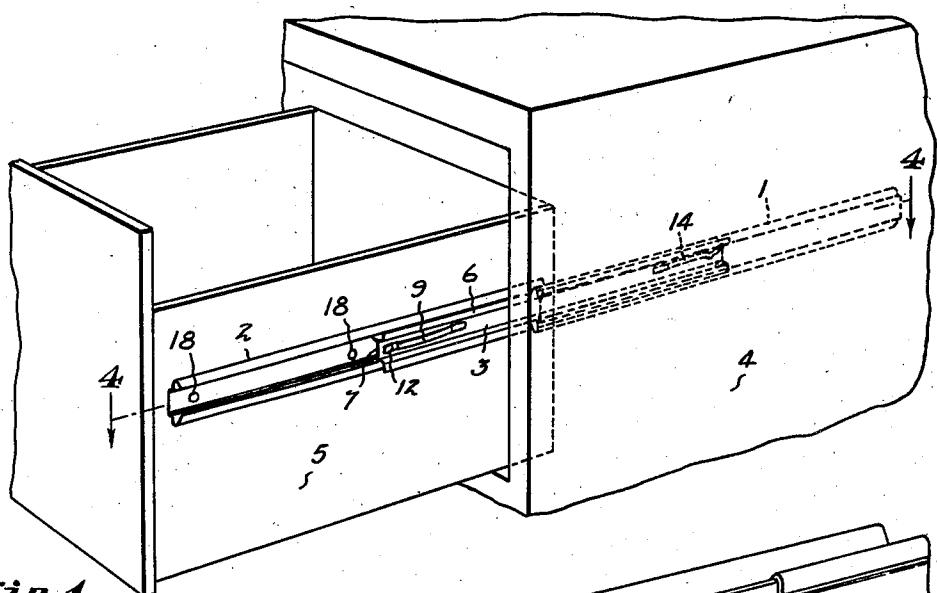


Fig. 1

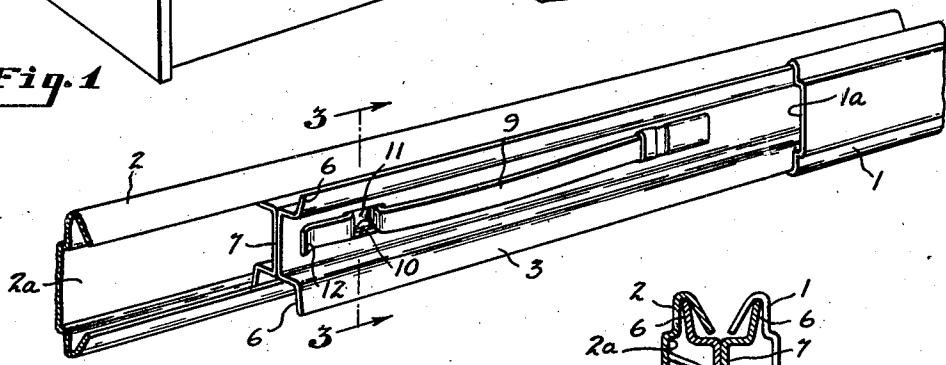


Fig. 2

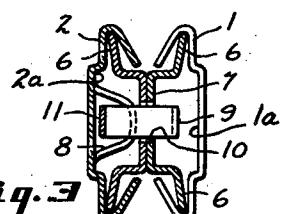


Fig. 3

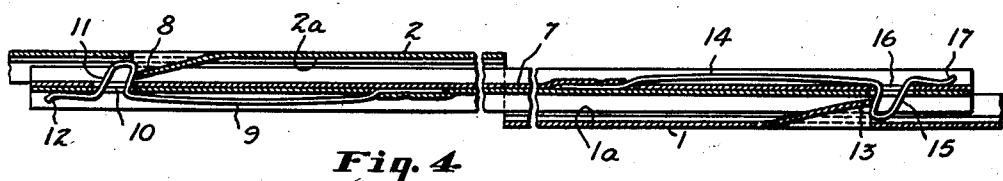


Fig. 4

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## UNITED STATES PATENT OFFICE

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## SLIDE SUSPENSION

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4 Claims. (Cl. 45—77)

This invention relates to slide suspensions for drawers, trays, etc. which are slidably mounted in a supporting structure, such as a cabinet, tool chest, desk, etc. The invention is particularly directed to the details of construction of the slide suspension whereby its component parts may be readily separated and assembled.

It is an object of the present invention to provide a slide suspension which permits ease of movement of the sliding member with stops to prevent accidental removal and spilling of the contents of the slide drawer or tray.

Another object is to provide a slide suspension in which the removal of the drawer or tray may be accomplished with greater ease, the releases for the above mentioned stops being readily accessible and capable of manual actuation.

A further object is to provide a slide suspension of simple and economical construction and one which will support the sliding member firmly at any position thereof relative to the supporting structure. Other objects and advantages of the present invention will become apparent from the following detailed description accompanied by the drawing, in which like parts throughout the several views bear identical reference numerals.

In the drawing:

Figure 1 is a fragmentary view in perspective of a cabinet or the like employing a slide suspension embodying the present invention and illustrating the drawer in an outwardly extending position;

Fig. 2 is an enlarged fragmentary view in perspective of the slide suspension to show the construction and operation of the stops and releases;

Fig. 3 is an enlarged sectional view taken substantially on the line 3—3 of Fig. 2 and illustrating details of the stop; and

Fig. 4 is an enlarged sectional view with parts broken away taken substantially on line 4—4 of Fig. 1.

The slide suspension shown in the drawing and embodying the present invention briefly comprises a pair of substantially identical members, one of them an outer member 1 and the other an inner member 2, which are cooperatively associated with an intermediate member 3. The members 1 and 2 are substantially C-shaped and are disposed in opposed relationship, the outer member 1 being secured to a supporting member 4 and the inner member 2 being secured to a drawer or tray 5. The inwardly turned free edges of the C-shaped members 1 and 2 provide longi-

tudinal channels along the length of the members in which flanges 6 of the member 3 are slidingly received. The intermediate member 3 as shown in the drawing comprises a pair of shallow channel shaped parts with the bottoms of the channels disposed vertically and the parts secured together with the channel bottoms back to back. These channel bottom portions which are secured back to back provide a web portion 7 on the intermediate member 3.

The inner member 2 is provided intermediate its ends with a stop 8, the stop in the instant embodiment being struck from the normal plane of the member. To engage with the stop and prevent removal of the inner member 2 from the intermediate member 3, a releasable detent is carried by the intermediate member. A flat spring 9 is secured at one end to the side of the web 7 which faces in an opposite direction from the inner member 2. The web 7 is also provided with an aperture 10 therethrough. Near the free end of the spring 9 is disposed a U-shaped portion 11 which extends through the aperture 10 and provides a projection to act as a detent or latch in engaging the stop 8. The free end of the spring 9 terminates in a tab portion 12 which is directed away from the web 7 to provide ready accessibility to the spring. The stop 8, the aperture 10 and the spring 9 are so disposed that the detent of the spring engages the stop when the drawer and outer member 1 are in their outwardly extending position with respect to the intermediate member 3. Flexing the spring 9 moves the detent portion of the spring through the aperture and sufficient flexing removes the detent from engagement with the stop, whereby the inner member may be freed from the intermediate member.

A more positive engagement of the projection 11 of the spring and the stop on the C-shaped member may be provided if the angle between the projection 11 and the spring proper 9 is an acute angle, that is, a little less than 90 degrees, such as about 70 degrees. With this arrangement the danger of the spring projection 11 accidentally slipping past the stop 8 is obviated. Should the stop be forced against the spring projection it merely puts tension in the spring and does not permit the spring to flex. To further assist in providing a positive engagement between the spring projection and the stop, the C-shaped members may be recessed between their longitudinally channeled edges, as shown in the drawing by the numerals 1a and 2a. These recessed portions 1a and 2a permit the use of a larger spring projection

11 and a larger stop 8. Also, the spring projection has adequate room upon movement of the members 1 and 2 relative to the intermediate member 3.

To prevent separation of the intermediate member 3 and the outer member 1, a stop and releasable detent mechanism similar to that just described is provided. A stop 13 is struck from the outer member 1 and the web of the intermediate member on the side opposite the outer member 1 carries a flat spring 14 secured thereto at one end. The spring is provided with a U-shaped detent portion 15, which is adapted to extend through an aperture 16 in the intermediate member and the spring 14 terminates in a tab portion 17 which is directed away from the web 7 of the intermediate member.

Two of the slide suspensions are used for each drawer, one being disposed on each side of the drawer, each of the suspensions being disposed at the same distance from the bottom of the drawer. The inner and outer members of each suspension slide upon the flanges 6 of the intermediate member. Movement of the drawer in an outward direction is limited by the engagement of the detent portion 15 engaging the stop 13 of the outer member secured to the supporting frame and the engagement of the detent portion 11 of the spring 9 with the stop 8 of the inner member, secured to the drawer. When it is desired to remove the drawer, it is a relatively simple matter to bring the drawer to its outwardly extended position, insert a thumb or fingernail between the tab portion 12 of the spring 9 and the intermediate member, and flex the spring away from the intermediate member so that the U-shaped portion 11 is drawn away from the stop 8 and the drawer 5 may be readily removed.

If it is further desired to remove the intermediate member from the outer member secured to the supported frame, it is only necessary to reach into the space from which the drawer has been removed and flex the spring 14 by its tab 17 so that the U-shaped portion 15 thereof cannot engage with the stop 13 and then the intermediate member may be readily removed from the outer member.

The outer and inner members 1 and 2, respectively, of the slide suspension may be secured to the supporting member 4 and the drawer or tray 5, respectively, in any suitable manner, such as by welding or riveting where the members are made of sheet metal or by suitable screws where the supporting member and drawer are made of wood. Since the slide suspension of the present invention may be readily disassembled, its installation is relatively easy. The inner member is secured to the drawer or tray at spaced locations, indicated in the drawing by the numeral 18. Similarly, the outer member may be secured to the supporting structure and the suspension may be assembled by sliding the flanges 6 of the intermediate member into the longitudinally channeled portions of the outer and inner members.

It may be noted that in accord with the present invention a rigid support of the drawer member is provided throughout the movement of the drawer member, even when it is at the limit of its outward movement. The suspension of the present invention also provides positive limits to the outward movement of the sliding member.

Although the movement of the sliding member is positively limited, the drawer or tray may be

released very readily since the releases are so readily accessible. When the drawer is in its outwardly extending position the intermediate member has been withdrawn from the outer member which is secured to the supporting structure so that the release is exposed. The tab portions on the release permit an advantageous grip by which to flex the spring. At the same time the component parts of the suspension are relatively compact, so that they do not interfere with the movement of the drawer or slide. Further, an economical structure is provided by embodying the release in a single member which may be readily secured to the intermediate member.

It is to be understood that variations and modifications of the specific device herein shown and described for purposes of illustration may be made without departing from the spirit of the invention.

What I claim is:

1. A slide suspension for suspending a sliding member in a supporting structure which comprises an outer guide member on the supporting structure having a longitudinally channeled portion, an inner guide member on the sliding member having a longitudinally channeled portion, an intermediate member having portions received for sliding movement in the channeled portions of said inner and outer members, a stop on said inner member adjacent the intermediate member, an aperture in the intermediate member disposed adjacent the stop when the sliding member is in its outward extended position, and a detent carried by the intermediate member for engagement with said stop, said detent including a flat spring secured to the intermediate member on the outer side thereof and at a point spaced rearwardly from the aperture, a U-shaped portion of said spring projecting through the aperture to engage the stop, and an outwardly disposed free end portion of the spring to provide accessibility to the spring for manual disengagement of the detent from the stop to release the sliding member and inner member for removal.

2. A sliding suspension for suspending a sliding member in a supporting structure at all points along its sliding movement, which comprises an outer guide member on the supporting structure having a longitudinally channeled portion, an inner guide member on the sliding member having a longitudinally channeled portion, an intermediate member having portions received for sliding movement in the channel portions of said inner and outer members, a stop on said inner member adjacent the intermediate member, an aperture in the intermediate member which is disposed adjacent the stop when the inner member is at the limit of its outward movement with respect to the intermediate member, and a releasable catch for engagement with the stop, said catch including a flat spring secured to the intermediate member on the outer side thereof and at a point spaced rearwardly from the aperture, a projection carried by said spring to extend through the aperture and engage the stop, and a tab by which the spring may be readily flexed to disengage the catch from the stop to release the sliding member and inner member from the intermediate member for removal of the sliding member.

3. A slide suspension for suspending a sliding member in a supporting structure which comprises an outer member affixed to the structure and having a longitudinally channeled portion, an inner member affixed to the sliding member

and having a similar longitudinally channeled portion, an intermediate member having portions received for sliding movement in the channeled portions of said inner and outer members, a stop on said inner member adjacent the intermediate member, an aperture in the intermediate member disposed adjacent the stop when the sliding member is in its outward extended position, a detent carried by the intermediate member for engagement with said stop, said detent including a flat spring secured at one end to the intermediate member on the outer side opposite the inner member, a U-shaped portion of said spring projecting through the aperture to engage the stop, and an outwardly disposed free end portion of the spring to provide accessibility to the spring for manual disengagement of the detent from the stop to release the sliding member and inner member for removal, a stop on said outer member adjacent the intermediate member, an aperture in the intermediate member adjacent the stop when the sliding member is in its outwardly extended position, and a detent carried by the intermediate member for engagement with the stop, said detent including a flat spring secured at one end to the intermediate member on the inner side thereof, a U-shaped portion of said spring projecting through the aperture to engage the stop, and an inwardly disposed free end portion of the stop, and an inwardly disposed free end portion of the

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tion of the spring to provide ready disengagement to the detent from the stop to remove the intermediate member from the supporting structure after the sliding member has been removed.

4. A drawer suspension for suspending a drawer in a supporting structure which comprises an outer member affixed to the structure and having a longitudinally channeled portion, the drawer having a similar longitudinally channeled portion, an intermediate member having portions received for sliding movement in the channeled portions of said outer member and said drawer, a stop on said drawer adjacent the intermediate member, an aperture in the intermediate member disposed adjacent the stop when the drawer is in its outward extended position, and a detent carried by the intermediate member for engagement with said stop, said detent including a flat spring secured to the intermediate member on the outer side opposite the drawer and at a point spaced rearwardly from the aperture, a U-shaped portion of said spring projecting through the aperture to engage the stop, and an outwardly disposed free end portion of the spring to provide accessibility to the spring for manual disengagement of the detent from the stop to release the drawer for removal.

HOWARD L. KENNEDY.