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EXTENSION DRAWER SLIDE.

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To all whom it may concern:

Be it known that I, ENOCH OHNSTRAND, citizen of the United States of America, and resident of Mohawk, in the county of Herkimer and State of New York, have invented new and useful Improvements in Extension Drawer-Slides, of which the following is a specification.

This invention relates to extension drawer slides, such as are designed for the purpose of permitting a drawer to be fully extended and to be supported in the fully extended position.

It is an object of this invention to provide a slide of such a nature as to permit a drawer to be fully extended in either direction from its normal closed position. Such a slide is particularly adapted for use with drawers in the bases of desks which are used by two persons sitting on opposite sides of the desk. In such a desk the present invention makes the drawers available for use by both of the two persons without moving from their seats. It is a common practice to file cards of card index systems in a plurality of rows crosswise of the desk drawers, in which case it can readily be seen that the cards can be used with equal facility at either side of the desk provided the drawers can be extended in both directions.

It has the further advantage that, when used either with such desks, or with filing cabinets, it is possible for two persons to work at the same time on different drawers in the same stack, one drawer immediately below the other, by sliding one out on one side and the other on the other side of the desk or cabinet. This will result in a considerable saving in the time of filing and posting clerks or other persons using such files, who often find it necessary to wait until another person has completed the use of a drawer just above or below the one they may desire to use.

It is an object of this invention to provide a double extension slide the relative movement of the several parts of which will be entirely automatic and yet certain of operation when a drawer is opened or closed, and to provide such a slide which consists of but few and durable parts with resultant economy in manufacture and use. Other and further objects will appear as the description proceeds.

I have shown a preferred embodiment of my invention in the accompanying drawings in which—

Figure 1 is a side view of the fixed slide member;

Fig. 2 is a similar view of the extension slide member;

Fig. 3 is a side view of the drawer slide as seen from the extension slide;

Fig. 4 is a cross section of the slides assembled;

Fig. 5 is a fragmentary view partly in section, showing the centering roller;

Fig. 6 is a view similar to Fig. 5 showing the drawer slide catches;

Fig. 7 is a view of one end of the slide assembly showing the extension slide catch; and

Fig. 8 is a view similar to Fig. 7 but showing the extension slide catch in operation.

The fixed slide member 11 which is preferably formed of sheet metal is adapted to be fastened to a fixed portion of a desk or filing cabinet. Both upper and lower edges of the fixed slide are turned out horizontally as shown in Fig. 4 and are then turned back parallel to the main portion, thus forming a member of substantially channel-like cross-section. Carried upon the upper surface of the fixed slide are the swinging cam stops 12, and 12′ which are pivoted in the U-shaped clips 13. The cams extend downward through the fixed slide and have extensions 14 to limit their downward movement. The bearing rollers 15 and 16 are carried by the lower edge of the fixed slide, the roller 16 being located midway between the ends of the slide and having a central portion of greater diameter than the other rollers.

The extension slide 17, shown in detail in Fig. 2, is formed of sheet metal and is substantially channel-shaped in cross section being shaped similarly to the fixed slide and adapted to telescope therein. The extension slide has the upper flange portion 18 carrying the fixed cam stops 19 and 19′ having the cam surfaces 20 and 20′.

Near its upper side the slide carries the rollers 21 and 22 pivoted upon rivets extending from bosses 23 as shown in Fig. 4, the height of the bosses giving a clearance between the edges of the rollers and the slide. The lower flange of the slide is bowed upwardly at 24 to fit over the roller

16. At either end the slide is provided with the fixed stops 25, 25′ best shown in Fig. 6.

The drawer slide 26 is adapted to be attached to the side of a drawer in any suitable manner and its upper edge is flanged in cross-section as shown at 27 to fit over the rollers 21 and 22 as shown in Fig. 4. On the lower side of the slide at its middle are spring pressed catches 28 and 28′ pivoted in the clip 29.

Each end of the drawer adjacent the drawer slide is provided with the extension slide hook 30, pivoted to a plate 31 and having its upward movement limited by a pin 32. The lower surface of the hook is provided with a cam 33 adapted to contact with the fixed slide 11 as shown in Fig. 7.

In the use of the device two slides are, of course, used with each drawer, one for each side thereof. The members 11 are fastened to the inside of the desk and do not move, while each member 26 is fastened to one side of the drawer and moves only with the drawer. It will be noted that the three members, the fixed slide 11, the extension slide 17 and the drawer slide 26 are of equal length and this length should not be substantially less than the drawer length for the best results.

When the drawer is closed all members are telescoped together.

When the drawer is pulled out to the right, the slide 26 moves with the drawer, and as it is drawn out the spring pressed catch 28′ on the drawer slide comes against the fixed stop 25′ of the extension slide 17, the extension slide then being drawn out with the further movement of the drawer slide. This movement is stopped when the cam stop 19′ on the extension slide comes into contact with the swinging cam stop 12′ on the fixed slide member 11. The drawer is now fully extended to the right. It may be similarly extended to the left, spring pressed catch 28 on the drawer slide coöperating with fixed stop 25 on the extension slide, and the cam stop 19 on the top of the extension slide coöperating with swinging cam stop 12 at the left end of the fixed slide member.

When the drawer is closed after having been extended to the right, the drawer slide moves to the left with the drawer. The hooked end of the extension slide hook 30 on the right end of the drawer slide comes in contact with the right end of the extension slide 17 and carries that slide to the left with the drawer. When the cam 33 on the hook reaches the end of the fixed slide member the hook is lifted by the fixed slide and the extension and drawer slides move in together. The swinging cam catch 12′ is lifted by the cam 20′ and passes on to the top of the stop 19′ where it rests when the three members come to rest with their ends coextensive, the drawer being closed. The cam catch 12 similarly rests on stop 19.

In the closing of the drawer from the left the action of the slide is exactly similar, the elements coöperating in the closing being exactly duplicated on each end of the slides.

The bowed portion 24 of the extension slide 17 by fitting over the roller 16 tends to retain the extension slide centrally located until it is picked up by the cams 28 or 28′, the weight of the drawer being carried by the roller 16 when the drawer is at other than its central position, but the portion 24 permitting the slide to drop down so as to distribute the weight to the rollers 15 when centered.

The rollers 22 are of greater diameter than the rollers 21 and serve as both carrying and guide rollers as shown in Fig. 4, the rollers 21 serving as carrying rollers only.

Portions of the slide 17 are cut away at 36 and 36′ adjacent the ends so that when the drawer is partly drawn out the cams 28 or 28′ may be disengaged from the stop 25 or 25′ in order to entirely remove the drawer from the case when desired.

From the foregoing description and its accompanying illustration, it will be clear that I have devised a double extension slide which is simple in construction, consisting of only three parts, and in which the relative movement of these parts is entirely automatic, it being simply necessary to use a drawer in the normal manner.

I claim:

1. An extension drawer slide comprising a fixed slide member, an extension slide member of sheet material of substantially channel-like cross section telescoping within the fixed slide member and capable of being extended beyond the end thereof in either direction; and a drawer slide member movable on the extension slide member and capable of being extended beyond the end thereof in either direction.

2. An extension drawer slide comprising a fixed slide member of sheet material, an extension slide member of sheet material and of substantially channel-like cross section movable on the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member telescoping within the extension slide member and capable of being extended beyond the end thereof in either direction, and coöperating stop members adapted to limit the relative movement of the several members in each direction at predetermined points.

3. An extension drawer slide comprising a fixed slide member of sheet material, an extension slide member also of sheet ma-

terial movable on the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member movable on the extension slide member and capable of being extended beyond the end thereof in either direction, and means to retain the extension slide normally centered upon the fixed guide.

4. An extension drawer slide comprising a fixed slide member, an extension slide member movable on the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member movable on the extension slide member and capable of being extended beyond the end thereof in either direction, and a depression upon the extension slide adapted to coact with a member upon the fixed slide and adapted to maintain the extension slide normally centered on the fixed slide.

5. An extension drawer slide comprising a fixed slide member of sheet material, an extension slide member of sheet material telescoping within the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member of sheet material telescoping within the extension slide member and capable of being extended beyond the end thereof in either direction, coöperating stop members adapted to carry the extension slide for a predetermined distance with the drawer slide when the latter is extended in either direction, and means adapted to carry the extension slide with the drawer slide when the latter is returned to normal position.

6. An extension drawer slide comprising a fixed slide member, an extension slide member movable on the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member movable on the extension slide member and capable of being extended beyond the end thereof in either direction, and hook members upon the drawer slide adapted to carry the extension slide with the drawer slide when the latter is returned from extended position to normal position, the hook members being disengaged from the extension slide in the normal position.

7. An extension drawer slide comprising a fixed slide member, an extension slide, and a drawer slide, the fixed slide member comprising an outwardly faced channel shaped member adapted to be attached to a desk, the extension slide comprising a similarly shaped and faced channel shaped member adapted to fit within the slide guide and to move therein in either direction so as to be extended beyond either end thereof, and the drawer slide comprising an inwardly faced channel member adapted to fit within the extension member and movable therein in either direction so as to be extended beyond either end thereof.

8. An extension drawer slide comprising a fixed slide member, an extension slide, and a drawer slide, the fixed slide member comprising an outwardly faced channel shaped member, adapted to be attached to a desk, the extension slide comprising a similarly shaped and faced channel shaped member adapted to fit within the slide guide and to move therein in either direction so as to be extended beyond either end thereof, and the drawer slide comprising an inwardly faced channel member adapted to fit within the extension member and movable therein in either direction so as to be extended beyond either end thereof, means to limit relative movement between the fixed guide, extension slide and drawer slide, and means whereby, when the drawer slide is returned from extended position in either direction, the extension slide is returned therewith.

9. An extension drawer slide comprising a fixed slide member, an extension slide, and a drawer slide, the fixed slide member comprising an outwardly faced channel shaped member adapted to be attached to a desk and carrying horizontal rollers in the lower portion of the channel, the extension slide comprising an outwardly faced channel shaped member adapted to fit within the fixed slide and rest upon the rollers carried thereby, and being adapted to move upon the rollers in either direction so as to be extended beyond either end of the fixed slide, and the drawer slide comprising an inwardly faced channel member adapted to interfit with the extension member, and being movable upon the extension member in either direction so as to be extended beyond the end thereof in either direction.

10. An extension drawer slide comprising a fixed slide member, an extension slide member movable on the fixed slide member and capable of being extended beyond the end thereof in either direction, a drawer slide member movable on the extension slide member and capable of being extended beyond the end thereof in either direction, a roller upon the fixed slide coacting with a depression on the extension slide adapted to maintain the extension slide normally centered on the fixed slide and hooks adjacent the drawer slide adapted to carry the extension slide with the drawer slide when the latter is returned from extended position to normal position and in normal position to be disengaged from the extension slide.

Signed by me at Ilion, N. Y., this 16th day of July, 1920.

ENOCH OHNSTRAND.