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ROLLER EXTENSION DRAWER.

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2 SHEETS—SHEET 1.

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Fig. 3

Fig. 4 Fig. 5

Fig. 6

Fig. 8

Fig. 9 Fig. 10

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To all whom it may concern:

Be it known that I, Albert T. Weiss, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Roller Extension-Drawers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to furniture and more particularly to drawer cabinets and has for its object to provide a simple, light and efficient drawer supporting means of the extension type permitting the entire area of the drawer to be withdrawn from the cabinet while still supported thereby and in which the frictional resistance of the moving parts will be relatively small.

A further object of the invention is to promote the ease with which the parts may be assembled with particular attention to the removal and replacement of the drawer proper.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is an inside elevation of a drawer supporting means with the drawer removed but the support extended and taken in vertical section through the containing casing; said parts being constructed in accordance with and illustrating one embodiment of my invention; Fig. 2 is an outside elevation of the supporting means on the other side of the drawer with the latter shown in extended position and the casing in section on the plane of the inner face of its side wall; Fig. 3 is an inside elevation of the mechanism shown in Fig. 1 with the exception of the drawer hanger which is shown in vertical section through its track member; Fig. 4 is a transverse vertical section through one of the supporting mechanisms and also through the adjacent walls of the casing and drawer, taken on the line 4—4 of Fig. 3; Fig. 5 is a detail section through a portion of the drawer wall taken substantially on the line 5—5 of Fig. 2; Figs. 6, 7 and 8 are perspective views of the drawer hanger, extension support and casing guide respectively; Fig. 9 is a detail section of one of the stops taken on the line 9—9 of Fig. 3, and Fig. 10 is a similar view of another stop taken on the line 10—10 of Fig. 3.

Similar reference numerals throughout the several figures indicate the same parts.

There is one group of extension and supporting mechanism on each side of the drawer disposed between it and the adjacent wall of the casing in the present instance but while one is, for convenience, shown in one view and the other in the others, they are duplicates of each other except for being rights and lefts and they will be described indiscriminately and in the singular. In this view, 1 indicates the side walls of a suitable casing or drawer chamber and 2 a drawer operating therein. Secured to the casing wall is a flanged plate 3 constituting a guide having upper and lower inside tracks 4 and 5 both of which are provided with vertically disposed lateral retaining flanges 6 and 7 on the inside. It may be here stated that the latter term will be used herein to designate the drawer side of the mechanism and “outside” to designate the casing side. Operating in the guide is an extension support 8 constituted in the present instance by a plate flanged in a manner corresponding to the guide plate 3 to provide an inside and outside track member 9 at the top and an inside and outside track member 10 at the bottom, respectively provided with depending and upstanding retaining flanges 11 and 12 on the drawer side for the inside tracks. A pair or set of preferably free rollers 13 disposed between the upper inside track of the track member 9 and the upper inside track 4 of the casing 3 take the upward or tilting thrust of the extension support 8, these rollers being adapted to run in engagement with the retaining flange 6 at their inner sides. Similarly, a lower set of rollers 14 disposed between the lower outside track of the track member 10 and the lower inside track 5 of the guide, support the extension support from beneath while retained by the flange 7 against lateral disengagement.

The extension support 8 has superposed upon its outer side a plate 15 which is extended to form outside lateral retaining flanges 16 and 17 at the top and bottom for the outside tracks which engage the respec-
tive sets of rollers on the opposite side from the flanges 6 and 7. Thus the extension support is held from disengagement through the intermediary of the rollers and the latter, in turn, are prevented from being displaced laterally by the flanges as both pairs preferably extend over a substantial proportion of the side faces of the rollers or nearly to their centers. The rollers run between inside stops 18 on the guide track which limit their movement and tend to keep them spaced while intermediate stops 19 on the extension support engage the rearward rollers at their rearmost limits to halt the inward movement of the extension support, as shown in Fig. 3, and end stops 20 on the latter engage the rearward rollers at their foremost limits to halt its outward movement at a time when the intermediate stops are similarly engaged by the forward rollers as shown in Fig. 1. These respective stops are preferably made as shown in Figs. 9 and 10 where-in the stop blocks 18 and 19 are themselves composed of some fibrous or elastic material that is silent and enduring. Two additional sets of preferably free rollers 21 and 22 are provided, the former traveling on the upper inside tracks of the upper track member 9 on the extension support and the latter on the inside track of the lower track member 10. They are limited in their movements by stops 23 on the tracks similar to the stops 18 previously described. Engaging between these sets of rollers is a track member 24 bent laterally from a drawer hanger formed in the present instance by a plate 25. The said track member provides an upper track surface running against the upper set of rollers 21 which take the upward or tilting thrust and a lower track member running upon the lower set of rollers 22 that support and ride the hanger from beneath. A lateral retaining flange 26 engages upon the outside faces of one set of rollers, in the present instance the upper one, in opposition to the flange 11 on the upper inside extension support track 9 to perform corresponding functions to those above described with respect to the flanges 16 and 6 and the rollers 13. An intermediate stop 27 on the hanger track corresponds in function to the stop 19 on the extension support before described and end stops 28 on the hanger to stops 20 on the extension support. In other words, the relation of the hanger to the extension support corresponds, substantially, to the relation of the latter to the casing guide with only the differences in form that have been noted as the support is extended on the guide and the hanger is extended on the support.

The hanger 25 is substantially coincident with the drawer 2 that is not only supported thereon but interlocks therewith so that both move together. It might be permanently fixed to the drawer but I prefer to provide a detachable connection to which ends a guideway 29 for a follower block attachment within the drawer (constructed in accordance with my prior application, Serial No. 867,490, filed December 18, 1913) and embodying an outwardly turned flange 30, is utilized. This flange rests upon the upper edge of the hanger plate 25 and is retained thereon by a lateral flange 31 depending from the flange 30 on the outside of the plate. A cutaway portion or notch 32 in the flange 31 (Fig. 2) provides abutments between which a laterally turned or horizontal projection 33 on the hanger fits 86 to interlock the latter and the drawer for joint longitudinal movement. The drawer may be easily disengaged from its hangers by a simple lift of the drawer and removed entirely from the supporting mechanism 85 stripped of any attachments that would give it objectional added weight while in replacing it, it can be dropped onto the hangers at any point and then pushed longitudinally until the interlocking devices automatically engage.

A drawer constructed in accordance with this invention may be given almost any degree of extension desired while, as indicated in Fig. 2, it is of extremely neat appearance due to the complete housing of the rollers from outside view which is a protection to the moving parts, as well. Extension drawers of this general type being well known in the art, no detail description of the operation, aside from that already given during the course of the description of structure, is deemed necessary.

I claim as my invention:

1. The combination with a casing and an extension drawer support guided therein, of a drawer hanger movably supported on the extension drawer support with a laterally extending projection and a drawer detachably supported on the hanger and having a lateral flange extending outwardly and thence downwardly and by means of which the drawer is supported on the hanger, the said downwardly extending portion of the flange being provided with a recess adapted to be engaged with and disengaged from the projection on the hanger by a vertical member of the drawer and to interlock therewith to prevent relative longitudinal movement of the drawer and hanger.

2. The combination with a casing and an extension drawer support guided therein, of a drawer hanger movably supported on the extension support and provided with a laterally extending projection and a drawer detachably supported on the hanger having a laterally offset portion forming a follower guideway within the drawer and at the same time a supporting shoulder engaging over the hanger and further provided with a
downwardly extending flange on the outside of the guideway, said flange being provided with a recess adapted to be engaged with and disengaged from the projection on the hanger by a vertical movement of the drawer and to interlock therewith to prevent relative longitudinal movement of the drawer and hanger.

3. The combination with a casing and a guide thereon embodying upper and lower inside tracks respectively provided with downwardly and upwardly extending lateral retaining flanges, of upper and lower sets of rollers co-operating with the respective tracks and engaging the retaining flanges on one side, an extension support comprising a plate having opposite edges bent at right angles to form an upper outside track co-operating with the upper set of rollers and a lower outside track co-operating with the lower set of rollers and further comprising a flat superposed plate secured to the outer face of the first mentioned plate with its edges projecting beyond the tracks formed by the latter and constituting, in each instance, a lateral retaining flange engaging upon the other side of the rollers from that on the casing guide, and a drawer supported on the extension support.

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