No. 883,069. PATENTED MAR. 24, 1908.

P. H. YAWMAN.

DRAWER SUPPORT FOR FILING CASES.

APPLICATION FILED MAR. 16, 1905.

2 SHEETS—SHEET 1.

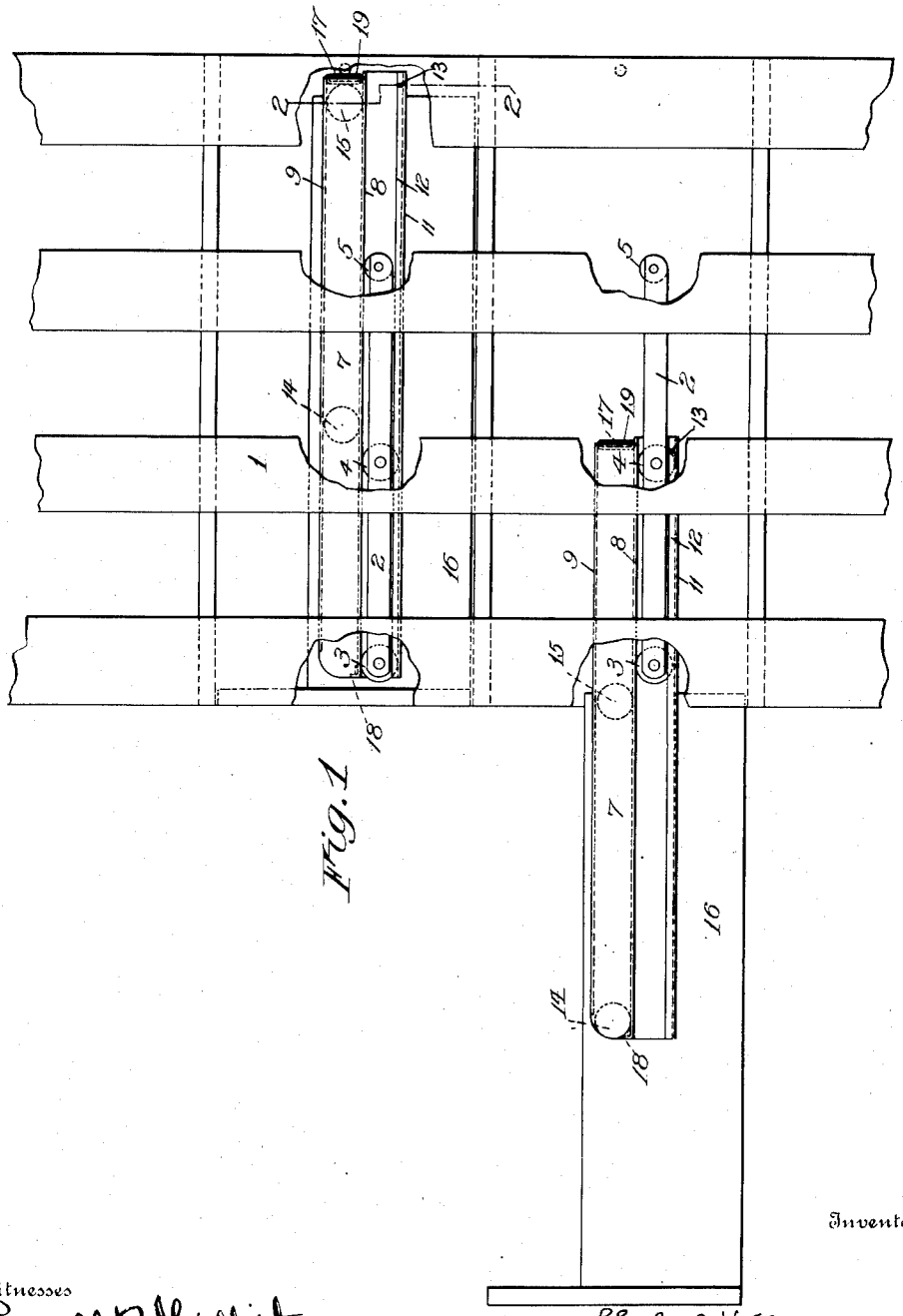


Fig. 1

Witnesses

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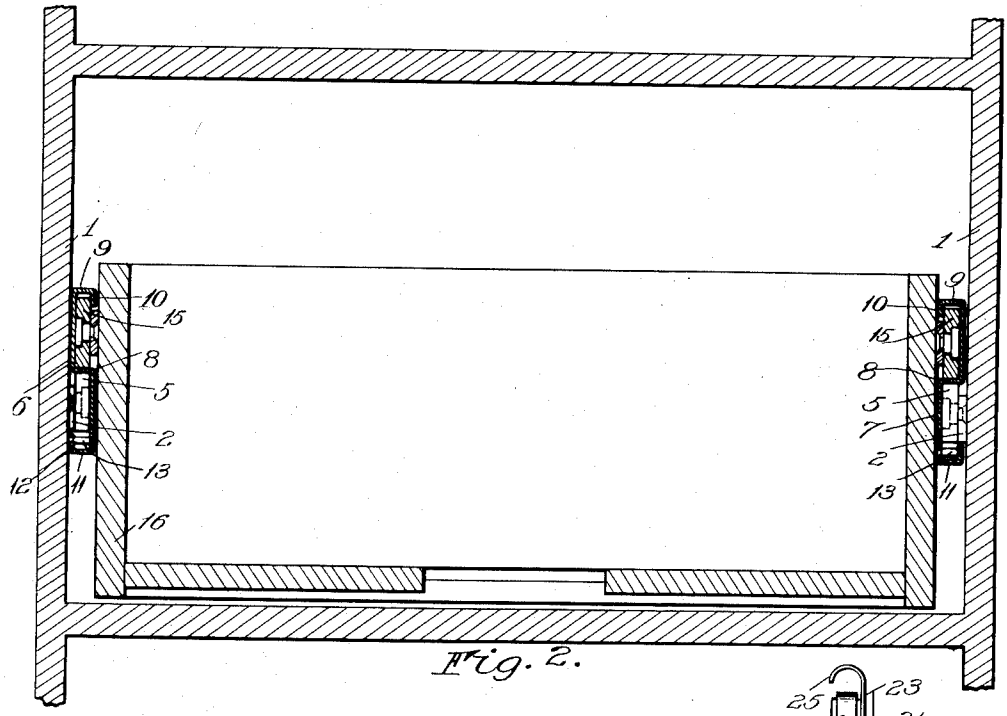


Fig. 2.

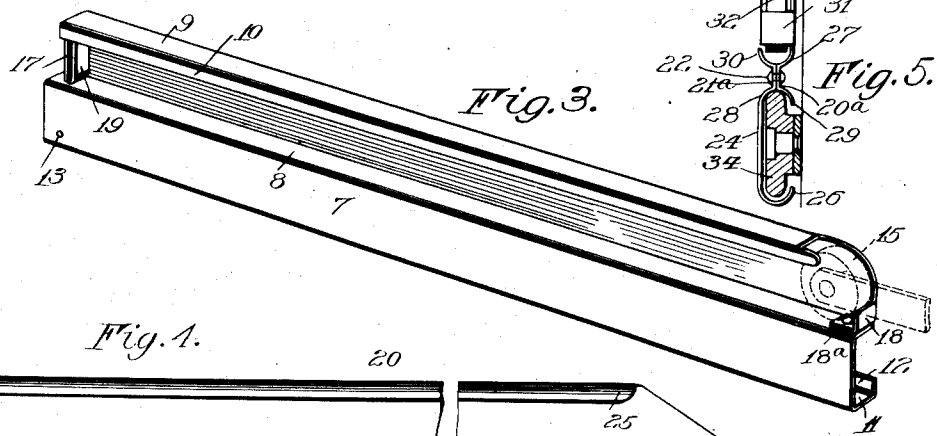
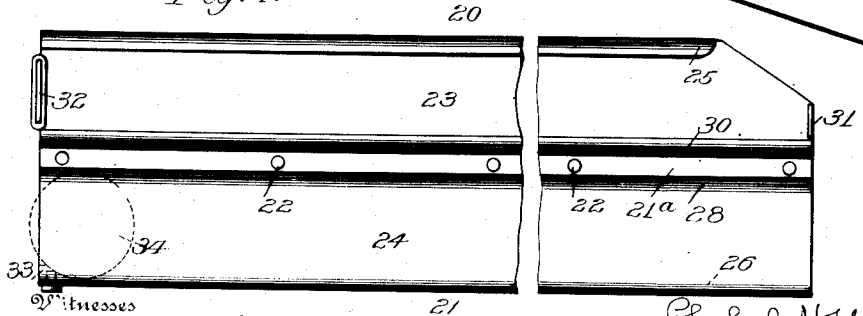


Fig. 3.

Fig. 5.

Fig. 1.



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DRAWER-SUPPORT FOR FILING-CASES.

No. 883,069. Specification of Letters Patent. Patented March 24, 1908.

Application filed March 16, 1905. Serial No. 250,348.

To all whom it may concern:

Be it known that I, PHILIP H. YAWMAN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Drawer-Supports for Filing-Cases; 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 improvements in cases for filing documents and other papers of various descriptions in drawers of comparatively large capacities, and it is the purpose of my invention to provide supporting devices for these drawers which will possess ample strength with the least weight of material, and which will enable the drawers to be easily withdrawn and returned to the filing case although they may be heavily loaded with papers or documents, and which will prevent the drawers from binding excessively and sticking within the case from warping or other causes which would prevent or render difficult the manipulation of the drawer.

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

In the drawing: Figure 1 is a vertical sectional view of a portion of a filing case showing extensible supports constructed in accordance with my invention applied thereto, the upper drawer being shown in closed position and the lower drawer being shown withdrawn from the case; Fig. 2 is a sectional view on the line 2—2 of Fig. 1, showing the supports and their ways in transverse section; Fig. 3 is a perspective view of one of the supports removed from the case illustrating in dotted lines the manner of inserting and removing the drawer rollers from the upper ways of the support, and Figs. 4 and 5 represent in side elevation, and transverse section respectively, a modified form of support which may be similarly applied to the case for supporting the drawers thereof.

The purpose of my invention is to provide extensible supports of this kind which may be applied to filing cases or other furniture of a similar nature for guiding and supporting the drawers thereof with a minimum amount of friction to enable the latter to be readily and easily handled even though they may be heavily loaded or weighted with papers, the particular construction of the supports or ways being such that they may be interposed between the drawers and the adjacent walls of the casing with a minimum amount of clearance, and as they are preferably constructed their peculiar formation will insure ample strength to prevent sagging of the drawers, while the parts may be comparatively light in weight and cheaply manufactured.

In Figs. 1, 2 and 3 I have shown one form of my invention applied to the ordinary wooden filing cases, the vertical walls 1 thereof between which the drawers are adapted to fit being provided with the horizontally-extending strips 2 preferably of sheet metal and secured in any desired way to the opposite walls of the drawer opening at the same level, and on each of these strips are journaled a series of rollers 3, 4 and 5 which are mounted to rotate in a vertical plane. The upper bearing surfaces of each series of rollers are arranged in the same horizontal plane, but the rearmost roller 5 is of smaller diameter than that of the intermediate roller 4 and the forward roller 3. The particular form of supports which I prefer to employ in connection with these supporting rollers are each made of substantially the channel bars 6 and 7 arranged edgewise and having their channel openings at opposite sides, the intermediate flange 8 and the upper flange 9 with its overhanging edge 10 forming horizontal ways at the top of the support, and the intermediate portion 8 and the lower flange 11 with its upturned edge 12 forming separate ways in the lower portion of the support. In the lower ways formed between the horizontal flanges 8 and 11 are adapted to rest the rollers 3, 4 and 5 which are relatively fixed upon the case and located therein is a stop 13 formed in the present instance by extending a pin from the upturned edge 12 in the lower portion of the ways transversely across the path of the larger rollers 3 and 4, the position of this stop being such as to permit it to pass the smaller roller 5 and coöperate with the intermediate roller 4 to arrest the rearward motion of the movable supports. In the upper ways the

rollers 14 and 15 journaled at each side of the drawer 16 are adapted to run, an abutment 17 being provided at the rear ends of the upper ways to engage the rearmost rollers 15 of the drawer to act as stops between the latter and the support when the drawer is moving rearwardly, and at the forward ends of the upper ways are provided the projections 18 which act as stops to limit the forward motion of the drawer relatively to the supports, the intermediate section of the ways being of sufficient length to enable the requisite motion of the drawer.

The upper flanges 9 of the upper ways are preferably cut away for a sufficient distance rearwardly of the projections 18 to enable the rollers 14 and 15 of the drawer to pass longitudinally into and out of the ways after being lifted over the stops 18 for the purpose of removing the drawer, the downwardly-extending edge 10 of the upper flange 9 being preferably extended forwardly to form a guide which coöperates with the inner sides of the rollers to insure their proper insertion within the ways.

The supports shown in Figs. 1, 2 and 3 may be readily formed of sheet metal possessing sufficient strength and stiffness, for it will be understood that the sides of the upper and lower ways 6 and 7 may be readily rolled or otherwise bent so as to extend on opposite sides and at right angles to the intermediate flange 8, and the edges of the ends thus formed may be again bent at right angles, or parallel to the intermediate flange 8, and in opposite directions to form the upper and lower flanges 9 and 11, the edges of these flanges being turned inwardly or toward the intermediate flange 8 to form the substantially parallel edges 10 and 12 respectively which are offset at opposite sides of the support. In this way the upper and lower ways which extend longitudinally of the support are in substantially the same plane, but are arranged at opposite sides of the intermediate flange 8, and the latter acts as a track on which the rollers 3, 4 and 5 of the case, and 14 and 15 of the drawer, are adapted to run. The stop 17 at the rear ends of the upper ways in this form are preferably made by bending a portion of the material composing the support laterally so as to extend transversely of these ways, and it is preferable to fit a band of rubber or other resilient material 19 over this stop which may act as a yielding buffer to reduce the shock that might be caused by contact between it and the rollers 15 of the drawer. The forward stop 18 may be formed in a similar way by bending a forwardly-extending portion of the sheet material in a direction transversely of the upper ways, an ear 18^a thereon being preferably secured to the flange 8 to reënforce the slot, and the forward extension of the edge 10 of the upper flange 9 may be produced by removing a portion of the upper flange 9 to provide the aperture for the passage of the drawer rollers and leaving a portion of the edge 10 to form this guide.

Instead of manufacturing the guide ways or supports each of one single piece of material, it may be preferable in some instances to form them of two or more similar sections suitably united, and in Figs. 4 and 5 I have shown a modified form of support which is made up of similar sections 20 and 21 secured together by the rivets or other fastening devices 22. Each of these sections comprises the channel bars 23 and 24 of suitable length, and each of these channel bars has one of its longitudinal edges turned or bent over to form a semi-circular track or guide 25 and 26, the opposite longitudinal edge of each section being curved laterally in an arc of approximately a quarter of a circle as at 27 and 28, and is thence bent substantially parallel to the body portion of the section to form the attaching portions 20^a and 21^a and the edges of these attaching portions are bent or curved laterally to form the sides 29 and 30 of the upper and lower ways. The similar sections thus formed are brought together so that their attaching portions 20^a and 21^a are in proper relation and are then secured by the rivets or securing devices 22, thus forming a support having the upper and lower tracks or channels at the opposite sides thereof. The forward end of the upper section is provided with a stop 31 which is preferably formed by bending the corresponding edge of the material laterally so as to extend transversely across the track and at the rear end of the same section a similar stop 32 is provided, preferably in the same way. Behind the stop 31 at the forward end of the section the upper flange or guide 25 is cut away for a sufficient distance to permit the rollers of the drawer to pass into and out of the upper track or ways, and at the rear and in the bottom of the lower section is provided a suitable stop 33 which may be formed in any desired way, and is of sufficient height to engage the rollers 3 and 4 of larger diameter on the casing to arrest the forward motion of the supports and to permit the passage of the smaller rollers 5 in a manner similar to that described in connection with the stop 13, which is used on that form of support illustrated in Figs. 1, 2 and 3. When supports of this kind are employed wherein the tracks are curved in cross section, correspondingly-formed rollers 34 are employed which may be made of fiber or other composition, and are secured to the drawer and the casing respectively in a manner similar to that described in connection with the rollers employed in the form shown in Figs. 1, 2 and 3. The supports shown in Figs. 4 and 5 are preferably employed in metallic filing cases, or in

other places where a minimum clearance between the drawer and the wall of the casing is obtainable, and by forming the tracks with a curved cross section, the rollers will be so guided as to insure the proper action of the drawer without binding against the walls of the casing.

Drawer supports of the kind described may be readily formed of sheet material either in one integral piece, or made up of sections suitably united, and in each case the weight of the parts will be inconsiderable while the maximum strength is secured, for it will be observed that each of the supports is made up substantially of two oppositely-arranged channel bars placed edgewise, and therefore the weight of the drawer, when it has been withdrawn from the case, will be easily sustained without sagging or bending the supports, and at the same time lateral motion of the drawer caused by bending of the supports laterally will also be prevented. Moreover, by using the rollers in connection with the guide ways of the supports and so arranging the latter that they may move freely relatively to the drawer and the case, drawers of considerable weight may be easily handled with a minimum friction, and the operation of the parts is practically noiseless and secure from derangement while the wear of the parts is insignificant, and for this reason, the top of the drawer will always register closely with the casing which forms the top of the drawer opening, and the space which usually develops during the use of the ordinary drawer on account of the wearing away of the coöperating parts of the latter and the casing does not occur in the use of drawer supporting devices constructed in accordance with my invention.

Although it is preferable to employ the supporting rollers to operate in the ways of the extensible supports for the reason that friction and wear of the parts is reduced to a minimum, it will be understood that supporting devices of any suitable form may be employed instead of the rollers and the ways of the extensible supports may be correspondingly formed to accommodate the particular form of supporting devices which it is desirable to employ.

In carrying my invention into practice, it is preferable to so form the extensible supports that the rollers or other supporting devices arranged on the casing and the drawer will be provided with stops to limit their vertical motion while they occupy any position on their respective ways, and in both forms of my invention herein shown, each of the ways are formed between upper and lower tracks or guides, so that when the drawer and the supports are withdrawn from the casing, the forward rollers 14 of the drawer will rest upon the lower guide of the upper ways while the rearmost rollers 15 will bear against the upper guide thereof, and in a similar way, the forward rollers 3 of the filing case will bear against the upper guide of the lower ways while the rollers 4 will bear against the lower guide thereof, and therefore it will be obvious that sagging or tilting of the drawer and the supports at their forward portions is effectually prevented, and as these rollers or supporting devices are closely confined by these guides in a vertical plane, the motion of the drawer while being withdrawn and replaced within the casing will be in a straight line, and will not be deflected downwardly toward the forward part of its motion, and these results are secured with supports that are extremely compact, requiring very little space between the drawer and casing.

I claim as my invention:

1. The combination with a casing having a drawer opening therein and supporting devices arranged on opposite walls of the casing, of a drawer operating within the opening, supporting devices on opposite sides thereof and supports movable freely between the sides of the drawer and casing each provided with separate ways adapted to receive the supporting devices of the drawer and casing respectively, each way being accessible only from the side at which its coöperating device is mounted.

2. The combination with a cabinet having a drawer opening therein, a drawer adapted to operate in said opening, and suitable supporting devices on the drawer and the cabinet, of slidable supports arranged to operate between the drawer and cabinet, each having oppositely turned horizontal ways to coöperate with said supporting devices respectively, each way being accessible only from the side of the support on which its coöperating device is mounted, and guiding edges arranged angularly to said ways for preventing lateral disengagement of the supporting devices from their ways.

3. The combination with a cabinet, a drawer mounted to operate therein and supporting devices arranged between the sides of the drawer and cabinet, of movable supports having ways thereon coöperating with said supporting devices, each way being accessible from the side of the movable support on which its respective coöperating device is mounted, and having a guiding portion extending laterally of said coöperating device to prevent its disengagement.

4. The combination with a cabinet, a drawer adapted to operate therein, and supporting devices provided on the cabinet and drawer, of supports mounted to operate between the drawer and cabinet each composed of sheet material bent to form an intermediate track section having the supporting devices of the drawer and cabinet arranged on opposite sides thereof, and flanges formed

above and below said track section for preventing tilting between the drawer and casing.

5. The combination with a cabinet, a drawer adapted to operate therein, and supporting devices provided on the cabinet and drawer, of supports mounted to operate longitudinally between the drawer and cabinet each embodying a horizontal intermediate track section having said supporting devices of the drawer and cabinet arranged on opposite sides thereof, flanges arranged above and below said track section and arranged to engage said supporting devices to prevent relative tilting between the drawer and cabinet, and portions on said flanges extending toward the intermediate track section for preventing lateral disengagement of the supporting devices and support.

6. The combination with a cabinet, a drawer mounted to operate therein, and suitable supporting devices provided on the drawer and cabinet, of supports mounted to operate between the drawer and cabinet each composed of sheet material bent to form a horizontal track section having the supporting devices of the drawer and cabinet arranged at either side thereof, the material being bent in opposite directions from the track section and thence bent to form flanges extending parallel to the track section, said flanges being arranged to coöperate with the supporting devices to prevent relative tilting of the drawer and cabinet, the edges of said flanges being bent toward said track section to form lateral guides for the supporting devices.

7. The combination with the casing having a drawer opening therein, a drawer adapted to operate in the drawer opening, and supporting devices arranged on the drawer and casing, of supports having ways extending longitudinally of the drawer to receive the supporting devices of the drawer and casing, and means on the supports for retaining the supporting devices of the drawer in their corresponding ways, a portion of the latter being cut-away to form passages arranged out of alinement with said ways for permitting the removal of the supporting devices of the drawer from their ways.

8. The combination with the casing having a drawer opening therein, a drawer adapted to operate in the drawer opening, and supporting devices arranged on the drawer and casing, of supports having closed ways thereon for receiving and guiding the supporting devices of the drawer and casing, and stops on the supports for limiting the forward motion of the drawer, cut-away portions being formed in the corresponding ways and forming passages leading past the stops to permit the removal of the drawer supporting devices from their ways.

9. The combination with the casing having a drawer opening therein, a drawer adapted to operate in said opening, and laterally-projecting rollers on the drawer and casing, of supports having ways open at opposite sides thereof to receive the rollers of the drawer and casing and means on said supports for preventing the lateral disengagement of the rollers and the ways.

10. The combination with the casing having a drawer opening therein, a drawer adapted to operate in said opening, and laterally-projecting supporting devices on the drawer and casing, of supports composed of sheet material each having horizontal upper and lower ways arranged in the same vertical plane to receive the supporting devices of the drawer and casing, said ways having turned edges serving as lateral guides for the supporting devices.

11. The combination with the casing having a drawer opening therein, a drawer adapted to operate in said opening, and laterally-projecting supporting devices on the drawer and casing, of supports composed of sheet material bent transversely into substantially the form of two channel bars placed edgewise to form ways extending longitudinally relatively to the drawer to receive the supporting devices of the drawer and casing.

12. The combination with the casing having a drawer opening therein, the drawer adapted to operate in the said opening, and laterally-projecting supporting devices arranged on the drawer and the casing, of supports composed of sheet material bent transversely to form oppositely-arranged channels or ways arranged edgewise and open at opposite sides of the support to receive the supporting devices of the drawer and casing.

13. The combination with the casing having a drawer opening therein, the drawer adapted to operate in the said opening, and laterally-projecting supporting devices arranged on the drawer and casing, of supports composed of sheet material having intermediate horizontal tracks thereon for the supporting devices of the drawer and casing, and flanges above and below the intermediate portion having retaining edges for guiding the supporting devices in the ways.

14. The combination with the casing having a drawer opening therein, a drawer adapted to operate in the said opening, and laterally-projecting rollers arranged on the drawer and casing, of supports composed of sheet material bent transversely substantially in the form of oppositely-arranged channel bars placed edgewise to form upper and lower ways open at opposite sides of the supports to receive the rollers of the drawer and casing, and stops at the forward ends of the upper ways arranged to coöperate with the rollers of the drawer to limit the forward movement of the latter, portions of the upper channel

bars being cut away adjacent to the stops to permit removal of the drawer rollers from their respective ways.

15. The combination with the casing having a drawer opening therein, a drawer adapted to operate in the said opening, and laterelly-projecting rollers arranged on the drawer and casing, of supports having upper and lower ways extending longitudinally to receive the rollers of the drawer and casing, stops at the forward ends of the upper ways, the adjacent portions of the supports being cut away to permit the passage of the drawer rollers above the stops, and guides on the supports extending beyond the cut-away portions to coöperate with the rollers of the drawer in passing through the cut-away portions.

16. The combination with the casing having a drawer opening therein, a series of rollers arranged horizontally within the casing, a supplemental roller of smaller diameter being arranged in rear of the other rollers, and a drawer adapted to operate in the said opening, of supports having ways thereon to receive the rollers of the casing and adapted to movably support the drawer therein, and stops on the supports arranged to permit the passage of the smaller roller and engage one of the larger rollers to limit the motion of the support relatively to the casing.

17. The combination with the casing having a drawer opening therein, a drawer adapted to operate in said opening, and oppositely-arranged supporting devices on the drawer and casing, of extensible supports composed of sheet material having the horizontally-extending ways or tracks to receive the supporting devices, the upper and lower flanges for retaining the supporting devices within their ways, and stops at either end of the ways for the supporting devices on the drawer formed by bending a portion of the sheet material laterally across the ways.

18. The combination with a casing having a drawer opening therein, a drawer adapted to operate in the opening, and projections arranged on the side walls of the drawer and casing, respectively, of extensible supports arranged between the side walls of the drawer and casing each having parallel upper and lower ways formed thereon to receive the respective projections of the drawer and casing, and coöperating therewith to prevent vertical tilting of the drawer, and flanges on said supports extending laterally of the sides of the respective projections to prevent lateral movement of the supporting devices relatively to the supports.

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