J. BODENSTEIN.

GUIDE OR SUPPORT FOR DRAWERS AND THE LIKE.

APPLICATION FILED MAR. 8, 1919.

1,385,811.

Patented July 26, 1921.

2 SHEETS—SHEET 1.

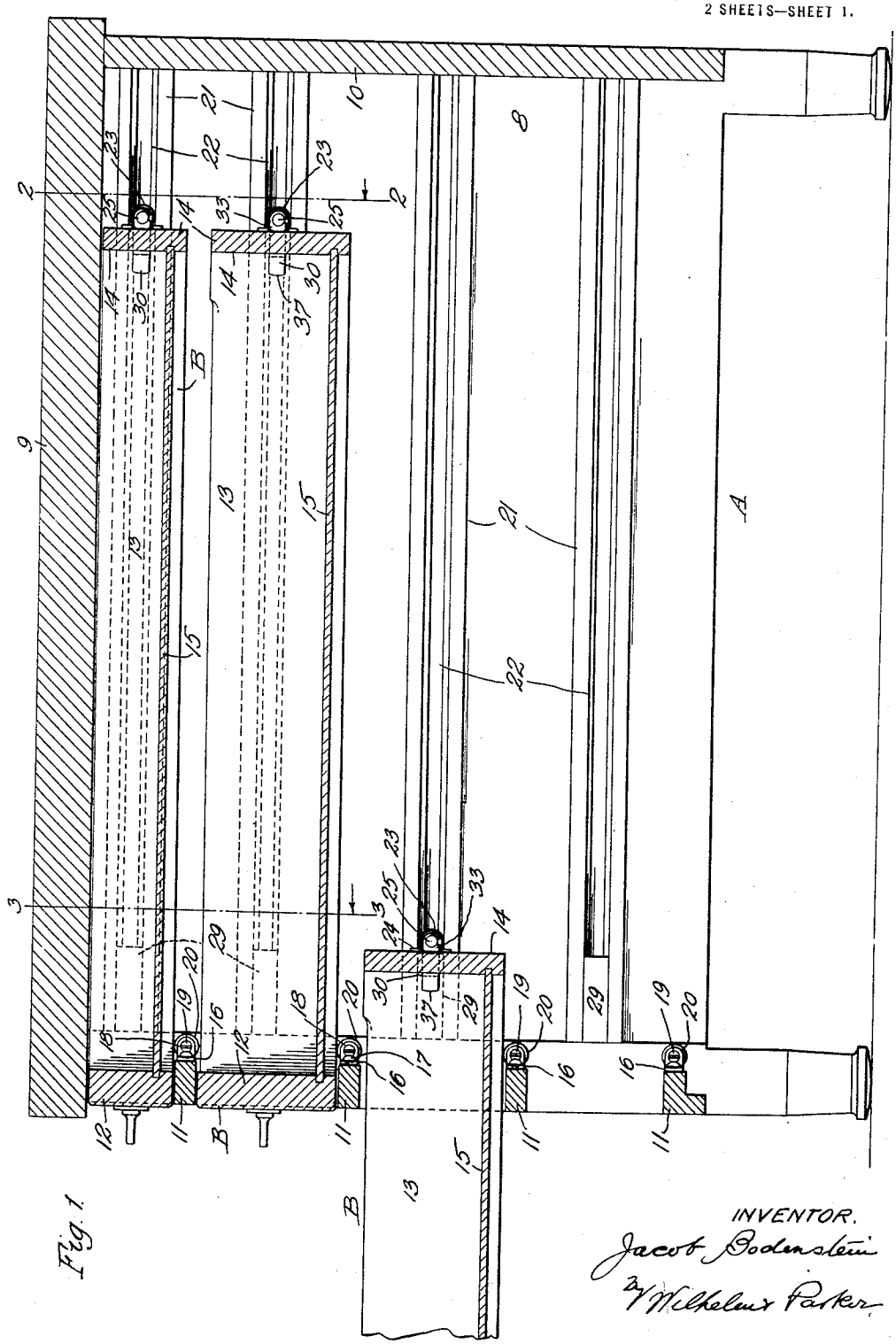


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

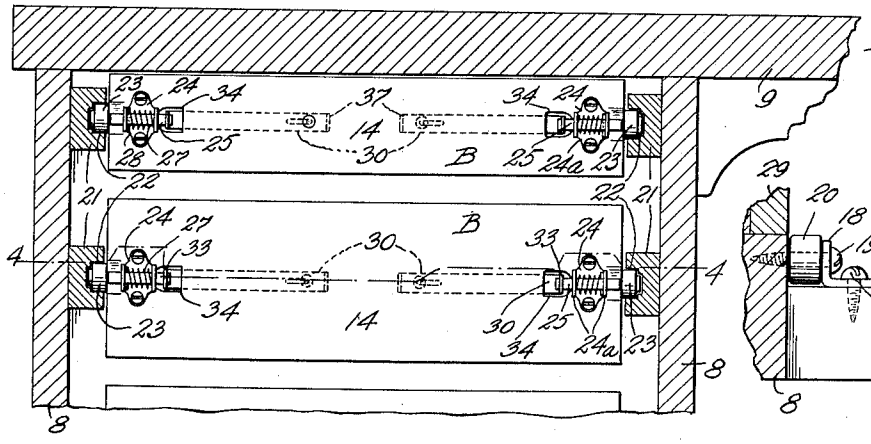


Fig. 6.

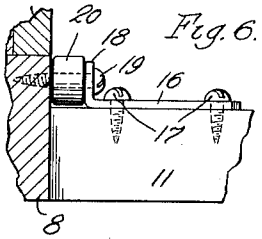


Fig. 3.

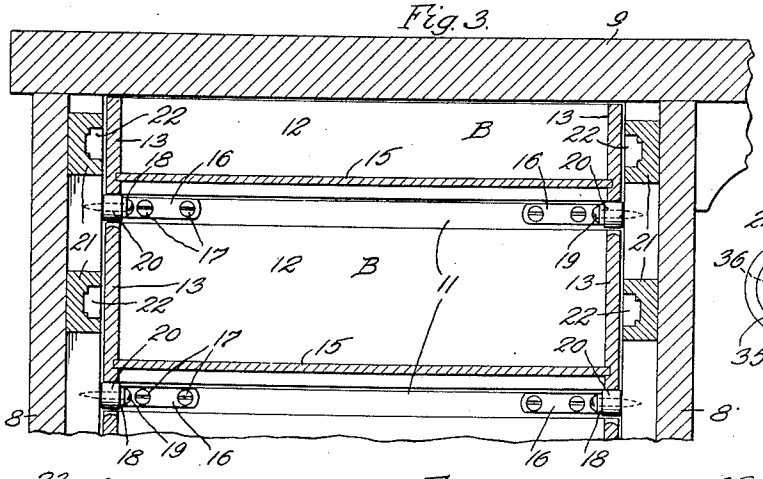


Fig. 7.

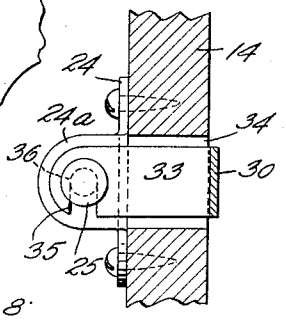


Fig. 4.

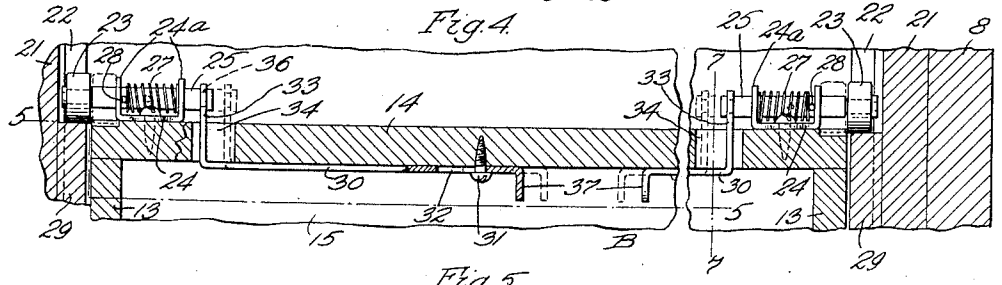
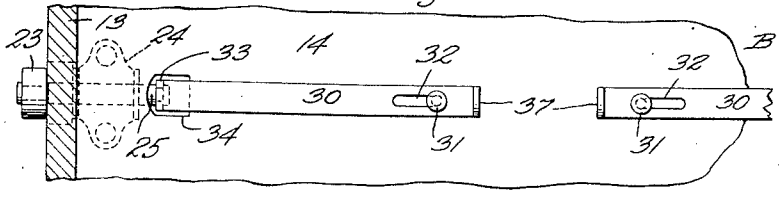


Fig. 5.



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UNITED STATES PATENT OFFICE.

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GUIDE OR SUPPORT FOR DRAWERS AND THE LIKE.

1,385,811. Specification of Letters Patent. Patented July 26, 1921.

Application filed March 8, 1919. Serial No. 281,323.

To all whom it may concern:

Be it known that I, JACOB BODENSTEIN, a citizen of the United States, residing at Herkimer, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Guides or Supports for Drawers and the like, of which the following is a specification.

This invention relates to roller supports or guides for drawers and similar sliding devices in desks or other articles of furniture.

One object of the invention is to provide drawers or the like with devices of the sort mentioned which are very smooth running and quiet, and are of simple, light and inexpensive construction combined with strength and rigidity and such that they are not liable to get out of order in use.

Another object is to provide roller bearings for both the front and back parts of the drawer or slide, which coöperate to keep the drawer in perfect horizontal and vertical alinement at all times and prevent sticking or binding of the drawer or slide in use.

Other objects are to arrange the roller supports for the back part of the drawer or slide so that they coöperate with stops to prevent the accidental removal of the drawer or slide from its guides, but nevertheless may be readily shifted to permit the removal of the drawer or slide when desired; and also to improve devices of the kind mentioned in the respects hereinafter described and set forth in the claims.

To prevent unnecessary repetition, the terms "drawer" and "desk" are hereinafter used and should be understood to mean respectively a drawer, slide or the like and a desk or other article of furniture or analogous device.

In the accompanying drawings:

Figure 1 is a longitudinal vertical sectional elevation of a desk having drawers provided with roller supporting means and stop devices embodying the invention.

Fig. 2 is a fragmentary transverse sectional elevation thereof on line 2—2, Fig. 1, showing the back portion of two drawers provided with rear supports embodying the invention.

Fig. 3 is a similar view on line 3—3, Fig. 1, showing the front supports for the drawers.

Fig. 4 is a fragmentary horizontal section, on an enlarged scale, thereof, on line 4—4, Fig. 2.

Fig. 5 is a fragmentary sectional elevation of one of the drawers on line 5—5, Fig. 4.

Fig. 6 is a fragmentary horizontal plan view of one of the front rollers or supports for a drawer.

Fig. 7 is a fragmentary longitudinal sectional elevation on an enlarged scale, on line 7—7, Fig. 4.

The desk A shown in the drawings is provided with vertical side walls or parts 8, top 9, and back or rear wall 10. The front of the desk is provided with the usual cross bars or fillers 11 between which the fronts 12 of drawers B are adapted to fit.

The drawers preferably also have the usual sides 13, a rear wall or end 14, and bottom 15. The desk and drawers may be of any suitable construction and of themselves form no part of this invention.

In the construction shown in the drawings, the fillers 11 are provided on their inner or rear faces with plates or straps 16 adjacent to the side walls 8 of the desk, secured in place by screws or the like 17. Each of the plates 16 has an inwardly or rearwardly extending or bent end lug 18 having a hole or bearing for a pin or screw 19, which passes through said hole and is screwed or secured in the corner post of the side wall 8. The lugs 18 are spaced from the side walls 8 and journaled on each pin 19 and located in this space is a roller 20 preferably of fiber or analogous material, having a relatively wide cylindrical periphery which extends slightly above the plane of the top of the adjacent filler 11. These rollers 20 are adapted to contact with the under edge of the sides 13 of the drawers and support the front of the drawers. The location of the periphery of the rollers slightly above the plane of the fillers permits the drawers to slide in and out without friction or contact with the fillers. The rollers mounted as described are rigidly supported between the sides of the desk and the lugs 18 in such manner as to prevent them from becoming loose or being forced out of position by the pressure of the drawer thereon, and they are held in true alinement and contact with the drawers at all times, notwithstanding

that the plates or straps 16 can be made of comparatively light stock and are exceedingly inexpensive to make and apply.

The means for supporting the rear portions or backs of the drawers are preferably constructed as follows:

A pair of oppositely disposed guide rails 21 is provided for each drawer B, said rails being stationarily secured in any suitable manner to the sides 8 of the desk, their thickness being preferably such that they occupy a space slightly less than the distance between the sides of the desk and the outer sides of the drawers. The guide rails 21 are provided with inwardly facing horizontal grooves 22 into which extend supporting rollers 23 which are mounted on the rear end of the drawer, preferably as follows: On the rear face of the back of the drawer and adjacent the sides thereof is secured, by screws or otherwise, a pair of brackets 24. Each bracket has a pair of rearwardly extending, perforated lugs 24^a which slidably support a short shaft or axle 25 disposed parallel to the back of the drawer. On the outer ends of these shafts are the rollers 23 which are preferably similar to the front-supporting rollers 20, said rollers 23 being adapted to roll in the grooves 22 of the guide rails. The rollers 23 are normally projected outwardly and held in the grooves by means of coil springs 27 surrounding each shaft 25 between one of the lugs 24^a and a pin or stop 28 extending through or provided on the shaft. These stops are adapted to engage the other lugs 24^a to limit the outward movement of the shafts and rollers. This construction provides a desirable means for releasably retaining the rollers in the grooves so that they will not extend in too far and scrape or rub against the bottoms of the grooves, and permits the rollers to be withdrawn from the guide grooves as presently explained.

The grooves 22 are preferably substantially equal in width and depth to the diameter and length respectively of the rollers 23, so that the drawers B will be held from tilting, and from objectionable lateral motion or displacement and will at all times slide in and out freely and with the minimum amount of friction. Each of the grooves 22 is closed at the front end by means of a block 29 so arranged as to form a stop against which the roller 23 in the groove will strike to limit the outward movement of the drawer and thus prevent the accidental removal of the drawer from its guides. It is sometimes desirable, however, to remove the drawer from the desk for one or another reason and the following means are provided for this purpose:—On the front face of the rear wall 14 of the drawer is slidably mounted a pair of horizontal, oppositely disposed roller-actuating members or bars 30, see Figs. 4 and 5. Each actuating bar is slidably retained on the rear wall of the drawer by a screw 31 extending through an elongated slot 32 in the bar 30 and a lug or part 33 at the outer end of the bar projects through a slot 34 in the rear wall of the drawer. The rearwardly extending lugs 33 are notched at 35 to engage reduced or shouldered portions 36 on the inner ends of the roller shafts 25. Forwardly projecting lugs 37 at the inner ends of the bars 30 form pinch handles, by means of which the bars 30 can be moved toward each other to withdraw the rollers 23 from the guide grooves 22. Upon reference to Fig. 4 it will be seen that if the roller-actuating members 30 are moved inwardly as explained, and held against the action of the springs 27, the rollers 23 will be withdrawn from behind the stops 29 in the grooves 22, to a position behind the back of the drawer and inside of the planes of the outer side faces of the drawer where they preferably abut against the brackets 24. In this position the drawer may readily be removed from the desk.

The described arrangement and location of these parts is such that the handles are readily accessible after the drawer has been pulled forwardly with the rollers 23 in engagement with the stops 29 and it is only necessary to hold the roller-actuating members 30 in their inward position long enough for the rollers to pass the inner end of the stops 29, as they will then remain in this position by the engagement of the rollers with the sides of the stop blocks until the drawer has been removed from the desk. Obviously, to replace the drawer it is only necessary to hold the roller-actuating members 30 in their inward position until the back of the drawer has been inserted in its opening, when a rearward movement of the drawer will cause the rollers to enter the guide grooves 22 when they pass the ends of the stops 29.

I claim as my invention:

1. In an article of furniture, the combination of a sliding member, a guide therefor, a stop, means for supporting the front portion of said sliding member, a roller on said sliding member which rolls on said guide to support the rear portion of said sliding member and which engages said stop and is adapted to be shifted to a position to pass said stop and permit the removal of the sliding member from said guide, said roller, when so shifted also permitting the insertion of said slide into said article of furniture, and means which automatically shift said roller into said guide when moved inwardly beyond said stop.

2. In an article of furniture, the combination of a sliding member, a guide therefor, a stop, a supporting device releasably held in

traveling contact with said guide for supporting said sliding member and which is adapted to engage said stop to limit the outward movement of said sliding member, means for shifting said supporting device to a position to clear said stop and permit the removal of the sliding member from said guide, said supporting device when so shifted, also permitting the insertion of said sliding member into said article of furniture, and means which automatically shift said supporting device into said guide when moved inwardly beyond said stop.

3. In an article of furniture, the combination of a casing, guides in said casing, stops at the front ends of said guides, a drawer having a back, a pair of openings in the back of said drawer, brackets secured to said drawer back at opposite ends thereof, a shaft movable lengthwise in each of said brackets, a roller on each of said shafts and adapted to engage its respective guide, springs normally pressing said shafts to maintain said rollers in the guides, releasing bars movably mounted on said drawer back, each of said bars having a part extending through one of said openings in said back and a part engaging one of said shafts and a pinch handle on the inner side of the drawer back, whereby said releasing bars may be actuated to shift the shafts to permit said rollers to pass the stops to remove the drawer from the casing.

4. In an article of furniture, the combination of a casing, a sliding drawer within said casing, guides in said casing providing channels at the sides of said drawer, rollers at the front of said casing to support the bottom of said drawer, stops closing the front ends of said channels, brackets mounted on the back of said drawer, a shaft slidably mounted in each of said brackets and extending transversely of said drawer, springs mounted on said shafts and bearing on said brackets to force said shafts outwardly from said drawer, a roller on the outer end of each shaft, said rollers being resiliently held in said channels by said springs, a pair of releasing bars slidably mounted on the back of said drawer and engaging said shafts, pinch handles on said releasing bars, whereby said bars may be actuated to move the shafts to withdraw said rollers from their respective channels, thereby permitting the rollers to pass the stops at the channel ends and the drawer to be removed.

5. In an article of furniture, the combination of a pair of relatively fixed guides, a drawer having a back, a pair of shafts slidably mounted on the rear side of said drawer back to project laterally from opposite sides of said drawer, rollers on the outer ends of said shafts adapted to engage said guides, resilient means for normally maintaining said rollers in engagement with said guides, a pair of actuating bars slidably mounted on said drawer back, each of said actuating bars having a part engaging the adjacent shaft, and forwardly projecting lugs extending into the interior of said drawer whereby said actuating bars may be manipulated to withdraw said rollers from engagement with said guides.

6. In an article of furniture, the combination of a pair of relatively fixed guides, a drawer having a back, said back having a pair of openings therethrough, a pair of shafts slidably mounted on the rear side of said drawer back to project laterally from opposite sides of said drawer, rollers on the outer ends of said shafts adapted to engage said guides, resilient means for normally maintaining said rollers in engagement with said guides, a pair of actuating bars movably mounted on the inner side of said drawer back, said bars having parts at their outer ends extending through said openings in the drawer back and engaging said slidable shafts, and forwardly projecting lugs on the inner ends of said bars providing a pair of pinch handles which may be manipulated to slide said bars and withdraw said rollers from engagement with their guides.

7. In an article of furniture, the combination of a pair of relatively fixed guide-ways, a slidable drawer, brackets secured to said drawer adjacent opposite sides thereof, a shaft movably mounted in each of said brackets, a friction-reducing element on each of said shafts normally projecting beyond said drawer to engage its respective guide-way, resilient means normally tending to resist movement of said friction-reducing elements from said guide-ways, and means engaging said shafts and having parts extending inside of said drawer for actuating said shafts to permit intentional removal of said friction-reducing elements from said guide-ways.

8. In an article of furniture, the combination of a pair of relatively fixed guide-ways, a slidable drawer, brackets secured to said drawer adjacent opposite sides thereof, a shaft movably mounted in each of said brackets, each of said shafts having an outer roller end normally engaging an adjacent guide-way, resilient means normally tending to resist movement of said roller ends from their respective guide-ways, and shaft-actuating means having handles projecting into said drawer for permitting manipulation of said shaft-actuating means from the inside of said drawer for withdrawing the roller ends of said shafts from said guide-way.

9. In an article of furniture, the combination of a casing, a sliding drawer within said casing, guides in said casing at oppo-

site sides of said drawer, means at the front of said casing to support the front end of said drawer, stops at the front ends of said guides, supports for the rear end of said drawer movably mounted at the back of said drawer for movement to and from guide-engaging position, spring means resiliently maintaining said rear supports in guide-engaging position, and actuating means inside of said drawer for withdrawing said rear supporting means from engagement with said guides.

10. In an article of furniture, the combination of a casing, a sliding drawer within said casing, guides in said casing at opposite sides of said drawer, means at the front of said casing to support the front end of said drawer, stops at the front ends of said guides, supports for the rear end of said drawer projecting laterally from the rear end of said drawer and movable relatively thereto, means for moving said supports to and from guide-engaging positions, resilient means for normally maintaining said supports in engagement with said guides, said support-moving means including actuating handles extending forwardly into the inside of said drawer.

Witness my hand this 5th day of March, 1919.

JACOB BODENSTEIN.

Witnesses:
F. A. TINKER,
GEO. W. SEARLES.