

July 27, 1926.

1,594,291

A. M. WOLTZ

DRAWER SUPPORTING DEVICE

Filed May 13, 1920

3 Sheets-Sheet 1

FIG. 1.

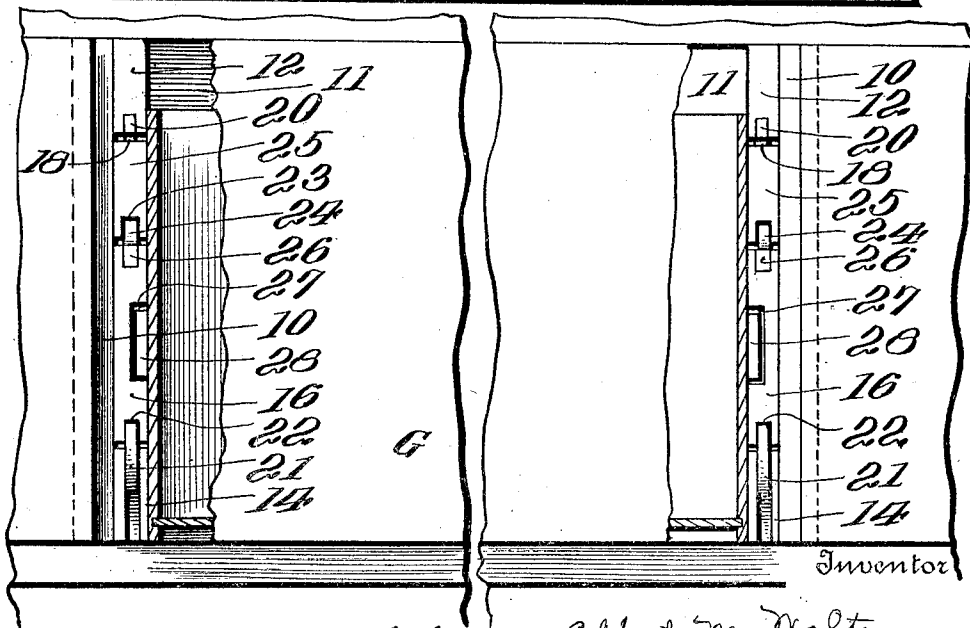
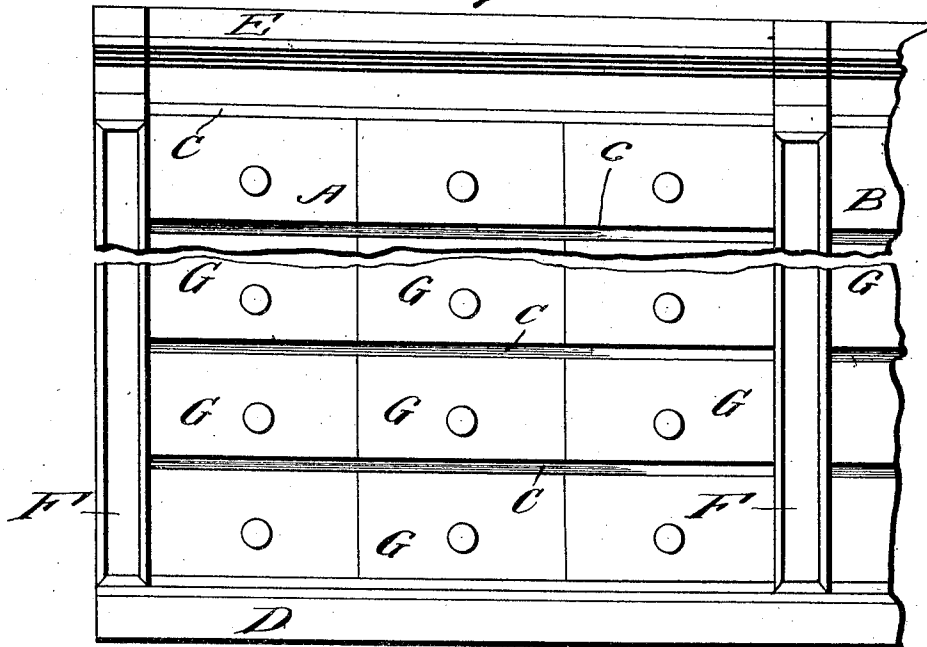


FIG. 2.

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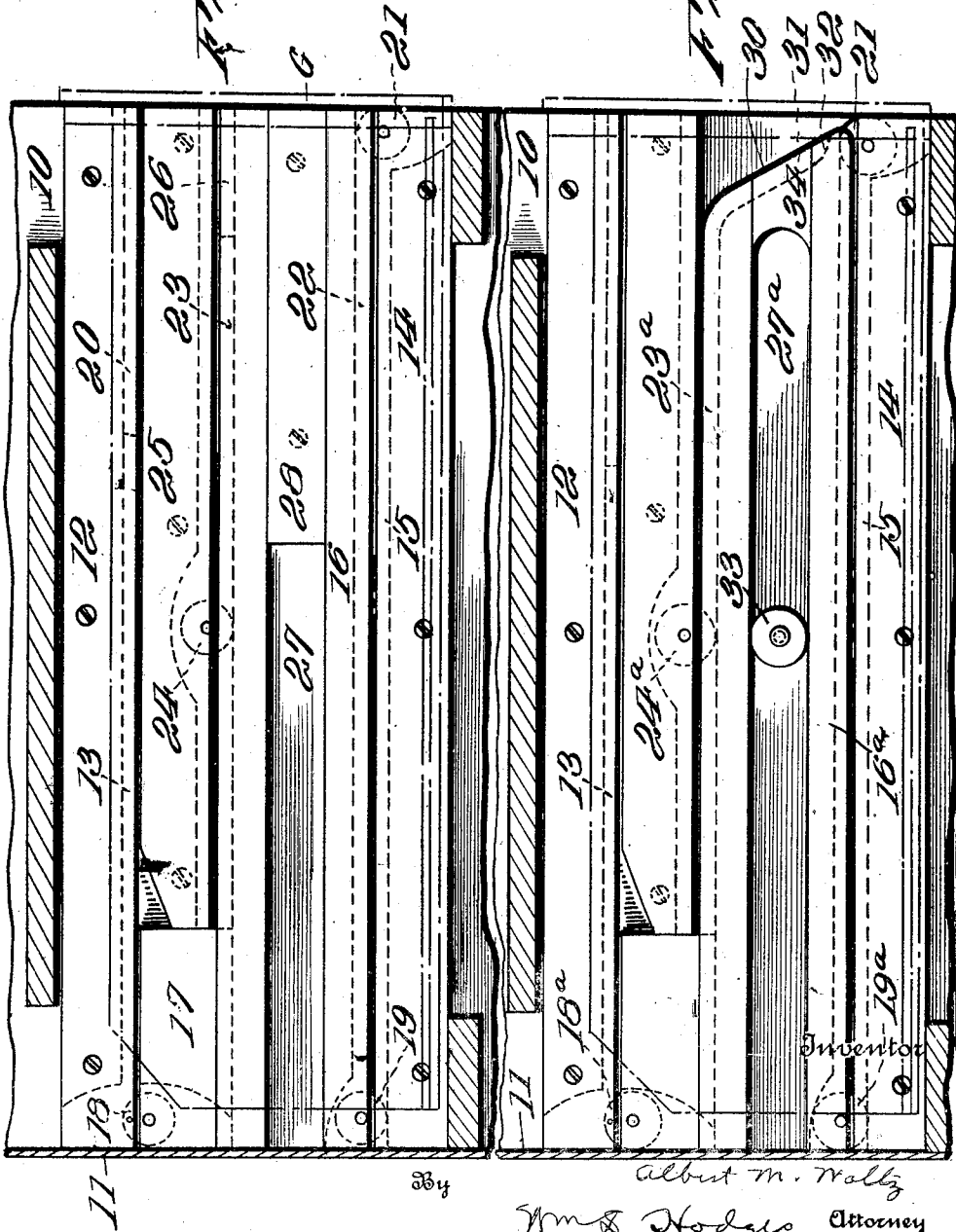
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Fig. 3.

Fig. 5.



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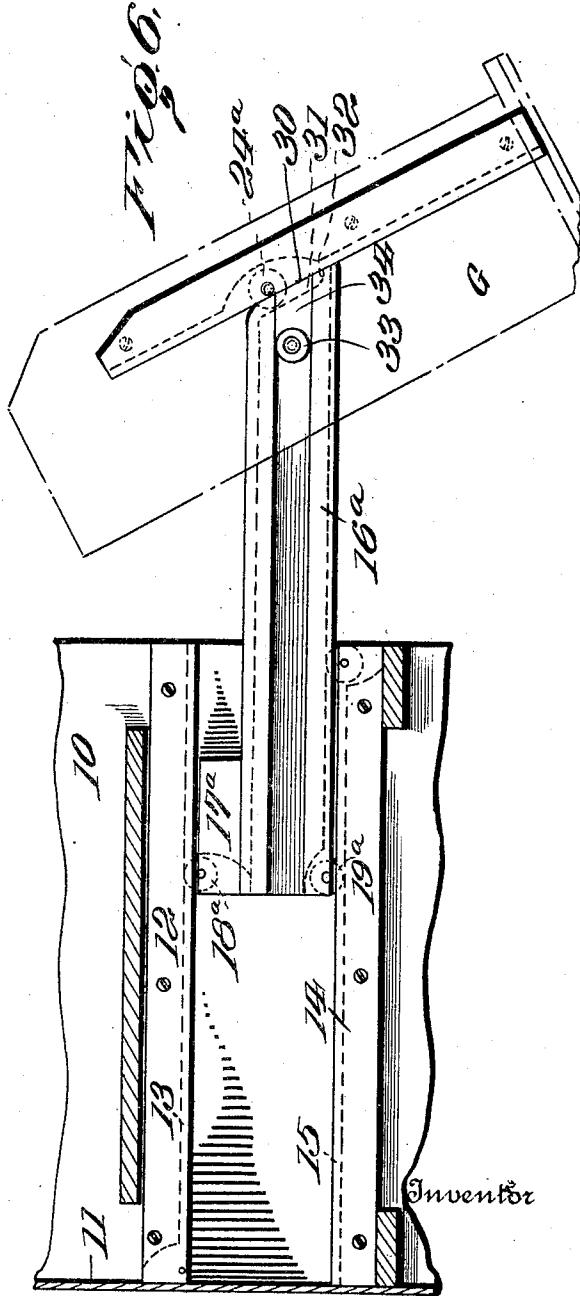
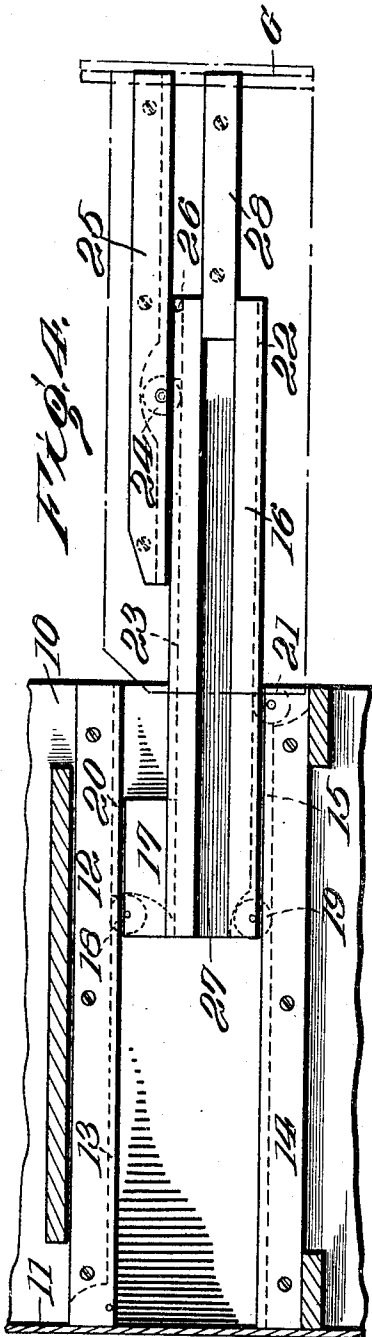
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

ALBERT M. WOLTZ, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO SAMUEL D. YOUNG, TRUSTEE, OF GRAND RAPIDS, MICHIGAN.

DRAWER-SUPPORTING DEVICE.

Application filed May 13, 1920. Serial No. 381,216.

This invention is an extensible sliding device for supporting drawers and the like. 55

One of the objects of the invention is to provide supporting means, so constructed that a drawer may be firmly supported when wholly withdrawn from the cabinet or other unit in which it is mounted. A further object is to provide a supporting device of the character mentioned, made up of slidable elements which may be pushed back into the supporting unit simultaneously with the closing movement of the drawer. A further object is to provide supporting shelving of sectional construction, the units of which are provided with extensible drawer supporting means of the type mentioned whereby one or more drawers, depending on size, may be mounted in each unit. A further object is to provide store shelving having slidable drawers, so mounted and supported, that they may be drawn outwardly to a sufficient extent, to enable a salesman to lift and remove the contents thereof, without obstruction by the unit in which the drawer is mounted. A further object is to provide means whereby those drawers which are located too high for the salesman to look into them, may be tilted and supported in the tilted position. 60

The invention will be hereinafter fully set forth and particularly pointed out in the claims. 65

In the accompanying drawings:—

Figure 1 is a front elevation illustrating store shelving made up of stacks of units, each provided with drawers supported in accordance with the invention. Figure 2 is an enlarged front elevation of one of the shelving units with parts broken away. 70
Figure 3 is a side elevation illustrating a set of the extension members in closed relation. Figure 4 is a similar view with the elements extended. Figures 5 and 6 are views similar to Figures 3 and 4, illustrating the tilting drawer arrangement. 75

Referring to the drawing, A and B represent adjoining stacks each made up of a plurality of superposed sectional units C, each stack being provided with a base D and a top E, the joints between adjoining stacks being covered by pilasters F, all of a well-known type of construction. 80

Each unit C is divided into two or more compartments by partitions 10, each com-

partment being designed to provide storage space for a drawer G; the number of partitions 10 in each unit, depending on the sizes of the drawers to be stored therein. Each partition extends from the back 11 to the front edge of the unit. 60

The extensible elements which support the drawers G are attached to the partition walls 10 and to the end walls of the units, but inasmuch as each set of these extensible elements is a duplicate of all of the other sets, it is considered sufficient to describe but one set, it being borne in mind that two sets are required to support each drawer. 65

Secured to an end wall of the unit or to a partition wall 10 as the case may be, is a top guide 12 of a set of extensible elements, said guide having its lower edge provided with a longitudinal groove 13. Spaced from said top guide is a bottom guide 14, provided in its top edge with a longitudinal groove 15. Interposed between the guides 12 and 14 is a slide 16, provided with an enlargement 17, forming a stop block, said slide being provided with rollers 18 and 19 mounted to travel in the grooves 13 and 15 respectively. Rearward movement of the slide 16 is limited by the back 11 of the unit, and forward movement is limited by means of a stop block 20, located in the groove 13 and arranged in the path of movement of the roller 18. At the outer end of the guide 14, in a cut away space, is located a roller 21, which extends into a groove 22 in the guide 16, and supports said guide in its travel back and forth with respect to the unit C in which it is located. The upper edge of the guide 16 is provided with a groove 23, to receive a roller 24, carried by a drawer suspension arm 25, which is mounted to reciprocate between the upper edge of the slide 16 and the lower edge of the guide 12. Said roller 24 is mounted in a recess spaced from both ends of the arm 25. Outward movement of the suspension arm 25 is limited by means of a stop block 26, in the groove 23, and rearward movement of the suspension arm is limited by the stop block 17. It will be noted that the suspension arm is shorter than the slide, and that the stop block 17 is so proportioned that when the parts are in closed position their front ends are in register. 85

The suspension arm 25 is secured to the

drawer in any desired manner, and is provided with an inclined inner end so that it may be easily guided under the projecting end of the top guide, when the parts are moved to closed position. In order to provide means for maintaining the drawer in alignment with the guide and slide, the slide is provided with a channel 27, in which is slidably mounted a slide retaining strip 28, also secured to the drawer.

In practice the drawer is supported by the suspension arm 25 and the slide retaining strip 28, by reason of the engagement of said suspension arm with the slide 16 and top guide 12, and the engagement of the slide retaining strip 28 with the channel 27, of the slide 16. The weight of the drawer is sustained by the guides 12 and 14. When it is desired to pull out a drawer, the operator grasps the usual handle with which the drawer is provided, and pulls outwardly thereon. The effect is to first pull out the suspension arm 25 and the retaining strip 28, until the roller 24 engages the stop 26. A continued pull on the drawer then causes the roller 24, acting against the stop 26, to draw out the slide 16, until the roller 18 strikes against the stop abutment 20, which will arrest the outward movement of all of the parts, with the drawer in a position extending clear of the front of the unit in which it is mounted. Thus the salesman may readily remove boxes or the like from the drawer without being impeded by any part of the unit. When it is desired to close the drawer, it is merely pushed inwardly until the inner end of the suspension arm 25 engages the stop block 17, whereupon continued inward pressure will cause the slide to move inwardly until its rear end strikes the back 11 of the unit, in which position the drawer and all of the extensible elements are entirely within the unit.

Where the drawers are located at an elevation too high for the salesman to conveniently have access to the contents thereof, it is desirable to provide means by which the drawer may be tilted. Such a construction is illustrated in Figures 5 and 6. In this form the guides 12 and 14, provided with the grooves 13 and 15, and the roller 21 are identical with the construction already described in connection with Figures 3 and 4. The drawer suspension arm 25, with its roller 24, are also the same as described in connection with Figures 3 and 4. In the modified construction, the slide 16^a is provided with a stop 17^a, and the rollers 18^a and 19^a, which latter engage the grooves 13 and 15 respectively. The forward end of the slide 16^a is inclined as illustrated at 30, and the groove 23^a in which roller 24^a travels, is extended over the inclined end 30, as indicated at 31, terminating with a stop shoulder 32. The drawer is provided with

a roller 33, which travels in the channel 27^a, its outward movement being limited by a stop block 34. Said roller 33 functions in the same manner as the retaining strip 28 in maintaining the drawer in alignment.

In practice a pull upon the drawer will move the same outwardly, the suspension arm being guided between the top guide 12 and the slide 16^a, the roller 33 traveling in the channel 27^a, until it strikes the stop 34. Continued outward movement of the drawer will, by reason of the engagement of the roller 33 with the stop 34, cause the slide 16^a to be drawn outwardly until the roller 18^a comes into contact with the stop 20, and thereby arrests further movement. The rear end of the drawer is then clear of the top guide 12, leaving the drawer free to rock on the rollers 33 as pivots. As the drawer moves on said pivots from the horizontal to the tilted position, the roller 24^a will travel down the groove 31, which provides the necessary clearance, until the lower edge of the suspension arm rests against the inclined end 30, thereby arresting the tilting movement. When it is desired to close the drawer, it is swung back to horizontal position and then moved inwardly, in the manner already described in connection with Figures 3 and 4.

The advantages of the invention will be apparent to those skilled in the art to which it appertains. It will be particularly observed that a construction is provided, by means of which a drawer may be firmly supported when wholly withdrawn from a cabinet or other unit, so that its contents are readily accessible, and yet all of the parts are stored within the supporting unit, out of the way, when the drawer is closed. It will also be readily understood that a simple and efficient means for supporting the drawers in tilted position is also provided.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:—

1. In a drawer supporting device a pair of normally stationary spaced apart guides, a slide mounted to reciprocate between said guides, a drawer suspension strip mounted to reciprocate between the slide and one of said guides, and drawer alignment means in fixed relation with said suspension strip and positioned directly beneath said strip, said means engaging said slide whereby it will cooperate with said suspension strip.

2. In a drawer supporting device a pair of normally stationary spaced apart guides, a slide mounted to reciprocate between said guides and provided with a channel in one face, a drawer suspension strip mounted to reciprocate between the slide and one of said guides, and a drawer alignment mem-

ber in fixed relation with said suspension strip and positioned directly beneath said strip, said alignment member being mounted to travel in said channel.

5 3. In a drawer supporting device a pair of normally stationary spaced apart guides, a slide mounted to reciprocate between said guides and having a groove in one edge, a drawer suspension strip positioned to reciprocate above said guide groove and hav-
10 ing a roller located at a position intermediate between the ends thereof and engaging said guide groove, and drawer alignment means in fixed relation with said suspension
15 strip and positioned directly beneath said strip, said guide means engaging said slide whereby it will cooperate with said suspen-
sion strip.

4. In a drawer supporting device a pair
20 of normally stationary spaced apart guides, a slide mounted to reciprocate between said guides and provided with a channel in one face, a drawer suspension strip mounted to
25 reciprocate between the slide and one of said guides, and a drawer guiding roller located in fixed relation with respect to said suspen-
sion strip and also positioned to reciprocate in said channel, said roller being located
30 directly beneath said suspension strip, where-
by it will cooperate therewith.

5. In a drawer-supporting device a pair
of normally stationary spaced apart guides, a slide mounted to reciprocate between said
35 guides and having a guide-groove in its top edge, said slide having an inclined end, a suspension arm having a roller in its lower
edge located at a point between the ends thereof and engaging the groove of said
40 slide, and pivoted retaining means supported in fixed relation with respect to said suspen-
sion arm and engaging the slide beneath the suspension arm, whereby the roller may
travel over said inclined end when said sus-

pension arm reaches its limit of outward movement.

45 6. In a drawer supporting device, a pair of normally stationary spaced apart guides, a slide mounted to reciprocate between said guides and having an inclined outer end, said slide also having a channel in one face
50 closed at its outer end, a drawer suspension arm mounted to reciprocate between said slide and one of said guides, a roller carried by said suspension arm and positioned to travel on said slide, and a pivoted align-
55 ment member located in a fixed position with respect to said suspension arm and directly beneath it, and mounted to travel in said channel, whereby said roller may travel over
60 the inclined end of the slide when the align-
ment member reaches the closed end of the channel.

7. In a drawer supporting device a pair
of normally stationary spaced apart guides, a slide mounted to reciprocate between said
65 guides and having an inclined outer end, a drawer suspension strip mounted to travel between the slide and one of said guides, and a drawer aligning roller located directly be-
neath said arm and engaging said slide,
70 whereby the drawer may tilt and cause said suspension strip to rest against said in-
clined end.

8. In a drawer supporting device a pair
of normally stationary spaced apart guides,
75 a slide mounted to reciprocate between said guides and having an inclined forward end, the top and inclined end of the slide being
grooved, a drawer suspension strip pro-
80 vided with guide means travelling in the
grooved portions of the slide, and drawer alignment means engaging the slide and co-
operating with said suspension arm.

In testimony whereof I have hereunto set my hand.

ALBERT M. WOLTZ.