Sept. 25, 1928. 1,685,536

R. I. EUSTIS ET AL

DRAWER SLIDE

Filed Sept. 7, 1926 2 Sheets-Sheet 1

Fig. 1.

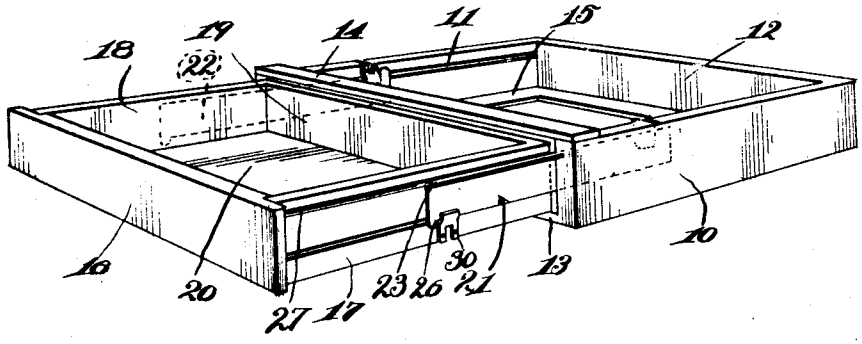


Fig. 2.

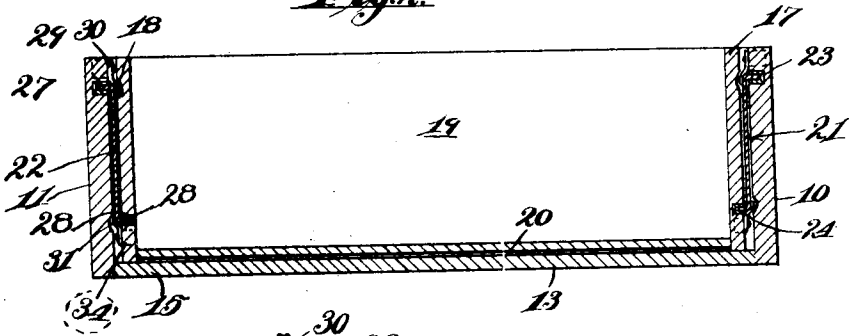


Fig. 3.

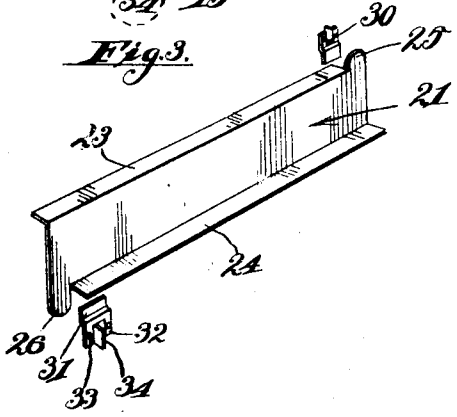


Fig. 4.

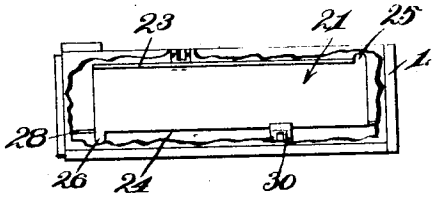


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Fig. 5.

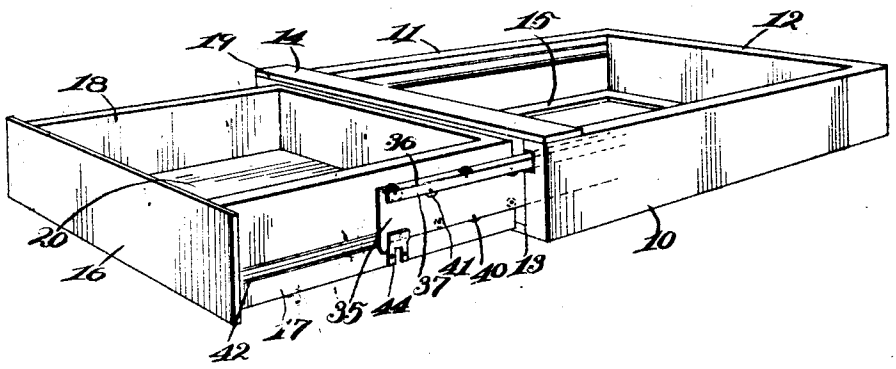



Fig. 6.

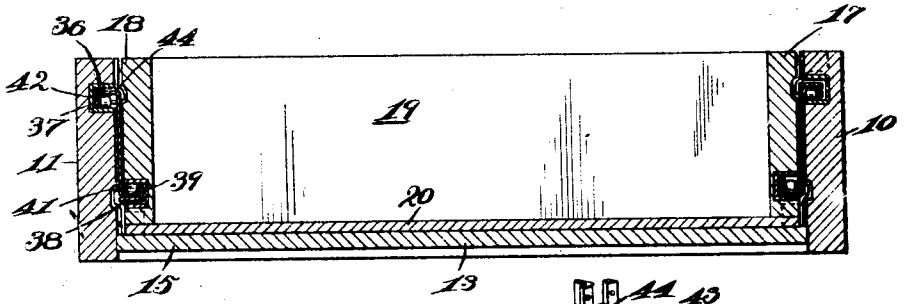
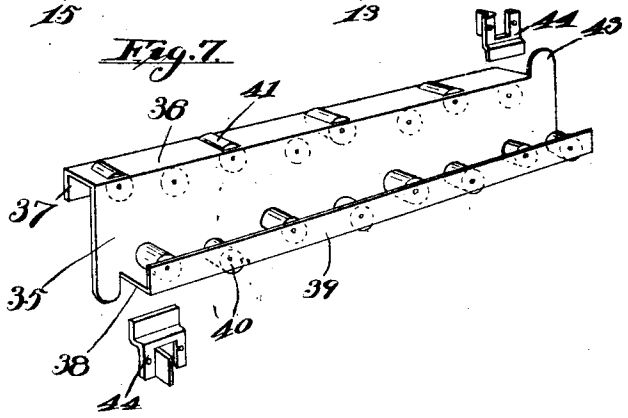



Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## DRAWER SLIDE.

Application filed September 7, 1926. Serial No. 133,842.

This invention relates to improvements in drawer slides.

An object of the invention is to provide a drawer slide of novel construction which will enable a drawer to be completely withdrawn from within the structure supporting it and which will rigidly support the drawer in its withdrawn position.

Another object of the invention is to provide a drawer slide of novel and simple construction which may be easily, quickly and cheaply manufactured, and which may be easily and quickly applied to a drawer.

A further object of the invention is to provide a drawer slide having the above mentioned characteristics which occupies a very small amount of space between the sides of the drawer and the sides of the supporting structure.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a perspective view of the supporting construction and a drawer to which the improved slide has been applied, the drawer being shown in its fully open position,

Fig. 2 is a vertical section taken through the supporting construction and drawer shown in Fig. 1,

Fig. 3 is a perspective view of the drawer slide,

Fig. 4 is a view in side elevation of the supporting construction with the drawer therein, parts being broken away to illustrate the drawer slide,

Fig. 5 is a perspective view illustrating a slightly modified form of construction,

Fig. 6 is a vertical transverse section through the construction shown in Fig. 5, and

Fig. 7 is a perspective view of the modified drawer slide shown in Fig. 5.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the supporting construction may be of any desired form, such as in a table, cabinet, cupboard, or the like. In the present instance it is illustrated as consisting of a pair of side walls 10 and 11 connected by a back wall 12 and the forward ends of the side walls being connected by top and bottom pieces 13 and 14. Flanges 15 are provided at the bottoms of the side and back walls 10, 11 and 12. The drawer employed may be of any desired construction and is illustrated as consisting of a front wall 16, side walls 17 and 18, a back wall 19 and a bottom 20. The ends of the front wall 16 project laterally a short distance beyond the sides 17 and 18.

Between the side 17 of the drawer and the side wall 10 there is disposed a drawer slide generally indicated at 21, and in a similar manner another drawer slide which is a counter part of the slide 21 is disposed between the side 18 of the drawer and the side wall 11. This second drawer slide is indicated generally at 22. Each drawer slide is constructed as follows: It consists of a section of sheet metal which has its top edge bent laterally to provide a top flange 23 extending from one side of the section. The bottom edge of the section is also bent laterally to provide a bottom flange 24 projecting laterally from the other side of the section. One end of the top flange, however, is not bent to provide an upstanding finger 25 and in a similar manner there is provided a downwardly extending finger 26 at the opposite end of the bottom flange 24. Grooves are formed in the tops of the side walls 10 and 11, such grooves being indicated at 27. These grooves are adapted to receive one of the flanges on the slide, such as for example the top flange 23. In a similar manner grooves 28 are formed upon the outside surfaces of the sides 17 and 18 of the drawer to receive the bottom flanges 24 of the drawer slides. If desired, metallic channels 29 may be positioned in the grooves 27 and 28, within which the flanges on the slides are slidable, thus reducing wear and also the friction between the slide and the sides and side walls.

Guides are provided which are indicated generally at 30, each guide consisting of a small rectangular section of sheet metal having one portion 31 bent out of the plane of the other portion 32 so as to be parallel to it. One of these guides is mounted upon each side of the drawer at about its center in such a manner that the portion 31 overlies the bottom of the drawer slide. Another of these guides is mounted on each side wall 10 and 11 at about its center, and has its portion 31 overlying the top of the

drawer slide. These guides which are fastened by screws passing through the apertures 33 serve to maintain the flanges in their respective grooves. They also serve an additional function. They are engageable by the fingers 25 and 26, thus forming stops which limit the movement of the slides. In the preferred form of construction lugs 34 are struck out of the portion 32 of each guide, and these lugs are arranged at the center of the guides so that all of the guides are interchangeable and will not have to be constructed in pairs. The lugs 32 extend into small vertical grooves or slots formed in the sides 17 and 18 and the side walls 10 and 11 respectively.

From the above described construction it will be appreciated that on pulling the drawer open, the drawer usually will first slide upon the drawer slides 21 and 22 until the guides mounted on the sides of the drawer engage the downwardly extending fingers on the forward ends of the drawer slides. A continued forward movement of the drawer causes the slides then to slide upon the side walls 10 and 11 until the fingers 25 on the tops of the slide engage their respective guides. The guides are so arranged that when both fingers on each slide are engaging their respective guides, the drawer will be completely withdrawn from the supporting construction to completely expose the interior of the drawer. Furthermore, as each drawer slide is engaging a side wall of the drawer in this position for substantially half its length and also each side wall for substantially half its length, the drawer will be firmly supported in this completely withdrawn position.

In closing the drawer, usually the drawer first slides relatively to the slides 21 and 22 until the forward ends of the slides engage the projecting lateral ends of the front wall 16 of the drawer. Then the slides are caused to slide backwardly with the drawer relatively to the side walls 10 and 11.

In the modification shown in Figs. 5, 6 and 7 the construction of the drawer slide is as follows: The slide consists of a section of sheet metal 35 having its upper edge bent over to provide the top flange 36 and this top flange has its edge bent downwardly as at 37. The bottom edge of the section 35 is bent outwardly as at 38 from the opposite side and then upwardly as at 39. In this way there are formed two channels which are located on opposite sides of the section 35. Rivets 40 extend across the channels and have a staggered arrangement. Rollers 41 are rotatable on the rivets and some of the rollers have portions extending through apertures formed in the portions 36 and 38 respectively. The other rollers have portions projecting beyond the edges of the flanges 37 and 39. The drawer slide of this construction is mounted between the sides of the drawer and the side walls in a manner very similar to that previously described. In the grooves there are provided channels 42. In the upper groove those rollers 41, which have portions extending through the apertures in the flange 36, roll against the tops of the channels while those rollers which have portions below the bottom edge of the flange 37 roll on the bottoms of the channels. In a similar manner the rollers between the section 35 and the flange 39 roll against the top and bottom of the channel in the groove on the drawer. In this modification fingers 43 are provided in the ends of the slide and also guide means 44, which are substantially the same as the construction shown in Figs. 1 to 4. The modified form of drawer slide is designed to support large heavy drawers in large cabinets where the weight supported by the drawer is apt to be considerable. The modification shown in Figs. 1 to 4 inc. is designed for use where the drawer will probably hold articles of light weight.

From the above described construction it will be appreciated that a novel drawer slide is provided, which may be very easily, quickly and cheaply constructed. Furthermore, the improved wall slide permits the drawer to be completely withdrawn from within the supporting construction and to be firmly supported in its withdrawn position. Lastly, the improved drawer slide occupies but a very small amount of space between the sides of the drawer and the sides of the supporting construction, so that it will be neat in appearance and will prevent lateral movement of the drawer which might loosen the slide.

It will be understood that various changes may be made in the detail of construction without departing from the spirit and scope of the invention as defined by the appended claims.

We claim:

1. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, a sheet metal slide disposed between each side and its respective side wall, each slide having a top flange projecting from one side thereof and a bottom flange projecting from the other side thereof, said flanges extending substantially the complete length of the slide and being movably disposed in grooves in the sides and side walls.

2. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, a sheet metal slide disposed between each side and its respective side walls, each slide having a top flange projecting from one side thereof and a bottom flange projecting from the other side

thereof, said flanges being movably disposed in grooves in the sides and side walls, a downwardly extending finger provided on each slide adjacent one end of the bottom flange, an upwardly extending finger provided on each slide at the opposite end of the upper flange, and guides mounted upon the sides and side walls serving to maintain the flanges in their respective grooves, said guides being engageable by the flanges on the slides to limit the movement of the slides.

3. A drawer slide comprising a section of sheet metal adapted to be positioned between the side of a drawer and the side wall of the structure supporting it, said section having a top flange extending laterally from one side of the section and a bottom flange extending laterally from the other side of the section, an upstanding finger provided on one end of the upper flange and a downwardly extending finger provided on the opposite end of the bottom flange.

4. A drawer slide comprising a section of sheet metal adapted to be positioned between the side of a drawer and the side wall of the structure supporting it, said section having a top flange extending laterally from one side of the section and a bottom flange extending laterally from the other side of the section, an upstanding finger provided on one end of the upper flange and a downwardly extending finger provided on the opposite end of the bottom flange, and guides adapted to be mounted upon the side of the drawer and the side wall respectively, said guides serving to maintain the slide in proper position between the side of the drawer and the side wall and being engageable by said fingers.

5. In combination with a drawer and a pair of side walls between which the drawer is slidable, slides disposed between the sides of the drawer and the side walls, each slide having two flanges, one of which is adjacent the top of the slide and projecting from one side thereof and the other of which is adjacent the bottom and projecting from the other side thereof, said flanges having their edges bent toward the center of the slide to form channels, and rollers rotatably mounted in said channels, said rollers being disposed within grooves in the side of the drawer and side wall respectively.

6. In combination with a drawer and a pair of side walls between which the drawer is slidable, slides disposed between the sides of the drawer and the side walls, each slide having two flanges, one of which is adjacent the top of the slide and projecting from one side thereof and the other of which is adjacent the bottom and projecting from the other side thereof, said flanges having their edges bent toward the center of the slide to form channels, and rollers rotatably mounted in said channels, said rollers being disposed within grooves in the side of the drawer and side wall respectively, said rollers being mounted for rotation about staggered axes, whereby some of the rollers will roll upon the tops of the grooves and others will roll upon the bottoms of the grooves.

7. A drawer slide comprising a section of sheet metal adapted to be positioned between the side of a drawer and the side walls of the structure supporting it, said section having a top flange extending laterally from one side of the same and a bottom flange extending laterally from the other side of the same, a downwardly extending flange on said first mentioned flange, an upwardly extending flange on said second mentioned flange, rollers between said last two mentioned flanges and said section of sheet metal, said rollers being adapted to bear downwardly and upwardly respectively on a groove formed within the side walls within the structure supporting the drawer, and on a groove in the side of the drawer to support the same.

8. A drawer slide comprising a section of sheet metal adapted to be positioned between the side of a drawer and the side walls of the structure supporting it, said section having a top flange extending laterally from one side of the section, and a bottom flange extending laterally from the other side of the section, said top and bottom flanges having downwardly and upwardly extending flanges respectively, between which flanges and the sections there are disposed a plurality of rollers adapted to bear upon the side walls, of the grooves in the supporting side walls and sides of the drawer respectively, an upstanding finger provided on one end of the upper flange and downwardly extending finger provided on the opposite end of the bottom flange as and for the purpose specified.

9. A drawer slide comprising a flat section of sheet metal adapted to be positioned between the side of the drawer and the side walls of the structure supporting it and fit closely against a major portion of the surface areas of each, a top flange extending laterally from one side of the section into a groove within the supporting side wall, and a bottom flange extending laterally from the other side of the section into a groove into the side of the drawer, said slide being approximately S-shaped in cross section for practically its entire length.

10. A drawer slide comprising a flat section of sheet metal adapted to be positioned between the side of the drawer and the side walls of the structure supporting it and fit closely against a major portion of the surface areas of each, a top flange extending laterally from one side of the section into a groove within the supporting side wall, and

a bottom flange extending laterally from the other side of the section into a groove into the side of the drawer, said slide being approximately S-shaped in cross section, an upstanding finger provided on one end of the upper flange, and a downwardly extending finger provided on the opposite end of the bottom flange.

11. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, a drawer slide disposed between each side and its respective side wall, each slide comprising a section of sheet metal arranged between the side and side wall and having flange portions at its top adjacent its ends which are bent laterally in one direction, and flange portions at its bottom adjacent its ends which are bent laterally in the opposite direction, said flange portions being movably disposed in grooves in the sides and side walls.

12. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, a drawer slide between each side and its respective side wall, each slide comprising a section of sheet metal between a side and side wall, means extending laterally from the top of the section in one direction and arranged upon both sides of the center of the section and a material distance therefrom, means extending laterally from the bottom of the section in the opposite direction and being arranged upon both sides of the center of the section and a material distance therefrom, both of said means extending into grooves in the side and side wall respectively.

13. A drawer construction comprising two parallel side walls, a drawer having its sides therebetween, means disposed between each side and side wall and movably extending into grooves in the side and side wall providing a slide for the drawer, the portions in the grooves being materially greater in length than half the length of the drawer.

14. A drawer construction comprising two parallel side walls, a drawer having its sides therebetween, means providing two flanges extending into the grooves in each side and its adjacent side wall, each flange being materially greater in length than half the length of the drawer, and means connecting the flanges to each other.

15. A drawer construction comprising two parallel side walls, a drawer having its sides therebetween, means providing two flanges extending into grooves in each side and its adjacent side wall and being movably disposed therein, said flanges being arranged one beneath the other but extending in opposite directions, and means connecting the flanges to each other.

16. A drawer construction comprising two parallel side walls, a drawer having its sides therebetween, means providing two flanges extending into grooves in each side and its adjacent side wall and being slidably disposed therein, said flanges being arranged one beneath the other but extending in opposite directions, and vertically straight means connecting the flanges to each other.

17. A drawer slide comprising means providing two oppositely extending flanges, one being arranged beneath the other, said flanges being adapted to assume positions in grooves in the side of a drawer and an adjacent side wall respectively so as to be slidably disposed therein, and means connecting said flanges.

18. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, means providing a drawer slide comprising straight vertical means arranged between a side of the drawer and its adjacent side wall, and spacing the side and side wall, means extending laterally from one side of said means adjacent the top thereof, and means extending laterally from said means from the opposite side thereof and adjacent the bottom thereof, both of said means being arranged a material distance on both sides of the center of said vertical means and extending into grooves in the side and side wall, whereby the drawer will be movably supported by the side walls.

19. A drawer construction comprising two parallel side walls, a drawer having its sides between the side walls, means providing a drawer slide comprising straight vertical means arranged between a side of the drawer and its adjacent side wall, and spacing the side and side wall, means extending laterally from one side of said means adjacent the top thereof, and means extending laterally from said means from the opposite side thereof and adjacent the bottom thereof, both of said means being arranged a material distance on both sides of the center of said vertical means and extending into grooves in the side and side wall, whereby the drawer will be movably supported by the side walls, said laterally extending means providing rotatable elements adapted to roll in the grooves in the side and side wall.

In testimony whereof we have signed our names to this specification.

ROBERT I. EUSTIS.
FRED S. BEIGER.