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CONSTRUCTION FOR DISPLAY CASES AND THE LIKE

Filed Feb. 10, 1928

Fig. 1.

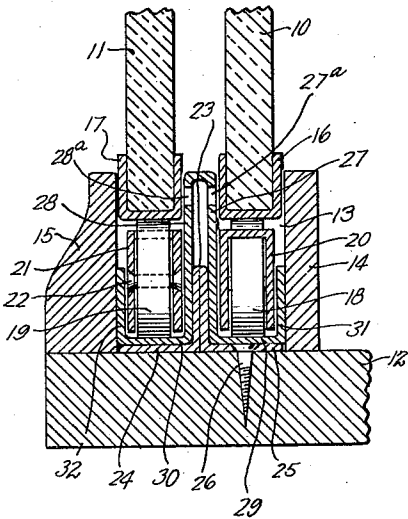


Fig. 2.

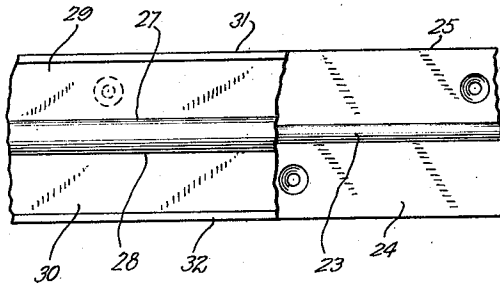


Fig. 3.

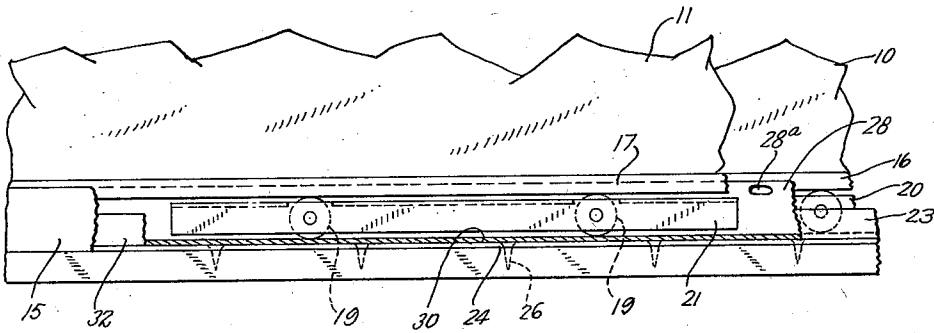


Fig. 4.

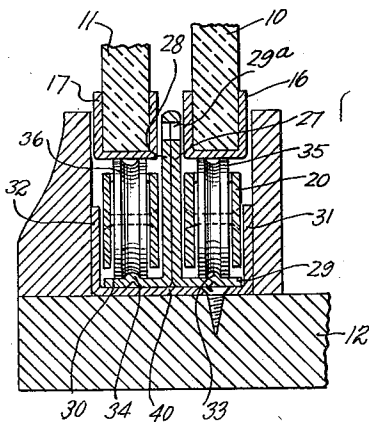
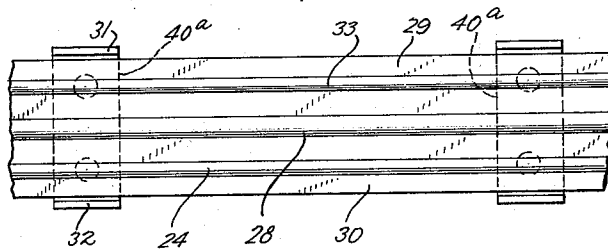


Fig. 5.



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CONSTRUCTION FOR DISPLAY CASES AND THE LIKE

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This invention relates to construction for display cases and the like and more particularly to sliding panels or doors of such devices.

5 One of the objects of the invention is to provide a mounting for sliding panels of display cases or the like which is thoroughly practical and efficient. Another object is to provide a construction of the above nature
10 by means of which the panels are mounted so that they slide smoothly and quietly. Another object is to provide a construction of the above nature which is conveniently and dependably maintained in efficient operating
15 condition. Another object is to provide a construction of the above nature which is capable of being kept clean conveniently. Another object is to provide a construction of the above nature which dependably supports
20 the panels for smooth and easy sliding action irrespective of the care or skill employed by the workman making the installation. Other objects will be in part obvious or in part pointed out hereinafter.

25 The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of
30 which will be indicated in the following claims.

In the accompanying drawing in which are shown one or more various possible embodiments of the several features of this invention,
35 tion,

Figure 1 is a vertical sectional view showing the lower portions of a pair of sliding panels of a display case and their supporting means,
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Figure 2 is a top plan view showing portions of the panel supporting construction;

Figure 3 is a side view, on a smaller scale and broken away, showing the parts through
45 which the section of Figure 1 is taken,

Figure 4 is a view similar to Figure 1 showing a modified construction, and

Figure 5 is a plan view showing a modified construction.

50 Similar reference characters refer to simi-

lar parts throughout the several views of the drawing.

Referring now to the drawing in detail and first to Figure 1, there are shown two upright panels or doors 10 and 11 of a display case. These panels may be employed to close the front or rear of the display case and they are adapted to be slid into overlapping relation to gain access to the interior of the display case. The member 12 represents the bottom or base of the display case and it has associated therewith an elongated groove 13 which may be formed in any suitable manner; in the construction here illustrated the groove 13 is formed by two spaced members 14 and 15 which are secured to the base 12 by any suitable securing means. The lower edges of the panels 10 and 11 are positioned within the groove 13 and, beneath the panels and within the groove are rollers which anti-frictionally support the panels for sliding movement.
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In the construction here illustrated, the panels 10 and 11 have channel pieces 16 and 17 embracing their lower edges and extending throughout their lengths. The bottom surfaces of these channel pieces 16 and 17 rest upon the rollers which support the panels, the rollers 18 being provided for the panel 10 and the rollers 19 being provided for the panel 11. A series of the rollers is provided for each panel and the rollers of each series are held in proper spaced relation by any suitable holding and spacing means. Preferably the spacers take the form of elongated strips of sheet metal bent to have a cross-section in the shape of a U, the spacing member 20 for the rollers 18 and the spacing member 21 for the rollers 19 being clearly shown in Figure 1. Extending between the side walls of the spacer members are short shafts or spindles 22 which pass axially through the rollers, permitting free rotation of the rollers and yet, in conjunction with the spacing members, holding the rollers in predetermined spaced relation as the rollers roll and the spacers move along therewith. As shown in Figure 1, and as may be seen in Figure 3 also, the upper portions of the rollers project through openings in the closed
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upper sides of the spacer members and the lower portions of the rollers project downwardly below the side walls of the spacers.

It may be here noted that display case panels, such as the panels 10 and 11, are frequently made of heavy plate glass and their weight is very substantial. In order that they may slide smoothly and quietly, it is very important that the surfaces engaged by the supporting rollers 18 and 19 be smooth and free from obstruction. The slightest unevenness in the surfaces upon which the rollers roll causes a very undesirable rumbling and vibration when the heavy panels are moved. Also, display cases in which these panels are used are often employed for the purpose of displaying food and it becomes of great importance that the panels and their supporting means be kept clean.

Referring again to Figure 1, secured in the groove 13 is a sheet metal member having a central upright web 23 and a pair of lateral flange portions 24 and 25 which rest flatwise against the base of the groove. This sheet metal member is rigidly secured within the groove preferably by means of suitable securing means such as screws 26 passing downwardly through openings in the parts 24 and 25 and into the display case base 12. The member is formed from a single strip of sheet metal which is bent upon itself to form the upright portion 23 of double the thickness of the sheet metal, the parts 24 and 25 being flanged outwardly at right angles to the part 23.

Above the sheet metal member just described is a second sheet metal member comprising an upright web 27—28, laterally extending portions 29 and 30, and a pair of upright side flanges 31 and 32 which rest against the side walls of the groove. This upper sheet metal member is preferably formed of a single strip of sheet metal, the strip being bent upon itself to provide the upright portions 27 and 28 which embrace the upright web 23 of the lower sheet metal member.

The part 29 provides a track upon which the rollers 18 roll and the part 30 provides a track upon which the rollers 19 roll. The upper sheet metal member, of which the track parts 29 and 30 form a part, is preferably not secured in position in the groove in any way except that a frictional holding may be had between the parts 27 and 28 and the part 23. The surfaces of the track parts 29 and 30 are smooth and regular and free from any openings or screw heads or other obstructions which would interfere with the smooth operation of the rollers. The screws 26 dependably hold the lower sheet metal member in position and the upright web 23 of this member determines the position of the upper sheet metal member and its track portions so that, once the lower member is secured in position, the position of the tracks and walls 27 and

28 is fixed while, at the same time, the screws 26 and their openings are covered up so that they cannot interfere with the operation of the rollers so as to cause rumbling and vibration when the panels are slid.

The side flanges 31 and 32 of the upper sheet metal member rest preferably against the respective side walls of the groove 13 as above mentioned. The rollers 18 and the spacing member 20 move between the flange 31 and the wall 27, and the rollers 19 and the spacing member 21 move between the flange 32 and the wall 28. The parts 31 and 27, and the parts 32 and 28, thus guide the rollers and their spacers in their movement. The upper sheet metal member is formed so that the distances between the parts 31 and 27 and between the parts 32 and 28 are such that the rollers and their spacers fit properly therebetween for smooth and easy action without binding. Thus, the accuracy or inaccuracy with which the walls of the groove 13 are formed has no effect upon the smooth and free action of the rollers, the latter being always dependably guided.

As has been mentioned above, the sheet metal member comprising the parts 27 and 28, the track portions 29 and 30, and the side flanges 31 and 32 is not fastened in the groove and may be easily removed. When the panels 10 and 11 are cleaned, they are ordinarily lifted out of the display case by raising them upwardly and then swinging them outwardly at the bottom. After the panels have been removed, the upper sheet metal member may be lifted out of the groove 13, carrying the rollers and the spacers with it, and the entire structure may be thereupon easily cleaned; when the removable track member is replaced, its position is predetermined by the parts 27 and 28 fitting over the central web 23 of the lower sheet metal member which is permanently secured in place. It may be pointed out also that the parts 27 and 28 preferably project upwardly between the lower portions of the two panels 10 and 11 and hold them in proper spaced relation. In order to facilitate removal of the removable track member, there are preferably provided in the parts 27 and 28 openings 27^a and 28^a which permit of obtaining a grip with the fingers or which may be engaged by an implement such as a button hook.

In the construction shown in Figure 4, the track portions 29 and 30 are provided with central longitudinal ribs 33 and 34 respectively. The rollers 18 and 19 have formed in their peripheries central grooves 35 and 36 with which the ribs 33 and 34 cooperate as the rollers roll. The ribs 33 and 34 are bent from the sheet metal and are made smooth and regular, free from any holes or interruptions in their surfaces, so that the rollers roll thereon smoothly and the panels slide quietly. The coacting ribs and grooves are

advantageous in that they keep the rollers always centered between the side walls of the spaces in which they move and thus prevent a rubbing or scraping between the metal parts as the panels are slid.

Also, in the modification shown in Figure 4, the central vertical web of the bottom sheet metal member is omitted, this member comprising simply a flat base portion 40 resting against the base of the groove and extending from side to side thereof, and having the upright side flanges 31 and 32 which rest against the side walls of the groove substantially as in the form shown in Figure 1, the side flanges 31 and 32 in the form shown in Figure 1 being formed on the upper member while in the form shown in Figure 4 they are formed on the lower member and fastened in the groove therewith. The member 40 with its side flanges is thus substantially U-shape and is permanently secured in the groove by any suitable securing means extending downwardly into the base 12 such, for example, as the screws 26. In this type of construction the parts 27 and 28 of the upper track member form a spacer for the panels just as they do in the form shown in Figure 1, but preferably these two parts 27 and 28 rest flatwise against each other instead of being spaced apart. The upper track member is loosely positioned above the lower member and is conveniently removable by engaging a suitable implement in the opening 27^a. In this construction, as well as in the construction shown in Figure 1, the rollers and their spacing members are guided in their movements by the metal walls 27 and 31 and the metal walls 28 and 32, the smoothness of operation thus being independent of the accuracy with which the groove is formed and being not affected by warping or shrinking of the wood. Also, this construction is quickly and easily cleaned.

In Figure 5 there is shown a construction in which the lower sheet metal member consists of a plurality of spaced short pieces 40^a shaped in cross-section as shown in Figure 4. This effects a saving in metal over a construction in which the lower track member is a continuous member extending the full length of the groove, and the short spaced pieces serve the intended purpose in substantially the same manner.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a supporting means for sliding panels for display cases and the like, in combination, a plurality of rollers adapted to be positioned

beneath the panel to anti-frictionally support the panel for sliding movement, and means to be positioned underneath said rollers to form a track therefor comprising a sheet metal member adapted to be secured flatwise against a base and a second sheet metal member resting upon said first member and removable therefrom and adapted to provide a smooth surface on which the rollers roll.

2. In a supporting means for sliding panels for display cases and the like, in combination, a plurality of rollers adapted to be positioned beneath the panel to anti-frictionally support the panel for sliding movement, and means to be positioned underneath said rollers to form a track therefor comprising a sheet metal member adapted to be secured flatwise against a base and having openings for screws to pass downwardly therethrough into said base, and a second sheet metal member free from openings resting upon said first and removable therefrom, said second sheet metal member being adapted to provide a smooth surface on which the rollers roll free from interference by said screw openings or the screw heads.

3. In a supporting means for sliding panels for display cases and the like, in combination, a plurality of rollers adapted to be positioned beneath the panel to anti-frictionally support the panel for sliding movement, a holder for cooperating with said rollers to hold them in spaced relation, and an elongated sheet metal member adapted to provide a runway for said rollers having a base portion forming a track on which the rollers roll, said sheet metal member being adapted to be positioned in a groove therefor in the display case base and being removable therefrom for cleaning, and sheet metal means adapted to be fixed in said groove under said elongated sheet metal member, one of said sheet metal devices having upright side flanges for guiding said rollers and said holder.

4. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support the panel for sliding movement lengthwise thereof, an elongated sheet metal member positioned in said groove having a base for supporting the rollers, and a pair of upright side flanges for guiding and forming a predetermined path for the rollers in their movement.

5. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support the panel for sliding movement lengthwise thereof, an elongated sheet metal member positioned in said

groove having a base on which the rollers roll, and a second sheet metal member in said groove and by which said first sheet metal member is carried, one of said sheet metal members having a pair of upright side flanges for guiding and forming a predetermined path for the rollers in their movement, said elongated sheet metal member being removable from said groove for cleaning.

6. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support the panel for sliding movement lengthwise thereof, a sheet metal member positioned in said groove and secured against the base thereof by securing devices entering the base, and a second elongated sheet metal member positioned in said groove above said first sheet metal member, said second member having a base portion on which the rollers roll and one of said members having a pair of side flanges for guiding and forming a predetermined path for said rollers in their movement and said second member being removable from said groove for cleaning.

7. In a supporting means for sliding panels for display cases and the like, in combination with a pair of parallel panels adapted to slide into overlapping relation and a display case base having an elongated groove, rollers for anti-frictionally supporting one of said panels, rollers for anti-frictionally supporting the other of said panels, and a sheet metal member positioned in said groove having a base portion resting against the base of said groove and secured in said groove by securing devices passing downwardly from said base portion, and a second sheet metal member positioned in said groove having a central longitudinal web extending upwardly between the lower edge portions of said panels and a pair of base portions one on either side of said web and resting above said base portions of said first member, one of said base portions of said second member forming a track on which said first rollers roll and the other of said base portions of said second member forming a track on which said second rollers roll, and said second member being removable from said groove for cleaning.

8. In a supporting means for sliding panels for display cases and the like, in combination with a pair of parallel panels adapted to slide into overlapping relation and a display case base having an elongated groove, rollers for anti-frictionally supporting one of said panels, rollers for anti-frictionally supporting the other of said panels, and a sheet metal member positioned in said groove having a base portion resting against the base of said groove and secured in said groove by securing devices passing downwardly

from said base portion, and a second sheet metal member positioned in said groove having a central longitudinal web extending upwardly between the lower edge portions of said panels and a pair of base portions one on either side of said web and resting above said base portions of said first member, one of said base portions of said second member forming a track on which said first rollers roll and the other of said base portions of said second member forming a track on which said second rollers roll, one of said members having also upright side flanges one at the outer side of each of said track portions, said side flanges resting adjacent to the respective side walls of said groove and cooperating with said central web portion to guide said rollers in their movements, said second member being removable from said groove for cleaning.

9. In a supporting means for sliding panels for display cases and the like, in combination with a pair of parallel panels adapted to slide into overlapping relation and a display case base having an elongated groove, rollers for anti-frictionally supporting one of said panels, rollers for anti-frictionally supporting the other of said panels, and a sheet metal member positioned in said groove having a central longitudinal upright web, a base portion on one side of said web forming a track on which said first rollers roll and a base portion on the other side of said web forming a track on which said second rollers roll, said sheet metal member being removable from said groove for cleaning and said web portion thereof having an opening therein to facilitate said removal.

10. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support the panel for sliding movement lengthwise thereof, a holder for cooperating and moving with said rollers to hold them in spaced relation comprising a sheet metal member having side flanges exterior of the side faces of said rollers, and sheet metal means positioned in said groove having a base on which the rollers roll and a pair of upright side flanges between which said side flanges of said holder rest and adapted to be engaged thereby to guide said rollers and said holder in their movement and means supporting said sheet metal means in said groove comprising a plurality of spaced sheet metal members of relatively short length in a direction lengthwise of said groove and secured in said groove.

11. In a supporting means for sliding panels for display cases and the like, in combination with a pair of parallel panels adapted to slide into overlapping relation and a display case base having an elongated groove,

rollers for anti-frictionally supporting one of said panels, rollers for anti-frictionally supporting the other of said panels, an elongated sheet metal member positioned in said groove having a central longitudinal upright web, a base portion on one side of said web, securing devices rigidly securing said sheet metal member in said groove, a second elongated sheet metal member positioned above said first and having a central longitudinal web embracing the central web of said first member, a base portion on one side of said web forming a track on which said first rollers roll, a base portion on the other side of said web forming a track on which said second rollers roll and integral side flanges one at the outer side of each of said base portions, said side flanges resting adjacent to the respective side walls of the groove and cooperating with said central web of said upper member to guide said rollers, said upper member being removable from said groove for cleaning.

12. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support a panel for sliding movement lengthwise thereof, of means to be positioned underneath said rollers to form a track therefor, said means including means secured in said groove and an elongated sheet metal member positioned in said groove and having a base for supporting the rollers, said sheet metal member being removably held to said second-mentioned means.

13. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support a panel for sliding movement lengthwise thereof, of means to be positioned underneath said rollers to form a track therefor, said means including means secured in said groove and a sheet metal member interposed therebetween and said rollers and having a base for supporting the rollers, said sheet metal member and said second-mentioned means being shaped to interfit and to cause said sheet metal member to be frictionally held to said second-mentioned means.

14. In a supporting means for sliding panels for display cases and the like, in combination with a display case base having an elongated groove therein and a plurality of rollers adapted to roll in said groove and anti-frictionally support a panel for sliding movement lengthwise thereof, of means to be positioned underneath said rollers to form a track therefor, said means including a sheet metal member secured in said groove and a sheet metal member interposed therebetween and said rollers and having a base for sup-

porting said rollers, one of said sheet metal members having spaced portions between which a portion of the other sheet metal member is received and frictionally held.

15. In a supporting means for sliding panels for display cases and the like, in combination with a pair of parallel panels adapted to slide into overlapping relation and a display case base having an elongated groove, rollers for anti-frictionally supporting one of said panels, rollers for anti-frictionally supporting the other of said panels, a sheet metal member secured in said groove and having means projecting upwardly from the bottom of said groove and a sheet metal member positioned in said groove and having a base forming tracks for said rollers and being shaped to provide a web extending longitudinally thereof and intermediate of the tracks for said rollers, said web and said projecting means interfitting.

In testimony whereof, I have signed my name to this specification this 30th day of January, 1928.

HENRY F. KEIL.