May 2, 1933. H. F. KEIL 1,907,117

CONSTRUCTION FOR DISPLAY CASES AND THE LIKE

Filed March 10, 1928

Fig. 1

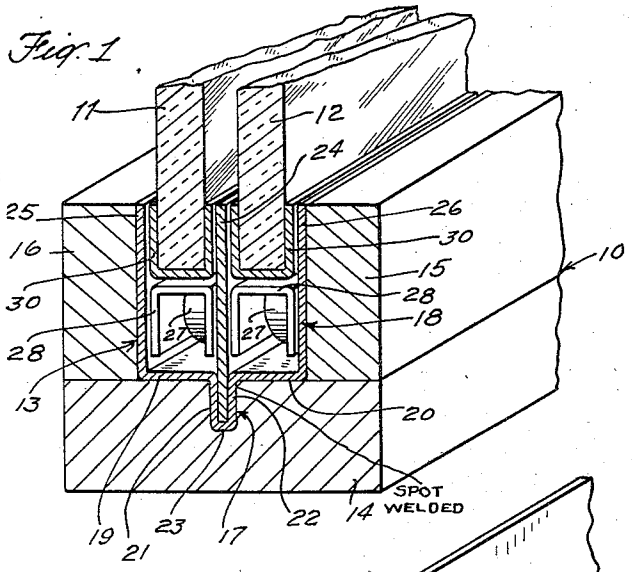


Fig. 2

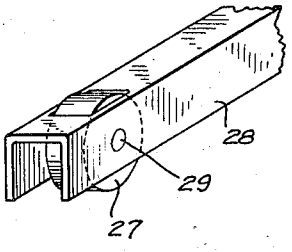


Fig. 3

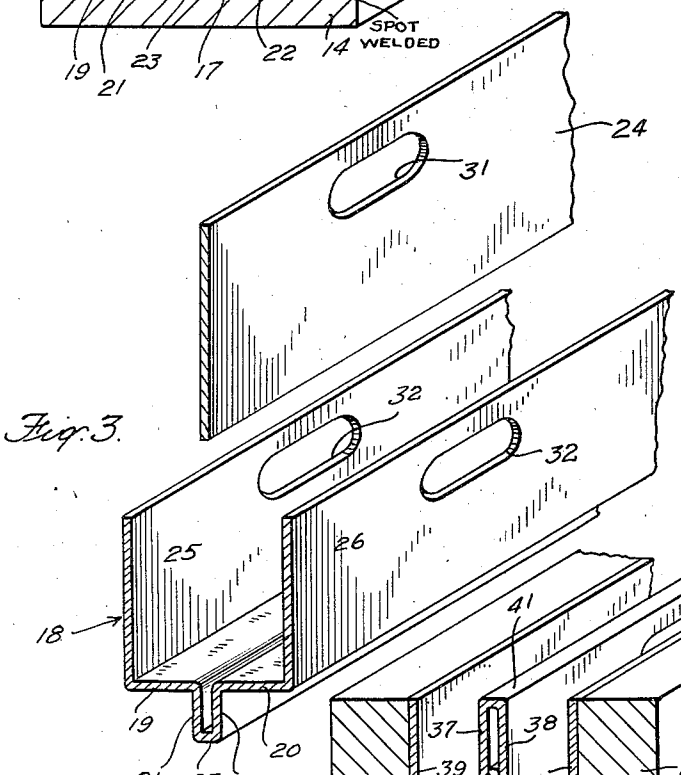
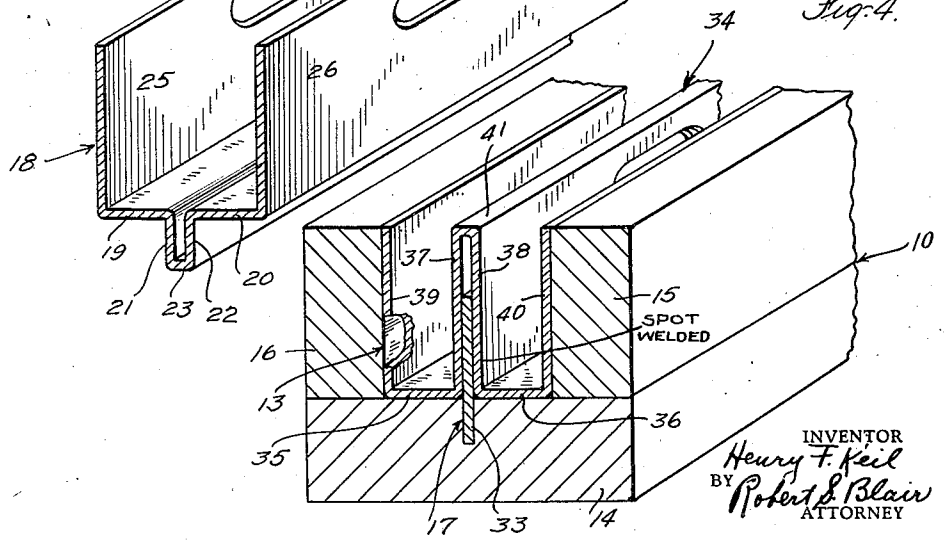


Fig. 4



INVENTOR
Henry F. Keil
BY Robert S. Blair
ATTORNEY

Patented May 2, 1933

1,907,117

UNITED STATES PATENT OFFICE

HENRY F. KEIL, OF SCARSDALE, NEW YORK

CONSTRUCTION FOR DISPLAY CASES AND THE LIKE

Application filed March 10, 1928. Serial No. 260,749.

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

One of the objects of this invention is to provide a construction of the above-mentioned character in which the sliding panels are supported in a thoroughly practical and lasting manner and so that the panels slide smoothly and quietly. Another object is to provide a construction of the above-mentioned nature which will be of inexpensive construction, well adapted for rapid and inexpensive manufacture and capable of being assembled rapidly and inexpensively, all without detracting from efficiency of action and durability of construction. Another object is to provide a mounting for sliding panels capable of being quickly installed without necessitating undue skill. Another object is to provide a sliding panel mounting which may be easily and conveniently kept clean. Another object is to provide a sliding panel mounting of substantial strength and adapted to coact with the display case construction in a manner to reinforce the latter. Another object is to provide a construction of the above-mentioned nature which will be well adapted to meet the varying conditions of hard practical use. Other objects will be in part obvious or in part pointed out hereinafter.

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 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,

Figure 1 is a fragmentary perspective view partly in vertical cross-section showing the lower portions of a pair of sliding panels of, for example, a display case;

Figure 2 is a detached perspective view of a possible form of device for holding in spaced relation the rollers with which the panels and other structural features of this invention coact;

Figure 3 is a detached perspective view of certain parts of the structure of Figure 1, and

Figure 4 is a view similar to that of Figure 1 but showing a possible modified form of construction, the panels and anti-friction rollers being omitted from Figure 4 in order to show the construction more clearly.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing and more particularly to Figure 1, there is generally indicated at 10 the base portion of an opening in, for example, a display case, the opening being adapted to be closed by, for example, two substantially upright panels or doors 11 and 12. The panels may be employed to close, for example, the front or rear of a display case and are adapted to be slid into overlapping relation to gain access to the interior of the case. The panels 11 and 12 may be of any suitable material or construction and may, for example, be of glass. The body portion 10 of the frame of the display case may be made, for example, of wood and is provided with a lengthwise extending groove 13 of square or rectangular cross-section; this groove 13 may conveniently be formed by making the base portion 10 of three assembled members, such as a base member 14 and two spaced members 15 and 16 secured thereto.

The base portion 10 is provided with a slot 17 extending lengthwise thereof and of suitable depth and width. This slot 17 may, for example, be cut into the base member 14 and extends centrally along the bottom of the groove 13.

Within the groove 13 and extending into the slot 17 there is received a sheet metal member generally indicated at 18 (see also Figure 3) and of sufficient length or made up in a sufficient number of individual lengths to extend throughout the length of the groove 13 and of the slot 17. The sheet metal member 18 is shaped to provide a pair of laterally extending base portions 19 and

20 connected by a vertically extending double wall web 21—22, the portions 21 and 22 of which are spaced apart and are connected by a horizontally extending portion 23. The depending portions 21–23–22 are so shaped and spaced and the dimensions of the slot 17 are so selected that the former will be snugly received and fitted into the latter. The slot 17 also accommodates the lower portion of a relatively heavy sheet metal plate-like member 24 (see also Figure 3) the lower portion of the latter having the portions 21–23–22 of the sheet metal member 18 interposed between it and the walls of the slot 17, and thus the slot 17 holds the plate-like member 24 in upright position and, moreover, substantially centrally with respect to the groove 13. The plate-like member 24 is of a length in a direction along the groove 13 substantially commensurate with the length of the sheet metal member 18.

The sheet metal member 18 is preferably also provided with a pair of vertically extending flanges 25–26 adapted to be snugly received between the side walls of the groove 13 and substantially line the latter and received between the flange 25 and the plate member 24 and supported upon the plane portion 19 of the sheet metal member 18 is a series of rollers, one of which is indicated at 27; the rollers 27 are held in proper spaced relation in a direction lengthwise of the groove 13 by means of any suitable holding and spacing arrangement conveniently taking the form of elongated strips of sheet metal 28 bent to have a cross-section in the shape of a U, as is more clearly shown in Figure 2. The rollers 27 are received between the side walls of the U-shaped members 28 and are rotatably held with respect thereto by shafts 29, the upper portions of the rollers projecting through suitable openings in the closed upper face of the spacer member 28 and the lower portions of the rollers projecting downwardly below the side walls of the members 28. These rollers and spacers are interposed between the panel 11 and the horizontal portion 19 of the sheet metal member 18 and thus anti-frictionally support the panel for sliding movement. A similar roller construction is interposed between the panel 12 and the horizontal portion 20 of the sheet metal member 18.

The flat portions 19 and 20 resting preferably against the bottom wall of the groove 13 thus provide flat and even surfaces along which the rollers 27 may move as the panels are moved, and since the panels 11 and 12 are frequently made of heavy plate glass and thus are of substantial weight, the sliding movement of the panels takes place quietly and smoothly and without such irregularities and rumbling and vibration as would result were the track along which the rollers move interrupted by improperly driven screws or the like, or by countersunk openings for the latter, for example. Moreover, the vertical members 25–24 and 24–26 provide dependable guides for the moving rollers and spacers therefor as well as for the lower edge portions of the panels 11–12 which are preferably provided with sheet metal channels 30 for engagement with the rollers 27.

After the bottom member 10 has been provided with the groove 13 and the slot 17 as hereinabove described, the sheet metal member 18 with the plate member 24 inserted into the depending central portions of the latter is simply inserted into the groove 13 and the depending portions 21–23–22 inserted into the slot 17. The latter portions preferably fit relatively snugly into the slot 17 and the parts are preferably so proportioned that they are thus held in assembled relation frictionally. The sheet metal member 18 with the plate member 24 acts in a highly advantageous manner in strengthening the frame-work of the casing. For example, the various angle portions of the member 18, reinforced by the relatively heavy plate member 24 are relatively rigid and being interfitted and interlocked with the base portion 10 dependably reinforce the latter. More particularly, should the member 10 or any of the parts thereof be warped the interfitted and inserted metal members act to straighten out the warping and, moreover, act dependably to prevent any subsequent tendency of the wood portion 10 or any parts thereof from warping.

The panels 11 and 12 are so related to the upper portion of the casing that by lifting the panels they may be lifted out of the guiding ways in which the rollers 27 are received and upon being swung outwardly may be removed. The rollers 27 may then be readily removed and the plate member 24 and the sheet metal member 18 may be lifted out of the groove 13 and the slot 17 and any débris that may have collected in the guiding ways thus readily removed. Thus the mounting may be readily and quickly disassembled and easily wiped clean. In order to facilitate the removal of the metal parts the plate member 24 (see Figure 3) is provided with openings 31 at appropriate intervals, by means of which the member 24 may be engaged by the fingers or by an appropriate implement and thus lifted out of the slot 17. Preferably the member 24 is secured to the member 18 so that the latter is lifted out with the former; conveniently these two parts may be secured together by spot welding, for example, the portions 21 and 22 to the lower portion of the plate member 24. It is to be understood, however, that many features of my invention may be achieved without thus se-

curing these parts together and I may, for example, provide the vertical flanges 25–26 of the member 18 with appropriate openings 32 at suitable intervals to permit the member 18 individually to be engaged and lifted out of the groove 13 and slot 17.

In the construction shown in Figure 4 the wood bottom portion 10 of the show case construction is provided with a groove 13 and a slot 17 substantially as above-described in connection with Figure 1.

Into the slot 17 is inserted a metal plate member 33 preferably of somewhat heavier material, the plate member 33 being snugly fitted into the slot 17. Within the groove 13 and over the plate member 33 is inserted a sheet metal member generally indicated at 34, shaped to provide two horizontally spaced lateral portions 35–36 adapted to rest against the bottom of the groove 13 and adapted to provide a smooth and unbroken track along which rollers such as the rollers 27 of Figure 1 may roll. The lateral portions 35–36 extend laterally of two vertically extending substantially central portions 37–38 spaced horizontally from each other and connected by a horizontal portion 41. The vertical members 37–38 are spaced apart sufficiently to snugly receive therebetween the plate member 33, the latter being preferably of somewhat less height than the members 37–38. The outer portions of the horizontal members 35–36 are provided with vertically extending flanges 39–40 adapted to fit against the side walls of the groove 13 and adapted to coact respectively with the members 37–38 in guiding the rollers 27 and the panels 11–12, as will be clear from what has been hereinabove set forth in connection with Figure 1.

The plate member 33 in thus extending substantially into the bottom member 10 of the frame may thus substantially reinforce the latter and in coaction with the sheet metal member 34 which is fitted about the member 33 the latter dependably strengthens and reinforces the bottom portion of the frame. If desired, the plate member 33 may be secured to the sheet metal member 34, for example, by spot welding the vertical portions 37–38 to the upper portion of the plate member 33. If the parts are thus secured together it will be seen that they may be readily lifted out of the groove 13 and slot 17 for cleaning the guiding ways for the rollers while, if they are not secured together, it is sufficient simply to lift the member 34 out of the groove 13 and leave the plate member 33 upstanding in the slot 17. In either case the tracks along which the rollers roll may be readily cleaned.

It will thus be seen that there has been provided in this invention a mounting for the sliding panels of a show case construction in which the several objects hereinbefore noted, as well as many thoroughly practical advantages, are successfully achieved. It will be seen that the mounting may be quickly assembled and also readily taken apart for cleaning, and that a dependable and highly advantageous reinforcement of the show case frame is achieved. In this latter connection, it might be pointed out that the interfitted members, such as the plate member 24 and the sheet metal member 18 of Figure 1, provide a peculiarly advantageous reinforcing cross-section, it being noted that the horizontal track portions 18 and 20 of Figure 1 extend substantially at right angles but through the plane of the vertical plate member 24, and thus form a construction of great rigidity, of great resistance to bend in any direction, and thus well adapted to correct or counteract the warping tendency of the wooden frame members with which these parts are peculiarly adapted to coact. It will furthermore be noted that such advantages as the latter are also dependably achieved by the modified form of construction illustrated in Figure 4. It will furthermore be seen that the construction is well adapted to meet the varying conditions of hard practical use.

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 construction of the character described, in combination, a frame member having a longitudinally extending groove and a slot extending substantially centrally along the bottom of said groove, a pair of parallel panels adapted to slide in a direction lengthwise of said groove, movable rollers for anti-frictionally supporting one of said panels, movable rollers for anti-frictionally supporting the other of said panels, an elongated sheet metal member having a base portion resting against the bottom of said groove and on one side of said slot and forming a track on which said first rollers roll and having a base portion resting against the bottom of said groove and on the other side of said slot for forming a track on which said second rollers roll, and a plate-like member accommodated in said slot and extending upwardly into said groove and between said two base portions and adapted to separate and guide said first-mentioned rollers relative to said second-mentioned rollers, said base portions having extensions adjacent their inner edges bent to extend vertically on either side of said plate member and connected by a portion

extending over a longitudinal edge of said plate member.

2. In construction of the character described, in combination, a frame member having a longitudinally extending groove and a slot extending substantially centrally along the bottom of said groove, a pair of parallel panels adapted to slide in a direction lengthwise of said groove, movable rollers for anti-frictionally supporting one of said panels, movable rollers for anti-frictionally supporting the other of said panels, an elongated sheet metal member having a base portion resting against the bottom of said groove and on one side of said slot and forming a track on which said first rollers roll and having a base portion resting against the bottom of said groove and on the other side of said slot for forming a track on which said second rollers roll, said sheet metal member being bent downwardly at the adjacent edge portions of said base members to provide two spaced wall members extending into said slot, and a plate-like member received between said two wall members and extending in an upward direction between said first-mentioned rollers and said second-mentioned rollers.

3. In construction of the character described, in combination, a guiding track for the rollers of a pair of sliding panels and along which said rollers roll comprising a sheet metal member bent to provide a portion of U-shaped cross section, each vertical member of which portion is bent at right angles thereto adjacent its end, and a sheet metal member fitted into said U-shaped portion and projecting therefrom beyond the plane of said bent portions.

In testimony whereof, I have signed my name to this specification this 29th day of February 1928.

HENRY F. KEIL.