

Feb. 3, 1959

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DRAWER GUIDE

Filed March 28, 1955

2 Sheets-Sheet 1

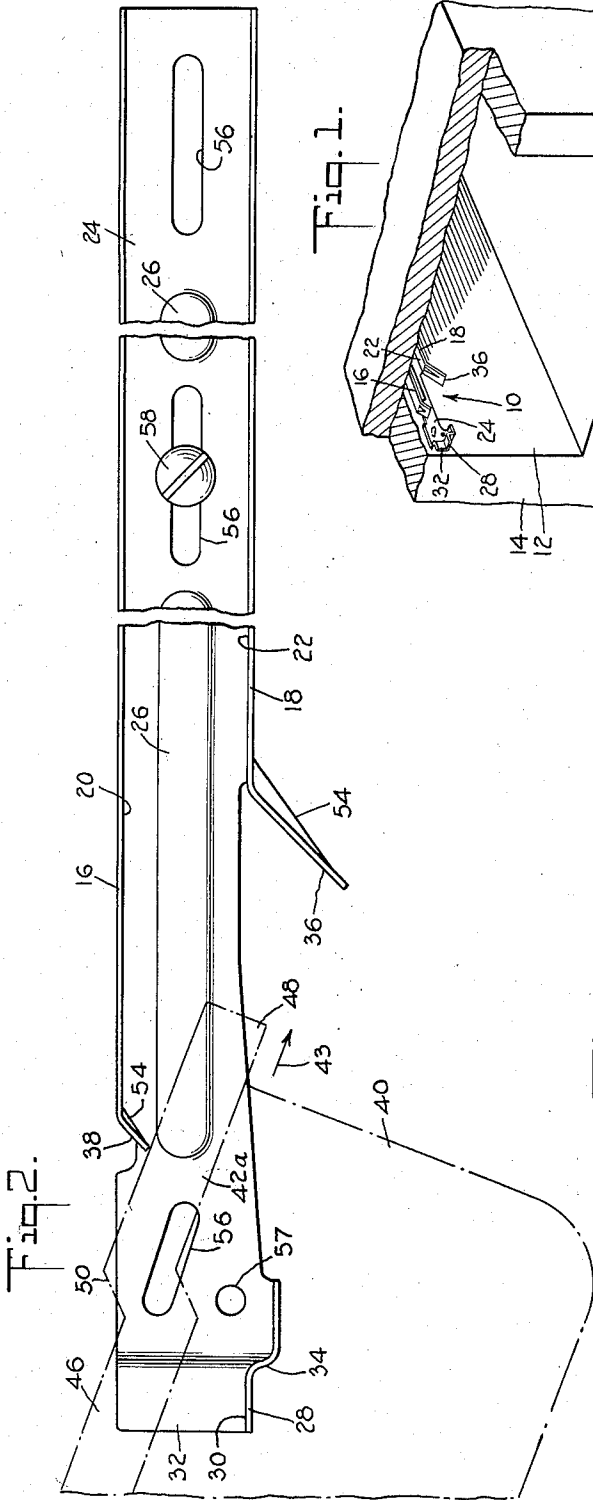


Fig. 1.

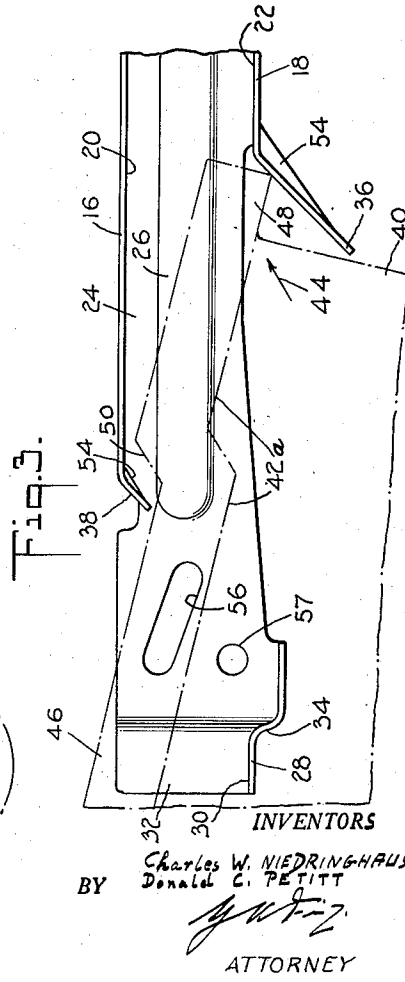


Fig. 3.

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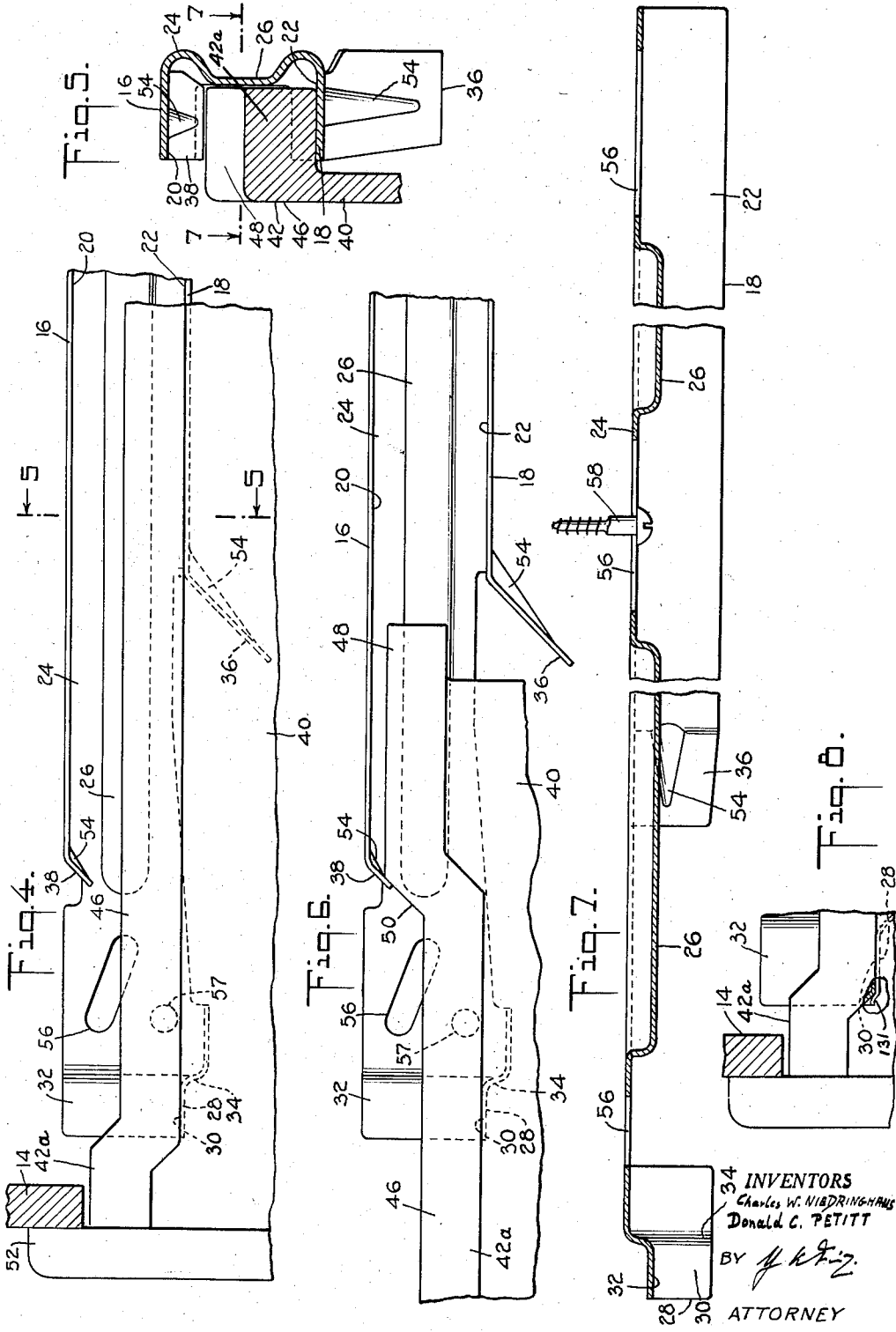
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DRAWER GUIDE

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Application March 28, 1955, Serial No. 497,212

4 Claims. (Cl. 312—345)

This invention relates to drawers for articles of furniture and/or built-in closets, and more particularly to improvements in the cooperating guiding structure on the drawers and their guides.

An object of the invention is to provide a metal channel guide device for sliding drawers peculiarly adaptable for drawers molded from plastic material, although it will be obvious the same may function with metal drawers.

In this regard, novel features of the invention reside in the manner in which the drawer is accurately guided into cooperation with the channel guide, the unique manner by which it is limited in its sliding movement relative to the channel guide, and the cooperative arrangement of structure on both the drawer and guide whereby the drawer is supported in suspension from the guide.

Other and further objects of my invention reside in the structures and arrangements hereinafter more fully described with reference to the accompanying drawings in which:

Fig. 1 is a partial perspective view of the front of an article of furniture showing a part of the novel guide channel construction in accordance with the principles of the invention.

Fig. 2 is a side elevational view of the novel guide shown in Fig. 1 and including the manner of sliding the drawer into the guide.

Fig. 3 is a side elevational view similar to Fig. 2 showing only the front portion of the guide, and with the drawer being guided thereinto by the guide member, while

Fig. 4 shows the drawer supported in suspension from the guide.

Fig. 5 is a sectional view of the guide channel and a portion of the drawer taken along lines 5—5 of Fig. 4.

Fig. 6 is a partial side elevation of the guide channel and drawer with the drawer in its extended open position.

Fig. 7 is a sectional view of the guide channel as taken along lines 7—7 of Fig. 5.

Fig. 8 is a partial side view of a modified embodiment of a guide channel with the drawer therein and with parts thereof broken away to provide a clearer understanding of the same.

Referring now to the drawings and in particular to Fig. 1, the novel drawer channel 10, constructed of metal, is shown secured in position on one side of a drawer opening 12 in an article of furniture 14. The channel 10 is elongated to extend for the distance of movement of a drawer in the opening 12. Provided in the channel 10 is a guideway (not numbered) defined by spaced upper and lower runners or flanges 16 and 18 respectively.

The upper runner 16 has a surface 20 (best seen in Fig. 5) which faces a surface 22 (best seen in Fig. 7) on the lower runner 18 to define the guideway therebetween. Interconnecting the upper and lower runners 16 and 18 is an edge wall or web 24 having a plurality

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of spaced detents or inwardly directed projections 26 which serve as guide bearing surfaces. The bearing surfaces 26 extend into the guideway and between the upper and lower runners, and although a plurality of bearing surfaces have been disclosed, at least one would suffice for reasons to be made clear.

At the forward end of the drawer channel 10 is a support 28. The support 28 is spaced from the runner 18 but has a support surface 30 which is horizontally aligned with the lower runner surface 22, and also an inwardly directed projection or bearing surface 32 which is aligned with the bearing surfaces 26. A reinforcing bend 34 resists bending forces applied on the support surface 30 when the same is in use. Provided on the channel 10 is a guide means 36 extending at a predetermined angle downwardly from the forward end of the lower runner 18 and below the guideway of the channel. Extending at a predetermined angle downwardly into the path of the guideway and from the forward end of the upper runner 16 is a limit means 38.

A drawer 40, shown in dot-dash lines in Figs. 2 and 3 and in full lines in Figs. 4, 5 and 6, is adapted to slide in the guideway of the drawer channel 10 and be supported in suspension therefrom. The drawer 40 includes side walls 42 having laterally projecting flanges 42a of substantial height. In the drawings it will be noted that only one sidewall flange 42a and its forward portion, and only a corresponding drawer channel 10 are shown for purposes of illustration although it will be obvious that there will be two such channels, one at each side of the opening 12. The side flanges 42a are adapted to slide in the guideway between the upper and lower runners 18 and 20 and to support the drawer 40 in suspension from the lower runner surface 22. In order to introduce the side flanges 42a of the drawer into the guideway of the drawer channel 10, the drawer is tilted upwardly at its front end at an angle as best seen in Fig. 2, whereby the side flanges 42a will pass between the horizontally staggered support 28 and the limit member 38.

Continued movement of the side wall flanges into the guideway channels 10 and toward the rear thereof (see arrow 43 in Fig. 2), will bring the rearward portions of the side flanges 42a into abutment with the guide member 36 (see Fig. 3). The angle of the guide member 36 is so predetermined as to direct the side flanges 42a of the drawer 40 upwardly into the guideway (see arrow 44 Fig. 3), in response to continued movement of the drawer. Once the side flanges 42a are positioned between the upper and lower runners 16 and 18 their substantial heights provide bearing surfaces which ride against the inwardly projecting bearing surfaces 26 and 32 as the drawer 40 is slid back and forth in the drawer opening 12.

Referring now to Figs. 2 to 6 it will be noted that the side flanges 42a are provided with a depressed runner portion 46 and a rearward raised portion 48 each of which, as a result of their substantial height, enables the side wall 42 to ride against the bearing surfaces 26 and 32. The connecting portion 50 between the raised and depressed portions 48 and 46 provides a limit means on the side wall flange 42a, and is directed at the same angle as the limit means 38 on the channel 10.

When the drawer 40 is moved back and forth in the channels 10 its movement is limited in the closing direction by a front piece 52 (Fig. 4), on the drawer abutting against the sides of the drawer opening 12, while its opening movement is limited by the drawer limit means 50 abutting the channel limit means 38. If it is desired to remove the drawer 40 from the opening 12 and from the side drawer channels 10, the drawer is moved in an opening direction until the limit means 50 abuts

and cooperates with the member 38. The drawer is then tilted to an angle greater than the angle of the limit means 38 so that the rearward portion 48 of the side wall flange 42a moves between the staggered guide member 36 and the limit member 38 with the depressed runner 46 and subsequently the raised runner 48 sliding on the support surface 30 until the drawer is removed.

Because of the impacts applied to the limit means 38 and the guide means 36 by the drawer 40 during its manipulations, rib means 54 are formed on each of them and between their respective runners to reinforce the same. Securing openings 56 and 57 are defined in the edge wall 24 of each of the drawer channels 10 to provide access for screws 53 (Figs. 2 and 7) or other securing means. It will be noted that each of the securing openings 56 are elongated to permit adjustment of the channel 10 relative to the walls of the opening 12 to which they are to be secured. After the channel 10 has been adjusted to its desired location a screw 53 may then be applied to the opening 57 to anchor the same from further adjustment.

In the embodiment shown in Fig. 8, the support surface 30 is provided at its entrance end with a stop lip 131. The lip 131 is bent upwardly into the guideway from the end of the surface 30 to provide a rest against which will seat the lower surface of the rear raised portion of the side wall 42, as best seen in Fig. 8. Hence, the stop lip 131 serves to restrain and hold the drawer to oppose accidental displacement or removal of the same from its closed position.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

We claim:

1. Drawer apparatus comprising a drawer having side walls with first laterally projecting flange portions extending longitudinally of the drawer adjacent the inner end thereof, second laterally projecting flange portions extending longitudinally of the drawer forwardly of said first portion and at a lower level, and a pair of fixed guide channels for receiving said drawer flange portions, each said guide channel comprising an upper flange, a lower flange, and a web connecting said flanges and spacing them vertically by a distance greater than the vertical distance between the upper surface of said first flange portion and the lower surface of the second flange portion, said upper flange terminating at its front end in a stop extending downwardly and having its lowest

portion spaced vertically above the upper surface of the lower flange by a distance greater than the vertical width of said second flange portion, said lower flange terminating at its front end in a downwardly extending guide, said guide being spaced inwardly of the channel from said stop by a distance greater than the length of said first drawer flange portion, and a pair of fixed supports aligned horizontally with said lower flanges and spaced outwardly of the drawer opening from said stops, so that the drawer flange portions may be inserted in the guide channels by tilting the inner end of the drawer downwardly between said supports and the front ends of said lower flanges, far enough so that the first flange portions may move under the stops, moving the drawer inwardly in the tilted position until the inner ends of the first flange portions strike the guides, then bringing the inner end of the drawer upwardly so that the first drawer flange portions move between the respective stops and guides into alignment with the guide channels, and then sliding the drawer inwardly to move both the first and second drawer flange portions into the channels.

2. Drawer apparatus as defined in claim 1, in which said second flange portions terminate inwardly of the outer end of the drawer, and said supports are provided on their outer ends with means adapted to engage the outer ends of said second flange portions when the drawer is closed, to hold the drawer latched in its closed position.

3. A drawer comprising side walls having laterally projecting flanges on either side thereof, each said flange including a first inner horizontal portion extending longitudinally of the drawer a substantial distance from the inner end thereof, a second horizontal portion extending longitudinally of the drawer outwardly of said inner portion and at a lower level, said drawer being insertable in a drawer opening by manipulation past two fixed obstruction on each side thereof, the two obstructions on each side being spaced longitudinally a distance greater than the length of said innermost flange portion and spaced vertically a distance less than the spacing between the upper surface of the uppermost flange portion and the lower surface of the lowermost flange portion.

4. A drawer as defined in claim 3, in which said flanges include diagonal portions connecting said first and second portions, said diagonal portions being effective upon a horizontal outward movement of said drawer to engage one of said obstructions and to stop said outward movement.

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