Nov. 7, 1967 R. L. ROPIEQUET ETAL 3,351,406

DRAWER GUIDE

Filed July 23, 1965

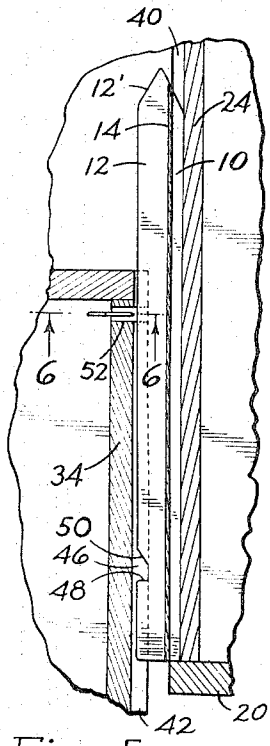


Fig. 5.

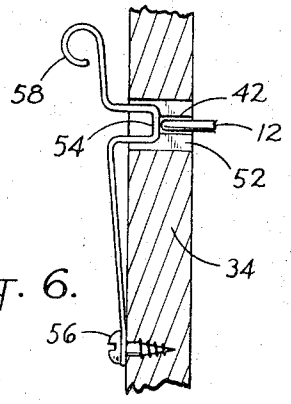


Fig. 6.

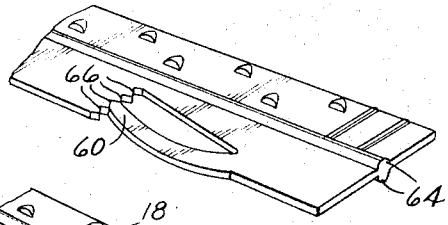


Fig. 8.

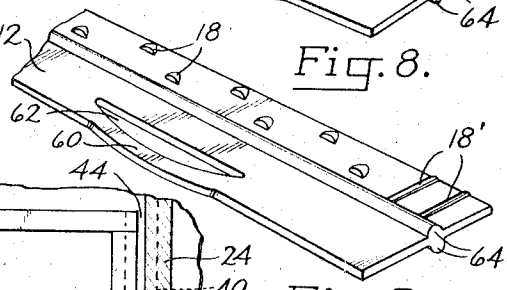


Fig. 7.

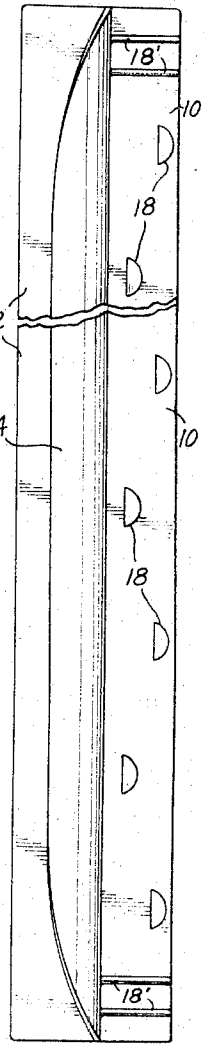


Fig. 1.

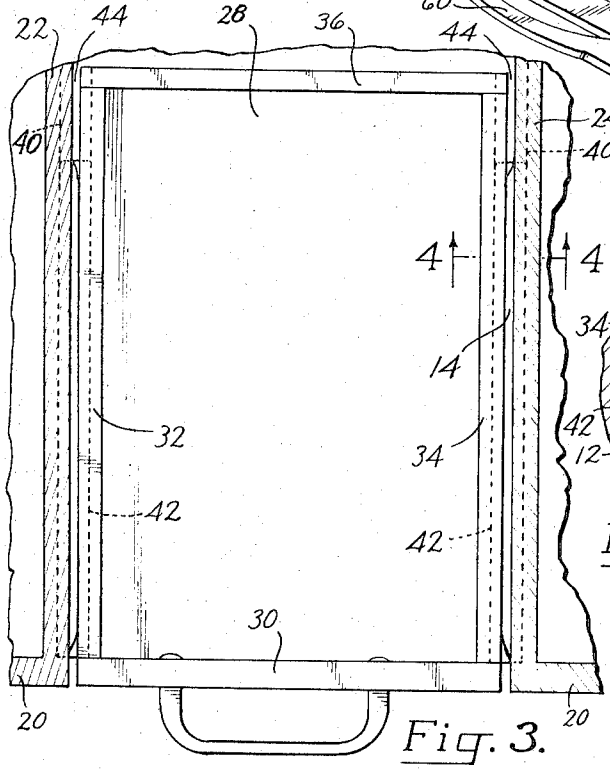


Fig. 3.

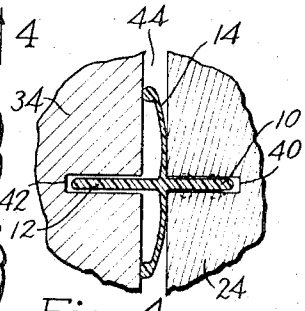


Fig. 4.

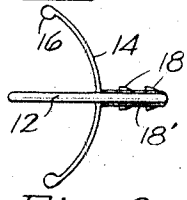


Fig. 2.

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DRAWER GUIDE

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ABSTRACT OF THE DISCLOSURE

A one-piece drawer-supporting guide has an anchor flange section adapted to be secured in a groove in a structural member, a support section adapted to be received freely in a groove in a drawer side wall, and a resilient spacer on the support section arranged for sliding engagement of the drawer side wall to space the latter from the adjacent structural member.

Background of the invention

This invention relates to the support of drawers in cabinets or the like, and more particularly to a novel drawer-supporting guide.

Drawer guides provided heretofore generally have been integrated with the cabinetry during manufacture, and therefore are of special construction and size for each type and size of cabinet structure. The guides also generally involve a number of pieces which increases the cost of manufacture and assembly. Additionally, prior guides have generally provided a fixed clearance between the cabinetry and drawer, thus requiring a rather high degree of precision of manufacture in order to avoid binding of the drawer or excessive space between the parts.

Summary of the invention

Broadly, the present invention provides a one-piece drawer supporting guide which is adapted for mounting simply by providing longitudinal grooves in adjacent portions of a cabinet structure and a drawer, with means on the guide for spacing the drawer from the cabinetry structure.

It is by virtue of the foregoing basic concept that the primary objective of the present invention is achieved, mainly to overcome the disadvantages of prior guide constructions enumerated hereinbefore. The guide of the present invention is further characterized by the following features and advantages:

The guide is of one piece construction, adaptable advantageously to mass production by conventional techniques of plastic molding.

The guide is installed in a cabinet or the like simply by pressing it into a groove provided in the latter and mounts a drawer by means of a similar groove in the drawer.

The guide serves to maintain the drawer in resiliently spaced relation to the cabinet or the like, thereby eliminating binding and promoting optimum freedom of movement of the drawer.

Although made of synthetic plastic material in relatively thin section, the guide is extremely strong and stable.

The guide may be provided in but a single size to accommodate drawers of widely varying dimensions.

The single piece guide may include means by which to inhibit full retraction of the drawer from the cabinet or the like, as well as means to limit the movement of the drawer into the cabinet.

The guide is of extremely simplifid construction for economical manufacture.

The foregoing and other objects and advantages of the

present invention will appear from the following detailed description, taken in connection with the accompanying drawing of the preferred embodiments.

Brief description of the drawing

FIG. 1 is a foreshortened plan view of a drawer guide embodying the features of the present invention;

FIG. 2 is an end view as viewed from the bottom in FIG. 1;

FIG. 3 is a fragmentary plan view, partly in section, showing a pair of the drawer guides mounted on a cabinet or the like and supporting a drawer therebetween;

FIG. 4 is a fragmentary sectional view taken on the line 4—4 in FIG. 3;

FIG. 5 is a fragmentary plan view, partially sectioned, of a cabinet and drawer in association with a modified form of drawer guide embodying features of the present invention;

FIG. 6 is a fragmentary sectional view taken on the line 6—6 in FIG. 5;

FIG. 7 is a fragmentary perspective view of a further modified form of drawer guide embodying the features of the present invention; and

FIG. 8 is a fragmentary perspective view of still another modified form of drawer guide embodying the features of this invention.

Description of the preferred embodiments

Referring first to the embodiment illustrated in FIGS. 1–4, the drawer guide comprises an elongated member having an anchor flange section **10** which preferably extends the full length of the member, and a similar drawer-supporting section **12** which extends laterally in the direction opposite the flange section. Projecting outwardly from the inner side of the support section **12** and extending angularly toward the outer side thereof, is a resilient web **14**. In the preferred embodiment illustrated, two such webs are provided, one projecting from each of the opposite surfaces of the support section. The outer edge of the web preferably is enlarged as an elongated bead **16**, for purposes explained more fully hereinafter.

Projecting from at least one, and preferably both surfaces of the anchor section **10** are a plurality of spaced barbs **18**, or other suitable forms of projections, and also a plurality of transversely elongated wedge-shaped ribs **18'** at the opposite ends of the section **10**, all of which serve as grippers for securing the anchor flange section to a cabinet or the like, as explained hereinafter.

The supporting drawer guide described hereinbefore is utilized in pairs for supporting a drawer for reciprocative movement spaced structural members of a cabinet or the like. Thus, referring particularly to FIGS. 3 and 4 of the drawing, there is shown for purposes of illustration a portion of a cabinet or the like which includes a front panel **20**, and a pair of laterally spaced, vertically extending walls **22** and **24** which constitute the structural members between which a drawer is to be supported. The drawer illustrated in the drawing includes a bottom member **28** from the perimeter of which extend the upstanding front plate **30**, side walls **32** and **34** and back wall **36**.

For use of the drawer guide described hereinbefore, there is provided in the confronting faces of the spaced cabinet walls **22** and **24** the horizontally aligned elongated grooves **40**. Conveniently, these grooves may be formed as saw kerfs in cabinets made of wood. The grooves are dimensioned in depth and width to receive therein the anchor flange section **10** of a pair of the guides. The barbs **18** engage the groove-defining sides of the cabinet wall to prevent lateral extraction of the anchor

flange section, and the ribs **18'** prevent longitudinal displacement of the anchor flange relative to the groove.

Similarly, there is provided in the outer faces of the drawer side walls **32** and **34** the elongated grooves **42** which are arranged to align with the grooves **40** when the drawer is installed in the cabinet opening. The grooves **42** are dimensioned to receive freely therein the support sections **12** of a pair of guides.

As best illustrated in FIG. 3, the elongated guides are secured in the cabinet walls with their front ends abutting the inner side of the front panel **20**. By this preferred arrangement, the front end of the drawer-support section **12** abuts the inner side of the front plate **30** of the drawer (the groove **42** in the side wall of the drawer terminating at the front plate **30**), and thus forms a stop which limits the inward movement of the drawer to the point where the front plate is flush with the front panel of the cabinet.

The rearward end of the drawer guide may terminate a substantial distance forwardly of the rear wall of the drawer when the latter is in closed position, without adversely limiting the supporting capabilities of the guide. Thus, although drawers may vary considerably in depth, for example from 15 to 30 inches, a single length of drawer guide, preferably about 12 inches long, may be utilized in all cases.

To facilitate the installation of the drawer in the cabinet, the forward ends of the resilient webs **14** are curved arcuately rearward, as illustrated in FIG. 1. The rearward ends of the webs are similarly contoured, merely for symmetry so that the drawer guide may be installed on either of the spaced cabinet side walls.

As the drawer is inserted between the cabinet walls, with the support sections **12** of the guides entering the grooves **42** in the drawer side walls, the beads **16** are engaged slidably by the outer surfaces of the drawer side walls and the webs **14** flex resiliently toward the inner surfaces of the cabinet side walls, as shown by comparison of FIGS. 2 and 4.

It will be noted in FIG. 4 that the webs **14** serve to space the side walls of the drawer resiliently from the cabinet side walls. By this means any lateral force applied to the drawer is resisted resiliently by the webs, preventing binding between the drawer and cabinet and tending to maintain the drawer in spaced parallel alignment with the cabinet side walls.

Furthermore, the substantial degree of lateral displacement of the resilient webs accommodates a substantial degree of variation in the space **44** between the side walls of the drawer and cabinet. Accordingly, the degree of tolerance in the manufacture of the cabinet and drawer is rendered far less critical with the use of the drawer guides of the present invention. For example, although the end view of the drawer guide shown in FIG. 2 is approximately twice actual scale, the guide accommodates a variation of about plus or minus ⅛" in drawer width, compared with the spacing between the cabinet side walls.

The drawer guide described hereinbefore may be made of metal or of various types of synthetic plastic material, such as the acetal resins (e.g. Delrin), polymers of tetrafluorethylene (Teflon), linear polyethylene resins, and other low friction synthetic resins. The primary advantage of Delrin resides in its substantial strength. For example, although the end view of FIG. 2 is approximately twice actual scale, the pair of drawer guides mounted in the manner illustrated in FIG. 3 are capable of supporting a drawer weighted in excess of 200 pounds. Polyethylene has higher cold flow than Delrin, and thus has the advantage that the webs **14** will set to the dimension of the space **44** when the drawer is installed, thereby reducing the lateral tension on the drawer for easier sliding movement.

Referring now to the modification shown in FIGS. 5 and 6, the guide of FIG. 1 is modified to the extent of removing portion of the support section **12** adjacent the

front end thereof to provide a notch **46** having a front edge **48** substantially normal to the longitudinal axis of the guide, and a rearward edge **50** which extends angularly outward toward the rear end of the guide. The notch functions as a stop to inhibit full retraction of the drawer from the cabinet, and to this end there is provided on the associated drawer side wall **34** adjacent the rear end of the latter, a narrow opening **52** which traverses the groove **42** and receives freely therein the catch sections **54** formed by an offset intermediate portion of a resilient wire. One end of this wire is secured to the drawer side wall, as by the screw **56**, and the opposite end is shaped to provide a finger pull tab **58**.

As the drawer is pulled outward from the cabinet, the catch section **54**, which normally is biased resiliently inward in the opening **52**, engages the tapered rearward end **12'** of the support section **12** and thus is cammed outward to slide along the edge of the support section. As the drawer approaches full retraction from the cabinet, the catch section **54** enters the notch **46** and abuts the front edge **48** thereof, thereby preventing further retraction of the drawer. If full retraction is desired, the pull tab **58** may be gripped between the fingers and pulled laterally away from the drawer side wall **34**, thereby removing the catch section **54** from the notch **46**.

Referring now to FIG. 7, the resilient spacer means provided by the web members of the previously described embodiments is provided by a plurality of laterally resilient webs **60** projecting from the outer side of the support section **12** at longitudinally spaced intervals along the length of the latter. These webs are disposed substantially in the plane of the support section and are adapted to be received freely within the groove **42** provided in the side wall of the drawer for sliding engagement with the inner side of the groove.

Each web **60** projects slightly outward from the outer edge of the support section, and its inner side is defined by the adjacent elongated opening **62** provided in the support section, as illustrated. The central longitudinal ribs **64** between the anchor flange section **10** and support section **12** serve to limit the penetration of the anchor flange section into the groove **40** in the cabinet side wall, in the same manner as the webs **14** of FIG. 1.

In the modification of FIG. 8, the web **60** of FIG. 7 is secured to the support section **12** only at one end, the opposite end being detached and shaped as a catch for selective engagement in any one of the plurality of spaced detents **66** formed in the support section.

As the drawer is inserted into the cabinet opening between the side walls of the latter, with the support section **12** of a pair of drawer guides entering the grooves **42** in the drawer side walls, the outer edge of each web **60** engages the inner side of the groove. Depending upon the magnitude of the spacing **44** between the side walls of the drawer and cabinet, the web is deflected resiliently inward to a corresponding degree, where it is retained by interengagement of the catch end of the web and an appropriate one of the spaced detents **66**. The web may deflect resiliently from its established position, without changing the position of the catch end, to resist lateral movement of the drawer during its reciprocative movement relative to the cabinet.

Although the drawer guide has been described herein for use in supporting a drawer for reciprocative movement relative to a cabinet or the like, it will be understood that the term "drawer" is intended to include such other structures as shelves, doors and other members which are mounted for movement relative to a support.

It will be apparent to those skilled in the art that various changes may be made in the size, shape and arrangement of parts described hereinbefore, without departing from the spirit of this invention and the scope of the appended claims.

Having now described our invention and the manner

in which it may be used, what we claim as new and desire to secure by Letters Patent is:

1. A supporting guide for mounting a drawer for reciprocative movement between spaced structural members of a cabinet or the like, comprising an elongated member having

(a) an anchor flange section adapted to be secured to a structural member,

(b) a support section extending laterally away from the flange section and adapted to be received freely in an elongated groove in a side wall of a drawer adjacent said structural member, and

(c) spacer means on the elongated member arranged to engage the drawer side wall and space the latter from the adjacent structural member.

2. The supporting guide of claim 1 wherein the anchor flange section extends laterally in a plane substantially parallel to the support section and is adapted to be secured in an elongated groove in the structural member.

3. The supporting guide of claim 2 including a plurality of gripper means projecting outwardly from the flange section for engaging a groove-defiining side of the structural member.

4. The supporting guide of claim 1 wherein the spacer means comprises a web member projecting outwardly from the inner side of the support section.

5. The supporting guide of claim 4 wherein the web member is laterally resilient and extends angularly toward the outer side of the support section.

6. The supporting guide of claim 1 wherein the support section has a notch therein adjacent one end adapted to engage a catch member on a drawer projecting normally into the groove in said drawer side wall to prevent complete retraction of the latter from a cabinet or the like.

7. The supporting guide of claim 1 wherein the spacer means comprises a laterally resilient web member projecting from the outer side of the support section substantially in the plane of the latter for resiliently engaging the base of the groove in the side wall of a drawer.

8. The supporting guide of claim 7 wherein one end of the web member is secured to the support section and the opposite end is movable relative to the support section, and there is included on the support section a plurality of spaced detent means arranged to be engaged selectively by said opposite end of the web member.

9. In combination with a drawer and a cabinet or the like having spaced structural members between which the drawer is positioned for reciprocative movement, a supporting guide comprising a pair of elongated members one associated with each of said structural members, each elongated member having

(a) an anchor flange section secured one to each structural member,

(b) a support section extending laterally away from the flange section and received freely in an elongated groove in the side wall of the drawer, and

(c) spacer means on the elongated member engaging the drawer side wall and spacing the latter from the adjacent structural member.

10. The combination of claim 9 wherein the support section has a notch therein adjacent the front end thereof, and the drawer includes a resilient catch member adjacent the rearward end of at least one side wall of the drawer and projecting normally into the groove in said drawer side wall for removably engaging said notch to inhibit retraction of the drawer completely from the cabinet.

11. The combination of claim 9 wherein the groove in at least one side wall of the drawer terminates rearwardly of the front end of the latter, forming an abutment edge adapted to engage the front end of the support section to limit the rearward movement of the drawer.

12. The combination of claim 9 wherein the anchor flange section extends laterally in a plane substantially parallel to the support section and is secured in an elongated groove in the structural member.

13. The combination of claim 9 wherein the spacer means comprises a web member projecting outwardly from the inner side of the support section.

14. The combination of claim 13 wherein the web member is laterally resilient and extends angularly toward the outer side of the support section and slidably engages the drawer side wall.

15. The combination of claim 9 wherein the spacer means comprises a laterally resilient web member projecting from the outer side of the support section substantially in the plane of the latter and resiliently engaging the base of the groove in the side wall of the drawer.

16. The combination of claim 15 wherein one end of the web member is secured to the support section and the opposite end is movable relative to the support section, and there is included on the support section a plurality of spaced detent means arranged to be engaged selectively by said opposite end of the web member.

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