

United States Patent

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[54] **DRAWER SUPPORT MEANS**
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[21] Appl. No.: **53,429**

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[52] U.S. Cl.312/330, 312/345, 312/350

[51] Int. Cl.A47b 88/00

[58] Field of Search.....312/349, 350, 342, 343, 246,
312/345; 211/148, 134, 153, 162; 5/152,
308; 4/3

[57] ABSTRACT

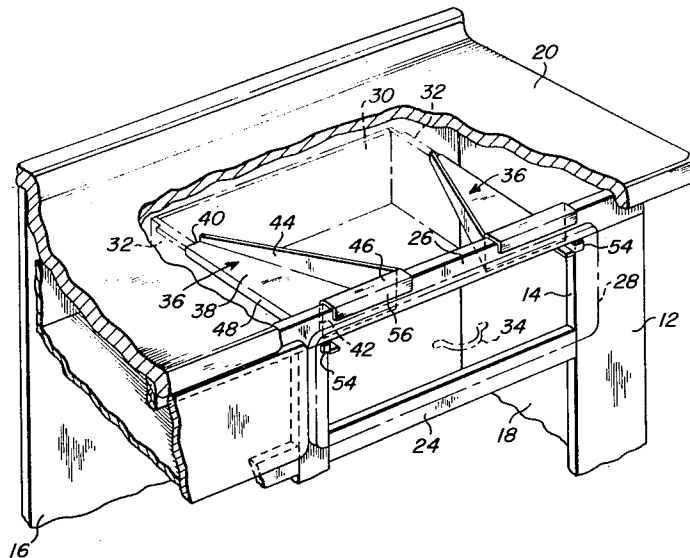
The drawer support means hooks over a horizontal rail of a cabinet front wall, and requires no other support from the cabinet walls in presenting drawer guides capable of supporting a drawer or the like for sliding movement through a front opening of the cabinet. It is installed without the use of tools or customary fasteners.

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32 Claims, 13 Drawing Figures



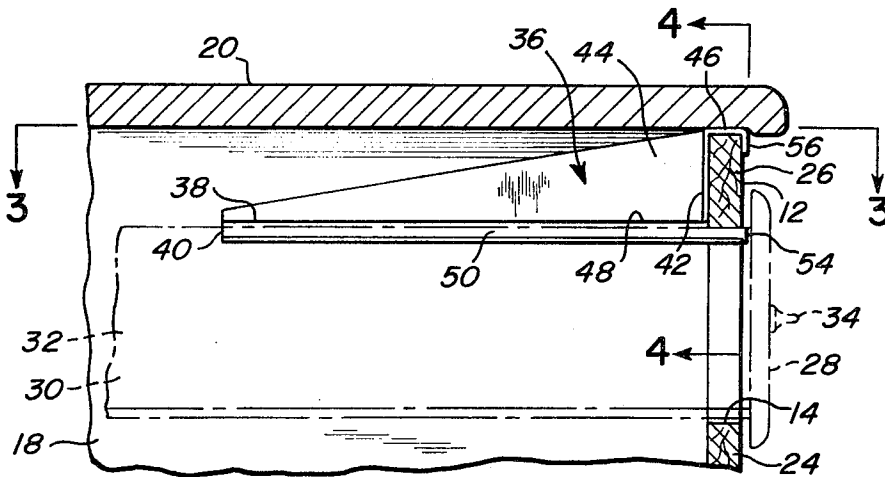
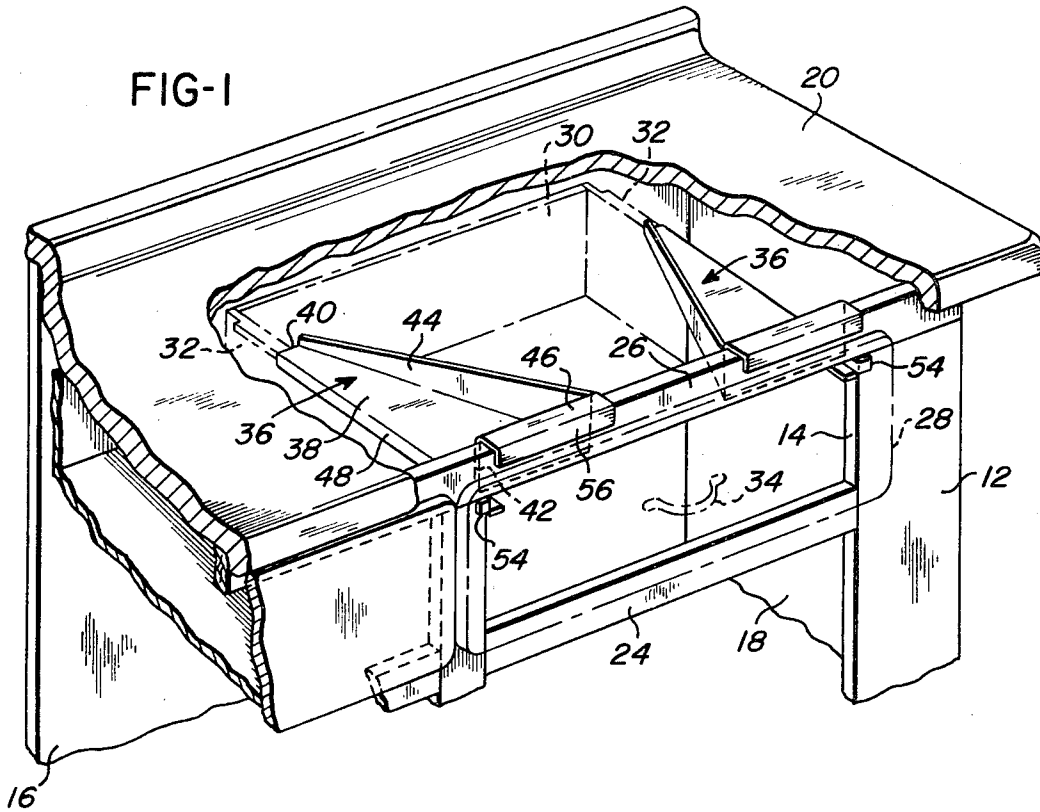
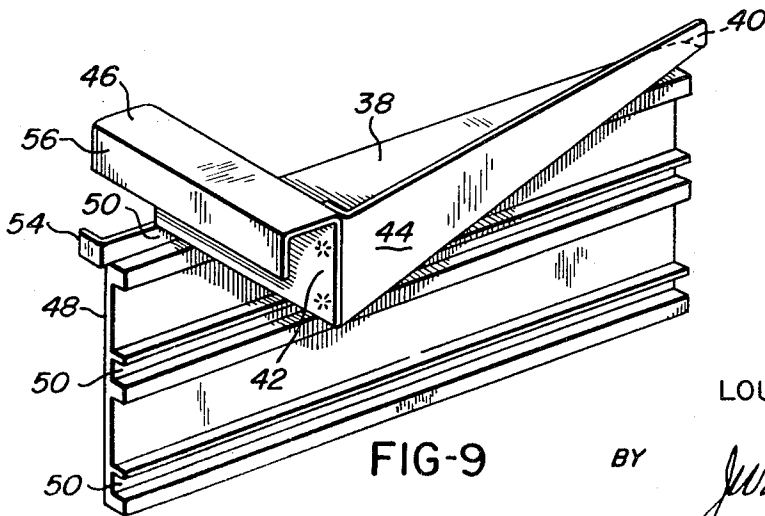
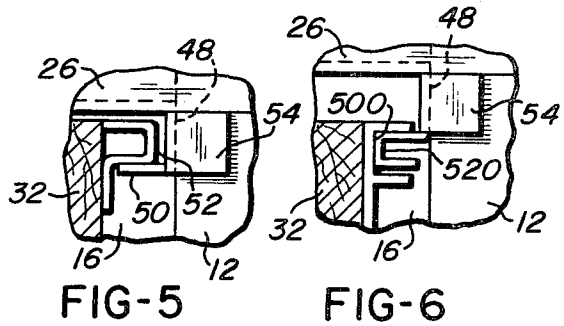
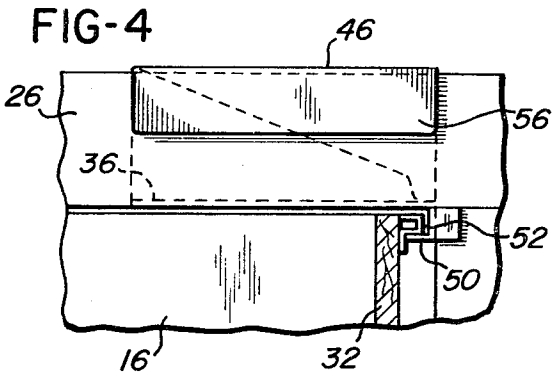
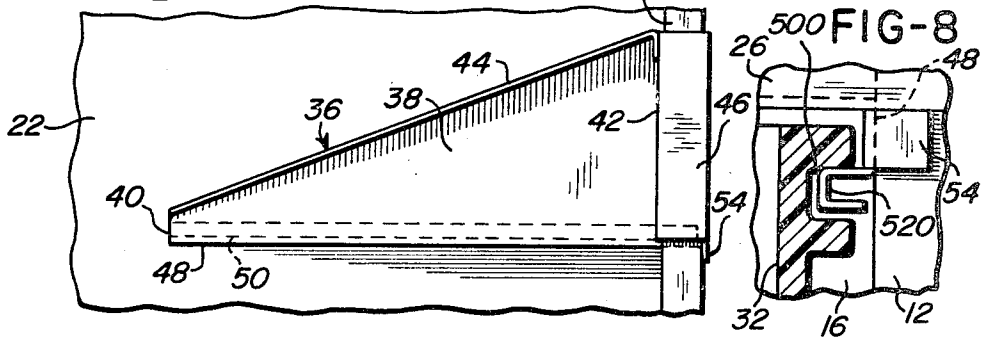
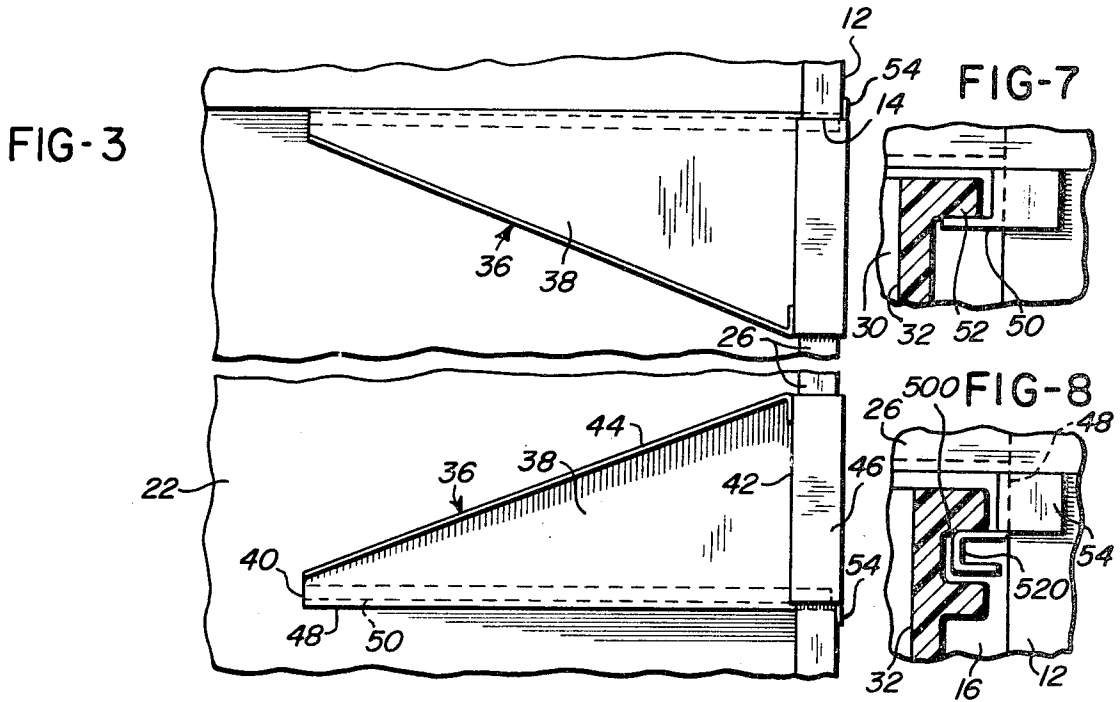


FIG-2

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FIG-10

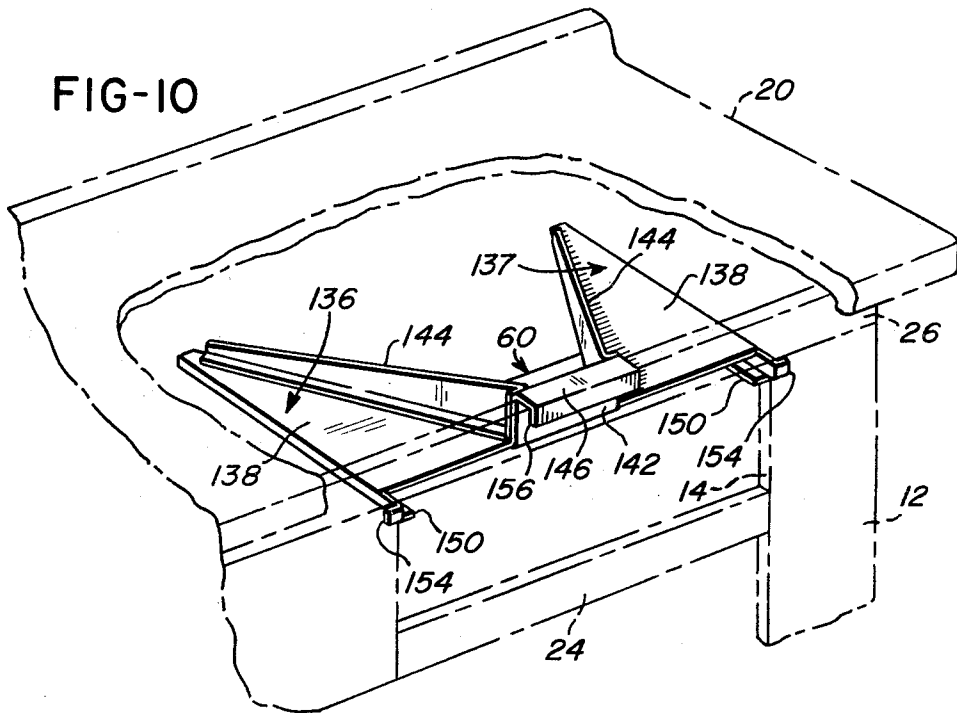


FIG-II

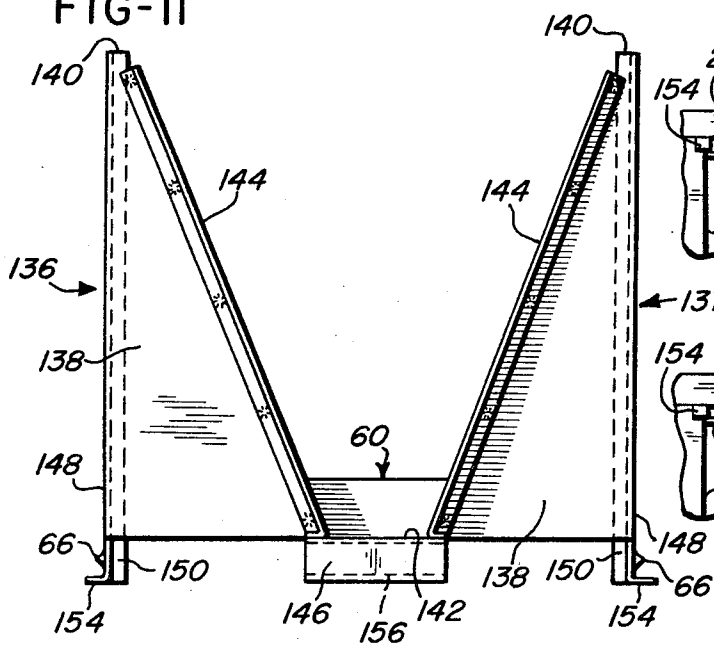


FIG-12

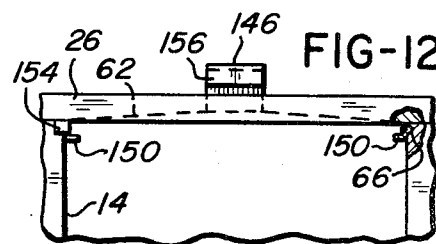
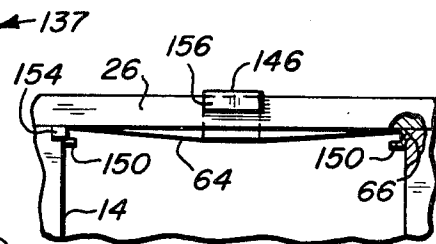


FIG-13



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DRAWER SUPPORT MEANS

This invention relates to a unitary, prefabricated, cantilevered drawer support means, for use with furniture or cabinetry having one or more openings in which a drawer or other slidable element is to be fitted.

The drawer support means herein disclosed is so constructed that it may be introduced into a drawer opening at the front of the cabinet, and fixed in place to support a drawer or other slidable element without the use of nails, screws or other fasteners, and without supporting or securing the drawer support means at the back or sides of the cabinet. Otherwise stated, the drawer support means when installed, together with any drawer or slidable element suspended thereby, is firmly supported solely from the horizontal stile of the front wall of a cabinet or the like.

An object of the invention is to provide a drawer support means of the character stated, which may be installed upon furniture or cabinetry of all kinds, by unskilled persons and without the use of tools or fasteners.

Another object of the invention is to provide a simple drawer support means attachable solely to the horizontal stile of the front wall of a cabinet, without the use of separate fasteners, and which may be applied to knocked-down type furniture, new or old furniture, or any type of cabinetry to be provided with drawers or other slidable elements.

Another object is to provide a device of the character stated, which in a modified form thereof, may support more than one drawer or slidable element simultaneously, with anchorage supplied solely by a cabinet front wall.

A further object of the invention is to provide a drawer support means for front wall mounting as hereinbefore stated, which is simple and inexpensive to manufacture and install, and which will materially reduce the labor and cost of furniture or cabinet construction.

Another object is to provide in a device of the character stated, detent means for simultaneously suspending and anchoring the drawer support means from the horizontal stile of a cabinet by flexing the support means past a dead-center position at which the detent means engages and embeds itself in the material of the cabinet.

The foregoing and other objects are attained by the means described herein and illustrated upon the accompanying drawings, in which:

FIG. 1 is a perspective view, partly broken away, showing a pair of individual drawer support means of the invention installed on opposite sides of the drawer opening of a cabinet, suspended from the horizontal stile for supporting a drawer.

FIG. 2 is a cross-sectional view taken on a vertical plane passed through the middle of FIG. 1.

FIG. 3 is a top plan view taken on line 3—3 of FIG. 2.

FIG. 4 is a fragmental cross section taken on line 4—4 of FIG. 2.

FIG. 5 is an enlarged detail view of a drawer guide or suspension means illustrated upon FIG. 4.

FIG. 6 is a view similar to FIG. 5, showing a modification.

FIGS. 7 and 8 are views similar to FIGS. 5 and 6, respectively, showing a modification thereof.

FIG. 9 is a perspective view of a multiple drawer support means, a modification of FIG. 1.

FIG. 10 is a view similar to FIG. 1, showing a drawer support means having right and left portions integral with a central hanger member.

FIG. 11 is a top, plan view of the FIG. 10 drawer support means, including a modification thereof.

FIGS. 12 and 13 are front elevations based on FIGS. 10 and 11, showing how the support means of FIG. 11 may be flexed into anchored position within a cabinet drawer opening.

In the several drawing views, the numeral 12 indicates the front wall of a cabinet or article of furniture, having formed therein a drawer opening 14. The rear wall of the cabinet is denoted 16, and a side wall is shown at 18. A counter top or top wall 20 overlies the cabinet side and end walls. The cabinet or article of furniture may include also a bottom wall, not illustrated. The horizontal rails 24 and 26 define the vertical dimension of drawer opening 14.

The numeral 28 indicates the face panel of a substantially rectangular drawer 30 having the usual bottom, rear, and side walls. The side walls of the drawer are denoted 32, 32. Face panel 28 may carry a suitable drawer pull 34.

In one form of the drawer support means, according to FIGS. 1 through 6, a drawer is supported by two complementary brackets 36, 36, made as rights and lefts but otherwise identical. The bracket comprises a substantially triangular horizontal plate or body 38 having a rear end 40, and a forward upstanding wall 42 defining the length of body or plate 38. If desired, wall 42 may be integral with said body or plate.

An integral substantially triangular gusset 44 extends along the inner side of body 38 rearwardly from wall 42, and preferably to end 40, diminishing in height from wall 42 to end 40. The gusset may be disposed in a vertical plane, and is fixed to wall 42. Wall 42, at its upper end is bent forwardly and downwardly to provide a hook or inverted channel hanger 46 receptive of a cabinet rail 26. When hooked over the rail 12 as in FIG. 2, the full weight and mass of the bracket is supported by the rail, with body 38 horizontally disposed.

It will be noted in FIG. 2, that the forward wall 42 of the bracket flatly abuts the inner face of rail 26, and hook or hanger 46 precludes sagging of the rear end 40 of the bracket, with the aid of reinforcing gusset 44. It is noted also that the bracket end 40 and gusset 44 receive no support from the rear or side walls of the cabinet.

Body or plate 38 has an outer side marginal portion 48 turned downwardly, or in a direction opposite to the upturn of gusset 44, and said marginal portion 48 carries an elongate drawer guide 50 which by preference extends the full length of the body or plate, from end 40 to wall 42. The drawer guide 50, as illustrated by FIGS. 2 through 5, and FIG. 7 may be in the form of a side-opening channel or groove in which may slide the laterally extending tongue or rib 52 carried by the side wall 32 of a drawer 30. Ribs such as 52 may be fixed to the opposite side walls of a drawer in any suitable manner, or if desired, may according to FIG. 7 be formed integral with the drawer side walls in molded plastic drawer constructions.

As an alternative to the guide means above described, the side-opening channel or groove might be carried by the drawer, with the tongue or rib carried by the bracket, all as depicted by FIGS. 6 and 8. This con-

stitutes a reversal of the FIG. 5 construction, and may be considered the full equivalent thereof. Thus, in FIGS. 6 and 8, the drawer side 32 carries a side-opening elongate groove or channel 500, whereas the cooperative rib or tongue 520 is carried by the marginal portion 48 of bracket body or plate 38. In either case, the drawer is suspended solely by the brackets 36, 26 for sliding movement through the cabinet opening 14.

FIG. 8 is a variation of FIG. 6, wherein the drawer and its channel 500 are formed of molded plastic material.

The forward end of the drawer guide portion 48 of body or plate 38 may be extended forwardly, and turned at right angles, to provide an integral tab 54 adapted to overlie a limited area of the cabinet front wall 12 in the immediate vicinity of drawer opening 14. Tab 54 performs the function of a stop preventing upward tilting of bracket end 40 when a heavy drawer is partially withdrawn, though supported in opening 14. Tab 54 extends laterally outwardly of the drawer guide, and is located in the plane of hanger lip 56.

The modified drawer support means of FIG. 9 is distinguished from that of FIGS. 1 through 5, only in that the depending side marginal portion 48 of the body or plate 38 is quite deep or extensive in the downward direction, thereby to accommodate a plurality of the drawer guides 50 arranged one beneath another as shown. By this means, the device applied in pairs to an enlarged cabinet drawer opening, may be used to support a plurality of drawers in a vertical column. The guides 50 may be formed as grooves or channels, or in the alternative, they may be formed as elongate horizontal tongues or ribs as explained in the description of FIG. 6 and 8, numeral 520.

With further reference to FIG. 9, the depending side portion 48 should possess a measure of rigidity when in service, to preclude outward spreading of the drawer guides 50 at opposite sides of the cabinet opening. If such spreading appears likely to occur, with resultant liability of one or more drawers to drop within the cabinet, the side portions 48 of the brackets may be butted against a stop (not shown) applied to the inner face of cabinet front 12 to limit spreading movements of side members 48. The same result may be achieved by fastening said member 48 inside the cabinet, to any stationary structural element of the cabinet located close to member 48.

In all of the drawing views FIGS. 1 through 9, the supporting and guiding of a drawer suggests the use of two separate brackets applied as a pair to the cabinet structure. The pair comprises a right and a left bracket, FIGS. 1 and 3, which are structurally similar. The use of the two brackets renders the drawer support means applicable to cabinets having drawer openings of different width dimensions, since the brackets may be spaced from one another as required to span the drawer opening.

In accordance with the modification, FIGS. 10 through 13, the drawer support means is presented as a composite unit, designed to fit a drawer opening having a specific width dimension. Here the unit comprises right and left brackets 136, 137 joined at their forward ends by a bridge member 60 spanning the bodies or plates 138, 138 and their respective gussets 144, 144.

The bridge member includes an upright forward wall 142 which at its upper extremity is turned outwardly and downwardly at 146 and 156 to provide a hook or hanger adapted to embrace a cabinet rail 26 for support of the brackets solely by means of the cabinet front wall rail.

The bridge member 60 may be integral with plates 138 and/or gussets 144, or it may be a separate part fixed to the plates and/or gussets in any suitable manner, such as by means of welds, rivets, crimps or other appropriate fastening devices. As herein disclosed, bridge member 60 is of limited length, and is dimensioned to establish and maintain a desired predetermined spacing of the drawer guides 150, 150 from one another. The material of the drawer guides may be extended forwardly and bent outwardly to provide integral tabs 154, 154 corresponding to the tabs 54 of FIGS. 1 through 9.

If desired, the composite drawer support structure of FIGS. 10 and 11 may have outer side marginal portions 148 corresponding to the outer side marginal portions 48 of FIG. 1, and said side marginal portions 148 in the region of tabs 154 may be spaced apart a distance exceeding slightly the width of drawer opening 14. Accordingly, the drawer support structure will require an upward flexing or bowing as indicated by the broken line 62 of FIG. 12, in order to accommodate it to the width of opening 14. When the drawer support structure is arched upwardly as at 62, the hanger 146 will be spaced directly above rail 26, FIG. 12.

By pressing down on hanger 146 to seat it on rail 26, (FIG. 13), the drawer support structure may be thereby bowed downwardly past a toggle dead-center position, as indicated at 64, to spread the support structure within the drawer opening and thereby anchor it in place. The anchorage may be enhanced by providing barbs or pointed detents 66 on the outer side marginal portions 148 of the support structure, (FIG. 11), to bite into the material of the cabinet at opening 14. The manner in which a barb or detent may embed itself in the cabinet material is evident from FIG. 13, at 66.

As will be understood, the inherent resiliency of the metal or other material from which the drawer support member is fabricated, will act to hold down the hanger 146 and keep the detents 66 extended into the cabinet material, assuming the cabinet material to be wood or any suitable board material penetrable by the detents. If the cabinet is of metal or other hard material impenetrable by the detents, holes or depressions may be provided therein to accommodate the detents at the sides of the drawer opening if desired.

The barbs or detents may conveniently be formed on the side members 148 by punching or otherwise deforming the material of the side members, or if desired, they may be in the form of pins or nubs secured to thy side members in any appropriate manner. In some instances the bars or detents may be omitted from the structure entirely. Also, the drawer support means or structure of FIG. 10 is operative to support a drawer or the like, whether or not the width of the structure at tabs 154 exceeds the width of the drawer opening 14 as previously mentioned.

In the unitary structure previously described, FIGS. 10 through 13, it is noted that gussets 144, 144 are shown welded to the plates or bodies 138, 138; and if

desired, the gusset stock may be of heavier gauge than that of the plates or bodies. Of course, the gussets could be formed integrally with the plates if desired, and as suggested by FIG. 3. Also, if any reinforcement of the unit is deemed necessary, the bridge member 60 of FIG. 10, might be increased in length so as to approach or reach the guides 150, with or without a corresponding lengthening of hanger or hook 146. Wall 142, as shown, terminates approximately at the gussets 144, 144, but could be extended toward the guides 150, 150 if desired. Wall 142 preferably is welded or otherwise fixed to the gussets at their forward ends.

It should be understood that the drawer guides carried by the plates or bodies 138, 138, may be of the side-opening channel type of FIG. 5, or the rib type of FIG. 6, or variations thereof according to FIGS. 7 and 8. In any event, the drawer guides are parallel and disposed in a common plane, with terminal rear ends 140 supported by the gussets. Like the structure of FIGS. 1 through 9, the structure of FIGS. 10 through 13 requires no support other than that furnished by a front rail 26. The plates or bodies 138 might, if desired, support a plurality of drawer guides in accordance with the teaching of FIG. 9.

The drawer support means herein disclosed may be fabricated from formed or stamped sheet metal, molded or sheet plastic, or a combination of metal and plastic or other suitable material having the desired rigidity and durability. In every instance, of course, the drawer support means is applied to the cabinet or article of furniture before application of the top panel 20. It is noted also that the support means is capable of supporting slidable elements other than drawers, examples of which are a cutting board, writing board, arm rest, or the like.

What is claimed is:

1. Cantilevered drawer support means supported solely on an upper horizontal rail defining a drawer opening in a wall of a cabinet or the like, said support means comprising: two body plates each having a forward end, a rear end, and opposite inner and outer side edge portions; reinforcing means on each of said body plates to rigidify each body plate; an elongate drawer guide extending along the outer side edge portion of said body plate; and hanger means connected to said body plates at the forward ends thereof, said hanger means embracing the upper horizontal rail of the cabinet opening to suspend said drawer guides within the cabinet at approximate right angles to the plane of said opening.

2. The support means as defined by claim 1, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail exteriorly of said cabinet wall, said hanger means being fixed relative to said body plates.

3. The support means as defined by claim 1, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail exteriorly of said cabinet wall, said hanger means being fixed to said body plates and to said reinforcing means.

4. The support means as defined by claim 3, wherein said reinforcing means comprises an upstanding gusset fixed to each body plate along the inner side edge por-

tion thereof between said hook and said rear end of the body plate.

5. The support means as defined by claim 1, wherein is included a fixed tab located at the approximate level of the drawer guide, to overlie said cabinet wall adjacent to the drawer opening.

6. The support means as defined by claim 2, wherein is included a fixed tab located at the approximate level of the drawer guide, to overlie said cabinet wall adjacent to the drawer opening.

7. The support means as defined by claim 1, wherein said two body plates are rigidly connected to one another by said hanger means, to form a unit.

8. The support means as defined by claim 2, wherein said two body plates are rigidly connected to one another by said hanger means, to form a unit.

9. The support means as defined by claim 5, wherein said two body plates are rigidly connected to one another by said hanger means, to form a unit.

10. The support means as defined by claim 6, wherein said two body plates are rigidly connected to one another by said inverted channel-shaped hook.

11. The support means as defined by claim 5, wherein each of said body plates is substantially triangular and flat in form, and the reinforcing means and said drawer guide are substantially convergent near the rear end of the body plate.

12. The support means as defined by claim 11, wherein said reinforcing means and said drawer guide are located on opposite faces of the plane of the body plate.

13. The support means as defined by claim 12, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail exteriorly of the cabinet, said hanger means being fixed relative to said body plate.

14. The support means as defined in claim 13, wherein said depending lip and said tab are in a common plane which is normal to the drawer guide.

15. The support means as defined by claim 1, wherein said elongate drawer guide is supplemented by at least one additional drawer guide disposed at a different elevation relative to the body plate.

16. The support means as defined by claim 5, wherein said elongate drawer guide is supplemented by at least one additional drawer guide disposed at a different elevation relative to the body plate.

17. The support means as defined by claim 14, wherein said elongate drawer guide is supplemented by at least one additional drawer guide disposed at an increased distance from the body plate.

18. The support means as defined by claim 14, wherein said two body plates are rigidly connected to one another by said hanger means, to form a unit.

19. The support means as defined by claim 18, wherein said two body plates are substantially flat and are in a common plane.

20. The support means as defined by claim 7, wherein the body plates are constructed of inherently resilient material and subject to temporary upward arching so as to reduce the linear distance between the outer side edges of the rigidly connected body plates, said linear distance prior to arching being slightly greater than the width dimension of the drawer opening, and being, when arched, slightly less than the width dimension of said opening.

21. The support means as defined by claim 20, wherein the outer side edge portions of the body plates are provided with outwardly projected detents to engage the material of the cabinet at the drawer opening.

22. The support means as defined by claim 20, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail exteriorly of said cabinet wall, said hanger means being fixed relative to said body plates.

23. The support means as defined by claim 21, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail, said hanger means being fixed relative to said body plates.

24. The support means as defined by claim 20, wherein is included a fixed tab located at the approximate level of each drawer guide, to overlie said cabinet wall adjacent to the drawer opening.

25. The support means as defined by claim 21, wherein is included a fixed tab located at the approximate level of the drawer guide, to overlie said cabinet wall adjacent to the drawer opening.

26. The support means as defined by claim 21, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail, said hanger means being fixed relative to said body plates.

27. The support means as defined by claim 27,

wherein is included a fixed tab located at the approximate level of the drawer guide, to overlie said cabinet wall adjacent to the drawer opening.

28. The support means as defined by claim 27, wherein said depending lip and said tabs are in a common plane which is normal to a drawer guide.

29. The support means as defined by claim 28, wherein said two body plates are substantially flat and are normally in a common plane prior to arching.

30. The support means as defined by claim 24, wherein said hanger means comprises an inverted channel-shaped hook having a depending lip to overlie said upper horizontal rail, said hanger means being fixed relative to said body plates.

31. The support means as defined by claim 30, wherein said depending lip and said tabs are in a common plane which is normal to a drawer guide.

32. Cantilevered drawer support means for supporting a drawer in a cabinet, said cabinet having a drawer opening with opposite sides, a top, and a bottom defining the opening, drawer support bracket and guide means attached solely at the top of said opening and supported from the top of said opening at opposite sides thereof, said drawer support bracket and guide means extending substantially horizontally rearwardly of said opening and substantially perpendicular to the plane thereof.

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