Nov. 1, 1966 L. E. HIMELREICH 3,282,635

HOLLOW-WALL DRAWER

Filed July 23 1965 2 Sheets-Sheet 1

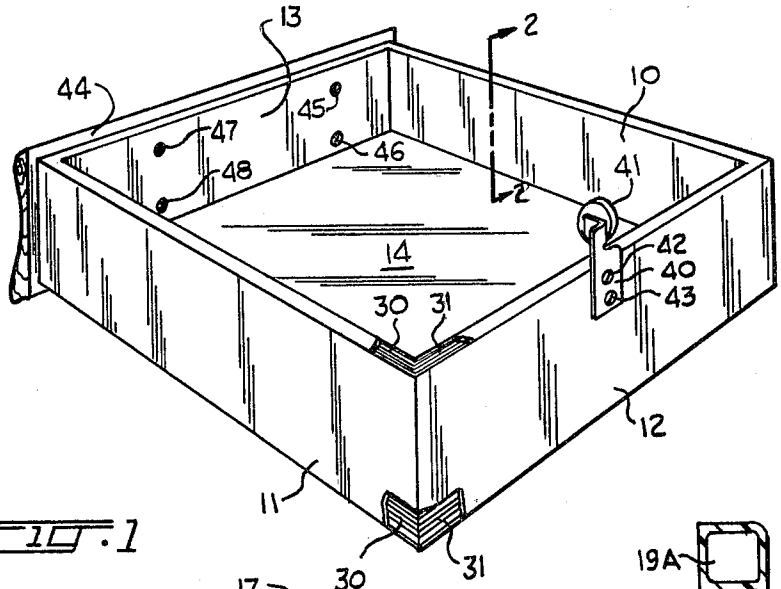


FIG. 1

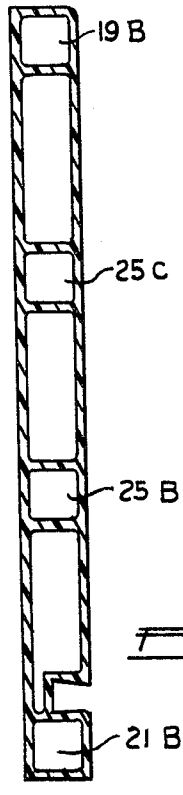


FIG. 4

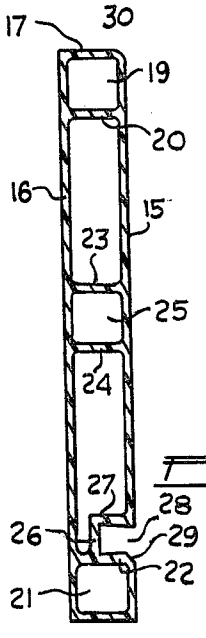


FIG. 2

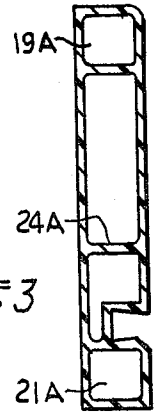


FIG. 3

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HOLLOW-WALL DRAWER

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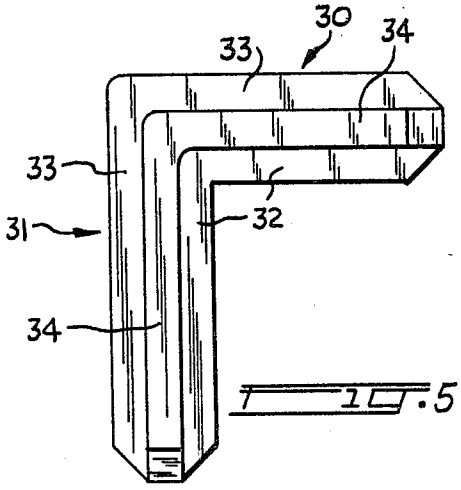


FIG. 5

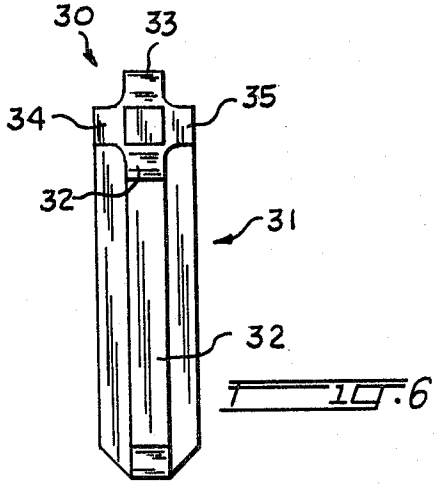


FIG. 6

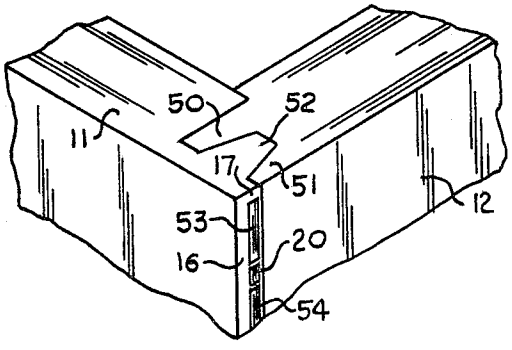


FIG. 7

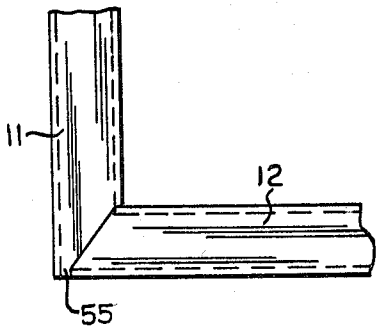


FIG. 8

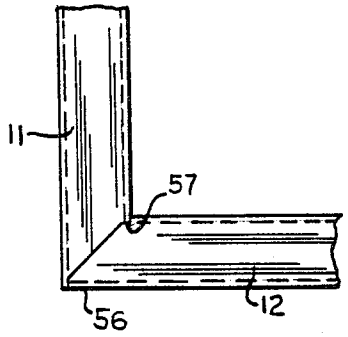


FIG. 9

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3,282,635

HOLLOW-WALL DRAWER

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Filed July 23, 1965, Ser. No. 474,264
5 Claims. (Cl. 312—214)

This invention relates to drawers for use in furniture, kitchen cabinets or the like and more particularly to a hollow-wall drawer which may be formed from extruded materials.

In copending application, Serial No. 382,444 assigned to the same assignee as the present application and in which earlier application I am a joint inventor, there is disclosed an invention jointly employing extruded and molded drawer sections. In contrast therewith, the walls of the drawer of this invention may be formed entirely of an extrusion with a concomitant saving in inventories of material and also resulting in a finished drawer, each of whose walls have substantially equal strength.

An object of this invention is to provide a reinforced hollow-wall drawer having separated interior spaces in its walls and through which fastening means for guides, handles, front panels or the like may be passed without impairing the strength of the drawer.

Another object is to provide a hollow-wall drawer having an improved mounting of the floor of the drawer.

Another object is to provide a hollow-wall drawer having corners reinforced in an improved manner.

A further object is to provide a drawer having hollow-walls formed of plastic and with vents for dissipating fumes produced in the assembly of the drawer.

Other objects and advantages will become apparent as the description proceeds and when considered in conjunction with the accompanying drawings in which

FIG. 1 is a perspective view partly broken away and showing one form of drawer embodying the invention.

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1 and with the drawer floor omitted.

FIGS. 3 and 4 are views similar to FIG. 2 and showing walls for drawers of different depths.

FIG. 5 is a plan view of a corner brace.

FIG. 6 is an end view of the brace shown in FIG. 5.

FIG. 7 is a perspective view of a corner showing a modified arrangement for assembling the walls of the drawer.

FIG. 8 is a diagrammatic view in plan showing another corner arrangement for assembling the walls of the drawer, and

FIG. 9 is a diagrammatic view in plan showing still another arrangement for assembling the walls of the drawer.

Referring first to FIG. 1, the drawer comprises a pair of side members **10** and **11**, a rear member **12**, a front member **13**, and a floor member **14**. The floor member is of rectangular planar construction and may be made of a suitable material such as wood, metal pressed board, or other material cut to the proper shape. The members forming the sides and ends of the drawer, however, are formed from an extrusion such as plastic or metal. When plastic, which is preferred, is so employed, such plastic may be of the thermo-setting type such as a polyester resin; for example, a medium or high impact polystyrene; or polyvinyl chloride, or other conventional plastic which can be bonded to itself and which can be adhered to the floor member and to corner braces by means of a suitable adhesive.

As best shown in FIG. 2 the extrusion for use with

a drawer of medium depth comprises an inner wall portion **15** and an outer wall portion **16**. Adjacent the upper and lower edges of these wall portions they are joined to each other by a top portion **17** and by a bottom portion **18**. If exterior recesses at the top and bottom of the walls should be required, as for use with guides in a cabinet opening, such can be provided without departing from the invention, and merely by offsetting of the top and bottom portions inboard of such edges. However, it is preferred to locate the top and bottom portions as shown.

Beneath the top portion **17**, and preferably defining an upper space **19** of generally square cross-section, is an integral web **20** extending between the inner and outer wall portions. Likewise, above the bottom portion **18**, and preferably defining a lower space **21** of generally square cross-section, and of the same size as space **19**, is an integral lower web **22** extending between the wall portions. Intermediate integral webs **23** and **24** defining an intermediate space **25** and located generally centrally of the height of the drawer are also provided. Each of the described webs acts as a reinforcing truss and strengthens the drawer when it is assembled, as later to be described.

Extending upwardly from the lower web **22** is a short web **26** merging into a transverse web **27** which is integral with the inner-wall portion **15** and which serves to define a recess **28** facing the interior of the drawer. This recess is adapted to receive both a suitable adhesive and the peripheral edge of the floor member **14** and may have a beveled edge **29** to assist in the mounting of that floor member. As will be noted, a substantial part of the upper surface of the lower web **22** serves as the lower face of the recess with the result that the periphery of the floor is supported upon a box-like frame which efficiently resists deflection under the loading of the contents of the drawer.

In manufacturing a drawer from the above-described extrusion it will be understood that the several wall members are cut from a single elongated extrusion and are so shaped at their ends as to abut against complementary ends of adjacent members and to provide right-angle corners for the drawer. This may take the form of cutting the wall members on a simple 45° bevel as seen in FIG. 1, or with other configurations as later to be described.

When cut on the simple bevel, it frequently is desirable to reinforce the corners of the drawer and the invention provides an improved corner brace for insertion in such corners. Referring now to FIGS. 5 and 6, a suitable corner brace comprises a rigid L-shaped member formed of plastic and having right-angle legs **30** and **31** each of which embodies a cruciform cross section. In this construction the side ribs **32**, **33** are shaped to contact the inner surfaces of the respective outer wall **16** and inner wall **15** of the assembled drawer elements when occupying either space **19** or space **21** therein. Also the side ribs **34**, **35** are shaped to contact the inner surface of top portion **17** and of the upper web **20** when occupying space **19**, or to contact the inner surface of lower web **22** and of bottom portion **18** when occupying the lower space **21**. It also is contemplated that the intermediate space **25** will be of the same size as spaces **19** and **21** and that the corner braces may be used therein whenever desired. By employing a cruciform shape of brace, adequate space is present between adjacent ribs to accommodate the adhesive and to provide for press fitting of the brace into the respective ends of the extruded and beveled members. Also the space between the ribs of the brace can communicate with vents later to be de-

scribed when it is desired to communicate the interior of the hollow walls with the atmosphere.

In assembling the drawer, one or more corner braces at each of the four corners may be coated with adhesive and inserted in the appropriate spaces, the recess **28** likewise being coated with adhesive and with the floor member **14** being engaged in the recesses about its periphery. The juxtaposed parts are then mounted in a jig with the beveled ends of the sides, rear, and front members abutting against each other; and preferably by means of a conventional heating mechanism which effects the bonding of the plastic wall members to each other and the adhering of the floor and corner braces to such members, the drawer is then formed into a unitary structure. Other methods for unifying the parts, for example, supersonic vibration, may also be employed.

After forming the basic drawer, various accessories may be added thereto if desired and as seen in FIG. 1, a conventional bracket **40** carrying a roller **41** at its upper end is mounted centrally of the back member **12**, which has a cross-section as illustrated by FIG. 2. This bracket is affixed to the drawer by means of fastening means such as bolts or screws **42**, **43**. The upper fastening **42** extends through the upper space **19** and the lower fastening **43** extends through the intermediate space **25** of the back member and upon being tightened against the exterior surfaces of the wall portions **15** and **16** a rigid construction is effected. As will be noted, the above-described webs **20**, **23** and **24** help to resist distortion of the back member **12** when loading is later applied to the drawer through the interaction of the bracket assembly and the cabinet guide on which the roller travels.

When the front of the drawer is to have a special exterior facing such as a wooden front piece **44**, that piece may be attached by pairs of fastenings **45**, **46** and **47**, **48**. The upper fastenings in this case extend through the upper space **19** and the lower fastenings extend through the lower space **21** of the front member **13**, and likewise that front member thus is not subjected to distortion in view of the presence of the several reinforcing webs above described.

In carrying out the invention, drawers having different depths can be made merely by varying the cross section of the extrusions employed. For example, a shallow drawer may be made from the extrusion seen in FIG. 3 and which is provided with an upper space **19A** and a lower space **21A** adapted to receive the above-described corner brace. In this modification a single intermediate web **24A** is employed for reinforcement between the top and bottom portions of the wall. For use in a deep drawer, an extrusion such as seen in FIG. 4 may be used. Here the usual upper and lower spaces **19B** and **21B** are used and in addition two intermediate spaces **25B** and **25C** are employed, all of these spaces being adapted to receive the corner brace.

Although it is preferred to employ corner braces of the type described, the invention in its broader aspects does not require the same, particularly when the plastic being employed can give a secure bonding of the several wall parts at the corners, at the time of assembly of the drawer. By suitable mortises, a secure interlocking of the ends of the parts can frequently be secured and as shown in FIG. 7 one such arrangement comprises the cutting of the end of one extrusion, for example, side wall **11**, with transverse recesses into which fingers **50** and **51** of the end of the adjacent back member **12** are adapted to fit, that back member also having a recess into which a finger **52** of the side wall also fits. In this arrangement the outer wall portion **16** and part of the top wall portion **17**, web **20** and the webs therebelow are exposed and a series of vertically-spaced openings or vents indicated at **53** and **54** are thus provided.

These vents serve to communicate the interiors of the hollow walls of the drawer with the outside atmosphere, and when fumes are formed inside those walls during the heating of the thermosetting plastic such fumes can escape without building up pressure within the hollow walls.

In FIG. 8 another arrangement is shown diagrammatically in which the side member **11** and the back member **12** are cut on about a 55° mitre and positioned so as to leave a vent **55** of about 1/16 inch width at the end of the member **11**. In FIG. 9 still another arrangement is shown in which the side wall **11** is cut on a 45° bevel, but with an abutting edge **56** against which the edge of back member **12** is fitted in contact. Likewise, the member **12** is provided with an abutting edge **57** fitting against the inner wall surface of member **11**. In each of the modifications of FIGS. 7, 8 and 9 the corner brace may be employed if so desired.

As will be apparent, the above-described features of the extrusion from which the drawer is constructed cooperate with one another to produce a strongly reinforced final product. The corner-brace is reversible end for end and comprises a standard size which can be used on any corner of any size of drawer. The particular floor member and the accessories used in the drawer are conventional and as such do not in themselves form part of my invention.

Having thus described the invention and its attendant advantages, it is intended that the appended claims are to cover such changes and modifications of the described invention as come within the true spirit and scope thereof.

What is claimed is:

1. A drawer comprising a pair of hollow side members, a hollow back member, and a hollow front member; each of said members having a uniform transverse cross-section and having ends formed to abut against complementary ends of adjacent members and to provide right-angle corners for the drawer, means for holding the abutting ends of said members in engagement with each other at said corners, said cross-section of said members including an inner wall portion, an outer wall portion, a top portion and a bottom portion, said top and bottom portions joining the respective inner and outer wall portions adjacent the upper and lower edges of the wall portions, an upper web joining said wall portions beneath said top portion and forming an upper space within said members, a lower web joining said wall portions above said bottom portion and forming a lower space within said members, a recess in said inner wall portion facing the interior of said drawer and employing a part of the upper surface of said lower web as the lower face of said recess, and a floor member having its peripheral edge engaged within said recess and contacting the confronting surfaces of said recess.

2. A drawer as described in claim **1** wherein said upper and lower spaces have substantially identical cross-sections.

3. A drawer comprising a pair of hollow side members, a hollow back member, and a hollow front member, each of said members having a uniform transverse cross-section and having ends formed to abut against complementary ends of adjacent members and to provide right-angle corners for the drawer, a brace for holding the abutting ends of said members securely in engagement with each other and located in at least one of said corners, said cross-section of said members including an inner wall portion, an outer wall portion, a top portion and a bottom portion, said top and bottom portions joining the respective inner and outer wall portions adjacent the upper and lower edges of the wall portions, an upper web joining said wall portions beneath said top portion and forming an upper space within said members, a lower web joining said wall portions above said bottom portion and forming a lower space within said members; a recess in said inner wall portion facing the interior of said drawer, and a floor member having its peripheral edge engaged within said recess, said brace being of right-angle form and having legs extending normal to each other and adapted for retention in

either of the corresponding upper spaces or the corresponding lower spaces of abutting members.

4. A drawer as described in claim **3** and including vents communicating the interior of said hollow members in the assembled drawer with the atmosphere.

5. A drawer as described in claim **3** wherein the legs of said brace have a cruciform cross-section including four side ribs adapted to contact the corresponding four inner surfaces of the space into which said brace leg is inserted.

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Disclaimer

3,282,635.—*Louis E. Himelreich*, Louisville, Ky. HOLLOW-WALL DRAWER. Patent dated Nov. 1, 1966. Disclaimer filed July 15, 1969, by the assignee, *H. J. Scheirich Company*.

Hereby enters this disclaimer to claim 3 of said patent.

[*Official Gazette November 25, 1969.*]