March 23, 1965 W. D. DREW ETAL 3,174,815

CABINET CORNER JOINT

Filed July 2, 1962

Fig. 1

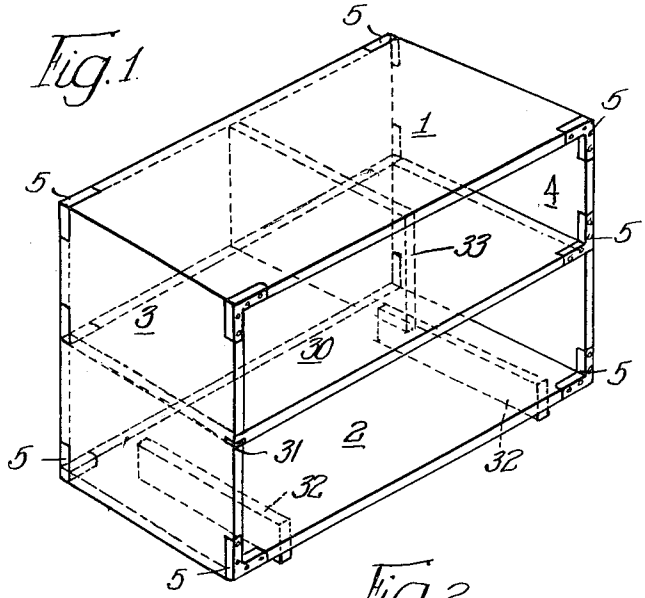


Fig. 4

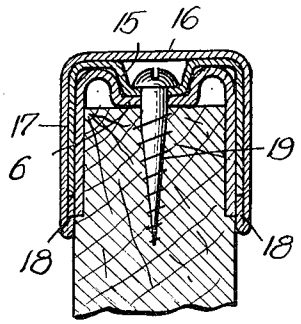


Fig. 6

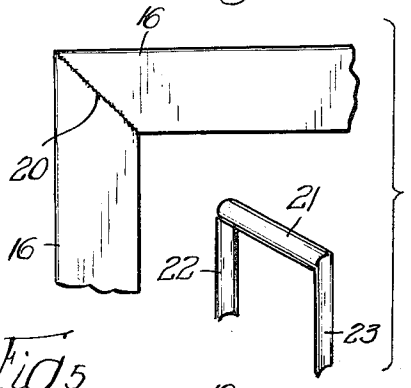


Fig. 2

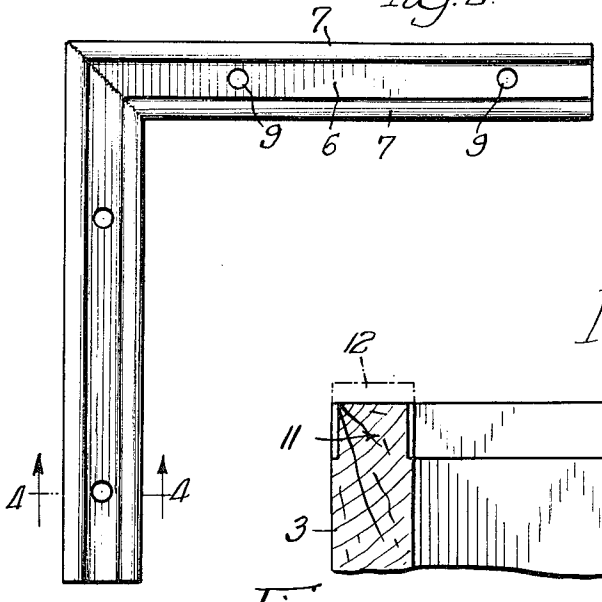


Fig. 5

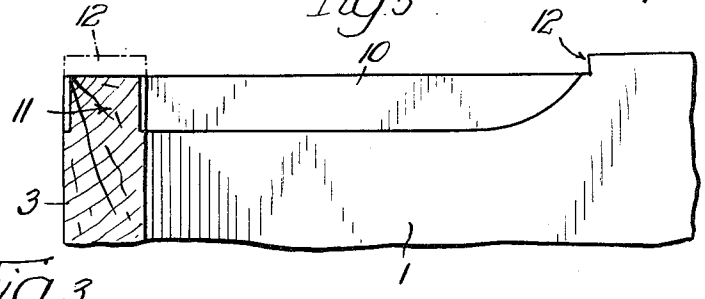
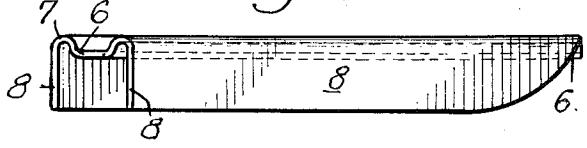


Fig. 3



INVENTORS.
William D. Drew,
BY Peter W. Schwab,
George H. Simmons
Attg.

United States Patent Office 3,174,815 Patented Mar. 23, 1965

3,174,815

CABINET CORNER JOINT

William D. Drew and Peter W. Schwab, Jr., Batesville, Ind., assignors to Hill-Rom Company, Inc., Batesville, Ind., a corporation of Indiana

Filed July 2, 1962, Ser. No. 206,869
4 Claims. (Cl. 312—263)

This invention relates to the construction of cabinets and has for its principal object the provision of a new and improved cabinet of this type.

It is a main object of the invention to provide a cabinet which can be custom built in small quantities at a reasonable price, thereby to meet particular conditions oftentimes encountered.

Another object of the invention is to provide a cabinet in which top, bottom and end walls of the cabinet are secured together by metallic brace members which rigidly hold these parts together independently of screws which serve merely to hold the brace members in place.

Another object of the invention is to provide a metallic brace for use in the construction of cabinets of custom design, which is of simple rugged design and capable of many uses in the construction of such cabinets.

Another object of the invention is to provide trim members capable of concealing the metallic braces used in a cabinet and to provide means for securing the trim members to the cabinet in an economical manner.

Further objects of the invention, not specifically mentioned here, will be apparent from the detailed description and claims which follow, reference being had to the accompanying drawings in which a preferred embodiment of the invention is shown by way of example and in which:

FIG. 1 is a perspective view of a cabinet embodying the invention;

FIG. 2 is a plan view of the metallic corner brace;

FIG. 3 is an elevational view of the brace shown in FIG. 2;

FIG. 4 is a cross sectional view along the line 4—4 of FIG. 2, looking in the direction of the arrows, drawn to an enlarged scale with a trim member added;

FIG. 5 is a fragmentary detail of the panel members prepared for receipt of a brace; and

FIG. 6 is a fragmentary view of a trim corner and trim clip.

It frequently happens that cabinets must be custom built to fit in the desired space. In the production of cabinets in a wood-working shop, large quantities of identical cabinets must be made if the cost is to be maintained at an attractive level. This is because of the cost of setup of tools required in the fabrication of the cabinet, such setup requiring a certain amount of time regardless of the number of pieces to be fabricated by a particular setup. When a relatively few number of parts are to be made, the setup time adds unduly to the cost of the parts.

The present invention provides a solution to this problem by providing metallic corner braces which are used to secure together the various panels of the cabinet. These braces are U-shape in cross section and dimensioned to receive panels with a very snug fit, with the result that when the several panels of a cabinet are joined together by the braces, a rigid structure results without the use of glue, screws or nails. The braces themselves, located at the corners of the panels provide this desired rigidity.

In order to insure that the braces will remain in place on the cabinet, screws are used; however, the strength of the joint is in no way dependent upon the screws.

In the construction of cabinets for hospitals and the like, trim members are employed. In one instance, the trim members were composed of stainless steel of light gauge and held on the edges of the panel members by

clips which are secured to the metallic corner braces by the same screws that secure the braces to the panel members. The trim members are of U-shape cross section and the distal ends of the side flanges thereof are of double thickness and snap under the bottom edges of the clips to secure the trim members in place. At the corners of the cabinet the trim members are mitered and the joint between the adjacent members covered by a trim clip of pleasing configuration and secured to the trim members by crimping the bottom ends of the clip under the bottom ends of the trim members.

When it is desired to position shelves or the like in a cabinet, the same corner braces are used. A saw kerf is cut in one panel to accommodate one leg of the corner brace the other leg of which fits over the shelf to support the same in the cabinet.

Referring now to the drawings in more detail, in FIG. 1 it will be seen that the top panel 1, bottom panel 2 and end panels 3 and 4, are secured together by metallic corner braces 5, one brace being employed at each end of each junction of two panel members.

As will be seen best in FIGS. 2 to 4, inclusive, the corner braces 5 are right angle braces consisting of a web 6 along the edges of which are beads 7 which with the web 6 form an outwardly opening groove of shallow depth. Side flanges 8 extend downwardly from the outer edges of the beads 7. Webs 6 contain perforations 9 through which screws may be projected to secure the brace upon the panel.

The distance between side flanges 8 is maintained to close tolerances and is preferably slightly less than the thickness of the panels to be used in the cabinet.

As will be seen in FIG. 5, each panel, such as for example panel 3 and top panel 1, are cut away, as indicated at 10, so that the tongue 11 thus formed is dimensioned for press or drive fit between the side flanges 8 of the corner braces. As a result, when the brace is installed upon the panels, the outer surfaces of the flanges 8 lie flush, or substantially flush, with the surface of the panel. The edges of the panels are also recessed, as indicated at 12, to a depth substantially equal to the height of the beads 7, with the result that the uppermost points of the beads lie in, or substantially in, a plane through the edges of the panels.

In order to conceal the edges of the panels, which panels may be veneered with a surface veneer of finish wood such as walnut, mahogany, birch, maple, or the like, trim members are employed. To secure the trim members on the edge of the panels, metallic clips 15 are shaped to snugly embrace the outer surface of the corner braces, the side flanges of these clips substantially coinciding with the bottom edges of the flanges 8. Trim members of U-shape cross section consist of a web 16 and side flanges 17, preferably composed of polished stainless steel, although the use of other materials is contemplated within the teachings of the invention. The distal ends of the flanges 17 are bent over upon themselves forming a double thickness, as indicated at 18, the upper edge of which snaps under the bottom end of the clips to secure the trim upon the panel. Since the clips are secured to the brace and panel by screws, such as indicated at 19 in FIG. 4, the trim members will thus be secured in place.

As will be seen in FIG. 6, at the corners of the cabinet the trim members are mitered and the joint 20 thus formed is preferably covered by a trim clip. This clip is generally U-shape in cross section and consists of a web 21 and one side flange 22, both of which are convex in cross section. The other side flange 23 is concave in cross section and when the clip is fitted over the joint 20, it is secured in place by crimping the lower ends of the flanges

22 and 23 under the bottom edges of the side flanges 17 of the trim members.

It often happens that shelves or other dividers are required in the cabinets. The brace members 5 are used to support such a shelf in the cabinet. As will be seen in FIG. 1, a shelf 30 is so supported, and to permit insertion of the metallic brace members at the corners thereof the end panels 3 and 4 are provided with saw kerfs, as indicated at 31, into which the outer flange of the brace member snugly fits.

As shown in FIG. 1, the cabinet is provided with feet 32 of suitable design, and vertically disposed dividers such as 33 are employed between the top 1 and the shelf 30 of the cabinet. The dividers may be secured in place in convenient manner, such as by dowels.

If desired, the top 1 of the cabinet may be covered with a top member, not shown, the exposed surface of which is covered with a suitable decorative material such as Formica.

From the foregoing, it will be apparent that through the use of the corner braces of the present invention custom built cabinets can be constructed with a minimum of machine setup and hence the cost of fabricating the cabinets can be maintained low. The resulting structure is rigid and capable of giving satisfactory service over a long period of time with little or no maintenance. Since the strength of the joints in the cabinet is achieved through the use of the metallic corner braces and is independent of screws, glue, nails and the like, repeated application of stresses tending to distort the cabinet does not weaken the same.

The cabinet of simple design shown in the drawing is shown by way of example only, as cabinets of many designs may incorporate the teachings of the invention and such modification is contemplated.

Having thus complied with the statutes and shown and described a preferred embodiment of our invention, what we consider new and desire to have protected by Letters Patent is pointed out in the appended claims.

We claim:

1. In a cabinet comprising top, bottom and end panel members fixed together by metallic corner braces, each of said braces comprising:

(*a*) An L-shaped web portion having outwardly extending beads from the outer edges of which flanges extend inwardly to form grooves into which the panel members snugly fit,

(*a'*) said panel members being recessed so that the outermost portions of the beads be substantially flush with the edges of the panels when the webs engage the bottoms of the recesses,

(*b*) said web containing perforations,

(*c*) screws projected through said perforations and into the edges of the panels to secure the brace to the panels,

(*d*) clips shaped to snugly engage the outer surfaces of the braces secured thereto by said screws,

(*e*) trim members of length equal to the length of a panel having webs wide enough to span the braces and clips and having flanges extending alongside the panel, braces and clips,

(*f*) and double thickness portions on the distal edges of said trim members engaging the distal ends of said clips to secure the trim members on the edges of the panels.

2. A cabinet as specified in claim 1, in which the trim members are mitered at the corners of the cabinet and in which trim clips are positioned over the joints between adjacent trim members and extended alongside the flanges thereon and engaged with the bottom edges of those flanges to secure the trim clips upon the cabinet.

3. A cabinet as specified in claim 2, in which the trim members and the trim clips are composed of polished metal.

4. A cabinet as specified in claim 3, in which the trim members and the trim clips are composed of polished stainless steel.

References Cited in the file of this patent

UNITED STATES PATENTS

406,156	Weir	July 2, 1889
1,057,913	Andrews	Apr. 1, 1913

FOREIGN PATENTS

645,772	France	July 3, 1928