

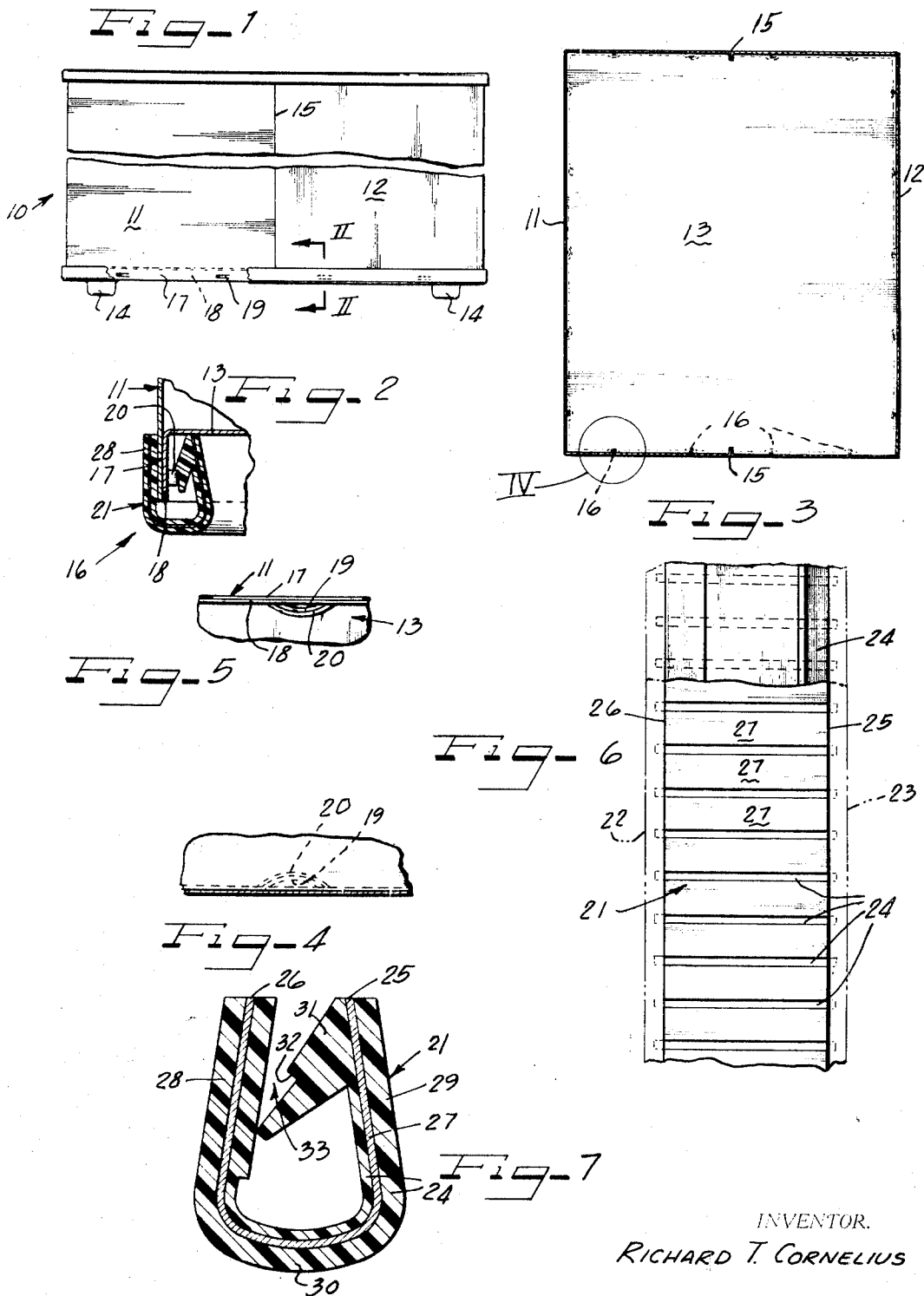
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CABINET JOINT

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CABINET JOINT

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ABSTRACT OF THE DISCLOSURE

Marginal abutting portions of a pair of metal sheets are joined together by means of at least one ear integral with one of the sheets and projecting into an aperture in the other, a molding strip of U-shaped cross-section receiving such marginal portions and having an internal shoulder abutting the ear for withstanding removal of the strip. An internal spring in the strip maintains the engagement between the shoulder and the ear.

BACKGROUND OF THE INVENTION

Field of the invention

This invention pertains to structure employed to join together and to conceal a joint between two metal sheets in a cabinet.

Description of the prior art

Heretofore, it has been conventional to join metal sheets together in various ways, such as by spot-welding, or such as by means of removable nuts and bolts. The former has the disadvantage that there must be an electrically clean connection between the sheets to be joined in order to obtain reliability in the production of spot-welds therebetween, and such reliability is not obtainable if one of the sheets has been pre-finished with a non-electrically conducting coating. The latter has the disadvantage that separate bolts must be employed, or their equivalents such as rivets, the use of which necessitates provision of aligned holes in the two workpieces.

Summary of the invention

The present invention contemplates that a number of ears are struck integrally out of one of the sheet metal parts and caused to project into the other to preclude relative movement therebetween in at least one axis, thereby enabling the use of pre-painted or pre-finished material and obviating the need for providing hole-receiving fasteners such as screws or rivets, such joint being enclosed and concealed by a trim strip of U-shaped cross section which receives the joint, and which has a shoulder which snaps over the ear thus produced to preclude separation of such trim strip therefrom.

Accordingly, it is an object of the present invention to provide a cabinet joint enabling the use of pre-finished sheet materials while eliminating the need for any separate fasteners.

Another object of the present invention is to provide a cabinet joint construction having a finished appearance at a minimum of cost in labor and materials.

Many other advantages, features and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description and to the accompanying sheet of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

On the drawings:

FIG. 1 is a side elevational view, partly broken away, of a cabinet provided in accordance with the principles of the present invention;

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FIG. 2 is an enlarged fragmentary cross-sectional view taken along line II—II of FIG. 1;

FIG. 3 is a top view in reduced scale of the cabinet shown in FIG. 1 during assembly thereof;

FIG. 4 is an enlarged fragmentary view of a portion shown within a circle IV on FIG. 3;

FIG. 5 is a bottom view of the structure shown in FIG. 4;

FIG. 6 illustrates fabrication of the trim strip; and

FIG. 7 is an enlarged cross-sectional view of the trim strip shown in FIG. 2 in its unassembled state.

As shown on the drawings:

The principles of this invention are particularly useful when embodied in a joint in a sheet metal cabinet such as shown in FIG. 1, generally indicated by the numeral 10. As best seen in FIG. 3, the cabinet includes a pair of side sections 11, 12, the side section 11 extending along the front of the cabinet and along opposite ends to meet the similarly extending side section 12 which extends along the rear and along such ends. The cabinet 10 includes a bottom 13 to which a number of feet 14 may be directly or indirectly secured. The side sections 11, 12 are jointly referred to herein as a metal sheet, and they may comprise a single such sheet. Where the side sections 11, 12 comprise separate sheets, they are joined together at their abutting seam 15 by means not shown herein nor necessary to an understanding of the present invention. The bottom sheet 13 is likewise also referred to herein as a metal sheet. The sheet 13 is joined to the sheet 11, 12 by means of a cabinet joint 16 best shown in FIGS. 2 and 5.

The sheet 11, 12 has a lower marginal portion 17 which extends about the lower perimeter of the cabinet 11 while the sheet 13 has a down-turned flange 18 which extends about its perimeter and which likewise comprises a marginal portion which is disposed in abutting relation to the marginal portion 17. In the practice of this invention, either side of the sheet 11 or either side of the sheet 13 may be pre-finished, and the joint 16 may be applied thereto without damage to such finish.

The joint 16 further includes an ear 19 which is integral with the marginal portion 17 of the sheet 11 and which extends through an aperture (not shown) in the marginal portion 18 of the sheet 13 such aperture being formed by the formation of a second ear 20 out of the marginal portion 18 thereof. The ear 19 is thus integral with the sheet 11 and projects from its surface while the ear 20 is integral with the marginal portion 18 of the sheet 13 immediately adjacent to the ear 19, the ear 20 projecting in a parallel position and in engagement with the ear 19. Both of the ears 19 and 20 are elongated and are integral at at least one and preferably both ends with the respective sheets 11, 13, and both ears 19, 20 are severed along their length, preferably along opposite sides thereof, and are bowed intermediate their ends, all as illustrated. The upper and lower edges of the ear 19 are thus engaged by confronting edges that define the aperture in the flange 18 of the adjacent sheet for the purpose of transmitting a supporting force therebetween. It is thus evident that the ear 19 projects snugly through an aperture in the flange 18 of the sheet 13.

A number of cabinet joints 16 are provided as shown in FIG. 3, there being 18 joints with the sheet 13 in this embodiment. Once these have been provided as shown in FIG. 3, the cabinet is then ready for the reception of a molding strip 21 shown in assembled relation to the pair of metal sheets in FIGS. 1 and 2.

The construction of the molding strip 21 is best understood by referring preliminarily to FIG. 6. A strip of metal of considerable length has marginal edges 22, 23 and a uniformly spaced series of apertures 24 which ex-

tend almost from the edge 22 to the edge 23. Over this strip there is molded plastic material 24 of suitable configuration, and then marginal portions of the metal strip are removed leaving a pair of ultimate edges 25, 26. These edges 25, 26 extend through the slits 24 so as to leave a series of separate elements 27 of uniform size and uniform spacing embedded in the strip. The strip is then bent along two longitudinal lines so as to form the molding strip 21 with a cross section as shown in FIG. 4.

As best seen in FIG. 7, the molding strip 21 thus comprises plastic 24 of U-shaped cross section having a leg portion 28 and a leg portion 29 and a closed end 30. A leg portion 29 has a resilient flange 31 which carries an internal shoulder 32 directed or facing generally toward the closed end 30 of the U-shape. The flange 31 is secured to an internal surface of the strip 21 on the leg portion 29. The resilient flange 31 tapers on both sides of the shoulder 32, the flange thickness increasing as it extends toward the inner surface of the leg portion 29, and the thickness decreasing in a tapered fashion in the opposite direction. Thus the strip has an internal spring which comprises a series of separate U-shaped elements 27 disposed along the length of the strip. The leg portions of the spring terminate at the edges 25, 26 which are substantially coplanar with the ends of the leg portions 28, 29 of the strip.

The internal shoulder 32 defines a gap 33 with the inner surface of the opposite leg portion, the gap being smaller than the combined thickness of the sheets at their marginal portions 17, 18, such gap 33 receiving the marginal portions 17, 18 as shown in FIG. 2. However, the ear, in this instance the ear 20, snaps past the shoulder 32 to hold the molding strip 21 securely in place. Preferably, the molding strip 21 has a length which is co-extensive with the flange 18 so as to enclose the entire lower edge of the sheet 11, 12.

To construct the cabinet joint 16, the pair of metal sheets are held in the desired ultimate relative position with respect to each other, the ear or ears 19, 20 are simultaneously formed, and the molding strip 21 is then slipped into place as described, the spring elements 27 acting to hold the strip securely in position with the leg portion 28 firmly against the outer surface of the sheet 11, 12.

Although various minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such embodiments as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

1. A cabinet joint, including:

- (a) a pair of metal sheets having marginal abutting portions joined together, at least one of said sheets having at least one ear integral therewith and projecting out of the surface of said one sheet;
- (b) a molding strip of U-shaped cross-section receiving said marginal portions within said U-shape, said strip having an internal shoulder directed toward the closed end of said U-shape in engagement with an oppositely facing edge of said ear.

2. A cabinet joint according to claim 1, in which said marginal portion of one sheet comprises a flange extending around said sheet, said strip being coextensive in length with said flange.

3. A cabinet joint according to claim 1, the other of said sheets having an ear integral therewith at each of said ears in said one sheet, and projecting in a parallel position therewith.

4. A cabinet joint according to claim 1, in which an

edge of said ear is engaged by an edge of the adjacent sheet for transmitting a supporting force therebetween.

5. A cabinet joint according to claim 1, in which each said ear is elongated, is integral at both its ends with said sheets, is severed from said sheet along its length, and is bowed along its length.

6. A cabinet joint according to claim 5, in which each said ear is severed from said sheet along opposite sides of its length.

7. A cabinet joint according to claim 1, in which each of said sheets have at least one of said ears, in parallel engagement with each other, each of said ears being elongated and integral with said sheets respectively at at least one of its ends, and being severed from said sheet opposite sides of its length.

8. A cabinet joint according to claim 6, in which each of said sheets have at least one of said ears in parallel engagement with each other, one of said ears projecting through one of said sheets for being engaged by an edge thereof.

9. A cabinet joint according to claim 1, in which said internal shoulder is carried on a resilient flange secured to an internal surface of said molding strip.

10. A cabinet joint according to claim 9, in which said internal shoulder and the opposite inner side of said molding strip define a gap which in its unassembled form is smaller than the thickness of said sheets at said ear.

11. A cabinet joint according to claim 1, in which the thickness of said flange tapers on at least one side of said shoulder.

12. A cabinet joint according to claim 11, in which the thickness of said flange tapers increasingly from said shoulder toward said internal surface and tapers decreasingly from said shoulder toward the opposite direction.

13. A cabinet joint according to claim 1, in which said molding strip comprises plastic, and has an internal spring of U-shaped cross-section aligned with the cross-section of said strip.

14. A cabinet joint according to claim 13, in which the leg portions of the U-shaped plastic strip terminate substantially with the leg portions of the U-shaped spring.

15. A cabinet joint according to claim 13, in which the U-shaped spring comprises a series of separate elements disposed along the length of said strip.

16. A cabinet joint according to claim 14, in which the U-shaped spring comprises a series of separate elements disposed along the length of said strip.

17. A cabinet joint according to claim 12, in which said molding strip comprises plastic, and has an internal spring of U-shaped cross-section aligned with the cross-section of said strip, the leg portions of the U-shaped plastic strip and of the U-shaped spring terminating together, said U-shaped spring comprising a series of separate elements disposed along the length of said strip.

18. A cabinet joint according to claim 17, in which each of said sheets have at least one of said ears in parallel engagement with each other, one of said ears projecting through one of said sheets for being engaged by an edge thereof, each of said ear being elongated and integral at both of its ends with one of said sheets and being severed therefrom along opposite sides of its length, and being bowed along its length.

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