May 7, 1963 F. W. PREUSS 3,088,560

CABINET CONSTRUCTION

Filed June 3, 1960

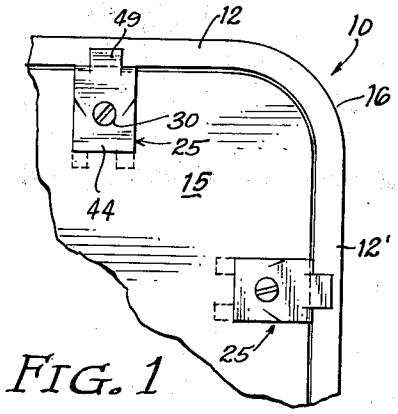

FIG. 1

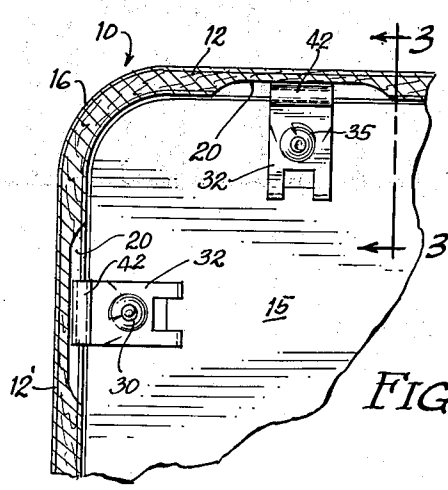

FIG. 2

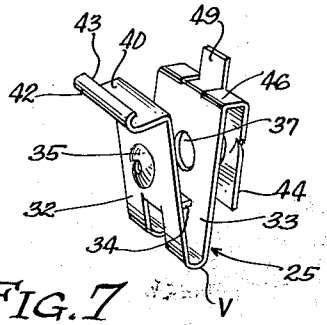

FIG. 7

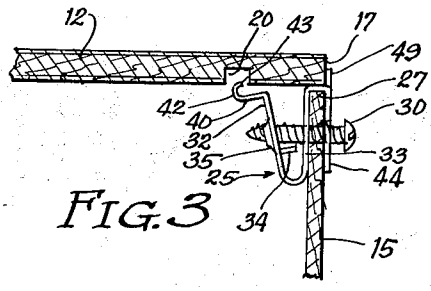

FIG. 3

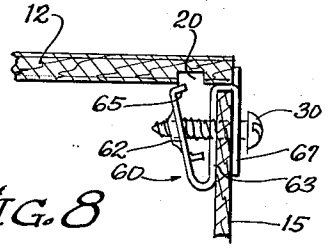

FIG. 8

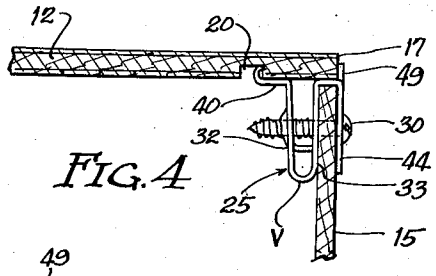

FIG. 4

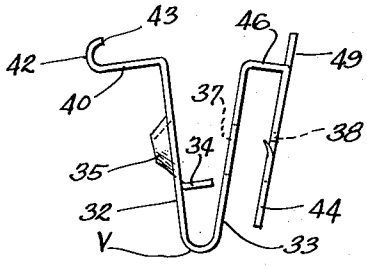

FIG. 5

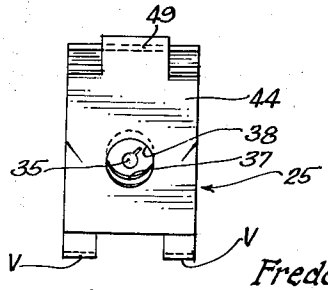

FIG. 6

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CABINET CONSTRUCTION

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My invention relates generally to cabinet construction and more particularly to means for attaching a removable panel to walls disposed in planes transverse to that of the panel, as in cabinets and housings of all kinds.

My invention is especially designed to solve certain problems in the manufacture of plywood cabinets employed largely for portable table model and console television and radio receivers, although adaptable for other uses.

On cabinets of the type referred to it is desirable that a particular closure panel, usually in the back or bottom, be readily removable for access to the inside of the cabinet for repair and replacement of parts, etc.

It has been customary in the past, in the production of cabinets of this type utilizing relatively thin sheets of wood, plywood and other materials, to employ interior wood pieces or cleats adhesively secured to the inner surface of a wall for the reception of screws inserted from the outside of the removable panel. This type of construction is objectionable because costly from the standpoint of time and labor and is not entirely satisfactory from other standpoints.

An object of my invention, therefore, is to provide an improved cabinet construction which will dispense entirely with the need for cleats and the like.

A further object is to provide, in a cabinet construction, improved means for attaching a removable panel to transverse walls, utilizing an improved spring-clip attaching means which may be quickly and conveniently attached and detached.

Still another object is to provide an improved construction of spring-clip which is especially suitable for cabinet construction in the manner described.

Various other objects and advantages will appear as the description proceeds.

Referring now to the drawings forming a part of this specification and illustrating a preferred form of my invention,

FIG. 1 is a fragmentary plan view of a corner portion of a cabinet utilizing my invention, showing the outside of a removable panel in relation to permanent walls of the cabinet disposed in planes perpendicular to said panel;

FIG. 2 is a plan-section in a plane parallel to that of FIG. 1, taken through the permanent walls and looking toward the inner face of the removable panel seen from the outside in FIG. 1;

FIG. 3 is a transverse sectional view taken substantially along the line 3—3 of FIG. 2, and showing the various parts in position to be secured, but not secured;

FIG. 4 is a sectional view similar to that of FIG. 3 but showing the parts secured;

FIG. 5 is an edge elevational view of a spring-clip forming a part of my invention;

FIG. 6 is an elevational view of said clip taken from the right of the clip as seen in FIG. 5;

FIG. 7 is a perspective view of the clip shown in FIGS. 1–6 inclusive; and

FIG. 8 is a sectional view similar to FIG. 3 but showing a modified form of clip.

Referring to FIGS. 1–4 inclusive, the numeral 10 represents generally a cabinet or container of any desired size, shape and material, although, as stated above, my invention is intended primarily for certain types of cabinets, frequently formed of relatively thin plywood, although

my invention is otherwise applicable. The numerals 12 and 12′ indicate two adjoining walls which might be continuous, as seen in FIGS. 1 and 2, or separate and permanently joined together at the corner. Said walls 12 and 12′ may be in planes perpendicular to each other, as for example a side and a top wall.

Disposed in a plane perpendicular to the walls 12 and 12′ as at the back of the cabinet or bottom thereof, is a removable panel 15. In this particular embodiment panel 15 is shown as a removable back closure for the cabinet 10, which in this instance is designed to house the operative parts of a television receiver or the like, the walls 12 and 12′ being, respectively, top and side walls of the cabinet 10.

As seen best in FIG. 3, one of the permanent walls of the cabinet 10, in this instance the top wall 12, is deformed on the inner face thereof adjacent an edge 17, as by the provision of a recess or groove 20 for engaging a clip secured to the removable panel 15 adjacent the edge 27 thereof by suitably retaining means, such as a wood screw 30. In the preferred embodiment shown, as seen best in FIGS. 1 and 2, securing means for the removable panel 15 is provided on opposite sides of and adjacent to the corner 16 of the cabinet, representing the juncture of the two permanent walls 12 and 12′.

The clip 25, preferably formed of suitable resilient material, such as tempered sheet steel or the like, comprises a pair of leaves 32 and 33 disposed in V formation, a tongue portion 34 being struck out adjacent the vertex of the V. This tongue 34 is retained as an integral element of leaf 32, functioning as a stop and adding strength against any tendency of the clip to collapse at the vertex when the leaves 32 and 33 are brought together by screw 30. Leaf 32 is deformed intermediate the extremities thereof to provide a female threaded portion 35, while an aperture 37 is provided in leaf 33 aligned with said threaded portion 35. At the end of leaf 32 remote from the vertex V is an integral J-shaped portion 40, the foot 42 of which extends outwardly and rearwardly and is designed to engage a side wall of groove 20 of one of the fixed walls or panels. It will be seen that the foot portion 42 is formed to provide a terminal lip 43 which will tend to bite into a wall of groove 20, as best seen in FIG. 4, when the removable panel 15 is secured in place by screw 30.

Integral with leaf 33 is a leaf portion 44 connected to leaf 33 by an intermediate bridge portion 46, leaves 33 and 44 being formed in substantially parallel planes and the bridge portion 46 being substantially perpendicular thereto, the three portions 33, 46 and 44 being thus of substantially U-formation so as to embrace panel 15. Struck out from the bridge portion 46 is an outstanding tab 49 which, as best seen in FIGS. 1–4 inclusive, is substantially coplanar with leaf 44 and is designed to abut against the edge 17 of the adjacent permanent wall or panel. In leaf 44 is a screw hole 38 aligned with holes 35 and 37.

In constructing the cabinet or other article to which my invention is applied, it will be understood that the permanent walls or panels are provided with the desired grooves 20, preferably before such walls are permanently secured together. The removable panel 15 may be preliminarily bored to receive screws 30, or such screws may be driven in place upon final assembly of the cabinet. In any event, when it is desired to attach the removable panel 15 to the cabinet, clip 25 is positioned, as best seen in FIG. 3, and screw 30 is then driven home until the parts attain the relationship shown in FIG. 4. At this point it will be seen that clip 25 is positively retained in position, the tab 49 abutting against the edge 17 of the adjacent permanent wall 12 while the terminal lip 43

bites into the side wall of groove **20**, firmly and positively retaining removable panel **15** in closing position on the cabinet.

When it is desired to remove the panel for access to the inside of the cabinet **10**, it is merely necessary to loosen screws **30** partly, to about the position shown in FIG. 3, so that the terminal lip of the clip is loosened from engagement with groove **20**, thus freeing panel **15** so that it can be removed without risk of loss of the screws or clips and subsequently readily restored to position closing the cabinet.

FIG. 8 shows a modified form of resilient clip **60**, comprising a pair of leaves **62**, **63** arranged in V formation, similar to leaves **32**, **33** of clip **25** (FIGS. 1–4). Leaf **62** has a terminal lip **65** extending outwardly and rearwardly, similarly to lip **43** of the first embodiment, so as to be engageable in groove **20** or other deformation of the cabinet wall **12**.

As in the first embodiment, a leaf **67** is disposed integrally in U-formation with leaf **63** so as to embrace an edge of panel **15**. Clip **60** may likewise be retained by a screw **30** and its operation will be substantially similar to clip **25**, the screw drawing up leaf **62** into locking position.

It is believed that from the above description the advantages achieved by my invention will be readily apparent. Cleats or blocks attached to the interior walls of a cabinet, as in present and prior practice of constructing cabinets of this type, are completely eliminated, with the attendant mess, labor and expense. Furthermore, in the use of such blocks or cleats the screw holes in the removable panels and in the cleats are likely to become worn after frequent removal and replacement of the closure panel, screws tend to become lost, etc.

I am aware that spring-clips have long been known for securing together adjacent panels, as, for example, in Tinnerman Patents Nos. 2,346,200 and 2,378,257 and in Hartmen et al. Patent 2,581,481 and numerous others. However, so far as I am aware, the constructions shown and described herein are believed to be new and are highly advantageous.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art; hence I do not wish to be limited to the specific embodiments shown and described or uses mentioned, but intend the same to be merely exemplary, the scope of my invention being limited only by the appended claims.

I claim:

1. A resilient, bent sheet-material clip for securing together a pair of panels with adjoining marginal portions disposed in planes generally normal to each other, one of said panels being relatively fixed and the other removable, comprising a first leaf and a second leaf, said leaves being arranged in substantially V-formation and having aligned apertures for receiving a screw, that of the first leaf being threaded whereby it may be drawn toward the second leaf by the screw, the first leaf also having a terminal lip angularly disposed to the major plane of said first leaf and directed toward the plane of said second leaf for engaging the marginal portion of said fixed panel, a third leaf having an aperture aligned with said screw apertures and arranged in substantially U-formation with the second leaf for embracing a marginal portion of the movable panel and also having a tongue portion stamped out of said clip for engaging an edge of said fixed panel when the panels are assembled, said first leaf being adapted to be drawn up by a screw threaded therein and passing through the other leaves and through the marginal portion of the movable panel, from a position substantially free of said fixed panel to a position firmly engaging the marginal portion of said fixed panel, further movement of the screw acting to draw up the movable panel into firmly assembled relation with the fixed panel.

2. A clip as defined in claim 1, wherein the terminal lip formed on the first leaf is disposed at the free end of a J-shaped member integral with and angularly disposed relative to said first leaf.

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