United States Patent [19]

Shore

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[54] **MULTI-UTILITY DURABLE MITERED PICTURE FRAME**

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[52] **U.S. Cl.** ..... **40/152.1;** 403/295 X

[51] **Int. Cl.²** **G09F 1/12**

[58] **Field of Search** ..... 52/758 H, 732; 403/295, 403/402; 248/489; 40/155, 152, 152.1

[56] **References Cited**

UNITED STATES PATENTS

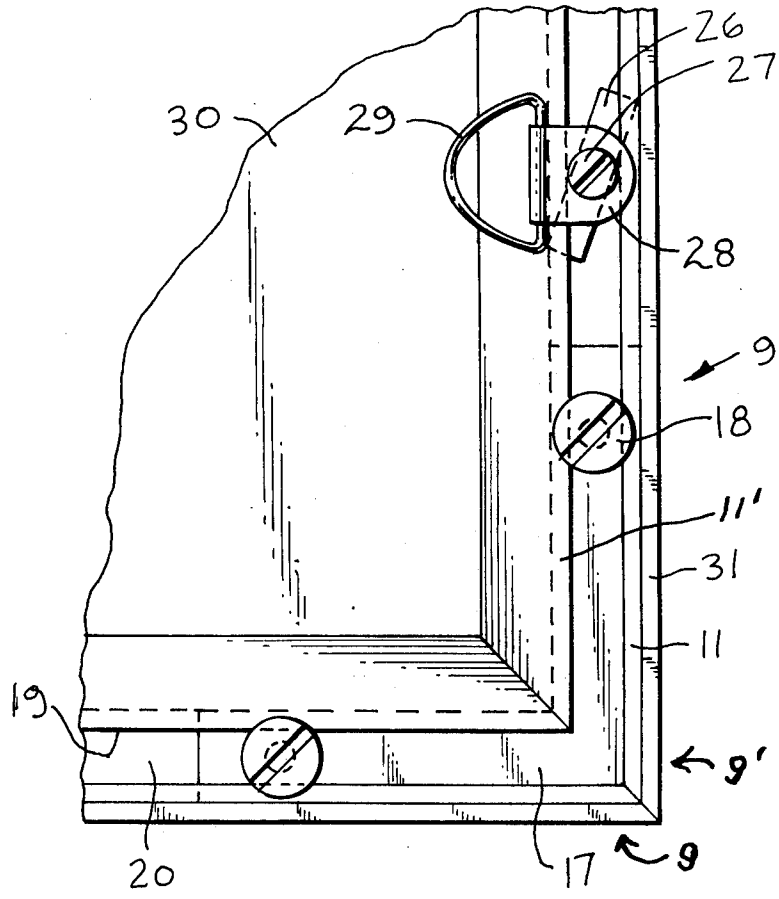
2,654,451	10/1953	Schmidgall	403/295 X
2,816,632	12/1957	Nardulli	403/295 X
3,486,288	12/1969	Pyne	52/732
3,668,799	6/1972	Sharron	40/152.1

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Assistant Examiner—Wenceslao J. Contreras

[57] **ABSTRACT**

In a preferred embodiment of the invention, there is provided a clip-fastened picture frame assembly of mitered outer-frame pieces of which for each outer-frame piece the clip-mountable "T"-shaped slot — as viewed in cross-section — is defined by structure extending laterally from about a mid-point of the width of the side of the outer-frame piece, each outer-frame piece being of sturdy and rigid material, such that the mitered corners are not subject to opening-up because of the bracing effect of the frame side portions on each of opposite sides of the mid-point as the mid-point serves as a pivot point by virtue of the clip being fastened at the mid-point of each of the mitered matched or mated corners of adjacent outer-frame pieces of a picture assembly, and the rearward portion of the clip supporting flange extending laterally further inwardly to provide a recessed seat for the mounting of a typically wooden frame of a picture canvas mounting, with a picture hanging clip being insertable within the T-shaped slot and twisted beneath the flanges of the T-shaped slot and therein locked by a lock screw extending through the clip strip such that the clip may be easily mounted onto the rear of the picture frame subsequent to the final assembling of the picture frame assembly.

11 Claims, 8 Drawing Figures



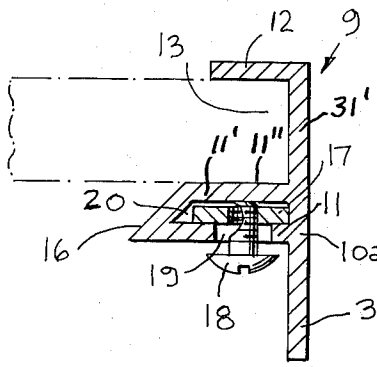


Fig. 1

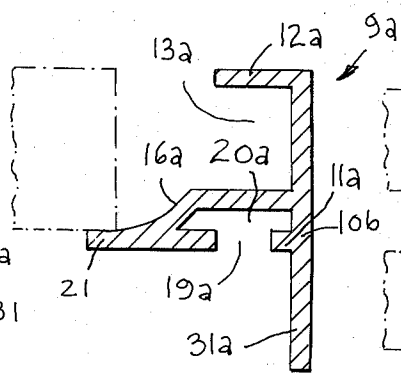


Fig. 2

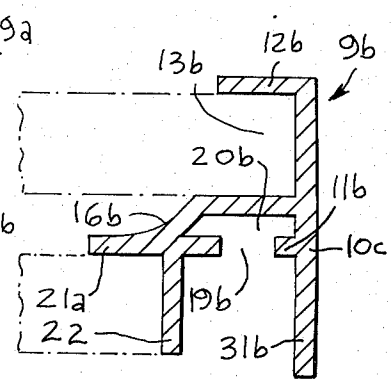


Fig. 3

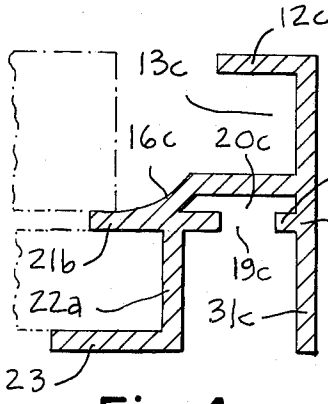


Fig. 4

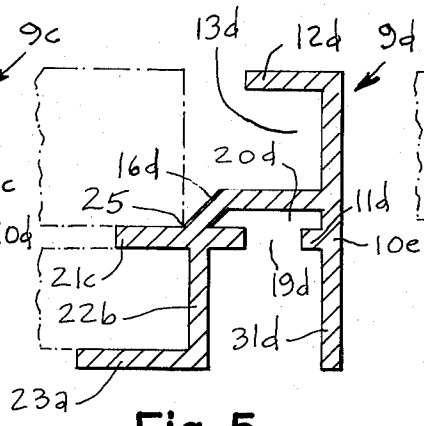


Fig. 5

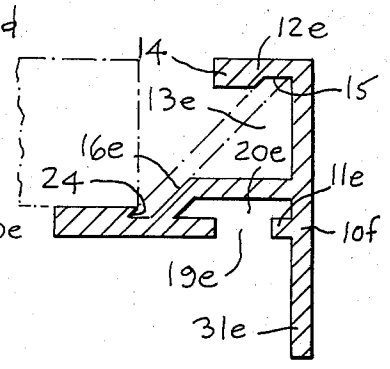


Fig. 6

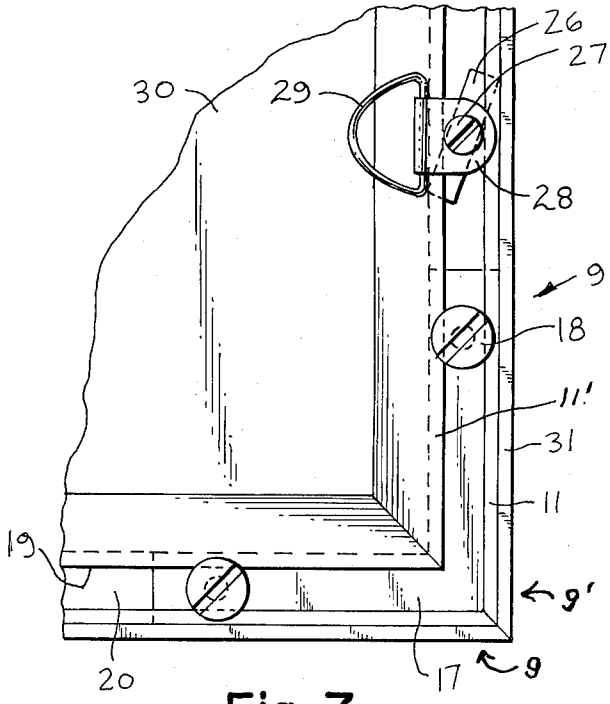


Fig. 7

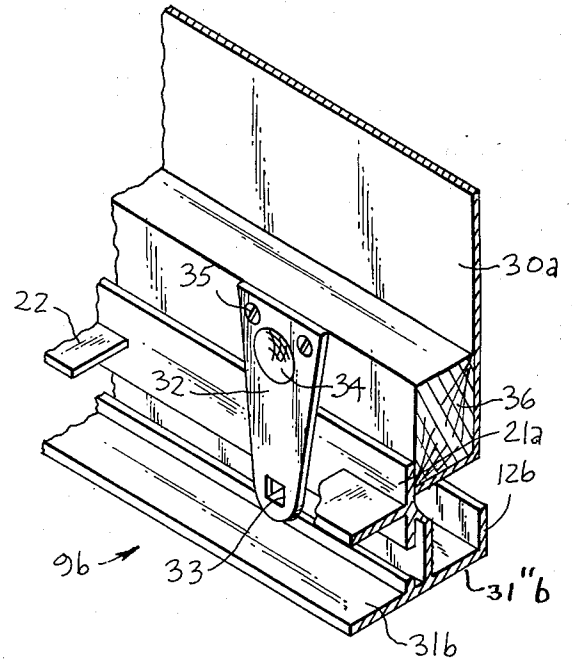


Fig. 8

MULTI-UTILITY DURABLE MITERED PICTURE FRAME

This invention relates to an improved clip fastened picture frame assembly and the pieces thereof.

BACKGROUND TO THE INVENTION

Prior to the present invention, there has existed a problem in the maintaining of mitered corner edges in a "closed" flush relationship against the strains of mounting a picture therein, typically under stress the mitered corner opening-up to expose a crack-opening which is most displeasing in appearance aesthetically and accordingly severely detracts from the value and utility of mitered picture frames of a metallic type or other rigid-structure type, with particular reference to the metallic variety having a T-shaped mounting slot extending peripherally along the back side of the outer frame into which the right-angle clip legs are slipped at the mitered corners during the assemblying of the picture frame. It is noteworthy to note that when the legs are anchored suitably at each corner on the back face within the matched slots at the mitered corners, the back edge is sturdy against parting, but the forward face edges are not sturdy, the back side attachments serving in the nature of a hinge or fulcrum point thereby allowing the front surfaces of the mitered corners to open-up undesirably.

The picture frames of this type heretofore have had other limitations also, such as being adaptable to solely a very limited number of mounting positions of pictures and/or canvases, as well as it heretofore being essential to step-wise insert the metal strip within the slot which metal strip is to be utilized for hanging the picture, the insertion being necessary before the locking together of mitered corners, otherwise it being necessary to disassemble the assembled frame in order to insert the strip which accidentally had been omitted before the locking together of the mitered corners of the picture frame. Such a procedure proves to be necessary as a result of the picture frame construction together with the construction of the picture mounting strip, with the result of much costly lost time in disassembling, insertion of the strip and reassembling.

SUMMARY OF THE INVENTION

Accordingly, objects of the present invention include the overcoming, obviating, or avoiding of one or more of the problems and difficulties and disadvantages of the type discussed above, together with other novel and desirable advantages.

Other objects become apparent from the preceding and following disclosure.

One or more objects of the present invention are obtained by the invention as defined herein.

Broadly the invention includes a picture frame assembly of a sturdy rigid type normally and preferably of metal, having mitered corners, in which each outer-frame piece typically of four matching pieces to form a four-sided frame, is basically similar to prior outer-frame pieces except that the inwardly-extending lateral flange does not extend from the rear edge of the rigid outerframe piece but alternatively extends from a mid-point half-way back along the inner side width of the side of the outer-frame piece such that portions of the side on each of opposite side of the mid-point serve to brace against corresponding portions of matched mitered corners of another outer-frame piece — i.e. the fulcrum point being at a mid point. In conjunction, the inwardly extending T-slot-forming structure in preferred embodiments includes various flanges extending therefrom, making possible several optional seating positions for the mounting of wooden frames on which a canvas or other painting or picture is mounted. Also, by virtue of the T-slot-forming structure being advanced forwardly to the mid-point, it is now possible to utilize a headed screw for the anchoring of the clip into position, as well as a headed screw for the mounting of the picture-hanging clip within the T slot on the back of the frame. Additionally, as another inventive feature of the picture hanging clip, because it is now possible to use a headed screw that extends backwardly behind the picture without danger of it touching the wall or the like, it is possible to use a strip narrower than the slot-opening space for insertion thereinto with a screw threadably mounted in the narrow strip which upon a tightening of the screw twists the opposite ends of the narrow strip to positions locked beneath the overhangs on either side of the slot, the narrow strip becoming locked into position as the screw is tightened.

THE FIGURES

FIG. 1 illustrates a cross-sectional view of an embodiment of the present invention, illustrating a single outer-frame piece together with a headed locking screw threaded and screwed into a clip aperture bracing a leg of a corner locking clip through which the threaded screw is passed, this illustrated outer-frame section being the same as illustrated in the frame assembly of FIG. 7.

FIG. 2 illustrates a cross-sectional view of an alternate embodiment of the inventive single outer-frame piece differing in the presence of a curved or arced seat face and flange extension thereof making possible the seating of varied sizes of a canvas-mounted frame.

FIG. 3 illustrates a cross-sectional view of a variation embodiment on the FIG. 2 embodiment, this variation being the addition of a rearwardly extending flange 22 providing a rear face seat for the mounting of a canvas-mounted or other frame.

FIG. 4 illustrates a further variation on the FIG. 3 embodiment, in cross-section, illustrating a back-up flange for the rearward extension of FIG. 3 embodiment.

FIG. 5 illustrates in cross-section a variation on the FIG. 4 embodiment, providing a lineally extending angular forward seat lateral face with a sharp angle of incidence to the inwardly extending forward seat flange first illustrated in the FIG. 2 embodiment.

FIG. 6 illustrates in cross-section an embodiment similar to the FIG. 5 embodiment, minus the rearwardly extending flange and plus a recess notch at the base of the angular flange providing a locking space for a forward laterally extending framing strip.

FIG. 7 illustrates in an in-part view in elevation plan view an embodiment such as that of FIG. 1, with a frame mounted therein as viewed from the rear face, illustrating matched corner outer-frame pieces with the mitered ends secured together by the right-angle clip screw-anchored by a separate screw for each leg of the clip in its slot-inserted state, this FIG. 7 also illustrating the novel picture-mounting device in a mounted state within the slot.

FIG. 8 illustrates an in-part view in perspective of a rear face, in cross-section through the outer-frame piece and wood frame mounted therein, this embodi-

ment corresponding to that illustrated in the FIG. 3 above, this FIG. 8 also illustrating a locking mechanism of the type previously disclosed in U.S. Pat. No. 3,665,629 issued May 30, 1972, the disclosure of which is hereby incorporated by reference. In order to utilize such a locking device, it should be noted that another feature of this FIG. 8 outer-frame piece embodiment is the intermittent nature of the rearwardly extending flange thereby defining a gap through which the locking lever may be rotated to lock the frame into the frame assembly.

DETAILED DESCRIPTION OF THE INVENTION

In greater detail, FIGS. 1 and 7 illustrate one basic embodiment of the present invention as outer-frame piece 9 of FIG. 1 includes at its side mid-point 10*a* inwardly laterally extending flange 11 and inwardly extending flange 11′ defining screw threaded hole 11″. The flanges 11 and 11′ jointly define the slot space 20 and the slot entrance 19 through which the screw 18 is screwed through the clip 17 aperture thereof bracing the clip 17 within the slot space 20. Flange 12 extend laterally inwardly, it being noted that the rear face of flange 12 is totally linear thus providing a space 13 between it and the flange 11′ into which space 13 a picture frame may be snugly inserted with a clean fit, as contrasted to the FIG. 6 embodiment, for example, which includes a rearwardly extending overhang flange 14 to define recessed wall face 15 facing rearwardly from flange 12*e*, for its special purpose. The FIG. 1 angular face 16 provides a surface against which frames of varying sizes may be seated, the small-sized frames on which a canvas typically would be mounted, being further rearwardly mountable than a larger frame. It should be noted that with the prior rigid T-slot frames over which the present invention is an improvement, the novel illustrated screw 18 locking mechanism was not possible because of the prior inwardly-extending clip-mounting flanges being flush with the rear end of the side extension 31, the extension 31 in this invention making possible the use of a screw lock as well as the mitered corner pieces being secure against opening by virtue of the corner faces of 31 and 31′ abutting those of the matched piece at the mitered corners.

The FIG. 2 embodiment corresponds substantially to that of FIG. 1, identical or similar parts having a similar numeral designation except for the addition of a letter, such as flange 12*a* of FIG. 2 corresponding to flange 12 of the FIG. 1 embodiment. Additionally, however, the FIG. 2 embodiment surface 16*a* is arced in nature for providing a more gradual seating surface seat for frames of differing sizes to be mounted on the novel inwardly extending flange 21.

The FIG. 3 embodiment includes additionally a rearwardly extending flange 22 providing a limit-abutment for a close fitting picture frame which possibly needs no further locking support for its mounting in this frame, in the same manner that the FIG. 1 embodiment needs no additional support for the mounting in the space 13.

The FIG. 4 embodiment provides a still further securing seating flange 23, as compared to the embodiment of FIG. 3.

The FIG. 5 embodiment is basically similar to the FIG. 4 embodiment, except for its similarity to FIGS. 1 and 6 in having a lineally extending face 16*d*, providing a proper surface for the mounting of a peripheral strip as illustrated in phantom in the FIG. 6 embodiment which additionally includes the slot 24 for more secure seating of a peripheral strip as well as the shoulder 14 defining the angularly faced recess of seating surface 15.

FIG. 7 illustrates a rear face appearance of an outer frame piece 9 of FIG. 1 having picture canvas-mounted frame 30 locked thereinto in a manner typically such as illustrated in phantom in FIG. 1. The clip 17 of FIG. 1 and the locking threaded screw 18 are also illustrated. Additionally there is illustrated in the FIG. 7 the locking metal strip 26 in its twisted state beneath the opposite overhangs of flanges 11 and 11′ within the slot space 20, as twisted by the locking tightening action of the screw 27 extended through the hanging structure 28 with its loop handle 29.

FIG. 8 illustrates a FIG. 3 embodiment showing both a perspective and a cross-section view of the outer-frame piece, together with a wooden frame mounted therein as secured by the locking screws 35 and the downwardly (forwardly-extending) section 34 of the twist lever 12 with its slot-lock keys 33 as fully described in the above-noted U.S. Pat. No. 3,665,629. This FIG. 8 also shows however the intermittent terminations of the flange 22 which thereby provide space for the turning of the locking lever 22 in a locking operation.

The various recesses seats provided by the varying embodiments make possible varying shadow-box effects and/or framed with special border-strip effect as typically illustrated in phantom for both effects in the FIG. 6 embodiment, as well providing for flush forward mounting as possible with any of the illustrated embodiments but illustrated with particularity in phantom in the FIGS. 1 and 3 embodiments.

It is within the spirit and scope of the present invention to make such variations and modifications and substitution of equivalents as would be apparent to a person of ordinary skill in this field.

Particular note should be made, however, that in order to obtain the inventive benefit of the mid-point inwardly extending flanges 11 and 11′ as for example illustrated in FIG. 1, the outer-frame pieces 9 and 9′ (FIG. 7) must be substantially rigid.

I claim:

1. A picture frame device comprising in combination: outer frame pieces mitered at opposite corner-ends thereof and thereby joinable to one-another at the ends thereof to form a corner frame assembly, each outer frame piece defining an outer side wall and a front wall, a cross-section through the outer frame and the outer side wall and the front wall thereof being in a shape of an inverted "L" with the front wall extending inwardly defining a base flange as a base to the inverted L at a front of the outer frame piece; and each outer frame piece further including additional second laterally inwardly-extending flange and third laterally inwardly-extending flange, the second and third laterally inwardly-extending flanges extending from said outer front wall, the second and third laterally inwardly-extending flanges being substantially parallel to each other and to the base flange, and the second and third laterally inwardly-extending flanges being spaced behind the base flange, the third laterally inwardly-extending flange being spaced behind the second flange and being short relative to each of the base flange and the second flange, the second flange continuing in structure and shape to form in conjunction with the third flange a T-shaped slot as viewed in said cross-sectional view, the second and third flanges both extending from about a

mid-point along the upright portion of the inverted L shape of said outer side wall structure whereby joined metered ends of a corner frame assembly when joined have opposite portions on opposite positions from the mid-point braced against the corresponding portions of a joined other outer frame, with the mid-point of each joined piece serving as a pivot point, each outer frame piece being sturdy and rigid.

2. A picture frame device of claim **1,** including an angular corner clip member having a shape mateably insertable into the T-shaped slots of opposing assemble mitered corner-ends, and including anchoring means for securing each clip member within the respective T-shaped slots of mated mitered corner-ends, each clip member including a leg member insertable into one of the slots of the assembled mitered corner-ends.

3. A picture frame device of claim **2,** in which the clip member defines a helically screw-threaded hole aligned with the space between a terminal end of the third flange and a space-apart terminal end of the second flange portion defining the leg of the T-shaped slot, and including a headed screw mateable within the screw hole.

4. A picture frame device of claim **3,** in which the second flange extends laterally a distance greater than the base flange, then extends rearwardly-inwardly angularly and thereafter includes an outwardly extending terminal portion extending toward and aligned with and spaced from the terminal end of the third flange in the defining of the T-shaped slot.

5. A picture frame device of claim **4,** including as part of the second flange, another and fourth terminal flange extending inwardly and about parallel with said the outwardly extending terminal portion, thereby providing a recessed seat on which a frame of canvas mounting may be secured to the frame assembly.

6. A picture frame device of claim **5,** in which the rearwardly-inwardly angularly extending portion of the second flange is concave in shape with the concave portion facing forwardly of the frame assembly.

7. A picture frame device of claim **6,** including as a part of the second flange, another fifth terminal flange extending rearwardly from about a proximal end of the fourth terminal flange such that a right-angle rearwardly-facing seat is provided for the mounting therein of a forwardly-facing frame of a canvas mounting.

8. A picture frame device of claim **7,** including as a part of the fifth terminal flange, a sixth terminal flange extending laterally inwardly from about a terminal distal end of the fifth terminal flange in a direction about parallel with the fourth terminal flange.

9. A picture frame device of claim **5,** including as a part of the second flange, another fifth terminal flange extending rearwardly from about a proximal end of the fourth terminal flange such that a right-angle rearwardly-facing seat is provided for the mounting therein of a forwardly-facing frame of a canvas mounting, and including as a part of the fifth terminal flange, a sixth terminal flange extending laterally inwardly from about a terminal distal end of the fifth terminal flange in a direction about parallel with the fourth terminal flange.

10. A picture frame device of claim **5,** in which the rearwardly-inwardly angularly extending portion of the second flange is linear and extends as a notch-forming back-lateral wall beneath the level of the forward face of the fourth terminal flange at a proximal end of the fourth terminal flange thereby forming a recess-notch forwardly facing providing a seat for a framing angularly seated side border strip.

11. A picture frame device of claim **1,** including a picture hanging means comprising a cord-attaching element defining a flat face of predetermined length greater than the insertion portion of the T-shaped slot as viewed from a back side of the outer frame piece, and an elongated strip of a width narrower than said insertion portion of the T-shaped slot as viewed from a back side of the outer frame piece, the elongated strip having a screw-threaded hole through about a center of its length portion, and a screw mateable within the elongated strip's screw-threaded hole, such that the elongated strip is insertable into the T-shaped slot and securable therein by twisting thereof within the T-shaped slot as the elongated strip's screw is screwed inwardly, the cord-attaching element defining an aperture therein for threading the screw therethrough for mounting on the elongated strip's screw, whereby at any time subsequent to an assemblying of the mitered frame pieces the picture hanging cord-attaching element may be mounted onto the frame assembly.

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