July 10, 1923.

L. R. CENTERBAR

1,461,440

CORNER JOINT FOR FRAMES

Filed Feb. 17, 1922

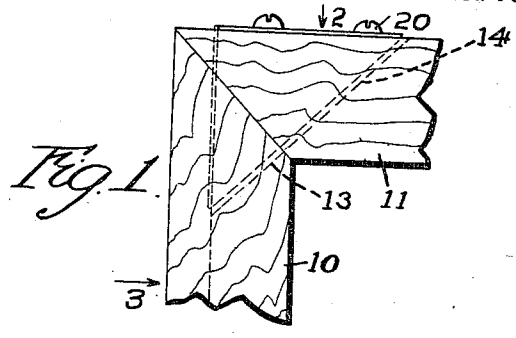


Fig. 1.

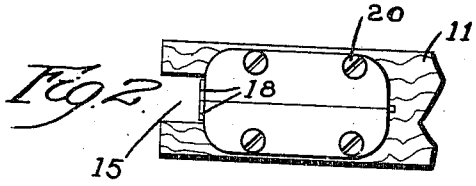


Fig. 2.

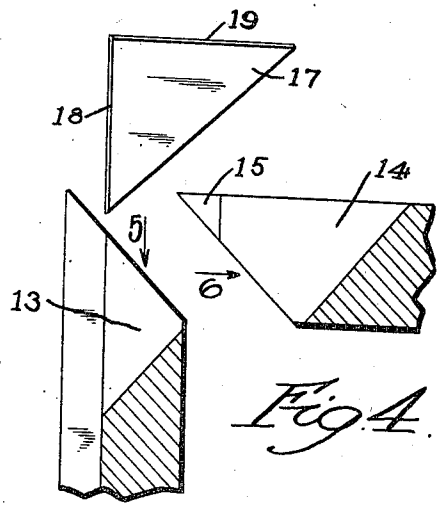


Fig. 4.

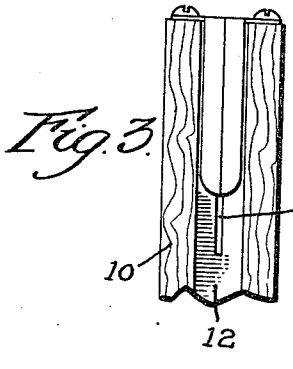


Fig. 3.

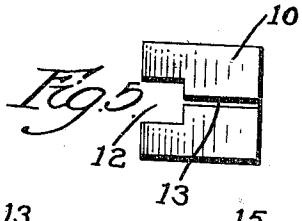


Fig. 5.

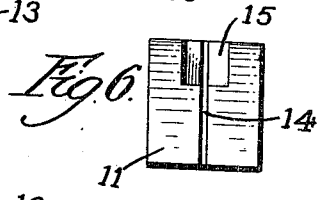


Fig. 6.

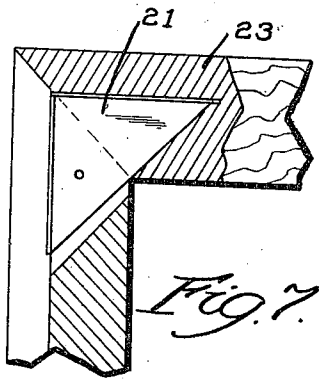


Fig. 7.

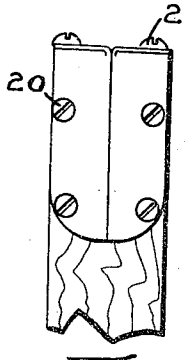


Fig. 10.

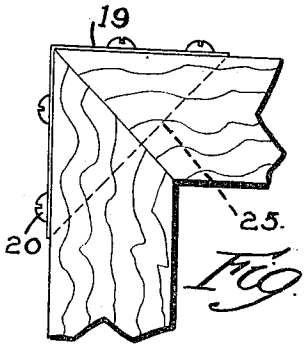


Fig. 9.

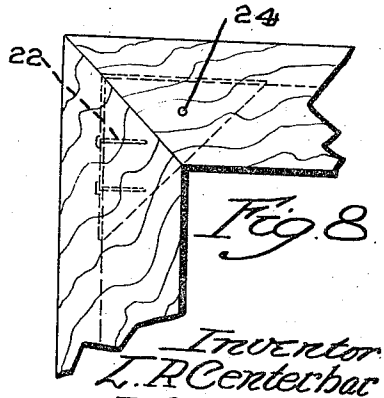


Fig. 8.

Witness
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UNITED STATES PATENT OFFICE.

LORENZO R. CENTERBAR, OF FITCHBURG, MASSACHUSETTS.

CORNER JOINT FOR FRAMES.

Application filed February 17, 1922. Serial No. 537,316.

To all whom it may concern:

Be it known that I, LORENZO R. CENTERBAR, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Corner Joint for Frames, of which the following is a specification.

This invention relates to a corner joint member, preferably made of sheet metal, for use in strengthening the corners of frames of various kinds, as for example, screens, windows, doors, picture frames and the like.

The principal objects of the invention are to provide a simple inexpensive piece of metal which can be applied to a corner of such an article as those above mentioned for the purposes of locating the parts of the mitre joint and fixing them together, either permanently or temporarily as desired, and to so combine it with the frame pieces that are joined together as to provide for its convenient and easy application and prevent the joint from working askew in use. Further objects and advantages of the invention will appear hereinafter.

Reference is to be had with the accompanying drawings in which—

Fig. 1 is a front elevation of a corner of a wood frame constructed in accordance with this invention.

Fig. 2 is a plan of same;

Fig. 3 is an edge view;

Fig. 4 is a side view of the three parts of the corner separated;

Fig. 5 is a plan of the upright looking in the direction of the arrow 5 in Fig. 4;

Fig. 6 is an end view of top piece looking in the direction of the arrow 6 in Fig. 4;

Fig. 7 is a longitudinal sectional view of a modified form of joint;

Fig. 8 is a front elevation of the same;

Fig. 9 is a similar view showing another modification; and

Fig. 10 is an edge view thereof.

In the form shown in the first 6 figures the two parts, namely the upright 10 and top piece 11 of the frame or casing to which the invention is applied, are shown as of wood. They are mitred off as is well understood in this art. In this form the upright 10 is provided with a longitudinal groove or rabbet 12 extending throughout its length. This is shown herein to illustrate the application of this invention to a frame which has such a groove on its edge. This groove may be of any shape that is suitable for the purpose intended. This piece also is provided with a central slit 13, parallel to its face, extending through it from the groove 12 to its mitred edge.

The top piece 11 is also provided with a central slit 14 extending from the top to the point at which the bottom of this piece 11 meets the upright 10 and makes an angle, preferably of 45 degrees, with the longitudinal dimension of the top piece 11. The lower boundary of this slit preferably is in alignment with the lower boundary of the slit 13. I have also shown this top piece 11 as cut out at 15 to form a continuation of the groove 12.

I have illustrated this corner or joint as held together by a piece of sheet metal 17 doubled on itself to form an equal sided right angled triangle, the bend coming at the hypotenuse. The two equal shorter edges are provided with opposite flanges 18 and 19 respectively constituting extensions from the two sides of which the corner piece is made. The two flanges of each set are in the same plane but project oppositely from the center of the strengthening piece. The flanges 18 are sufficiently narrow so that they will pass down through the opening 15 and be received in the groove 12. The flanges 19, however, are wider and are shown as perforated so as to receive screws 20 passing through them and into the top side of the top piece 11. The main triangular part of the corner piece 17 is located in the slit 14. In this way it will be seen that the metallic strengthening piece 17 is permanently secured to this top piece 11.

In assembling, the top piece 11 with the corner piece 17 fastened to it, is moved down so that the flanges 18 will slide along the bottom of the groove 12 and the bottom of the center part of the metal corner piece will be received in the slit 13. The abutting edges of the mitre joint can be glued together if desired, but it will be observed that the strengthening piece fixes the two parts together so that they will not become disengaged by any ordinary usage.

It will be understood that the grooves along the sides are not placed there for the purpose of providing for this invention, but that this invention is simply capable of being so modified as to take advantage of these grooves in the manner above indicated.

In the form shown in Figures 7 and 8, the

same principles are employed, but in this case the metallic strengthening piece 21 is shaped like the piece 17 in the first six figures except that both sets of flanges are of the narrow form. On the upright it is exactly like the first form, but in this case these flanges are perforated and nails 22 are inserted to hold the corner piece in position. Furthermore, the wooden top piece 23 is provided with a T-shaped slot for receiving the upper part of the metallic strengthening piece 21.

In these figures I have shown another way in which the strengthening piece can be permanently attached to either or both of the wooden frame members. This consists of a transverse pin 24 which may be in the form of a screw or nail if desired. This passes through the wooden piece and through the sheet metal strengthening piece transversely. This can be used in connection with, or in addition to, or in place of, any of the other devices indicated herein.

In the form shown in Figures 9 and 10, the strengthening piece is applied to the exterior of the frame and has flanges of the same width like the flanges 19, not only on top but also on the vertical edge. These are all screwed to the frame by screws 20. In this case the only thing that is done to the wooden pieces is to provide a central triangular slit 25 across their edges for receiving the straight angular edge of the corner strengthening piece.

In all the forms shown the two parts of the frame abut against each other along a mitre joint. In such cases as in the first 6 figures they are preferably glued together along these surfaces, but in the form shown in Figures 7, 8, 9 and 10 no such connection is required, as the two parts of the frame are secured together positively by the strengthening piece and screws. In all frames the parts are prevented from sidewise motion by the fitting of the corner pieces into the central slits and the flanges prevent motion in one direction in all cases.

This constitutes a simple and inexpensive means for connecting the corners of the frames of screens, doors, pictures and windows and for other frames and structures of similar nature. No expensive additional work is required on the wooden parts and the metal pieces are easily formed up by ordinary sheet metal operations so that they can be made at extremely small expense.

Although I have illustrated and described only three forms of this invention, I am aware of the fact that further modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, but what I do claim is:—

1. As an article of manufacture, a frame comprising a vertical member having a groove along the outer surface thereof and a horizontal member, said members having a mitre joint between them and being glued together along the same, and being provided with a continuous slit of triangular form extending from the bottom of the groove in the upright member, to the outer surface of the horizontal member, and being provided with a strengthening piece of metal extending through said slit and having flanges engaging the outer surface of the horizontal member and the bottom of said groove.

2. As an article of manufacture, a frame comprising a vertical member and a horizontal member, said members having a mitre joint between them on their contacting surfaces, and being provided with a continuous central slit of triangular form in a plane parallel to that of their flat front surface, and being provided with a strengthening piece of metal extending through said slit and having oppositely projecting flanges engaging the outer surfaces of said members, said strengthening piece consisting of sheet metal doubled over on itself to form a triangular body portion having extensions formed by bending over the extreme edges of the two sides of said triangle that are at right angles to each other to form said flanges.

3. As an article of manufacture, a corner piece for strengthening a corner of a frame of the like, comprising a piece of sheet metal doubled upon itself, and having two thicknesses in contact and in equal sided right triangular form, the line on which the metal is doubled being the hypotenuse of the triangle and the other two sides being equal, the free edges thereof being bent outwardly at right angles from the plane of said triangle to form two pairs of flat flanges, those of each pair extending in opposite directions for engagement with the exterior of the frame.

4. As an article of manufacture, a corner piece for strengthening a corner of a frame or the like, comprising a piece of sheet metal doubled upon itself, and having two thicknesses in contact and in triangular form, the free edges thereof being bent outwardly at right angles from the plane of said triangle to form two pairs of oppositely extending flat flanges.

In testimony whereof I have hereunto affixed my signature.

LORENZO R. CENTERBAR.