May 14, 1957 J. W. KENFIELD 2,792,037

SINGLE JOINT MITER CLAMP

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Fig. 1

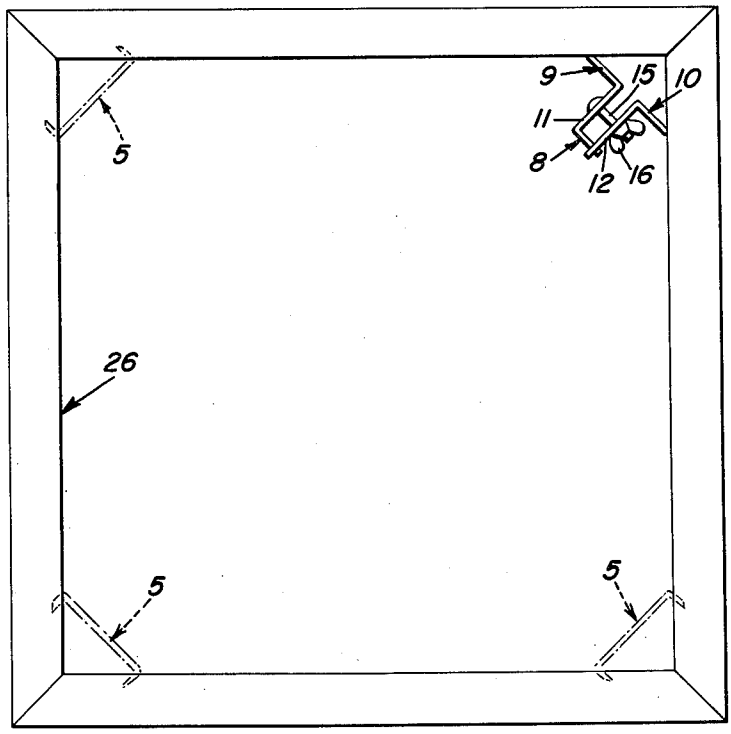


Fig. 5

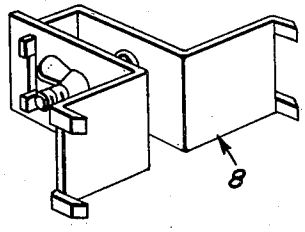
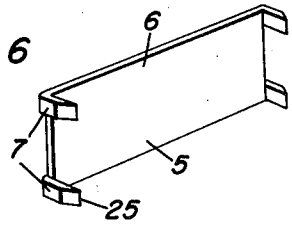


Fig. 6



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Fig. 2

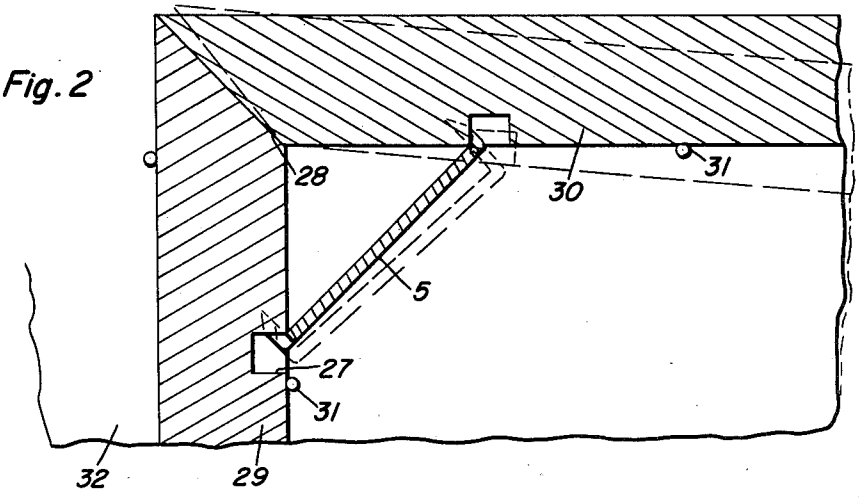


Fig. 3

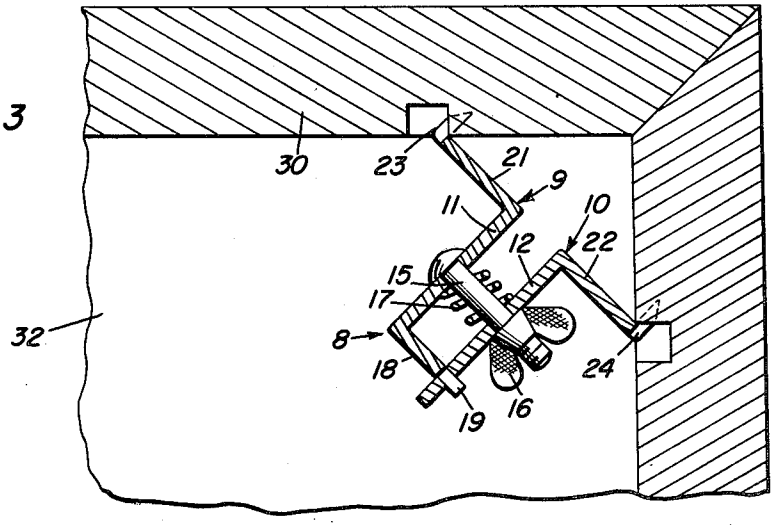
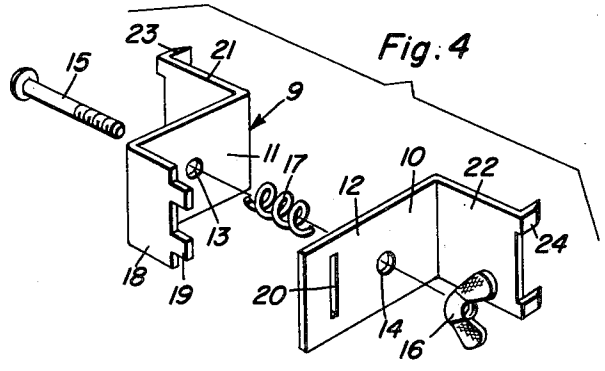


Fig. 4



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SINGLE JOINT MITER CLAMP

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1 Claim. (Cl. 144—293)

The present invention relates to new and useful improvements in clamps for the miter joints for temporarily holding the glued corners of a square-shaped frame or other work while the glue is setting.

An important object of the invention is to provide a miter clamp for use internally of the frame at the corners thereof.

Another object of the invention is to provide a set of non-adjustable clamps and at least one adjustable clamp for use in cooperating relation with respect to each other at the respective corners of a frame and wherein each of said clamps includes parallel prongs projecting angularly to a clamping plate and adapted to enter recesses in adjacent frame members to secure a mitered corner in assembled relation.

A further object is to provide a miter clamp of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purpose for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a plan view showing the set of miter clamps in position on a frame;

Figure 2 is an enlarged fragmentary sectional view of one corner of the frame showing the non-adjustable clamp in position;

Figure 3 is an enlarged fragmentary sectional view of another corner of the frame showing the adjustable miter clamp in position;

Figure 4 is a group perspective view of the adjustable clamp;

Figure 5 is a perspective view of the adjustable clamp in assembled relation; and

Figure 6 is a perspective view of the non-adjustable clamp.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates a non-adjustable miter clamp composed of a rectangular-shaped plate 6 having one or more prongs 7 at each end of the plate and projecting at right angles thereto and in parallel relation to each other to project outwardly at one surface of the plate.

In Figures 4 and 5 of the drawings there is illustrated an adjustable miter clamp designated generally at 8 and which includes a clamping jaw 9 and a clamping jaw 10 preferably of strap metal construction.

Jaws 9 and 10 include opposed plates 11 and 12 having aligned openings 13 and 14, respectively, therein to receive a bolt 15 and wing nut 16 to connect the plates 11 and 12 in opposed relation with respect to each other. A coil spring 17 is positioned on the bolt 15 between the plates 11 and 12 to urge the jaws 9 and 10 into open position.

The rear end of plate 11 is formed with a right angularly projecting flange 18 formed with a pair of spaced apart parallel tongues 19 adapted to enter a slot 20 in the rear portion of plate 12 to maintain the plates parallel to each other and to prevent relative turning movement thereof on the bolt 15 during opening and closing movement of the jaws. It is within the scope of the invention to utilize a solid single tongue though it has been found that in most cases the pair of tongues 19 are preferable. After the tongues are extended through the slot 20 they may be bent over plate 12 to form a loose hinge.

The front ends of the plates 11 and 12 are formed with outwardly projecting plate members 21 and 22 respectively, positioned coplanar with respect to each other and the outer ends of the plate members 21 and 22 are formed with one or more prongs 23 and 24, respectively, positioned parallel to each other or otherwise as may be suitable to the pieces being worked, and projecting forwardly of the plate members 21 and 22.

The prongs 7 of the non-adjustable clamps 5 and the prongs 23 and 24 of the adjustable clamp 8 are beveled to form substantially sharp penetrating edges 25.

The clamps are preferably used in a set comprising three of the non-adjustable clamps 5 and one of the adjustable clamps 8 for use in temporarily securing the mitered corners of a frame structure 26 in assembled relation while the glue is setting for permanently securing the corners of the frame in assembled relation. Recesses 27 are formed at the inside of the frame adjacent each corner 28 thereof and the prongs 7 of the non-adjustable clamp 5 are engaged in the recesses of a pair of the adjacent frame members 29 and 30 to clamp the mitered corner of said frame members in assembled right angular position with respect to each other, as shown in Figure 2 of the drawings. Alternatively, one non-adjustable and one adjustable clamp can be used starting with one corner and working around the frame using an adjustable clamp on the last corner.

All but the last of the corners of the frame are preferably secured in this manner by the non-adjustable clamps 5 and the frame members are retained in their right angular assembled relation by nails or pegs 31 driven into a work bench or the like 32 at the inside and outside of the frame. The fourth corner of the frame is then secured in assembled relation by the adjustable clamp 8 having its prongs 23 and 24 engaged in the recesses 27 of the adjacent frame members and the wing nut 16 tightened to draw the jaws 9 and 10 toward each other in effective clamping relation.

After the glue used for permanently connecting the corners of the frame has set, the clamps are removed.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and according all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

A miter clamp comprising a pair of jaws each including a front plate member, and a pressure plate extending normal to said front plate member and integral therewith, means adjustably securing said pressure plates in opposed relation to each other for opening and closing movement of the jaws, resilient means normally urging said jaws apart, slidable interlocking means on the opposed pressure plates retaining the front plate members

coplanar, and forwardly projecting prongs on the front plate members.

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