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E. KOLL.
MITER CLAMP.
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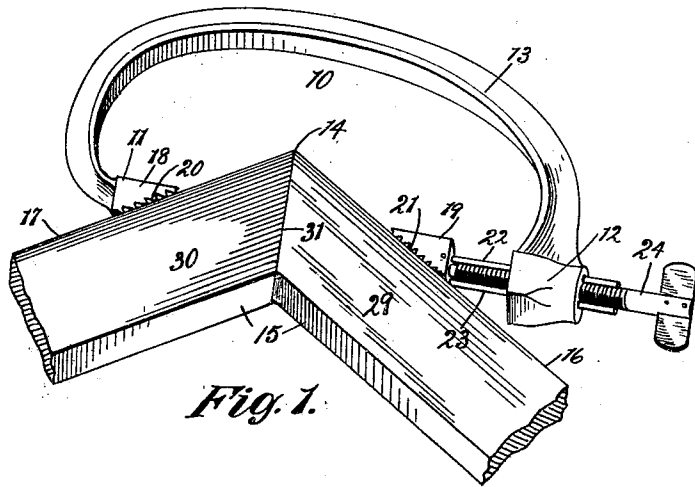


Fig. 1.

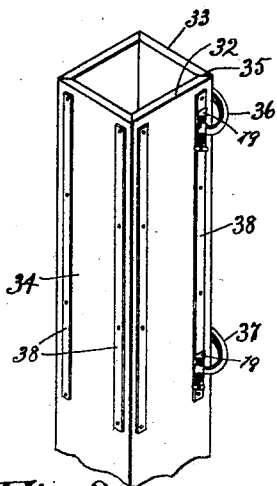


Fig. 2.

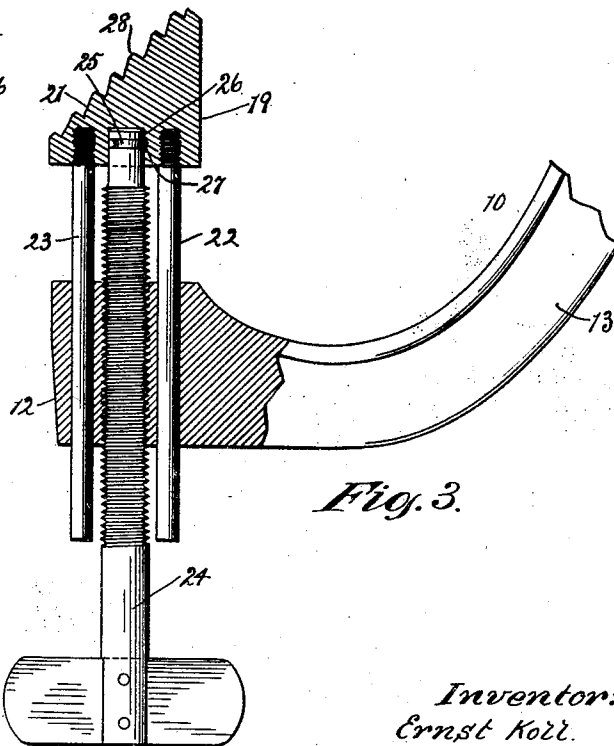


Fig. 3.

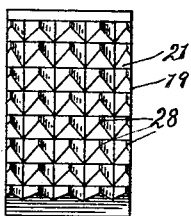


Fig. 4.

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MITER CLAMP.

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To all whom it may concern:

Be it known that I, ERNST KOLL, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Miter Clamps, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to clamps for use in wood working shops, and the like, for holding the parts of door frames, built-up parts or columns, and similar structures, at the corners or angles thereof when these parts are connected by so-called miter joints. The improved appearance and greater reliability of miter joints is well recognized, but the use of such joints has heretofore contributed additional cost to the structures involved largely because of the want of convenient means for holding the parts during the fastening of the joints, as in gluing the same.

The object of the invention is accordingly to provide an improved form of miter clamp, having in view a simple and inexpensive device, the convenience attending its use and the reliability of the clamp in service.

In the accompanying drawings:

Fig. 1 is a perspective view showing a preferred form of the improved clamp applied to the corner of a door frame or the like;

Fig. 2 is a perspective view illustrating another use of the clamp;

Fig. 3 is a detail plan view showing one end of the clamp, partly in section; and

Fig. 4 is a face view of one of the clamp jaws.

The improved clamp preferably comprises a rigid open frame, as 10, having its ends 11, 12, aligned at one side thereof. When such a frame is used the intermediate part, as 13, of the frame is shaped to extend about the corner 14 of a structure, as 15 (Fig. 1), having relatively perpendicular sides 16, 17, when entered between the said ends of the frame. Under these circumstances the clamping jaw may take the form indicated at 18 and 19. As shown, these jaws have beveled gripping faces 20, 21, directed inwardly across the opening between the ends 11, 12, of the frame 10, but outwardly away from the intermediate part, as 13, of the frame. On the other hand the relative move-

ment of the jaws 18, 19, is in a straight line between the ends of the frame, and both jaws are firmly held against movement in any other direction.

In the particular construction shown, only one of the jaws, as 19, is movable, the other jaw, 18, being fixed, as by being formed integral with the frame 10 upon the adjacent end, as 11, thereof. Likewise in the illustrated construction the means for holding the jaw 19 against movement, except in the straight line already mentioned, comprises a pair of parallel guide rods, as 22, 23. In order that these guide rods may effectively hold the jaw 19 against tilting they are spaced as far apart as the width of the jaw will permit. The guide rods 22, 23, are also firmly secured to the movable jaw 19, as by being screwed into the same, and they have a close sliding fit in the adjacent end, 12, of the frame 10 (Fig. 3). Obviously the length of the guide rods 22, 23, should be such as to permit the nearest desired approach of the movable jaw 19 to the fixed jaw 18, without disengagement of the rods from the frame.

Any convenient form of power device may be provided for advancing and retracting the movable jaw 19. As shown, a clamping screw 24, having threaded engagement with the adjacent end 12 of the frame 10, is employed for this purpose. This clamping screw is preferably located between the guide rods 22, 23, and is of such length as to extend outwardly beyond the ends of the rods. Since power is to be applied by the clamping screw 24 only in an inward direction, a satisfactory form of rotatable connection of the screw with the movable jaw 19 is provided by forming a groove 25 upon the screw adjacent its inner end and entering this end of the screw in a socket 26 in the back of the jaw 19, where a pin 27 is engaged with the said groove.

To insure a holding engagement of the gripping faces, as 20, 21, of the jaws 18, 19, with the parts to which they are applied in service, these faces are preferably roughened throughout their entire extent, as by being formed with sharp teeth 28. Furthermore, since clamping pressure is to be exerted upon the jaws 18, 19, only in one direction, at all times, the teeth 28 may desirably face in the direction of relative movement between the jaws (Figs. 3 and 4).

When the improved clamp is employed

for holding the parts 29, 30, of a frame, as 15 (Fig. 1), the jaws 18, 19, are applied to the sides 16, 17, of the frame substantially in line with the mid-length of the connecting miter joint, as 31. The clamp may also be used for holding the parts, as 32 and 33, of a built-up column or post 34, wherein the said parts, as 32, 33, are connected by a miter joint 35 at a corner of the post (Fig. 2). In this case a plurality of the clamps, as 36, 37, may be arranged at intervals along the post. To avoid marring the surface of the post, strips of soft wood, as 38, may be tacked onto the post along the two sides of the joint for engagement with the jaws of the clamps.

I claim as my invention—

1. In combination, a rigid clamp frame having separated opposed ends, the frame being shaped to extend about the right angled corner of a structure having relatively perpendicular sides entered between the ends of the frame, a slide guidedly supported in one end of the frame for movement toward and away from the other end of the frame, fixed and movable jaws rigidly mounted, respectively, upon the said other end of the frame and upon the inner end of the slide, each jaw having a beveled gripping face directed inwardly across the opening between the ends of the frame but outwardly away from the intermediate part of the frame, and a clamping device acting between the movable jaw and the end of the frame in which the slide is mounted.

2. In combination, a rigid clamp frame having separated opposed ends, the frame being shaped to extend about the right angled corner of a structure having relatively perpendicular sides entered between the ends of the frame, a pair of spaced parallel rods mounted for longitudinal sliding movement

in one end of the frame toward and away from the other end thereof, fixed and movable jaws rigidly mounted, respectively, upon the said other end of the frame and upon the inner ends of the two rods, each jaw having a beveled gripping face directed inwardly across the opening between the ends of the frame but outwardly away from the intermediate part of the frame, and a clamping screw extending between and parallel with the rods acting upon the movable jaw and having threaded engagement with the end of the frame in which the rods are mounted.

3. In combination, a rigid clamp frame having separated opposed ends, the frame being shaped to extend about the right angled corner of a structure having relatively perpendicular sides entered between the ends of the frame, and jaws mounted upon the ends of the frame for relative movement in a straight line connecting the ends of the frame, the said jaws having beveled gripping faces directed obliquely across the opening between the ends of the frame and each jaw being held against angular movement.

4. In combination, a rigid clamp frame having separated opposed ends, the frame being shaped to extend about the right angled corner of a structure having relatively perpendicular sides entered between the ends of the frame, jaws mounted upon the ends of the frame for relative movement in a straight line connecting the ends of the frame, the said jaws having beveled faces directed obliquely across the opening between the ends of the frame and each jaw being held against angular movement, and gripping teeth formed upon the beveled face of each jaw to directly face the other jaw.

ERNST KOLL.