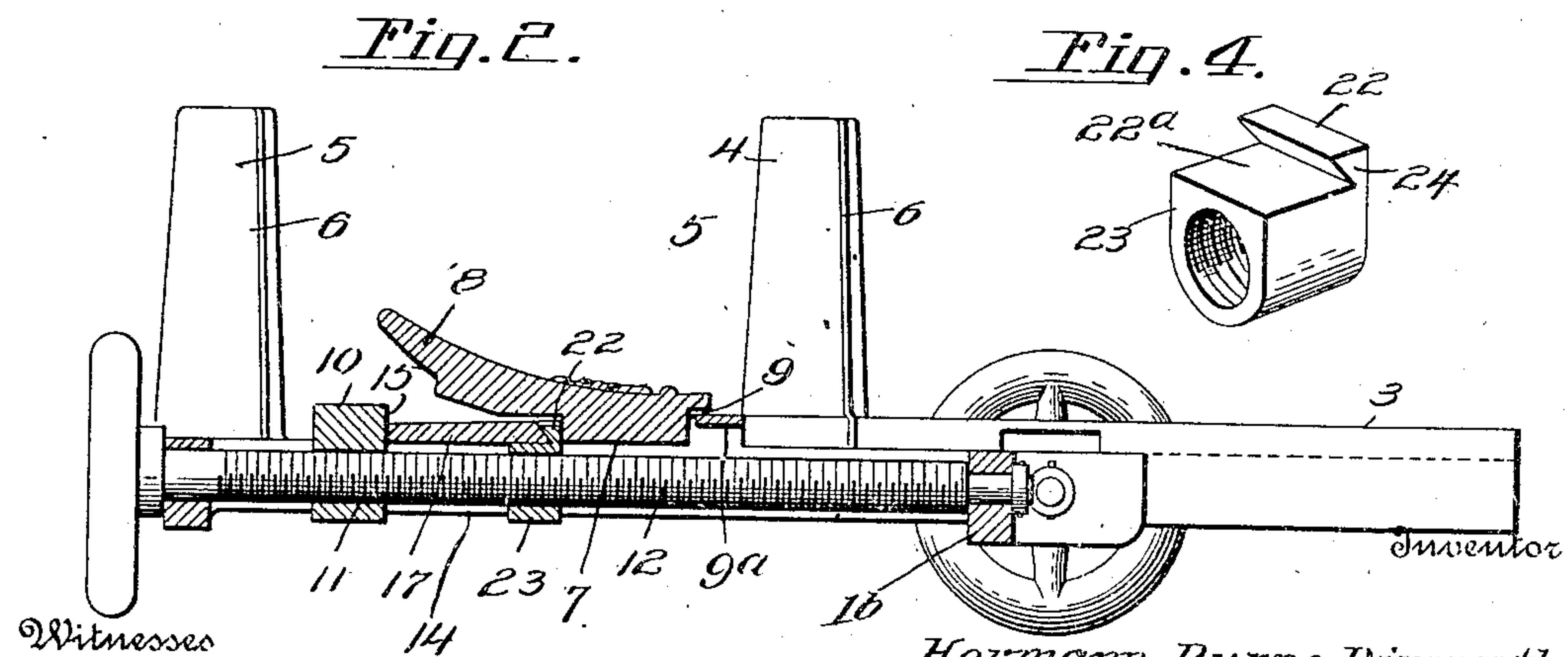
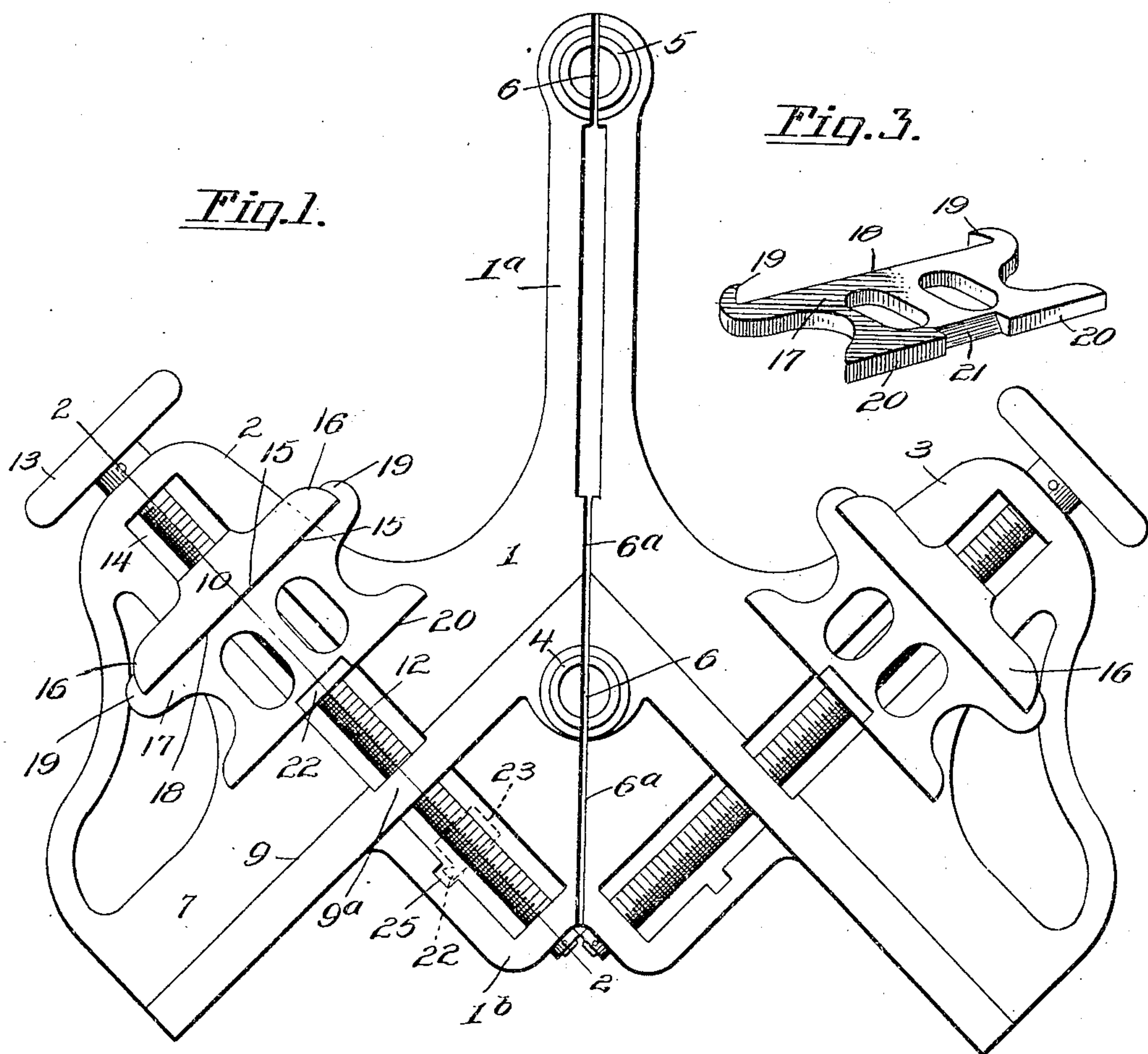


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 . MITER CLAMP VISE.
 APPLICATION FILED MAR. 15, 1910.

960,159.

Patented May 31, 1910.



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UNITED STATES PATENT OFFICE.

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MITER-CLAMP VISE.

960,159.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed March 15, 1910. Serial No. 549,434.

To all whom it may concern:

Be it known that I, HERMANN B. DIPWORTH, a citizen of the United States, residing at Saginaw, W. S., in the county of Saginaw and State of Michigan, have invented new and useful Improvements in Miter-Clamp Vises, of which the following is a specification.

This invention relates to a miter clamping vise designed particularly for use in holding strips of picture frame or other moldings while they are being sawed or mitered to fit or make a perfect corner, the object of the invention being to provide a simple, inexpensive and efficient construction of vise by means of which molding strips of different kinds and sizes may be securely clamped.

The invention consists in the novel construction, combination and arrangement of parts, hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a top plan view of a miter clamping vise embodying my invention. Fig. 2 is a section on an enlarged scale taken on the plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a perspective view of the auxiliary clamping plate. Fig. 4 is a similar view of the retaining nut.

Referring to the drawings, 1 designates the frame of the device, which is preferably of V-form, having arms or portions 2 and 3 arranged at right angles to each other. At the vertex or central portion and upon a rear central arm 1^a of this frame are respectively provided spaced guide posts 4 and 5 which are hollow or tubular and formed with guide slots 6 for the passage of the saw whereby the latter is guided in the mitering operation. The frame is formed in its face with grooves 6^a to receive the toothed edge of the saw and permit the same to pass cleanly through the work.

The arms 2 and 3 of the device are of corresponding construction and provided with similar clamping means so that opposite corner miters may be cut and, hence, a description of one will suffice for both. The frame 2, therefore, is provided with a flat supporting surface or table 7 for the strip of molding 8, as indicated in Fig. 2, and is provided with a fixed jaw or clamping surface 9 against which one side of the molding is adapted to abut in clamping the same in position.

Mounted upon the arm is a clamping

block or member 10 having a screw-threaded opening 11 therein through which passes an adjusting screw 12, said screw being respectively journaled at its opposite ends upon the arm 2 and upon an extension 1^b common to both arms for revoluble movement in a fixed plane, and provided at its outer end with a hand wheel or other equivalent adjusting device 13. The block 10 has its apertured portion arranged to move in a guide slot 14 extending transversely of the arm and beneath the surface 9 to the outer end of said extension 1^b and is provided with a clamping surface 15 and reduced beveled end portions 16. By means of this block, which is adjustable toward and from the surface 9 by the screw 12, wide moldings may be firmly and securely clamped in position for mitering. The surface 9 which is in the form of a rib, is cut away on its underside in line with the slot to provide a bridge portion 9^a crossing the slot and disposed above the plane of the table 7.

In order to provide for the effective clamping of narrow, concaved and "Florentine" molding strips, an auxiliary clamping plate or member 17 is provided, which plate is designed to rest horizontally upon the surface of the arm 2. The outer side of this plate has a bearing surface 18 to abut against the bearing surface 15 of the block 10 and is formed with hooked ends 19 properly beveled to slidably engage the beveled ends 16 of the clamping block 10 by which said auxiliary clamping plate may be slipped downward and upward into and out of engagement with said block. The opposite side of the member 17 is formed with a clamping face or surface 20 for coöperation with the surface 9 to clamp the molding in position, and this surface 20 is centrally divided by a recess 21 having a beveled or inclined inner wall to receive a correspondingly beveled or inclined hook or projection 22 upon a retaining member or nut 23 mounted upon the shaft 12 which is also provided with a flat face 22^a to extend under said member 17. The hook 22 is adapted to engage the beveled wall 21 and seat within the recess to prevent the member 17 from tilting upward under pressure when forced forward by the screw to clamp the molding in place. The upper face of this hook is adapted to lie within the recess while the outer face of the hook is arranged to form a bearing surface 24 extending above the

plane of the table 7 to fill the space between the portions of the bearing surface 20 of the member 17 and lie flush therewith so that the molding will be clamped the full distance between the extremities of said member 17.

By the construction described the plate 17 may be applied by holding it at an angle, fitting its recessed edge into engagement with the hook 22 and then tilting the plate downward into engagement with the block 10, and may be detached by a reversal of this operation. A clearance notch 25 is provided in one of the side walls of the portion of the slot formed in the extension 1^b and is of somewhat greater width than the thickness of the hook 22.

The arrangement of the parts for clamping narrow, concaved and "Florentine" moldings is shown in the drawings, from which it will be seen that the molding 8 is clamped between the shoulder 9 and face 20 of the member 17. The slot 14 is of somewhat greater width than the nut 23 to prevent the nut from binding, but of sufficiently restricted width to prevent the nut from turning except to a very limited extent when free from engagement with member 17. Hence when the screw 12 is turned the block 10 and nut 23 will be adjusted as a unit to the same extent, so that they will always maintain the same spaced relationship or distance apart.

The notch 25 is provided in order to enable the nut 23 to be rendered inoperative and the block 10 to be spaced a greater distance therefrom, so that said block alone may be employed to clamp wide moldings against the surface 9. To this end the elevated bridge 9^a is provided beneath which the nut is adapted to pass and the notch 25 so arranged that upon the removal of the plate 17 and the adjustment of the block 10 until it bears against the surface 9 the nut will be moved into that portion of the slot formed in the extension 1^b and the hook 22 will be disposed opposite the notch, as shown in dotted lines in Fig. 1. Hence the nut may be turned without resistance with the screw, allowing the block 10 to be adjusted independently thereof to clamp wide moldings of different widths. To again set the nut for operation for holding the plate 17, the block 10 is adjusted into engagement with the surface 9 and the nut held from rotation by pressure of the fingers while the screw is turned back and until the nut passes rearwardly beyond the notch, whereupon the nut and block will be restored to their normal relationship for use in conjunction with plate 17.

From the foregoing description, the construction and mode of use of my improved clamping vise will be readily understood and it will be seen that a device of this kind

is provided by which picture frame and other molding strips of different kinds and widths may be readily and conveniently clamped during the operation of sawing the same to form the joining corners. Hence, the efficiency of the device is materially increased over the devices of like character adapted for clamping only certain kinds of moldings within determined widths.

Having thus described the invention, what is claimed, is:—

1. A mitering device comprising a frame, an adjusting screw mounted on the frame, a clamping block operated by the screw, a clamping member adapted to detachably engage the block, and a retaining member carried by the screw and adapted to engage said clamping member and to be adjusted to an inoperative position.

2. A device of the character described comprising a frame having a guide slot, a clamping block movable in said slot for adjusting said block, a clamping member adapted to detachably engage the block, and a nut freely revoluble on the screw within said slot and provided with a projection to engage and hold said clamping member.

3. A device of the character described comprising a frame having a fixed clamping surface and provided with a longitudinal slot at an angle thereto, a clamping block movable in said slot toward and from said surface, a screw extending longitudinally of the slot for adjusting said block, a clamping member having a clamping surface provided with means to detachably engage said block, the said clamping surface of the clamping member being formed with a recess, and a nut revolvably mounted on the screw within the slot and having a projection to engage said recess.

4. A device of the character described comprising a frame having a fixed clamping surface and a guide slot disposed at an angle thereto, the inner end of said slot being provided with a notch or offset, a clamp block movable in the slot toward and from said surface, a screw extending lengthwise of the slot for adjusting said block, an auxiliary clamping member having portions to detachably engage the block and having a clamping surface provided with a beveled recess, and a nut loosely mounted on the screw and having a beveled projection to engage said recess, said nut being adapted for adjustment to the inner end of the screw to a position to permit said projection to move through said notch or recess on the revolution of the screw.

In testimony whereof I affix my signature in presence of two witnesses.

HERMANN B. DIPWORTH.

Witnesses:

EDWIN KERSTEN,

HERMAN KERSTEN.