

R. T. BOND.
BENCH CLAMP.

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938,457.

Patented Nov. 2, 1909.

Fig. 1.

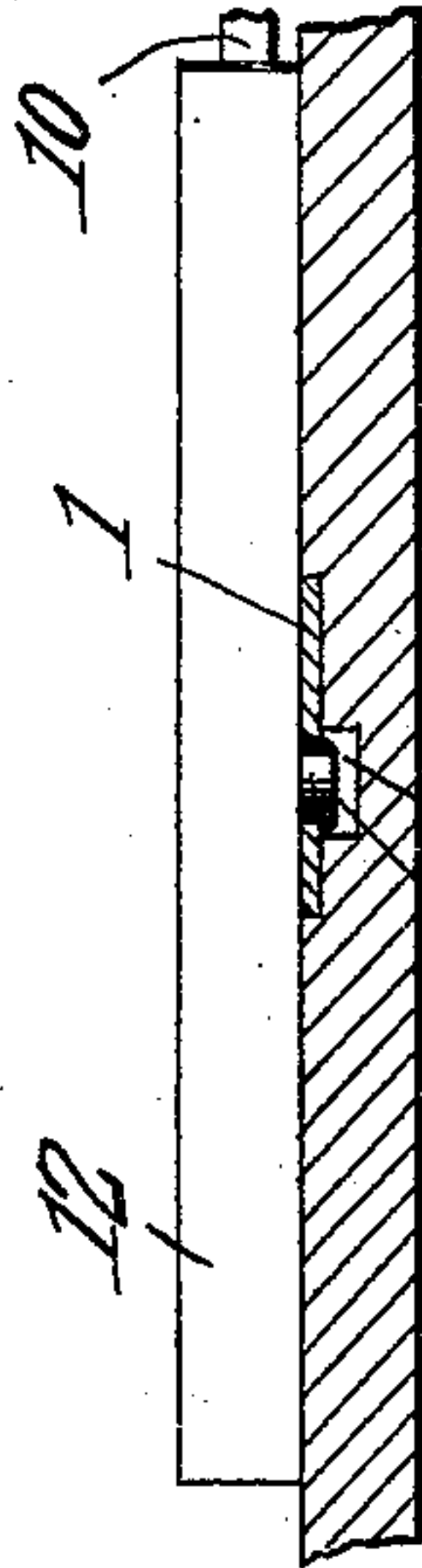
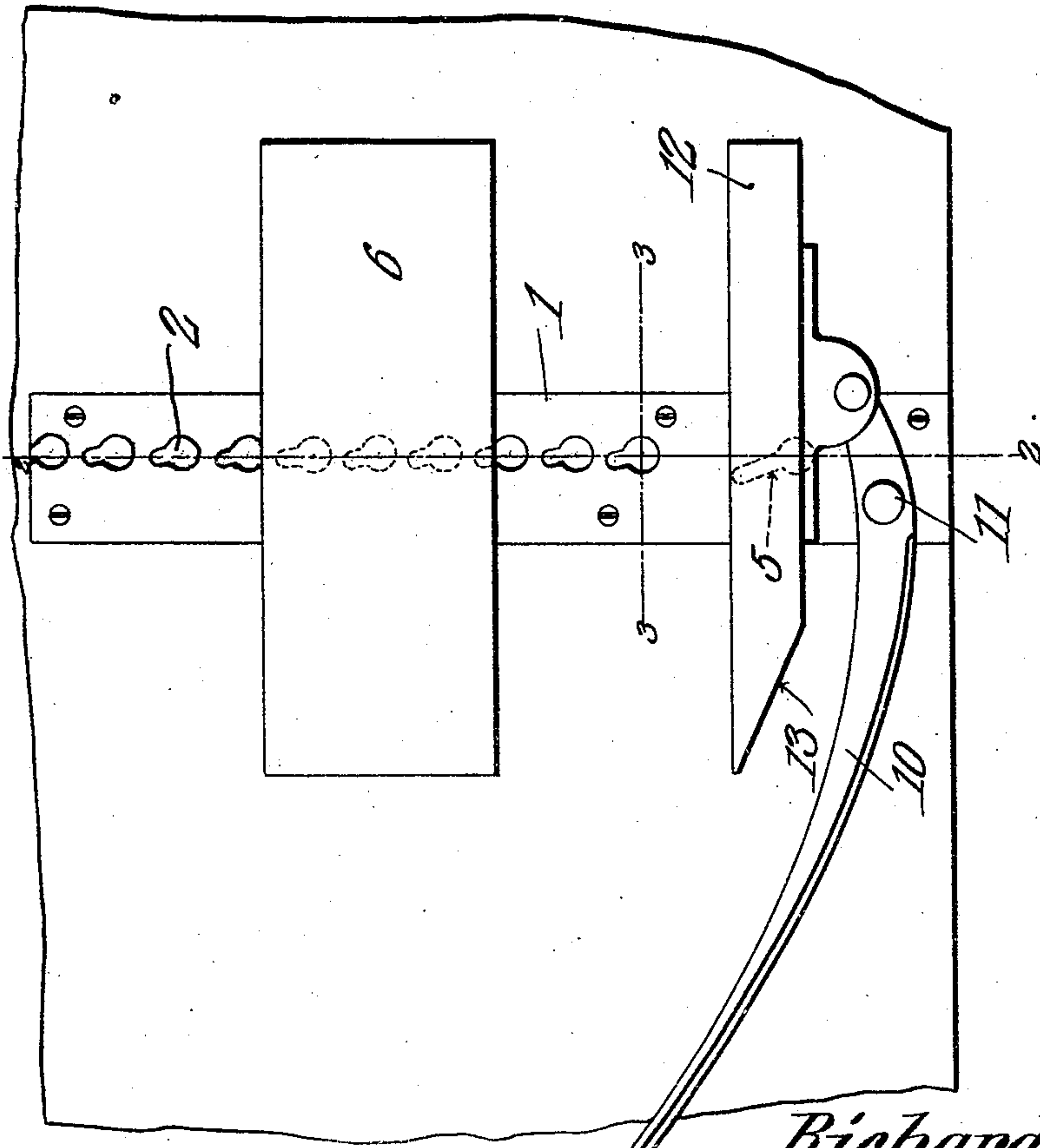


Fig. 3.

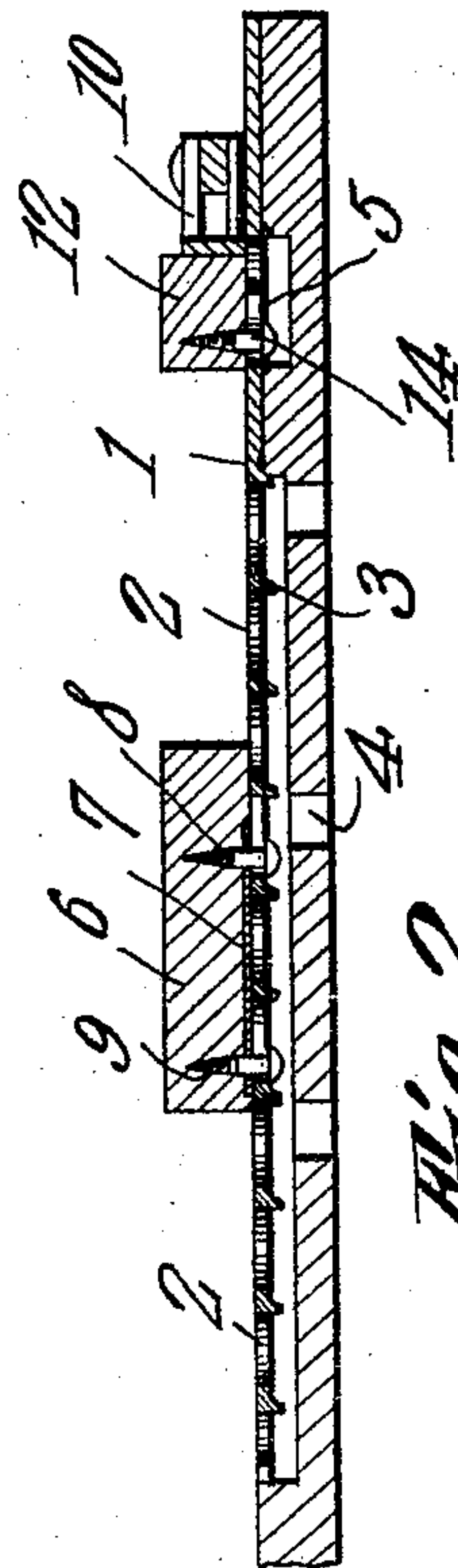


Fig. 2.

Witnesses

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BENCH-CLAMP.

938,457.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD T. BOND, a citizen of the United States, residing at Coalgate, in the county of Coal and State of Oklahoma, have invented a new and useful Bench-Clamp, of which the following is a specification.

This invention has relation to bench clamps, and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of the invention is to provide a device of the character indicated which is of simple and durable structure, and which will effectually hold an article of work in position to be operated upon by a plane or other tool.

With the above object in view the clamp includes a plate having key-hole slots, the longer dimensions of which are pitched at an angle to the longer dimension of the plate, and which are provided at their broader portions with depending flanges. A clamp block is provided upon its under side with a countersunk plate, from the face of which project screws having enlarged heads which are adapted to enter the key-hole slots in the manner as hereinafter explained. A curved lever is pivoted at one end portion of the plate, and an adjustable clamping block is pivotally attached to the working end of the lever. A key-hole slot, having its longer dimension disposed in a similar manner as the longer dimensions of the slots heretofore referred to, is located under the said adjustable block, and the said adjustable block is provided with a depending screw, having an enlarged head which operates in the last said key-hole slot.

In the accompanying drawing Figure 1 is a top plan view of the vise. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view of the same.

The clamp consists of the plate 1, which is provided with a series of key-hole slots 2. The said slots are arranged in a row along the back part of the plate, but the longer dimensions of the said slots are pitched at an angle to the longer dimension of the said plate, and the said slots are provided around those portions thereof of greater transverse dimension with the depending flanges 3. The plate 1 is adapted to be countersunk in the top of a bench, or other supporting object, which, in turn, may be provided under

the plate with the drop-holes 4, through which accumulated dust, etc., may fall, thus leaving ample room under the plate 1 for the proper manipulation of the parts of the clamp. The plate 1 is provided near its forward end with a key-hole slot 5, somewhat longer than the slots 2, but having its longer dimension disposed in the same general direction as the longer dimensions of the said slots 2.

A clamp block 6 is provided upon its under side with a countersunk plate 7, which is transversely disposed with relation to the block. The screws 8 and 9 pass transversely through the plate 7, and, at their inner ends enter the block 6, while their head portions project beyond the under side of the said plate 7. The screw 8 is located nearer the middle of the block 6 than the screw 9; consequently, there is a wider margin between the screw 8 and the edge of the block than there is between the screw 9 and the opposite edge of the block.

A curved lever 10 is fulcrumed upon a pin 11, which in turn is fixed to the forward end portion of the plate 1. An adjustable block 12 is pivotally connected with the working end of the lever 10, and the said block 12 is provided with a chamfered end 13 which lies adjacent the curved portion of the lever 10. The block 12 is provided upon its under side with a projecting screw 14, the head of which is adapted to operate in the slot 5 in the plate 1.

The clamp may be manipulated as follows:—The heads of the screws 8 and 9 mounted upon the block 6 are inserted in two of the key-hole slots 2, and the said block 6 is moved laterally so that the shanks of the said screws will enter the narrower portions of the said slots, while the heads of the said screws will pass under the edges of the narrower portions of the slots. As the said narrower portions are disposed toward the rear end of the plate 1 it is necessary for the operator to push the block away from himself in order to position the same as above described. When, however, it is desired to remove the block, the operator pulls the same toward him, and when the heads of the screws 8 and 9 enter the enlarged portions of the slots 2, the said heads are prevented from projecting at their edges under the sides of the enlarged portions of the slots by the depending flanges 3. Consequently, the heads will not catch under the

larger portions of the said slots, and the block may be readily lifted from its position upon the plate 1. The block 6 may be turned around so that the wide or narrow marginal portions from the screws 8 or 9 to the edges of the block may be disposed toward the front end of the plate 1 as desired. After the block 6 is properly positioned as above indicated, the lower edge of the work is placed against the forward edge of the said block and the lever 10 is swung so that the block 12 is brought toward the block 6 and forced in contact with the opposite side of the work from that which is in engagement with the forward edge of the said block 6. Thus the work is held in position, and when the work is operated upon by a plane (which is generally used so that during its cutting stroke it moves toward the clamp) the force used in driving the plane will have a tendency to more securely seat the screws 8 and 9 carried by the block 6 in the smaller portions of the key-hole slots 2, for the reason that the longer dimensions of the said slots 2 are slightly inclined toward the direction in which the plane will operate upon the work, as indicated. Therefore, by reason of the inclination of the longer dimensions of the slots 2, the parts of the clamp are not liable to work loose when an article held thereby is being operated upon. Furthermore, should an article which is between the blocks 6 and 12 move longitudinally between the same under the stress of the operation thereon, the end of the said article will eventually come in contact with the curved portion of the lever 10, and thus the longitudinal movement of the said article will be checked, and, at the same time, the lever will be slightly swung upon its fulcrum, whereby the block 6 will be brought in closer contact with the side of the article, and the longitudinal movement of the article will be effectually checked. An additional advantage gained by curving the power end of the lever 10 is that the said lever may be more conveniently swung and operated, and, at the same time, greater leverage can be had for tightly securing an object between the said blocks. Inasmuch as the block 12 is pivotally connected with the working end of the lever 10, the said block may have slight rocking movement with relation to the said

lever, and therefore the block will properly seat itself against the work, notwithstanding the fact that it (the work) may have a tapered shape.

Having described my invention, what I claim as new, and desire to secure, by Letters Patent, is:—

1. A clamp comprising a plate having a series of key-hole slots located therein and arranged in a row with their longer dimensions disposed at an angle to the longer dimension of the plate, a block having projecting members for engagement with the said slots, a lever fulcrumed to the plate, a block pivoted to the lever and having a projecting member also operating in one of the key-hole slots.

2. A clamp comprising a plate having key-hole slots which are provided around their broader portions with depending flanges, a block having projecting headed members adapted to enter the said slots in such manner that the heads thereof may pass under the edges of the narrower portions of the slots, but which will engage the flanges when brought into the wider portions of the slots, a lever fulcrumed to the plate, and a movable block pivotally connected with the working end of the lever.

3. A clamp comprising a slotted plate, a block having projecting members adapted to enter the slots in the plate, said block having between one edge and the adjacent projecting member a wider margin than at its opposite edge and the projecting member adjacent thereto, a lever fulcrumed to the plate, and a movable block pivotally connected with the working end of the lever.

4. A clamp comprising a plate, a block adapted to be adjustably positioned thereon, a second block movably mounted upon the plate, a lever fulcrumed to the plate and pivotally connected at its working end with the last said block, the power end of the said lever being curved toward the work facing plane of the last said block.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

RICHARD T. BOND.

Witnesses:

C. M. THREADGILL,
A. D. BROWN.