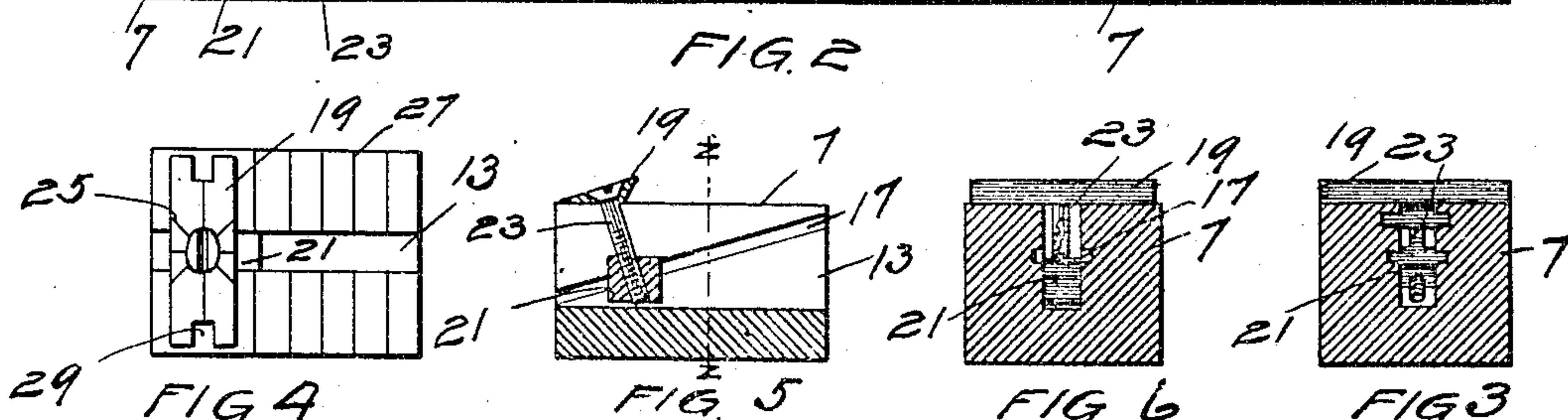
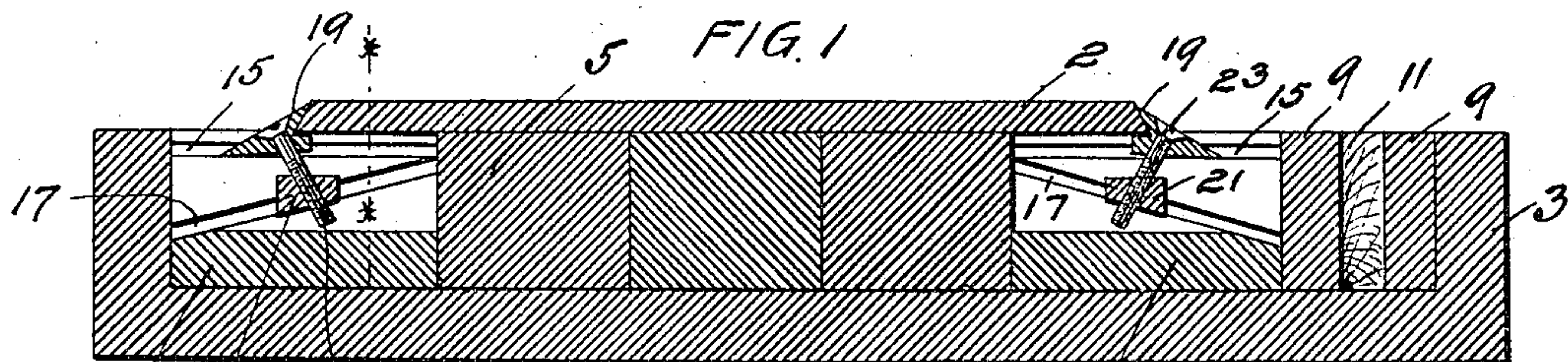
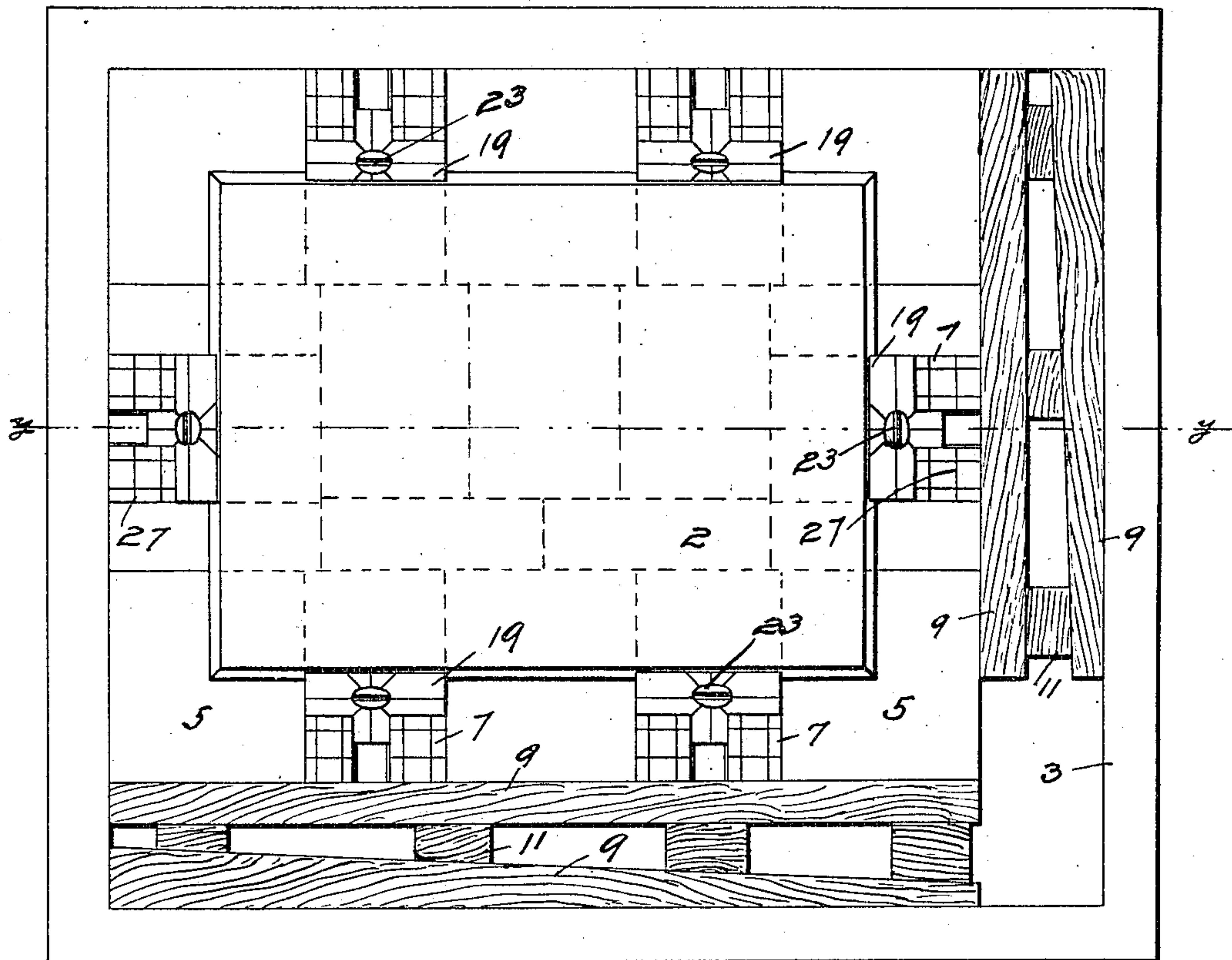


No. 819,827.

PATENTED MAY 8, 1906.

T. WENSEL.
REGISTER CLAMP.

APPLICATION FILED JULY 20, 1903.



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THEODOR WENSEL, OF ST. PAUL, MINNESOTA.

REGISTER-CLAMP.

No. 819,827.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed July 20, 1903. Serial No. 166,247.

To all whom it may concern:

Be it known that I, THEODOR WENSEL, of St. Paul, in the county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Register-Clamps, of which the following is a specification.

This invention relates to improvements in clamps designed for use in color-printing for holding the plates and permitting them to be accurately adjusted, so that the impressions will exactly register with impressions made by other plates.

The invention consists generally in a clamp consisting of a block having a series of register-marks upon its upper surface, a clamping-jaw arranged to slide upon said block and over said marks, and means for moving said jaw.

The invention consists, further, in the constructions and combinations hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view showing a number of my clamps in use holding a plate. Fig. 2 is a transverse section on line *yy* of Fig. 1. Fig. 3 is a section on line *xx* of Fig. 2. Fig. 4 is a plan showing a modified construction. Fig. 5 is a longitudinal section of the clamp shown in Fig. 4. Fig. 6 is a detail section on line *zz* of Fig. 5. Fig. 7 is a longitudinal section showing a modification of the construction shown in Fig. 6. Fig. 8 is a longitudinal section showing another modification.

In the drawings, 2 represents a plate which is to be adjustably clamped in a suitable chase 3. I provide a series of blocks 5 and the clamping-blocks 7. The blocks 5 and the clamping-blocks 7 make a complete base for the plate 2, and these blocks are locked in position in the chase by means of suitable printers' furniture, such as wedge-shaped wooden strips 9 and quoins 11. The clamping-blocks 7 are each provided with a central longitudinal groove 13, and the side walls of this groove are preferably provided near the top of the block with the horizontal ways 15, and these side walls are also provided with the inclined ways 17. A clamping hook or jaw 19 is arranged with its ends adapted to travel in the way 15, and a nut 21, provided with projecting rabbeted ends, is arranged within the groove in the block 7 with its ends engaging the ways 17. The block 21 has a threaded hole extending through it, and a

screw 23 passes through the clamping-jaw 19 and through the threaded hole in the block 21. The upper portion or flat surface of the jaw 19 is divided into a suitable scale by a series of marks 25, and the head of the screw is preferably provided with the usual slot, so that by turning this screw the slot may be made to register with any one of the marks on the surface of the jaw 19. The upper surface of the block 7 is also divided by a series of marks 27, and these marks are preferably a distance apart equal to one pica. As there are twelve points in a pica and as the scale upon the clamping-jaw 19 represents eight points, it follows that a complete revolution of the screw will move the clamping-jaw forward or back eight points, or eight-twelfths of a pica. By turning the screw 23 both the clamping-jaw 19 and the block 21 will be moved in their respective ways, and by this means the clamping-jaw may be adjusted any desired distance along the top surface of the block 7.

I prefer to provide the block 19 with a slightly-inclined bottom surface which does not come in direct contact with the bottom wall of the way 15. Then when the screw is tightened the lip or edge of the jaw will bear down upon the edge of the plate, thereby bringing the plate firmly down upon the blocks. By using a series of these clamps, as shown in Fig. 1, the plate 2 may be quickly and accurately adjusted in any direction. As the ways 15 and 17 extend the full length of the block 7, the clamping-jaw may be adjusted the full length of said block. As the nut 21 is arranged in the inclined way 17, by turning the screw 23 both the block 19 and the nut 21 may be simultaneously moved in either direction. With this device no tool is needed for moving the clamping-jaw 19; but said jaw is moved simply by turning the screw 23, and the exact amount that said jaw will be moved may be determined by the scale or dividing-lines upon the top surface of said jaw.

In Figs. 4, 5, and 6 I have shown the block 7 with the horizontal ways 15 omitted. In this instance the jaw 19 slides upon the top of the block 7. The screw 23 engages the block 21, as in the other instance. The way 17 extends the full length of the block 7, so that the jaw may be adjusted the full length of said block.

In Fig. 7 I have shown the block with the way 15 omitted and with the way 17 extending horizontally through the block, and in

Fig. 8 I have shown the block provided with the ways 15 and 17, both horizontal and parallel to each other.

With the construction shown in Figs. 7 and 8 the clamping-jaw is not moved by turning the screw 23; but in order to adjust the clamping-jaw the screw must be turned so as to loosen the jaw, and the jaw is then moved by hand or by a suitable tool, the screw and the block 21 moving with it, and when brought to the desired position the screw is tightened and the block and the jaw 21 are firmly secured in the position to which they have been adjusted. This construction is not as advantageous as that shown in Fig. 1, in which the jaw and the block are moved by turning the screw. In all of the constructions I prefer to provide the top of the block 7 with the division-marks and the clamping-block with the scale by means of which the distance which the jaw will be moved may be predetermined. The main advantages of this construction are that the clamping-jaw of each block can be adjusted the full length of the block and may be moved any desired distance and the number of points which the jaw is to be moved may be accurately determined.

By having the clamping-jaw capable of adjustment to any point in the length of the block I am enabled to clamp a plate of any desired size. For instance, where it is desired to clamp a very small plate the blocks 7 may be placed with their inner ends abutting, and the clamping-jaws may then be adjusted to engage a plate of the smallest size. It sometimes occurs that a clamping-jaw will become broken after the plate is locked in the form, and by having the groove 17 extending lengthwise of the block I can, by removing the quoins 11 and one of the wooden strips 9, remove the clamping-jaw and the corresponding block 21 without taking the block out of the form or disturbing the plate. Moreover, by having the clamping-jaws capable of adjustment the full length of the block I may remove one plate and substitute another of larger or smaller size, adjusting each clamping-jaw to any position within the full length of its block.

It frequently occurs in printing in several colors that it is necessary to use three plates in succession in making the same print. This construction of the block enables me to use two, three, or more plates of different sizes in succession without removing the blocks from the form and without making up an extra form. Again, by having the clamping-jaws arranged as shown I am enabled to turn

them at an angle to the longitudinal groove in the block, whereby I am able to clamp a plate having an irregular edge.

It frequently occurs that copper plates become bent after being used, and such plates may be brought down to a horizontal position by the use of my block, in which the bottom surface of the jaw, as hereinbefore explained, does not come in contact with the bottom wall of the way 15 at one end. This is another especial advantage arising from the use of my construction. There is also an especial advantage in having the upper surface of the block provided with the register-marks and having a corresponding scale upon the upper surface of the clamping-jaw, by which the operator may determine the amount necessary to turn the adjusting-screw to move the jaw the distance between two of the marks upon the upper surface of the block or any fraction thereof. By loosening the screws on all of the blocks the operator may then shove the plate in any direction, moving the jaws on one or two sides with the plate. The other jaws may then be moved up to the plate and all the plates secured by tightening the screws.

If preferred, and especially where the ways 15 are omitted, the clamping-jaw 19 may be provided with the recesses 29 to receive the prongs of a tool, by means of which the jaw may be moved toward or from the plate 2.

I claim as my invention—

A register-clamp comprising, in combination, a block having a longitudinal centrally-arranged groove extending from end to end of the block, bearing register-marks in its upper surface upon each side of said groove, inclined and horizontal ways provided in the walls of said groove, said inclined ways extending from the bottom of said groove at one end of the block to a point near the top of the groove at the other end of the block, a clamping-jaw having projections to enter said horizontal ways and slide over said marks and provided in its upper surface with a scale, a block having projections to enter and slide in said inclined ways and a screw having a head to revolve over said scale and a shank to pass through said jaw and said block, substantially as described.

In witness whereof I have hereunto set my hand this 6th day of July, 1903.

THEODOR WENSEL.

In presence of—

A. C. PAUL,
C. G. HANSON.