

(No Model.)

J. W. YATES.

MACHINE FOR MOLDING AND EMBOSSING SHEET METAL.

No. 464,410.

Patented Dec. 1, 1891.

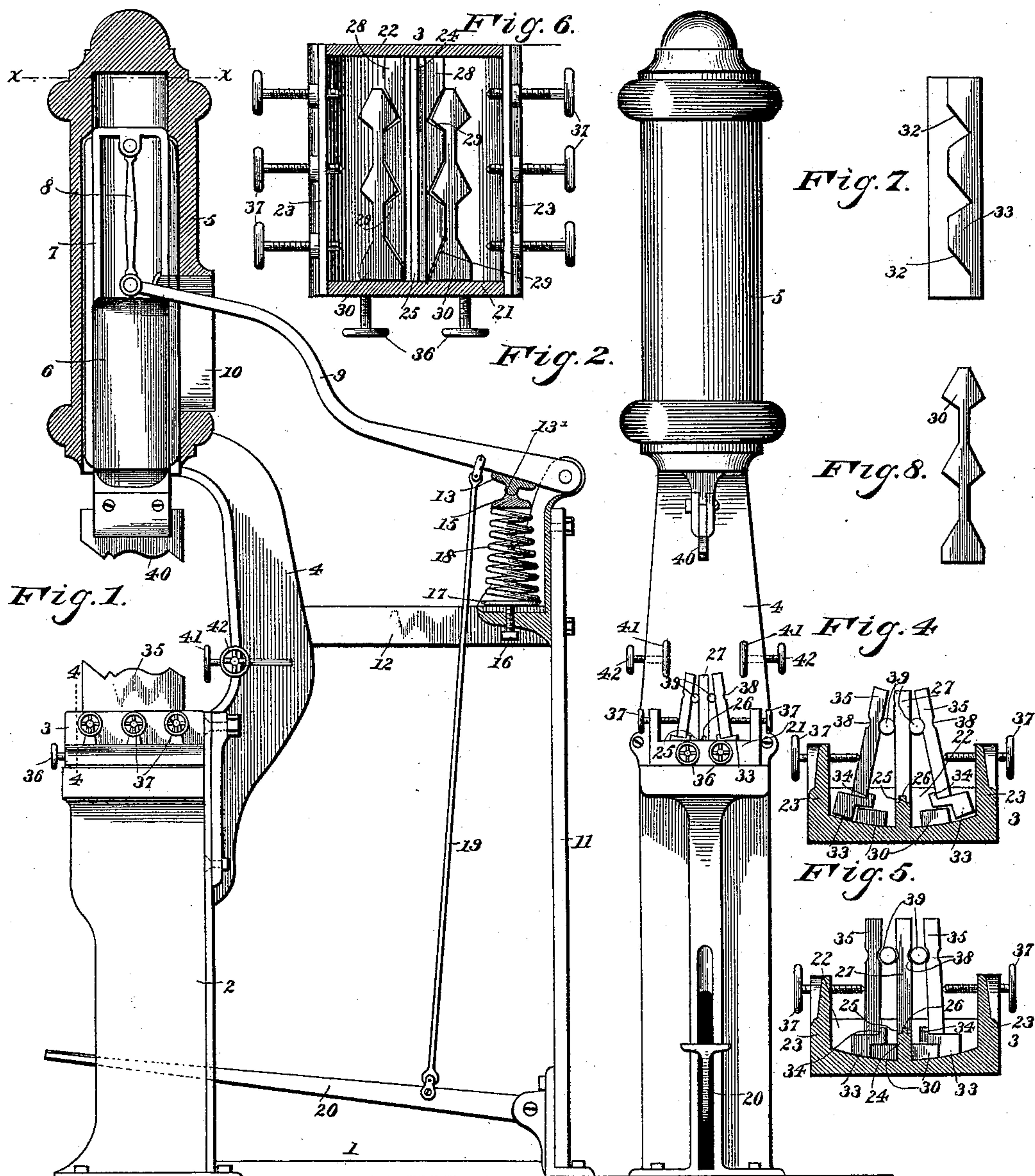
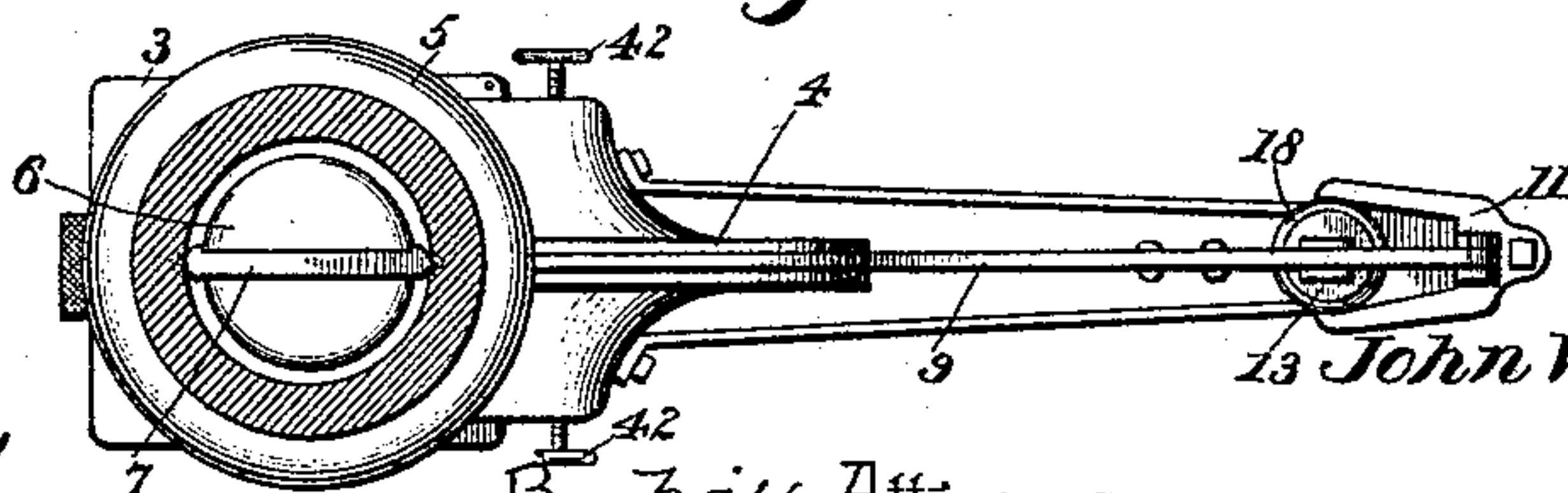


Fig. 3.

Witnesses;

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MACHINE FOR MOLDING AND EMBOSSING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 464,410, dated December 1, 1891.

Application filed May 26, 1891. Serial No. 894,154. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. YATES, a citizen of the United States, residing at New Decatur, in the county of Morgan and State of Alabama, have invented a new and useful Machine for Molding and Embossing Sheet Metal, of which the following is a specification.

This invention relates to machines for molding and embossing sheet metal; and it is an improvement on the device of this class for which Letters Patent of the United States No. 438,970 were issued to myself on the 21st day of October, 1890.

My present invention has especial reference to the means for adjusting and supporting the molding-blocks and to the construction of the frame of the machine, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side elevation, partly in section, of a machine constructed in accordance with my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a top view, partly in section, on line *x x* of Fig. 1. Fig. 4 is a sectional detail view taken on the line 4 4 in Fig. 1. Fig. 5 is a similar view showing the molding-blocks in a different position. Fig. 6 is a horizontal sectional view taken through the anvil-block or casing, parts having been broken away or removed to show the construction more clearly. Figs. 7 and 8 are detail views.

Like numerals of reference indicate like parts in all the figures of the drawings.

The base 1 of my improved molding or embossing machine is provided with an upright or anvil block 2, supporting the clamp 3. Said upright is also provided with an upwardly-extending curved arm or bracket 4, carrying the cylinder or casing 5, in which is mounted the vertically-movable weight or hammer 6. The latter has an upwardly-extending yoke 7, which is connected by a link 8 with a lever 9, that extends through a slot 10 in the casing 5, said lever being pivoted at the upper end of the upright 11, rising from the base. Said upright is connected by a bracket 12 with the arm 4, thus steadying and supporting the upright 11. To the un-

der side of the lever 9 is suitably attached a lug 13, which works in a recess or depression 13' in the upper side of a cup-shaped disk 15. The bracket 12 is provided with a vertically-movable set-screw 16, having at its upper end a cup-shaped disk 17. Between the latter and the disk 15 is interposed a coiled spring 18, which tends to force the lever 9, carrying the hammer 6, normally in an upward direction. The lug 13, working in the recess 13' of disk 15, forms an anti-friction bearing, and the tension of the spring 18 may be regulated by the vertically-adjustable disk 17, mounted upon the set-screw 16, as will be readily understood. The lever 9 is connected by a link 19 with a treadle 20, pivoted at the lower end of the upright 11 and extending forwardly in front of the upright 2 to a point where it may be readily reached by the operator.

The clamp 3 is provided at its front and rear ends with flanges 21 and 22 and at its sides with similar flanges 23. The bottom of said clamp is concave in cross-section, as will be clearly seen in Figs. 4 and 5, and it is provided with a central longitudinal rib 24, having a tongue 25 on its upper side to engage a groove 26 in the under side of the central molding block or die 27, which is seated upon the said rib. The bottom of the clamp 3 is provided adjacent to the central rib with flanges 28, having triangular or wedge-shaped recesses 29. Slides 30, which are placed in the clamp adjacent to the flanges 28, are provided on opposite sides with triangular or wedge-shaped projections adapted to engage, respectively, the recesses 29 in the flanges 28 and similar recesses 32 in the under sides of the supporting-blocks 33, which latter are provided on their upper sides at their inner edges with flanges 34, against which the outer molding blocks or dies 35 may rest. The front flange 21 of the clamp 3 is provided with set-screws 36, adapted to bear against the front ends of the slides 30, which latter may thus be forced in a rearward direction. The side flanges 23 of the clamp 3 are provided with set-screws 37, adapted to engage the outer sides of the outer molding-dies. The adjacent sides of the several molding-dies are provided with longitudinal horizontal grooves 38 to receive the circular pins 39, which are inter-

posed between the said molding-dies and which form pintles upon which the latter may partially turn.

The upper edges of the molding-dies are to be cut to any desired pattern, the inverse of which is formed in the shaping-die 40, which is suitably attached to the lower end of the hammer.

When desired, the relative positions of the molding-dies and the shaping-die may be reversed—that is to say, the latter may be mounted upon the upper side of the upright 2, and the clamp containing the molding-dies may be attached to the lower end of the hammer, as will be readily understood.

When the outer molding-dies 35 occupy a vertical position adjacent to the central block 27, straight moldings may be formed by a succession of blows of the hammer upon the sheet metal, which is being fed slowly through the machine and for the guidance of which the guides 41 are secured adjustably to the bracket 4 by means of set-screws 42. When it is desired to make curved or segmental moldings, the slides 30 are forced in a rearward direction to any desired extent, thus forcing the supporting-blocks 33 in an upward and outward direction and carrying with them the lower ends of the outer molding-blocks 35. The set-screws 37 are meanwhile adjusted so as to hold the upper ends of said molding-dies firmly in contact with the guide-pintles 38. It will be readily seen how, by proper adjustment of the molding-dies, moldings of any desired curvature may be produced. It will also be readily seen how, by the use of proper dies, embossed work may be produced by my improved machine.

Having thus described my invention, what I claim is—

1. The combination of the upright having an upwardly-extending arm carrying the tubular inclosed guide-casing, the hammer mounted in the latter, a yoke or frame extending upwardly from said hammer within the casing, an upright rising from the base, a lever pivoted at the upper end of said upright extending through a slot in the tubular guide-casing and connected with the upwardly-extending hammer-yoke by means of a link pivotally suspended from the top of the yoke, a bracket connecting the rear upright with the arm supporting the guide-casing, a spring interposed between said bracket and the operating-lever, and a link connecting the latter with a treadle pivoted at the lower end of the rear upright, substantially as set forth.

2. The combination of the uprights consti-

tuting the frame, a bracket connecting the rear upright with an arm extending upwardly from the front upright, the operating-lever pivoted at the upper end of the rear upright and carrying the hammer, which is mounted in a suitable casing, a lug secured to the underside of the operating-lever, a cup-shaped disk having a recess or indentation engaging said lug, a set-screw mounted in the horizontal bracket connecting the uprights and carrying a cup-shaped disk, and the spring interposed between the said cup-shaped disks, substantially as set forth.

3. The combination of the base or anvil-block and the clamp having the curved or concaved bottom and the central rib, the flanged supporting-blocks, means for forcing the latter in an upward and outward direction, the molding-dies mounted upon said supporting-blocks, and the set-screws mounted in the side flanges of the clamp, substantially as set forth.

4. In a device of the class described, the combination of the base or anvil-block and the clamp, the set-screws in the side flanges of the latter, the molding-dies having horizontally-grooved sides, the pintle-rods mounted in the grooves of the meeting faces of said blocks, and means for forcing the lower ends of the outer molding-blocks in an upward and outward direction, substantially as set forth.

5. The combination of the base or anvil-block, the clamp having the curved or concaved bottom and the flanges provided with triangular or wedge-shaped recesses, the supporting-blocks having triangular or wedge-shaped recesses in their under sides and provided on their upper sides with longitudinal flanges, the slides provided on opposite sides with triangular projections or wedges, set-screws mounted in the front flange of the casing and bearing against said slides, the molding-blocks mounted upon the supporting-blocks, a central molding-block mounted upon a longitudinal rib in the bottom of the casing, and set-screws mounted in the side flanges of the clamp and bearing against the outer molding-blocks, substantially as set forth.

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

JOHN W. YATES.

Witnesses:

E. J. FENN,

W. P. MULLIGAN.