

No. 755,588.

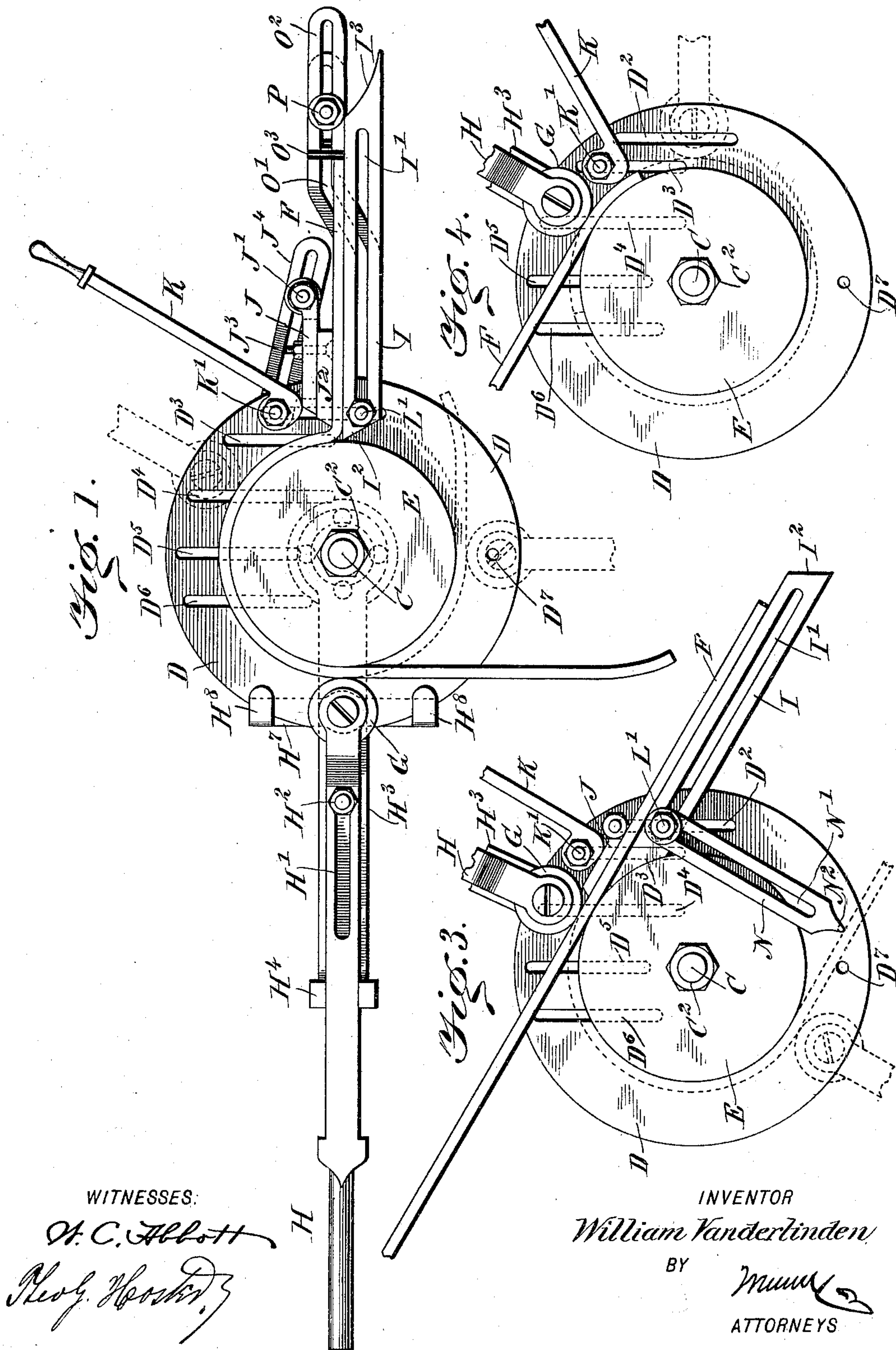
PATENTED MAR. 22, 1904.

W. VANDERLINDEN.
BENDING MACHINE.

APPLICATION FILED JULY 1, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

H. C. Abbott
Rev. Hooker.

INVENTOR

William Vanderlinden

BY

Munn
ATTORNEYS

ATTORNEYS

No. 755,588.

PATENTED MAR. 22, 1904.

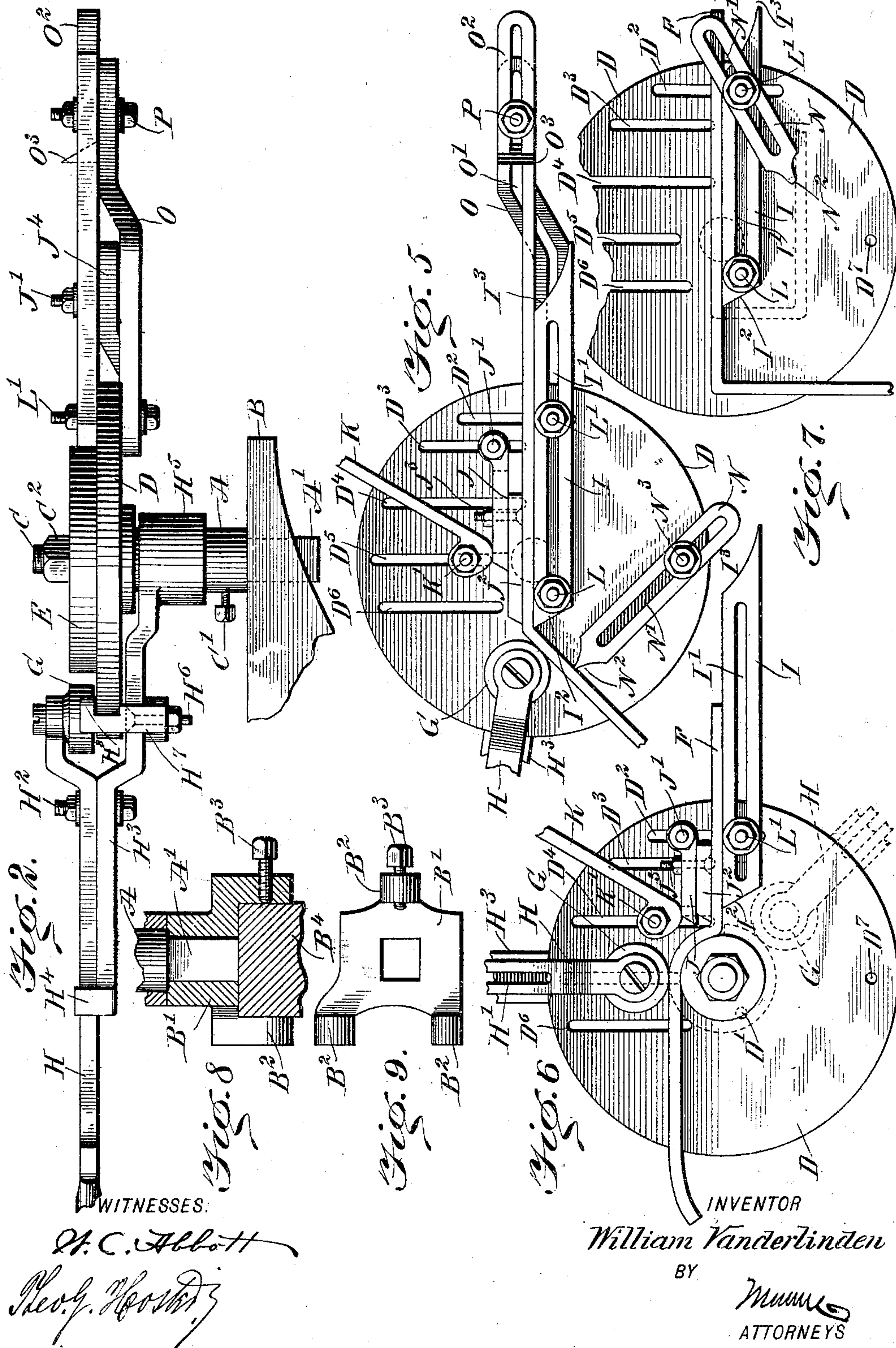
W. VANDERLINDEN.

BENDING MACHINE.

APPLICATION FILED JULY 1, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

WILLIAM VANDERLINDEN, OF LANSING, ILLINOIS, ASSIGNOR OF ONE-HALF TO GEORGE DEKKER, OF LANSING, ILLINOIS.

BENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 755,588, dated March 22, 1904.

Application filed July 1, 1903. Serial No. 163 871. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VANDERLINDEN, a citizen of the United States, and a resident of Lansing, in the county of Cook and State of Illinois, have invented a new and Improved Bending-Machine, of which the following is a full, clear, and exact description.

The invention relates to metal-working machinery; and its object is to provide a new and improved hand-machine for bending iron rods or bars to form eyes or angles of any degree in a very simple and effective manner, the machine being durable in construction, easily adjusted for different work, and adapted for hand use on an anvil or other support.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement arranged for forming a closed eye in the end of a bar. Fig. 2 is a side elevation of the improvement. Fig. 3 is a plan view of the improvement as arranged for forming an open eye in the end of a bar. Fig. 4 is a like view of the improvement as arranged for forming a spiral. Fig. 5 is a similar view of the improvement arranged for forming an angle at the end of a bar. Fig. 6 is a plan view of the improvement arranged for forming a small-sized eye on the end of a bar. Fig. 7 is a plan view of the improvement arranged for forming a U-shaped hook on the end of a bar, the bending-tool and dumping device being omitted. Fig. 8 is a sectional side elevation of a support for the device, and Fig. 9 is an inverted plan view of the support.

The square shank A' of a post or standard A is adapted to engage a correspondingly-shaped aperture in an anvil B or in a bearing B', having clamping-lugs B² and a set-screw B³ for securing the bearing in place on a bench or other support B⁴. In the standard

A is removably held a pin or stud C, fastened in place by a set-screw C' and carrying at its upper threaded end a nut C², and the said pin C projects through a central opening in a platform or bed D, resting on top of the standard A, and the said pin C is adapted to receive different-sized templets E, as shown in Figs. 1, 2, 3, and 4, each in the form of a disk, for bending a rod or bar F to produce an eye at one end thereof, as plainly indicated in the said figures. The portion of the pin C projecting above the platform D may be used as a templet around which the bar end is bent, and pins C of different diameters at their upper portions may be employed.

The bending of the bar F around the peripheral face of the templet E or the pin C is done by a friction-roller G, journaled at the inner end of a hand-lever H and provided with a longitudinal slot H', engaged by a bolt H², held on an arm H³, provided with lugs H⁴, straddling the sides of the hand-lever H a distance from the bolt H², as plainly indicated in Figs. 1 and 2. The arm H³ is provided with a hub H⁵, engaging the standard A, so that the hand-lever H, secured on the arm H³, swings from the standard A as the fulcrum. Thus by the operator taking hold of the hand-lever H the hand-lever can be swung around so as to move the friction-roller G concentric with the peripheral face of the templet E.

In order to properly guide the hand-lever H and its arm H³, the latter is provided at the under side with a cross-arm H⁷, held in place by a bolt H⁶, and on the ends of the cross-arm H⁷ are guide-lugs H⁸, engaging the peripheral face and top of the platform D. It is understood that the arm H³ extends with its pivotal portion under the platform D, while the inner end of the hand-lever H, carrying the friction-roller G, extends on the top of the platform, and the said hand-lever and its parts constitute the bending-tool.

In order to hold the bar F in position while bending the end thereof into an eye on the peripheral face of the templet E, a clamping device is provided, which for certain work consists of the clamping members I and J

(see Figs. 1, 2, 3, 5, and 6) or of a single cam-lever K, fulcrumed on a bolt K', held adjustable on the platform D, as shown in Fig. 4, the cam-lever K being also used for locking the clamping member J in position against the bar F, as shown in Figs. 1, 3, 5, and 6, thus forming a vise. The clamping member I is in the form of a straight bar provided with a slot I' for engagement by one or more bolts L L', removably held on the platform D, the bolts serving to securely fasten the clamping member I in place on the platform D. The bolt L is adapted to extend through an aperture D' in the platform D, while the bolt L' can be adjustably held in any one of a series of transverse parallel slots D², D³, D⁴, D⁵, and D⁶, formed in the said platform. One end, I², of the clamping member I is beveled to allow of bending the end of the bar F close to the beginning portion of the eye to be formed by the device, (see Fig. 1,) and the other end, I³, of the clamping member I is segmental to fit the peripheral face of the templet E (see Fig. 3) whenever it is desired to bend the bar F into U shape—that is, with two parallel sides and a half-round middle portion—as will be readily understood by reference to the said Fig. 3. The clamping member J is pivoted on a bolt J', held adjustable on the platform D in any one of its slots D² D³ D⁴ D⁵ D⁶. The clamping member may be provided with a removable check-piece J², fastened to the member by a bolt J³ to give the desired or necessary thickness to the clamping member for certain work. A number of clamping members of different lengths are employed according to the nature of the work. (See for comparison Figs. 5 and 6.) If necessary, the clamping member may be secured at its outer end by the bolt J' to a slotted link J⁴, attached to the platform D by the bolt K'. (See Fig. 1.)

The cam-lever K is fulcrumed at its cam end on the bolt K', adjustably held on the platform D in any one of the slots D², D³, D⁴, D⁵, or D⁶, so as to bring the cam end of the lever K in proper relation to the free end of the clamping member J to swing the latter in firm contact with the bar F, or the said cam end may directly engage the bar F to clamp the end thereof against the peripheral face of the templet E, as shown in Fig. 4.

When it is desired to form a U-shaped bar, as shown in Fig. 3, use is made of a distance-gage N, fastened by the bolt L' in position over the templet E, the said bolt L' engaging a slot N' in the gage to allow of setting the same to indicate with its depending point N² the distance the end of the bent side member is from the side member held fixed between the clamping members I and J. As shown, the bolt L' is the same that is used for fastening the clamping member I in place on the platform. As shown in Fig. 5, the distance-gage N is fastened by a bolt N³ directly to the platform D, the said bolt being removably

held in an aperture D' in the said platform. When bending a bar into angular form, as shown in Figs. 5 and 7, the templet E and bolt C are dispensed with, and the distance-gage is then set to form a stop for the bent end of the bar to bend the bar at an angle of any desired degree and shape. (See Figs. 5 and 7.)

To the under side of the platform D is secured, preferably by the bolt L', a stop-gage O, bent upward near its outer end to bring the top thereof level with the top of the platform D. The gage O is formed with a slot O', engaged by a bolt P, also engaging a slotted stop O², having a point O³ and held lengthwise adjustable on the outer end of the gage O. The terminal of the fixed or clamped end of the bar F abuts against this point O³ to give the desired length to this end of the bar F.

In using the device, as shown in Figs. 1, 3, and 6, the end of the bar F is clamped in place between the clamping members I and J, with the friction-roller in contact with the outer face of the bar adjacent to the clamping member J. The lever H is now swung around, so that the friction-roller G bends the free end of the bar against the peripheral face of the templet E to form the eye (see Figs. 1 and 6) or the middle bend. (See Fig. 3.) When forming a spiral, (see Fig. 4,) the clamping members I and J are dispensed with, and the clamping cam-lever K is only used to clamp the terminal of the bar to the templet E, and then the bar is bent against the peripheral face by the use of the lever H and friction-roller G, as above described, it being understood that the bar can be bent to form more than one convolution, if desired, as indicated in dotted lines in Fig. 4. When forming angular terminals on the bar, as shown in Figs. 5 and 7, the templet E is dispensed with, and the bar is bent over the beveled end I² of the clamping member I by the use of the lever H and friction-roller G, as above described.

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

1. A bending-machine comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the axis of the platform, a templet held on the platform and on which the bar is to be bent, a clamping device adjustable on the platform, for holding the bar to be turned, and a cam-lever adjustably fulcrumed on the said platform and operating in conjunction with the clamping device, to form a vise, as set forth.

2. A bending-machine, comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the axis of the platform, a templet held on the platform and around which the bar is to be bent, a clamping device adjustable on the platform for clamping the bar to hold it while being bent, and a distance-gage adjustably held on the platform and adapted to engage the end of the bar being

bent to limit the distance the said end is bent toward the end of the bar that is held by the clamping device, as set forth.

3. A bending-machine comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the axis of the platform, a templet held on the platform and on which the bar is to be bent, and a clamping device adjustable on the platform, for holding the bar to be turned, the said clamping device consisting of two parallel bars adjustably held on the platform and having beveled ends, as set forth.

4. A bending-machine comprising a platform, a circular templet held thereon, a clamping member on the platform, a bending-tool mounted to swing on the standard and adapted to engage the bar opposite the peripheral face of the templet, and a distance-gage on the said platform for limiting the approach of the bent end toward the fixed portion of the bar, as set forth.

5. A bending-machine comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the said platform, and a clamping device held on the said platform, the clamping device having two members of which one is fixed on the platform and the other mounted to swing thereon, and a cam-lever fulcrumed on the platform and adapted to engage the pivoted clamping-lever to form a vise, as set forth.

6. A bending-machine comprising a platform, a templet thereon, a bending-tool mounted to swing and having its axis coinciding with the said platform, and a clamping device held on the said platform, the said clamping device being adjustable on the platform and

having a member one end of which is beveled and the other end is segmental, as set forth.

7. A bending-machine comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the said platform, and a clamping device held on the said platform, the said clamping device being adjustable on the platform and having a clamping member, segmental on one end, and a circular templet on the platform and adapted to be peripherally engaged by the said segmental end, as set forth.

8. A bending-machine, comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the axis of the platform, a clamping device on the platform for clamping the bar to hold it while being bent, and a distance-gage held adjustably on the platform and adapted to engage with its end the end of the bar being bent, as and for the purpose set forth.

9. A bending-machine comprising a platform, a bending-tool mounted to swing and having its axis coinciding with the said platform, a clamping device held on the said platform, the said clamping device being adjustable on the platform and having a member beveled at one end, and a distance-gage held adjustably relative to the said beveled end of the clamping member, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM VANDERLINDEN.

Witnesses:

JACOB C. TON,
HERMAN A. LANGE.