(No Model.)

W. W. GREEN.

METAL BENDING MACHINE.

No. 420,935. Patented Feb. 11, 1890.

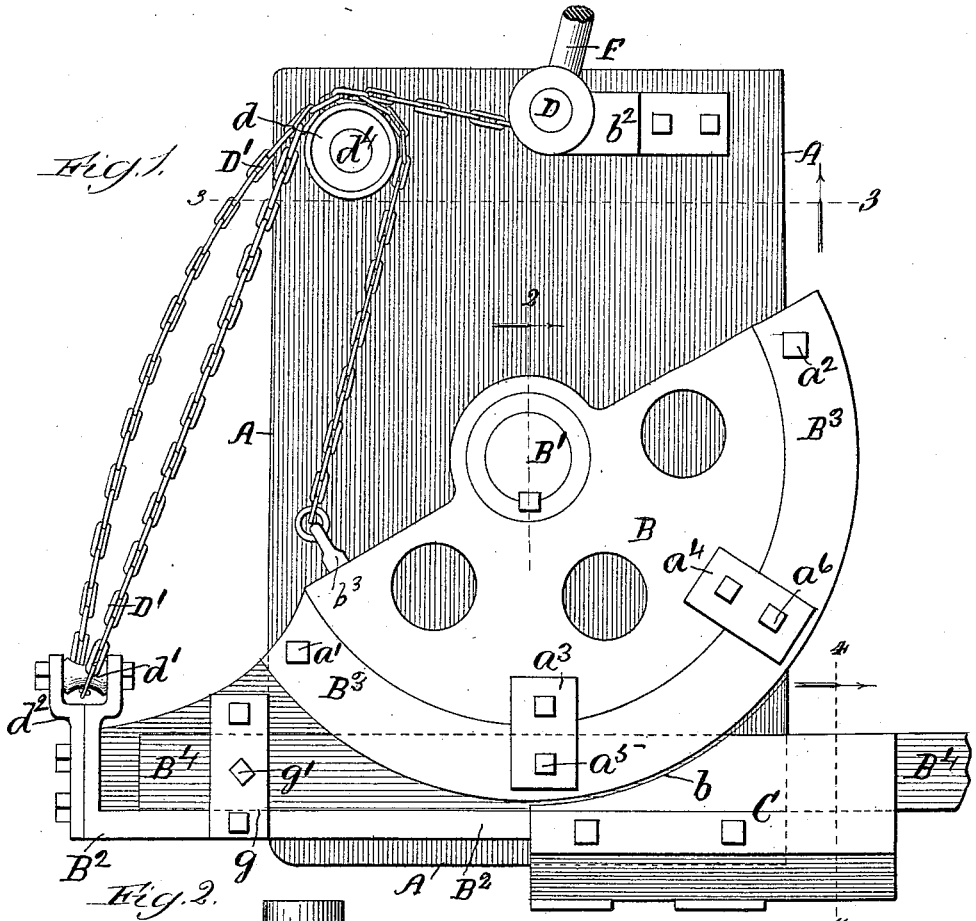


Fig. 1.

Fig. 2.

Fig. 4.

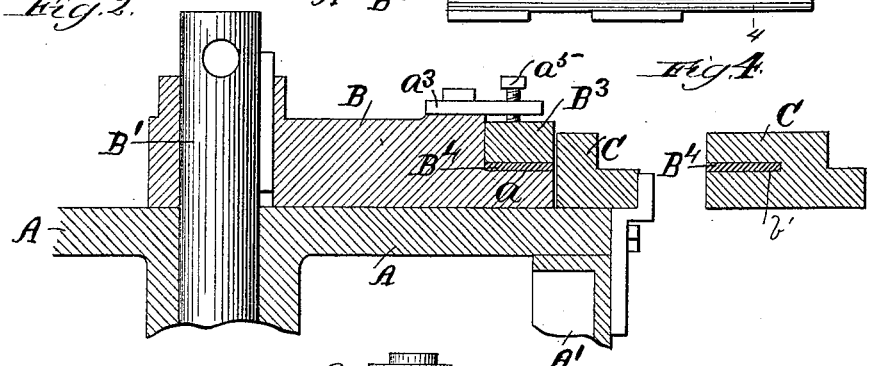
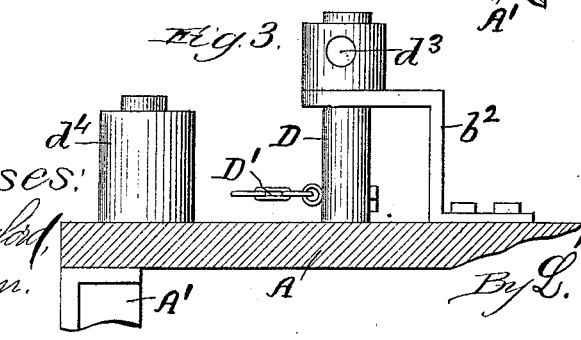


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM W. GREEN, OF CHICAGO, ILLINOIS.

METAL-BENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,935, dated February 11, 1890.

Application filed November 2, 1888. Serial No. 289,813. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. GREEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metal-Bending Machines, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide a machine for bending a strip or flat piece of metal edgewise, as will be hereinafter set forth.

Figure 1 is a plan of a machine embodying my improved features; Fig. 2, a vertical transverse section in plane 2, Fig. 1; Fig. 3, a vertical transverse section in plane 3, Fig. 1; Fig. 4, a vertical section in plane 4, Fig. 1.

Referring to the drawings, A represents the bed-frame, upon which the operating mechanism is mounted, and A′ the supporting-legs.

The circular bending or forming die B is rigidly mounted on the pivot-shaft B′, journaled in the bed-frame, and turns therewith. The projecting end B^2 is a part of the bending-die B and moves around with the same. The periphery or outer edge of the die B is cut away from the top down to about one-half its thickness to provide the seating-ledge *a*. The curved clamping-plate B^3 fits into and corresponds to the part cut away to form the ledge *a*. The bolts a' a^2 are loosely inserted through the clamping-plate and have a threaded engagement with the die B, and serve the purpose of retaining the clamping-plate in proper relative position. The inner ends of the rectangular plates a^3 a^4 are bolted to the body of the die B and extend outward over the curved clamping-plate B^3, as shown in Fig. 1. The screw clamping-bolts a^5 a^6 are threaded in the outer ends of the plates a^3 a^4, and have a bearing on top of the clamping-plate B^3, and thereby rigidly clamp and hold the strip of metal B^4 in the movable die during the operation of bending, as shown in Fig. 2.

The stationary die-block C is rigidly secured to the bed-frame, and is curved out along a part of the inner face, as at *b*, to correspond to the contour of the movable bending-die. This stationary die-block is provided with the recess *b*′, in which is inserted the strip of metal to be bent, as shown in Fig. 4.

The lower end of the vertical windlass-shaft D is journaled in the bed-frame at the back end, while the upper end is suitably supported in the angle-bracket b^2, as shown in Figs. 1 and 3. A ring-bolt b^3 is inserted in the forming-die at one side, and has one end of the purchase-chain D′ attached thereto, the opposite end being attached to the windlass-shaft D, the chain, however, being rove first over the sheave *d*, then over the guide-roller *d*′, journaled in the bracket d^2, and back again over the sheave *d* to the windlass, for the purpose of increasing the purchase and power. The windlass-shaft is provided with one or more apertures d^3, for the insertion of the hand-lever F for operating the movable die. The sheave *d* is journaled on the shaft d^4.

The machine is shown in its normal position, (see Fig. 1,) and has a strip of metal inserted ready for the operation of bending.

The plate *g* is bolted to the projecting end B^2 of the movable die B, and is provided with one or more clamping-bolts *g*′, for securing and holding the inner end of the strip of metal. By rotating the windlass-shaft the movable die turns on its pivot and the strip of metal is bent into a form corresponding to the periphery of the bending-die.

The machine illustrated is operated by hand; but it is obvious that a very slight change would be required to convert the same into a power machine.

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

1. In a bending-machine, the combination, with the supporting bed-frame, of a bending-die rigidly mounted and turning on a pivot-shaft and provided with a seating-ledge, as described, a curved clamping-plate adjustably secured on said ledge, and a stationary die-block provided with a recess and rigidly secured to the bed-frame, substantially as and for the purpose set forth.

2. In a metal-bending machine, the combination, with the movable bending-die mounted and turning on a pivot-shaft, of a windlass-shaft journaled in the bed-frame, a purchase-chain, the respective ends whereof are secured to said die and windlass-shaft, the sheave d, the guide-roller d', over which said chain is rove, and the fixed die C, substantially as and for the purpose set forth.

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