

R. MOBLEY.  
BENDING MACHINE.  
APPLICATION FILED MAY 8, 1905.

Fig. 1.

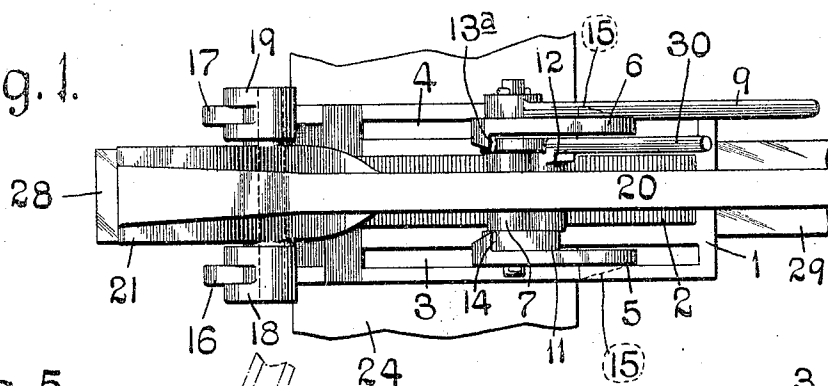


Fig. 5.

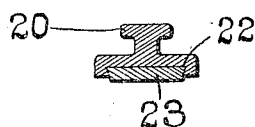


Fig. 2.

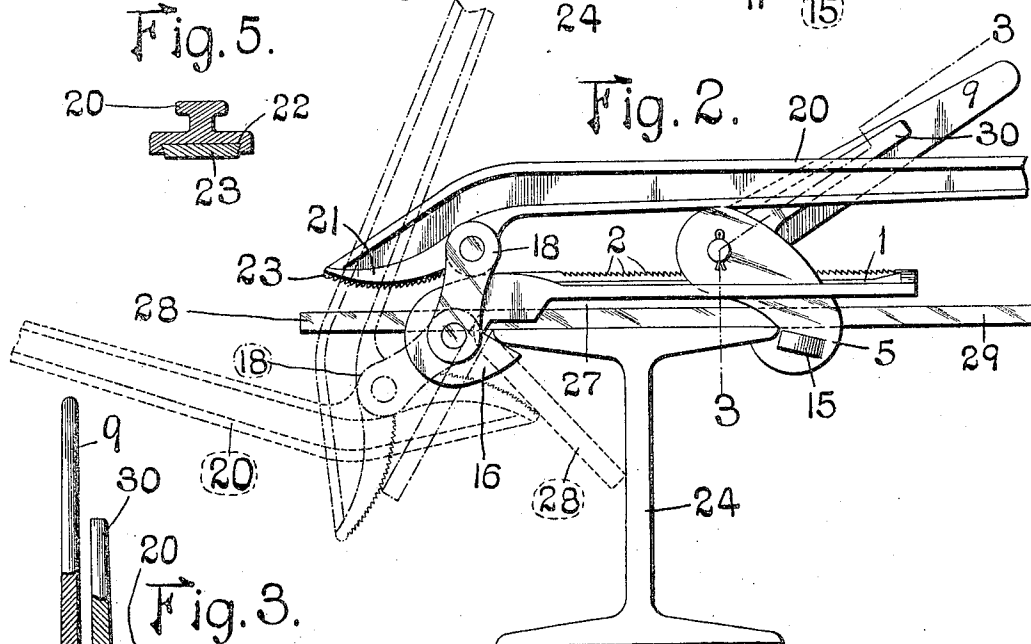


Fig. 3.

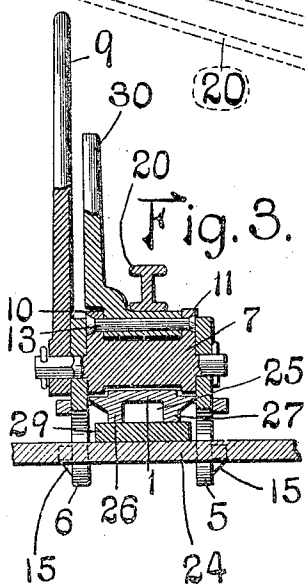
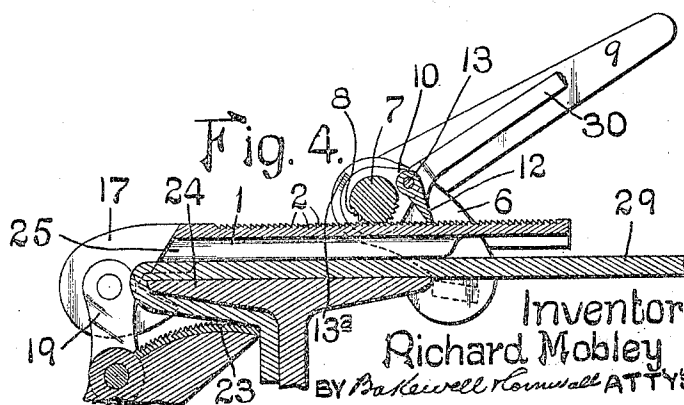


Fig. 4.



Witnesses

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Inventor:

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# UNITED STATES PATENT OFFICE.

RICHARD MOBLEY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
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## BENDING-MACHINE.

No. 808,672.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed May 8, 1905. Serial No. 259,386.

*To all whom it may concern:*

Be it known that I, RICHARD MOBLEY, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Bending-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a bending-machine constructed in accordance with my invention. Fig. 2 is a side elevational view of the bending-machine, the different positions of the former being shown in dotted lines. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2. Fig. 4 is a vertical longitudinal sectional view through the bending-machine applied to an I-beam; and Fig. 5 is a cross-sectional view through the former, showing the position of the removable face-plate.

This invention relates to bending-machines, and particularly to a machine for bending metal bars or strips on flanged members.

As is well known, the construction of fire-proof buildings includes metal joists or girders which support the weight of the floor, and these joists or girders are flanged beams of I form in cross-section and commonly and commercially known as "I-beams." The beams are generally tied together by tie-bars, which tie-bars terminally engage the flanged portions of the beams or girders by having their ends bent around the flanges. As the tie-bars are rather stiff, considerable difficulty has been experienced in bending the ends around the flanged portions of the girders or beams, and it is the purpose of my invention to provide means whereby this may be easily and expeditiously accomplished in a most efficient manner.

In order to properly illustrate the manner of using the invention, I have shown it applied to an I-beam and in position for bending the tie-bar end around the flange thereof.

The construction embodied in the preferred form of my invention is illustrated as comprising a base 1, on the upper portion of which is a plurality of transversely-arranged teeth 2.

3 and 4 designate longitudinally-arranged elongated slots, in which are secured the depending hooked extensions 5 and 6 of an anchor member connected by a shaft 7, which

shaft is provided with longitudinal teeth 8, coinciding with the teeth 2 on the base 1. On the end of the shaft is secured a lever 9, whereby said shaft may be rotated, as will be explained hereinafter. 10 and 11 designate bearing projections carried by said shaft, between which is pivoted a weighted dog or pawl 12, held in place on the pivot 13. The forward rocking movement of said shaft 7 will be limited by the projections 10 and 11, which are adapted to contact with the projections 13<sup>a</sup> and 14 of the anchor-hooks 5 and 6. These hooks are held against accidental displacement from the base by means of lugs or projections 15, carried near the lower ends thereof, which do not interfere with the free play of the anchor-hooks in the slots 3 and 4.

On one end of the base are depending hooks 16 and 17, which are adapted to engage the flange of the member to which the tie-bar is to be applied, and these hooks coöperate with the anchor-hooks 5 and 6 to hold the base in place. Journaled in the end of the base 1 and adjacent to the hooks 16 and 17 are bifurcated links 18 and 19, in which is journaled a former comprising a lever 20, having one end provided with an arcuate portion 21, in which arcuate portion is a dovetailed groove 22 to receive a tooth-engaging plate 23, which bears against the end of the tie-bar to form it into shape, so as to efficiently engage the flanged member—as, for example, the I-beam 24. This plate 23 is preferably of hardened steel, while the lever 20 may consist of any suitable metal. The under side or bottom of the base is provided with a groove 25, which extends throughout the entire length of the base and in which a tie-bar may be placed for bending; but if a tie-bar of greater width than the groove 25 is to be employed the tie-bar will be positioned beneath the ribs 26 and 27, forming the groove, and tie-bars of different thicknesses may be employed without affecting the operation of the machine.

In applying the device the tie-bar will be placed on the flanged members and the machine then placed on the tie-bar, so that the hooked members 16 and 17 will be caused to engage one edge of the flange, and the anchor member, which is adjustable along the base, will then be caused to engage the other edge of the flange, after which the shaft 7 may be rocked through the medium of the lever 9 to cause the teeth 8 to travel on the rack formed

by the teeth 2, which operation will cause the dog 12 to automatically travel over said teeth, and as soon as the anchor-hooks 5 and 6 have drawn the hooked members 16 and 17 into positive engagement with one edge of the flange and the hooks 5 and 6 tightly engage the other edge of the flange the lever 9 may be released on account of the engagement of the weighted pawl 12 with the teeth 2, so that the base will be securely anchored to the flange. It is to be understood that the end 28 of the tie-bar 29 is to project beyond one edge of the flange, so that by swinging the lever 20 on its links in the positions indicated in Figs. 2 and 4 the end of the tie-bar will be bent around under the flange, and if a sufficient length projects beyond the edge part of the end of the bar will rest against the web of the girder or I-beam, so that the bar will be securely tied to the flanged member.

By reference to Figs. 2 and 4 it will be observed that the former, comprising the lever and its removable face, may be swung from its initial or horizontal position to a vertical position and then to a horizontal position in a plane lower than the horizontal plane assumed in its initial position and that the end of the former in its bending position will rest adjacent to the angle of the flanged member, so that the tie-rod will be caused to snugly engage the flanged member for a considerable distance at its end. After the tie-bar has been bent—as, for example, as shown in Fig. 4—the handle 30, which constitutes the weight for the dog 12, may be raised, so as to release the shaft, and the weight of the lever 9 will throw the shaft out of engagement with the rack of the base, so that the machine may be easily removed.

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

1. In a device of the class described, the combination with a base having a rack thereon, a fixed flange-engaging means carried by

said base, an adjustable flange-engaging means cooperating with the rack, and a tie-rod-bending member carried by said base; substantially as described.

2. The combination with a base having a hooked portion at one end, means for anchoring the base to a beam and adjustable on said base, a pawl-and-rack mechanism for holding said means in an adjustable position, and a bending element carried by said base; substantially as described.

3. In a device of the class described, the combination with a base, an anchor member carried by said base, links connected to the respective sides of the base, and a bender secured to the ends of the links distant from the base and movable on the arc of a circle from a position above the base to a position below the base; substantially as described.

4. In a device of the class described, the combination with a base having a hooked portion at one end for engagement with a flange, and adjustably-movable flange-engaging hooks cooperating with the base near the other end, and a pivoted tie-rod-bending means carried by the base; substantially as described.

5. The combination with a base having a fixed hooked portion and an adjustable hooked portion, of a pivoted tie-rod-bending element carried by said base and movable in the arc of a circle; substantially as described.

6. The combination with a base, of a fixed anchor member on the base, said base having elongated slots, hooked members guided in said slots for engagement with the flange of a girder or beam, and a pivoted member carried by said base at one end thereof; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 29th day of April, 1905.

RICHARD MOBLEY.

Witnesses:

B. F. FUNK,

GEORGE BAKEWELL.