J. JENKINS & E. FUNK.

MACHINES FOR BENDING METAL BEAMS.

No. 171,729. Patented Jan. 4, 1876.

Fig. 3.

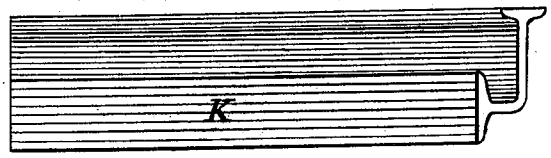


Fig. 1.

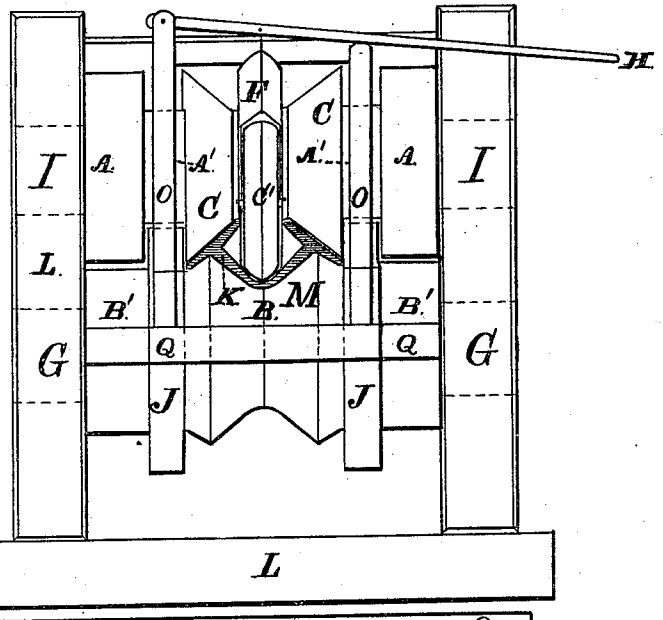
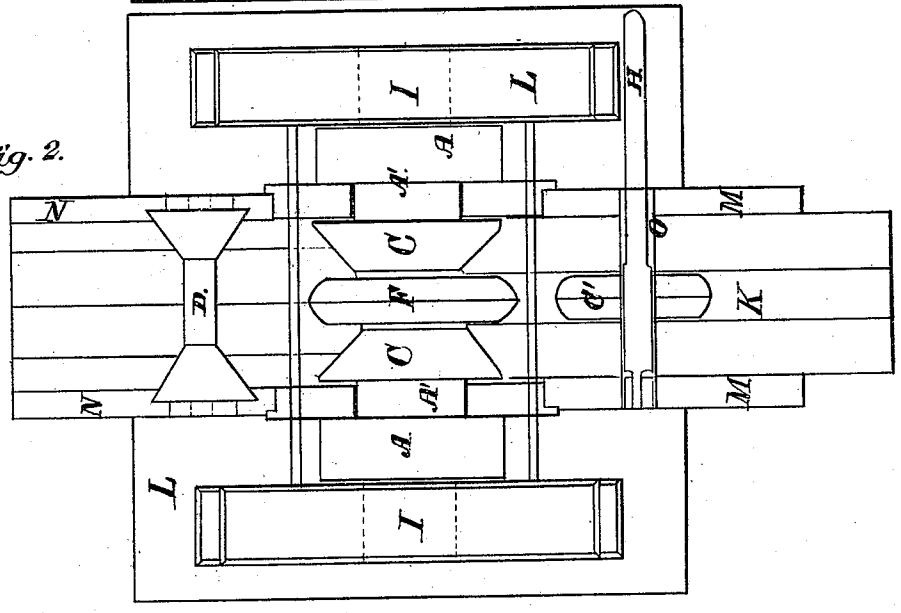


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES JENKINS AND EPHRAIM FUNK, OF BUFFALO, NEW YORK.

IMPROVEMENT IN MACHINES FOR BENDING METAL BEAMS.

Specification forming part of Letters Patent No. **171,729**, dated January 4, 1876; application filed May 14, 1875.

To all whom it may concern:

Be it known that we, JAMES JENKINS and EPHRAIM FUNK, of the city of Buffalo and State of New York, assignors to the Union Iron Company, of Buffalo, have invented a new and useful Machine for Bending Metal Beams; and we do hereby declare the following to be a full, clear, and exact description of the same, so as to enable those skilled in the art to which our invention appertains to make and use it, reference being had to the accompanying drawings—

Figure 1 of which is a front elevation of our machine; Fig. 2, a plan, and Fig. 3 a perspective view, of the beam as bent.

Our invention relates to the art of bending beams into a given shape while hot.

Our invention consists of a pair of rolls placed one above the other, and partially taking one into the other, of a form substantially as shown, in combination with two guides placed in front and back of the lower roll, and a forming-roll controlled by a lever to bear down upon the web of the beam and press it into the gutter of the front guide, and a spool-shaped roll, the angles of which conform to the angle of the flange of the finished beam as it passes out from the rolls.

The construction of our machine is as follows: L is the main frame-work supporting the rolls. It consists substantially of two solid rolls, the surfaces of which on the lines of each axis are turned in sections. The rolls, when in place, interlock, and the sections are in contact, excepting in the center one, where there is an open space which is the forming-pass for the beam. I is the upper roll. A A are the end sections of the body of the roll. Sections A′ A′ are grooves. Sections C C are frustums of cones, their apices turned toward F. Section F is a collar circular on the cross-section of its periphery, and beveled reversely off toward C C. G is the lower roll. B′ B′ are the end sections of the body of the roll. Sections J J are collars locking into A′ A′ of roll I, to keep I and G in line. Section B is a groove between J and J, in form like the convex side of the beam when finished. M is the front guide, having a central gutter, as shown. O is a frame-work supporting the forming-roll C′, which roll is similar to F of the upper roll. H is a hand-lever, controlling the forming-roll. N is the back guide, identical with the front guide. Supported above N upon the brackets P is the spool-shaped roll D. The front and back guides are supported upon rests Q.

Such being the construction of our invention, its mode of operating is substantially the following: The beam, after receiving the last pass in the beam-rolls, and while hot, is so placed upon the front guide and fed under the forming-roll C. By means of the lever H the forming-roll is pressed down upon the web of the beam until the web is so bent as to nearly conform to the shape of the roll, and is thereby more easily taken by the same. The beam passed through the rolls moves under and in contact with the spool-shaped roll D. The flanges of the spool-shaped roll, pressing upon the beam, prevent the warping out of the beam.

The beam, when bent, is for use in the manufacture of what is known as the "Kellogg wrought-iron column."

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for the bending of wrought-iron beams while hot, the combination of the rolls I and G with the guides M and N, the forming-roll C, and the spool-roll D, constructed, combined, and operating substantially in the manner and for the purpose specified.

2. The combination of the rolls I and G, substantially as described.

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Witnesses:
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