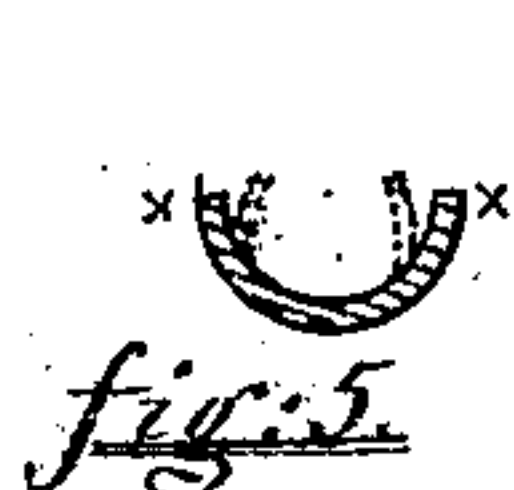
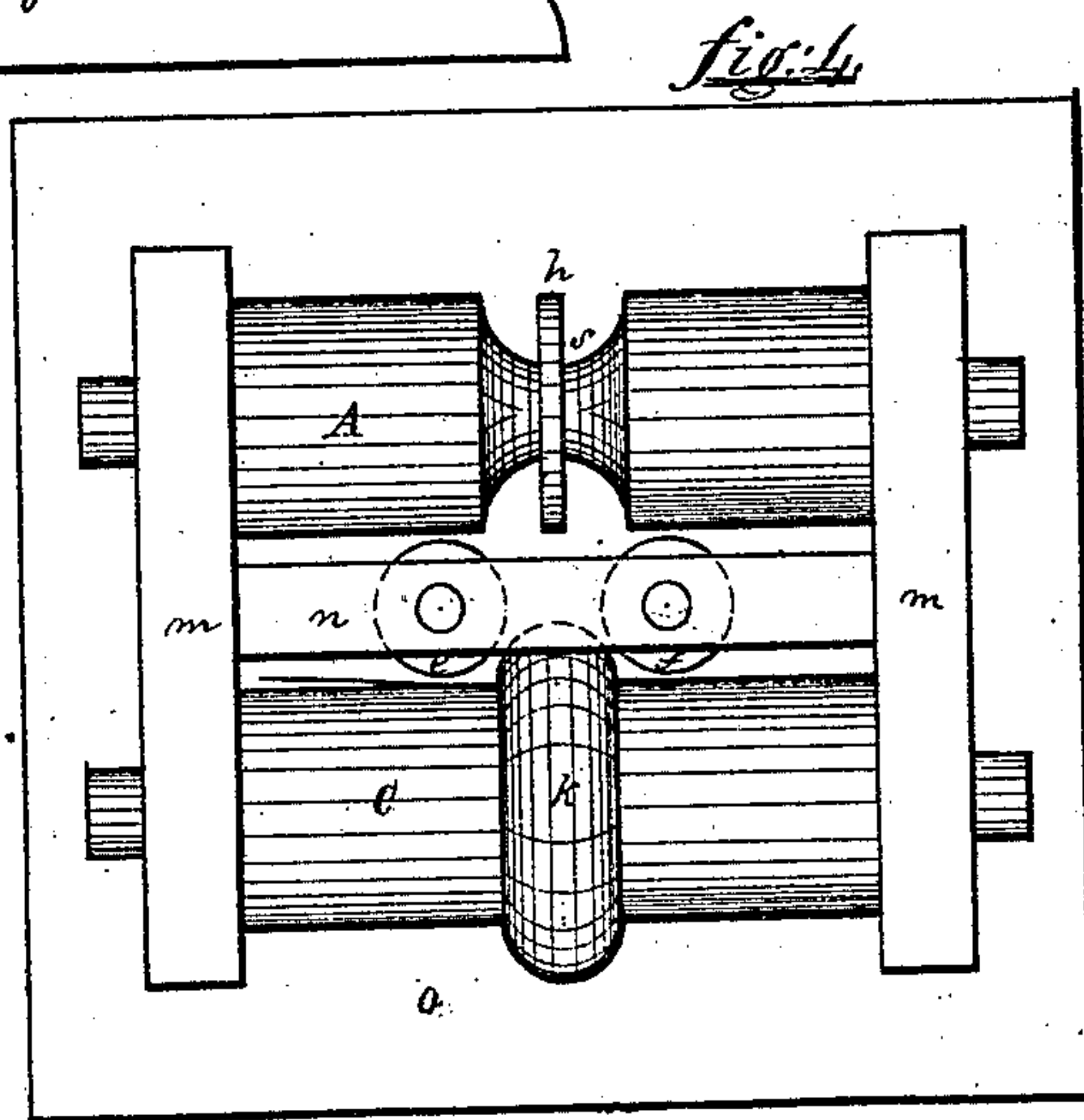
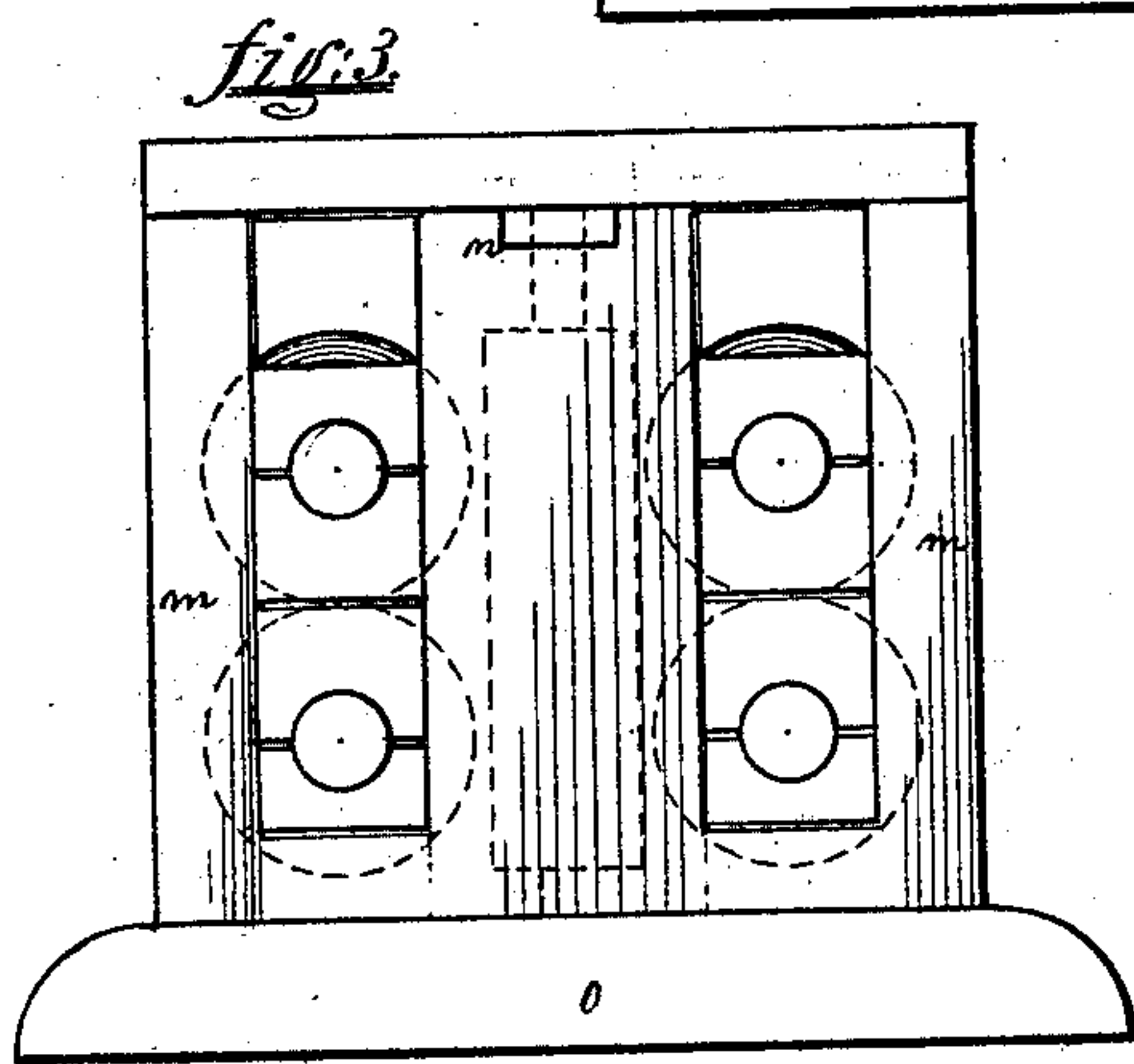
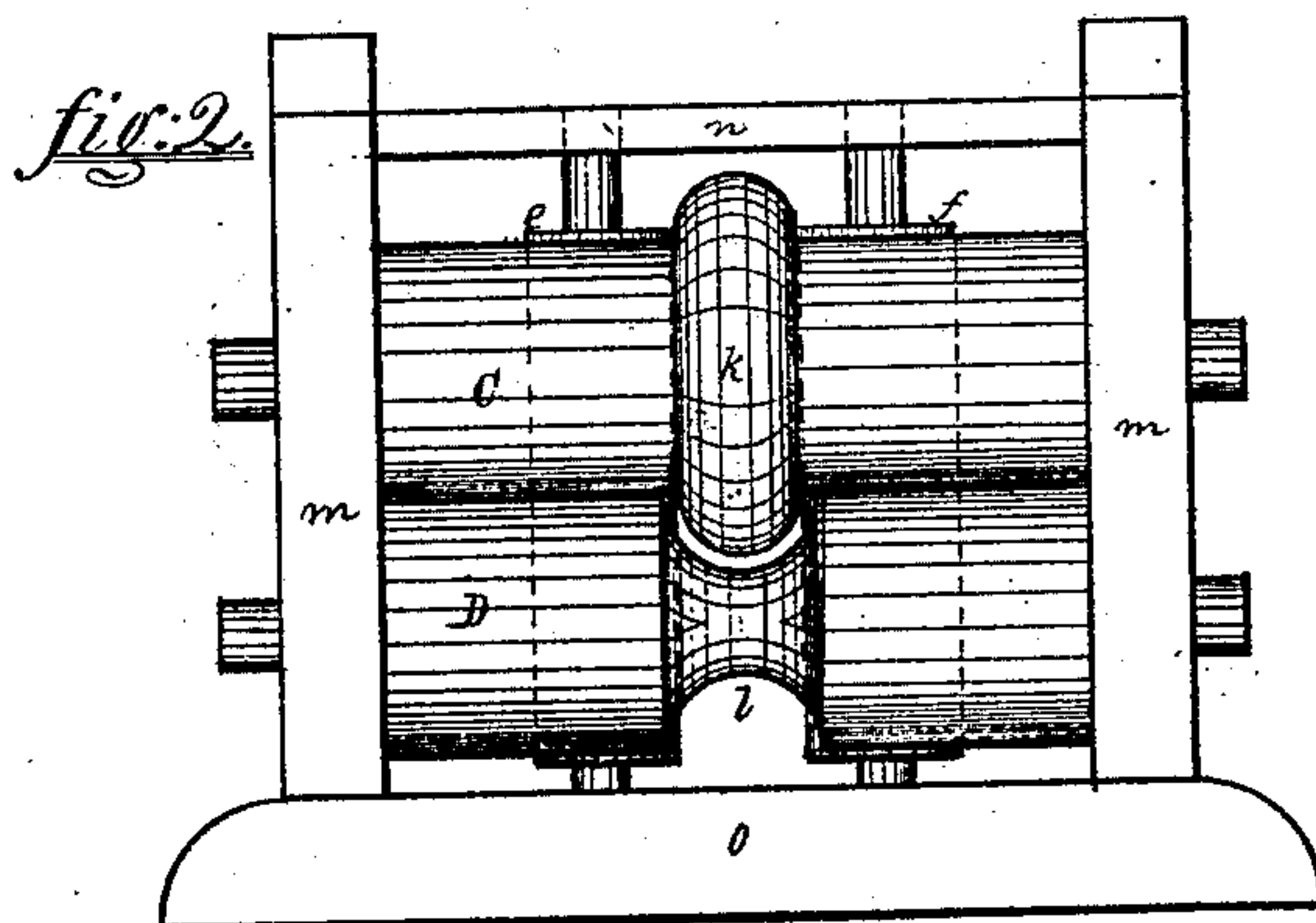
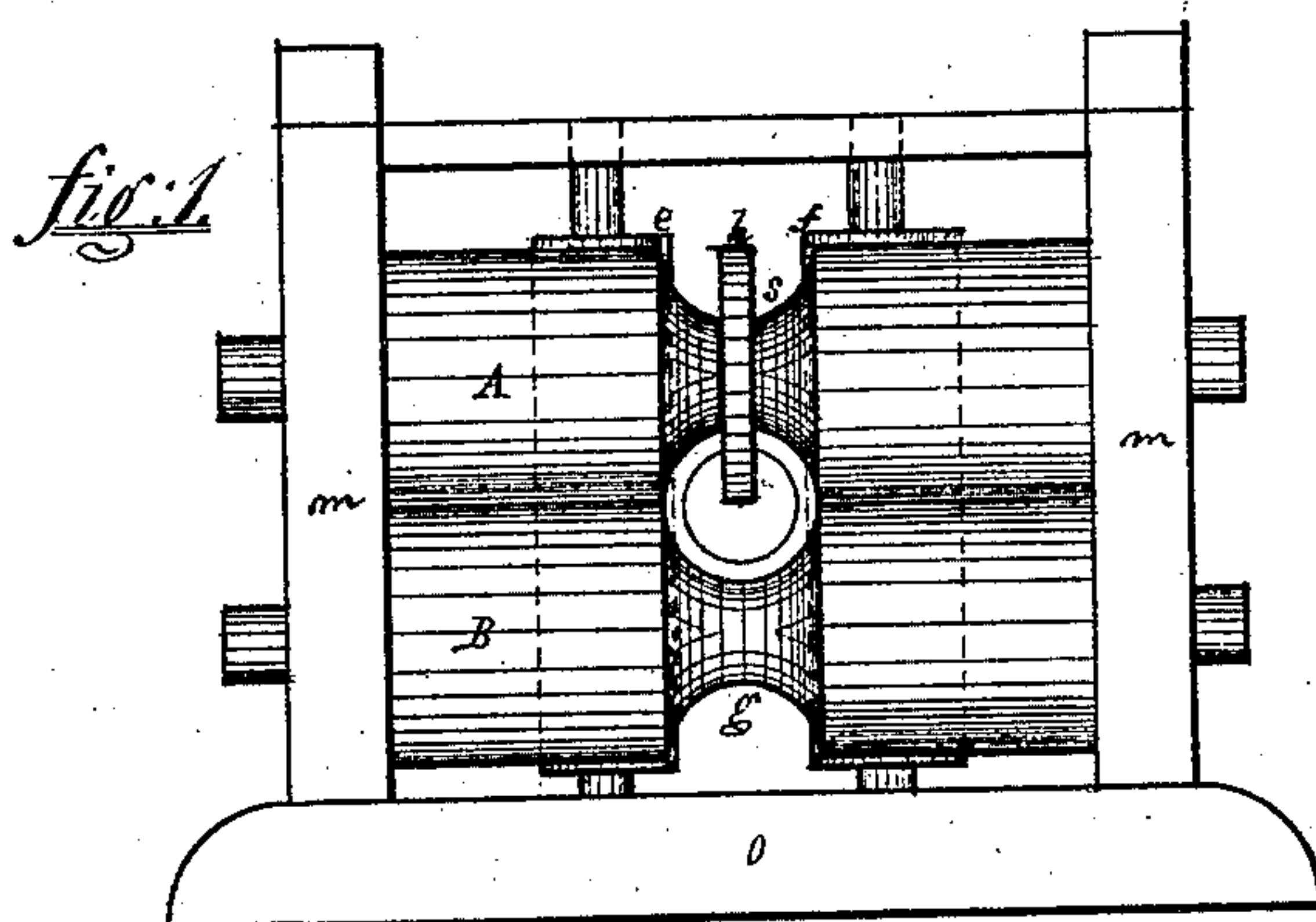


WOODWORTH, BRAWDY & MERITHEW.

Bending Iron Pipe.

No. 109,094.

Patented Nov. 8, 1870.



Alfred Johnston
John S. Thompson

Witnesses.

Elon B. Woodworth
John Brawdy
Fitch Merithew

Inventors.

United States Patent Office.

ELON G. WOODWORTH, JOHN BRAWDY, AND FITCH MERITHEW, OF BIRMINGHAM, PENNSYLVANIA.

Letters Patent No. 109,094, dated November 8, 1870; antedated October 29, 1870.

IMPROVEMENT IN MACHINES FOR BENDING IRON-PIPE FOR WELDING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, ELON G. WOODWORTH, JOHN BRAWDY, and FITCH MERITHEW, all of Birmingham, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machine for Bending Iron for Pipe for Welding; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of our invention consists in the combination and arrangement of rolls constructed, arranged, and operating with relation to each other, as hereinafter described.

To enable others skilled in the art to make and use our invention, we will proceed to describe more fully its construction and operation.

In the accompanying drawing which forms part of our specification—

Figure 1 is a back-end elevation of our improvement in machine for bending pipe for welding.

Figure 2 is a front-end elevation of the same.

Figure 3 is a side elevation of the same.

Figure 4 is a top view or plan of the same.

Figure 5 represents the shape of the iron, (when viewed in cross-section) of which the pipe is formed after it has passed through the first pair of the rolls.

Figure 6 represents the same iron after it has passed through the next two pair of rolls.

In the accompanying drawing—

O represents the base of the machine.

m represents the sides of the frame, in which the bearings for the journals of the rolls A, B, C, and D, are placed.

n represents a cross-bar, in which are pivoted the upper journals of the rolls e and f, the lower journals of which are pivoted in the base O of the machine. The rolls C and D are the first or front pair.

The roll C is provided with a tongue or projection, k, and the roll D is provided with a groove, l, which, in position and form, corresponds to the form and position of the tongue or projection k on the rolls C, so that a space is left between the groove and tongue which, in form, corresponds to the shape of the iron shown in cross-section in fig. 5.

The rolls e and f are arranged in a vertical position midway between the front and back pairs of the rolls, and are so arranged with relation to the tongue k and groove l of the rolls C and D, that they will press in

the edges x of the iron as it leaves the rolls C and D, so that it will pass readily into the grooves g and s of the rolls B and A, which grooves are of like form; but the groove s has a tongue, h, placed in the center of it.

The tongue h is used for the purpose of forming the opening x', which extends the whole length of the pipe. The rolls A, B, C, and D, are provided with suitable driving-gear, so arranged that the motion of the rolls C and D will correspond with the motion of the rolls A and B.

As the construction and arrangement of our improvement in machine for bending iron for pipe, and the relation that the several parts bear to each other will be readily understood from the foregoing description, and by reference to the accompanying drawing, we will, therefore, proceed to describe its operation, which is as follows:

The iron is rolled into flat bars, of the desired length, width, and thickness, corresponding to the size of pipe desired, as it comes in a hot condition from the rolls; it is then placed in the groove l of the rolls D, and, passing between the rolls C and D, is given the form shown in fig. 5, and, coming in contact with the vertical rolls e and f, the edges x are bent in, as indicated by the dotted lines as shown in fig. 5, and then passing into the grooves g and s of the rolls B and A, is given the form shown in fig. 6; it is then ready for being heated for the purpose of welding.

By forming iron for pipe in the manner herein described, one furnace and one heating of the iron is dispensed with in the process of manufacturing pipe.

It will readily be observed that stationary guides may be used as substitutes for the rolls e and f.

Having thus described the nature, construction, and operation of our improvement,

What we claim as of our invention, is—

The combination and arrangement of the rolls A B C D e f, constructed, arranged, and operating with relation to each other, substantially as herein described, and for the purpose set forth.

ELON G. WOODWORTH.

JOHN BRAWDY.

FITCH MERITHEW.

Witnesses:

A. C. JOHNSTON,

JAS. G. THOMPSON.