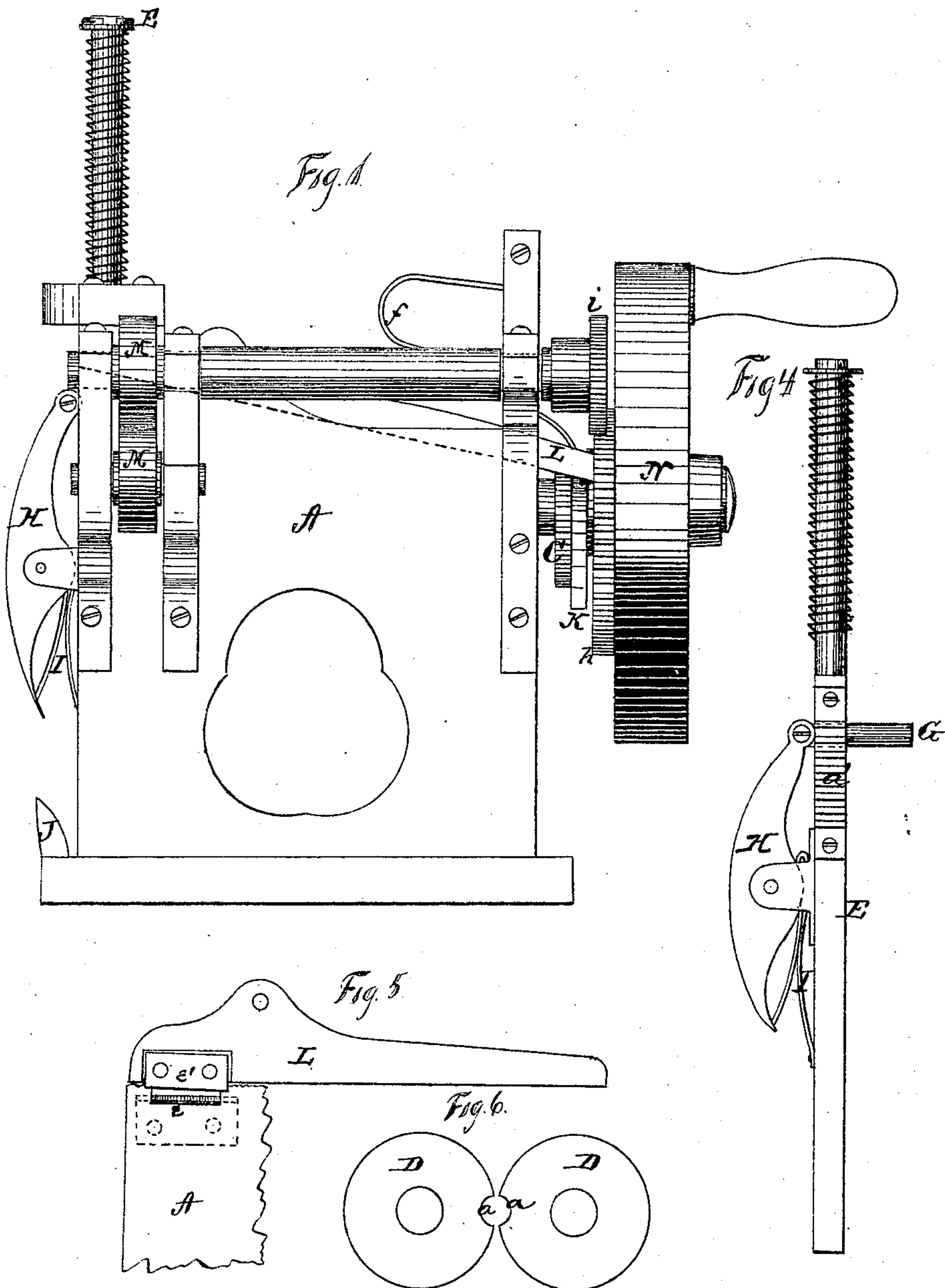


WILLIAM C. EISEMAN.

Improvement in Machines for Bending Metal.

No. 124,123.

Patented Feb. 27, 1872.



Witnesses:

James O. Hutchinson
C. L. Ewert.

Inventor

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Fig. 2.

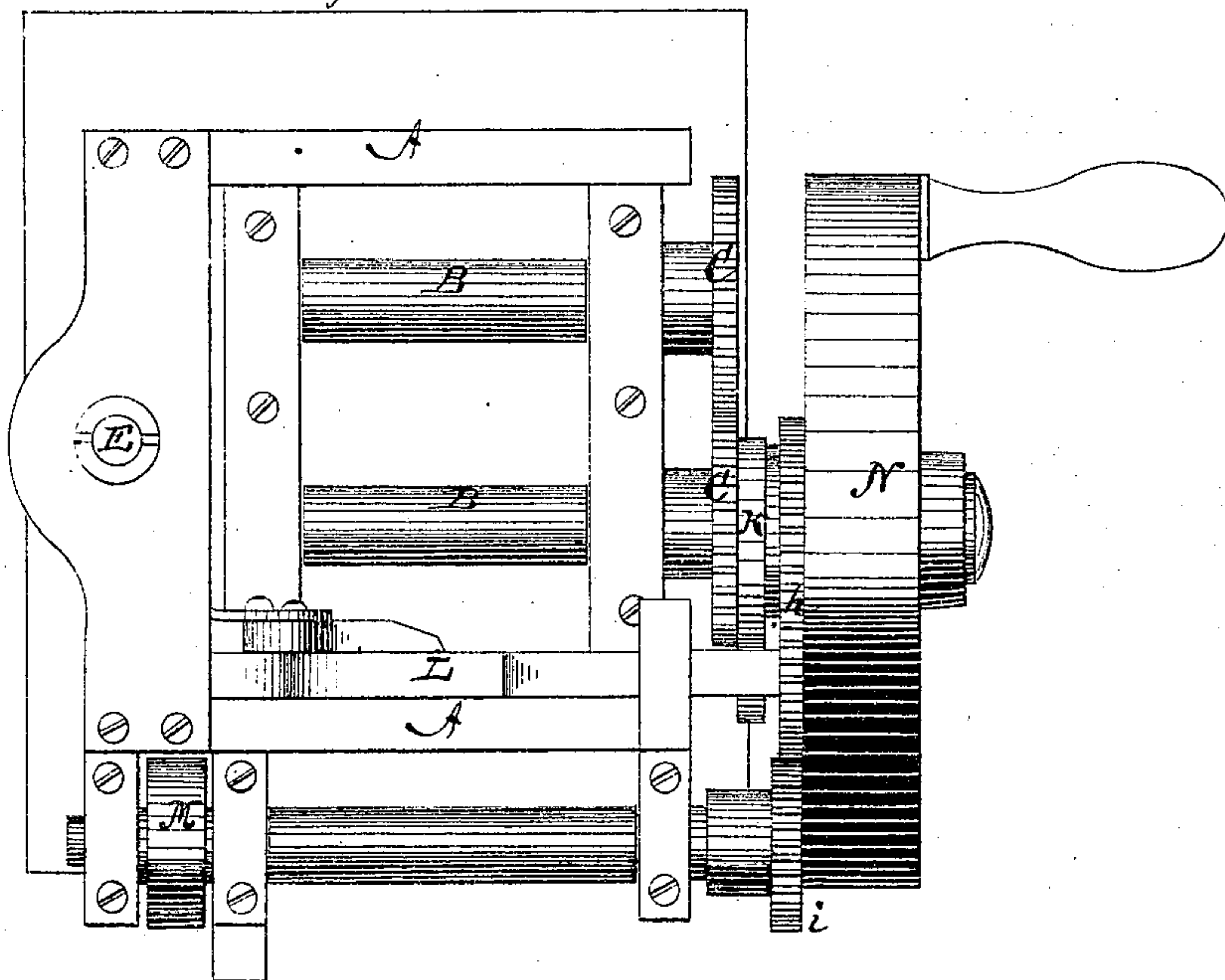
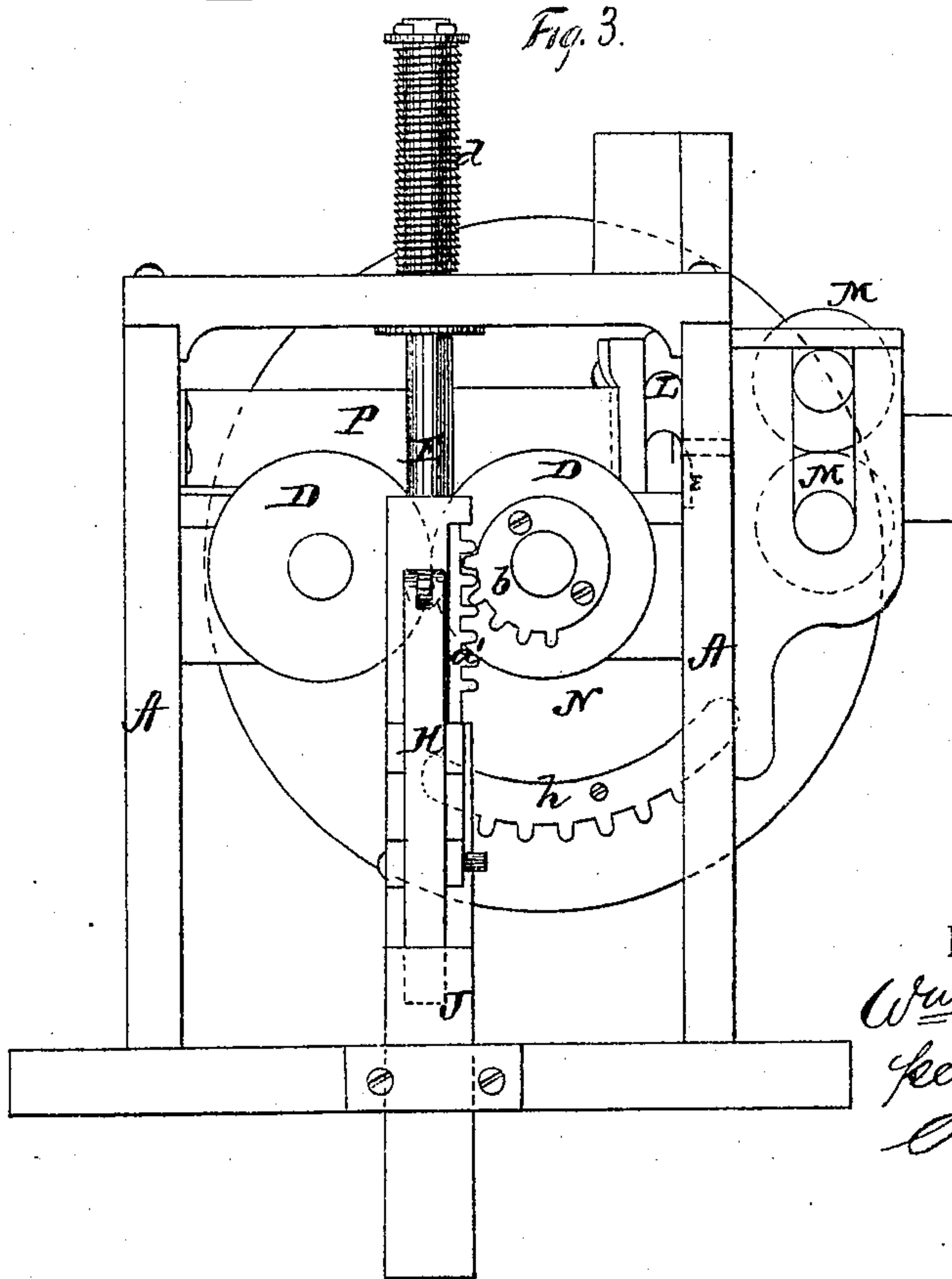


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM C. EISEMAN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR BENDING METAL.

Specification forming part of Letters Patent No. 124,123, dated February 27, 1872.

To all whom it may concern:

Be it known that I, WILLIAM C. EISEMAN, of Pittsburg, in the county of Allegheny and in the State of Pennsylvania, have invented certain new and useful Improvements in Machines for Bending Metal; and 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 making a part of this specification.

My invention relates to machines for bending metal to form split-keys or other articles; and it consists in the construction and arrangement of the various devices whereby such bending is accomplished, and also in the arrangement with said devices of the feeding and cutting apparatus, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view, Fig. 2 a plan view, and Fig. 3 a front elevation of my machine. Fig. 4 is a side view of a sliding bar with mandrel, which shapes the metal. Fig. 5 is a side view of the shears which cut the metal; and Fig. 6 is a side view of the rolling-heads.

A represents the frame of my machine, in which frame are situated two parallel shafts, B B, geared together at one end by gear-wheels C C. At the other end the shafts form the rolling-heads D D, in front of which is a vertical sliding bar, E, carrying a mandrel, G, on its inner side. This mandrel, in the downward movement of the sliding bar E, passes between spaces *a a* arranged for it on the faces of the rolling-heads. The mandrel G may be of any desired form or shape for rolling and forming a variety of shapes useful in metal; and I do not want to confine myself to any particular form or shape of the same. It is, of course, understood that the spaces *a a* in the rolling-heads should correspond in size and shape with the mandrel, of whatever form the same may be. The bar E is moved downward by means of a rack, *a'*, upon it and a cogged segment, *b*, attached to one of the rolling-heads D D; and it is moved up by means of the spring *d*

around the upper end of the bar as soon as the segment *b* ceases to work in the rack *a'*, said spring being compressed while the bar moves downward. On the outer or front side of the sliding bar is pivoted a lever, H, to the upper end of which the mandrel is pivoted or hinged and passes horizontally through the sliding bar. Under the lower end of the lever H is a spring, I, which holds the upper end close to the bar and the mandrel in its proper position. As the bar E completes its downward stroke the lower end of the lever H strikes a cam, J, pressing the same inward, causing the mandrel G to be withdrawn from the spaces *a a* in the rolling-heads at the proper moment, and allowing the spring *d* on the top of the sliding bar to bring it to its place above the rolling-heads ready for another movement. Attached to one of the shafts B is a cam, K, which works the shear for cutting the metal to the required length. The shears consist of a stationary blade, *e*, and a movable blade, *e'*, the latter attached to a lever, L, which is pivoted in the frame A and held up from the stationary blade by a spring, *f*. The cam K brings the same down to cut off the metal. M M are feed-rollers operated by a segment, *h*, attached to the drive-wheel N, for running the metal in at the required movement.

The operation is as follows: The machine being in motion the segment *h* first strikes the pinion *i* on the feed-rolls running the metal in on top of the rolling-heads D D along a guard, P, arranged at the side of them, and brings the metal under or below the mandrel G. When this is done the cam K strikes the shear and cuts off the portion intended to be formed, and the segment *b* on the rolling-head then strikes the rack *a'* on the bar E, drawing it down and causing the mandrel to bend the metal and force it to pass between the rolling-heads, thus forming it into the shape desired. At the proper time the mandrel is withdrawn by means of the lever H and cam J, and the spring *d* on the top brings it back to its place ready for work.

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

1. The lever H, spring I, and cam J, constructed and arranged with the sliding bar E

and mandrel G, substantially as and for the purposes herein set forth.

2. The combination of the rolling-heads D with spaces *a a* in their rolling surfaces, the sliding bar E, with racks *a'*, segment *b*, and spring *d*, the mandrel G, lever H, spring I, and cam J, all constructed and arranged substantially as and for the purposes herein set forth.

3. The arrangement, in connection with the devices claimed in foregoing clause, substantially as described, of the feed-rollers M M,

operated intermittently by the segment *h* and pinion *i*, and the cutting apparatus, consisting of the cam K, lever L, blades *e e'*, and spring *f*, all as herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 29th day of November, 1871.

WILLIAM C. EISEMAN.

Witnesses:-

JOHN B. GEYSER,

JACKSON G. STEWART.