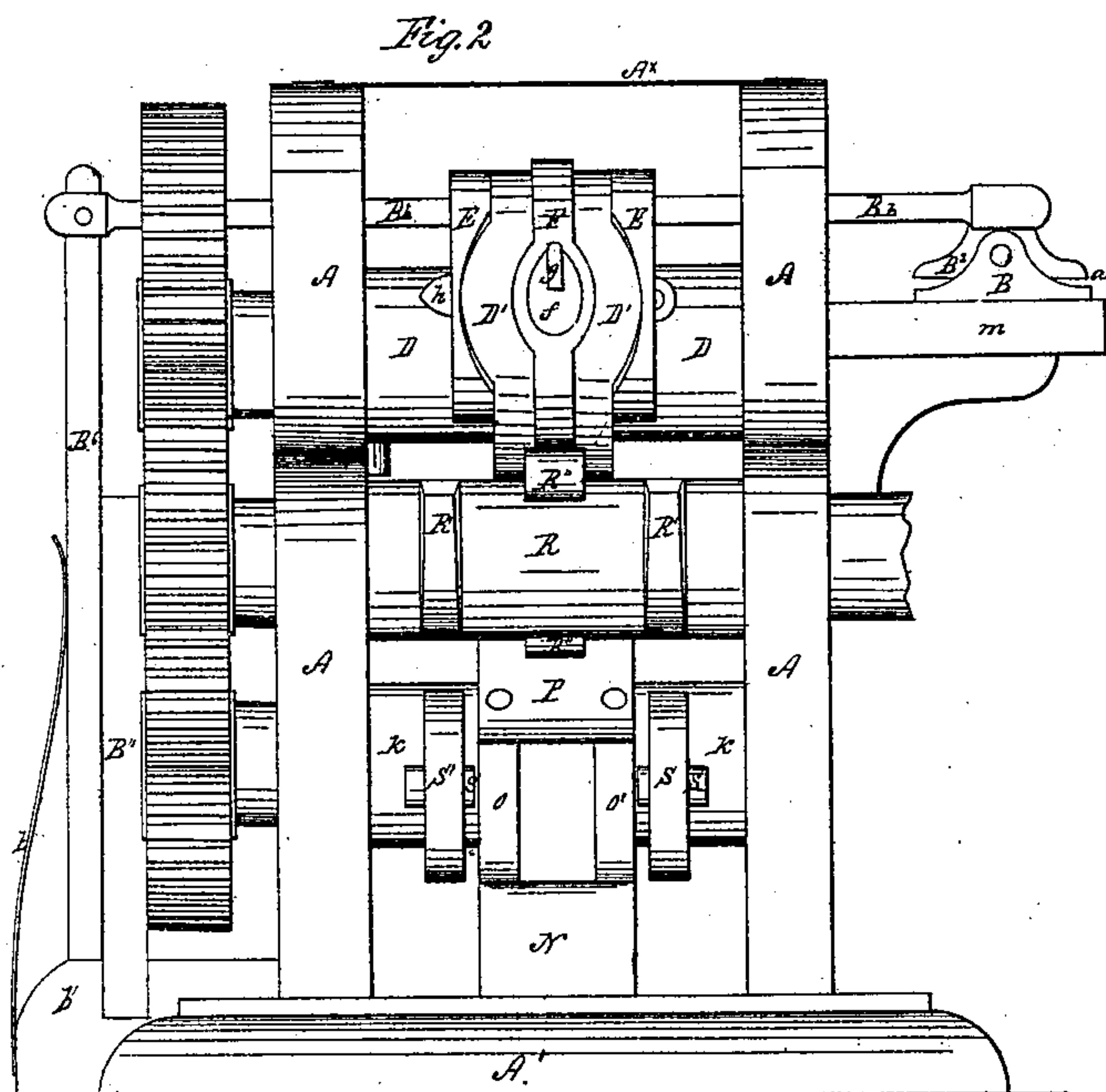
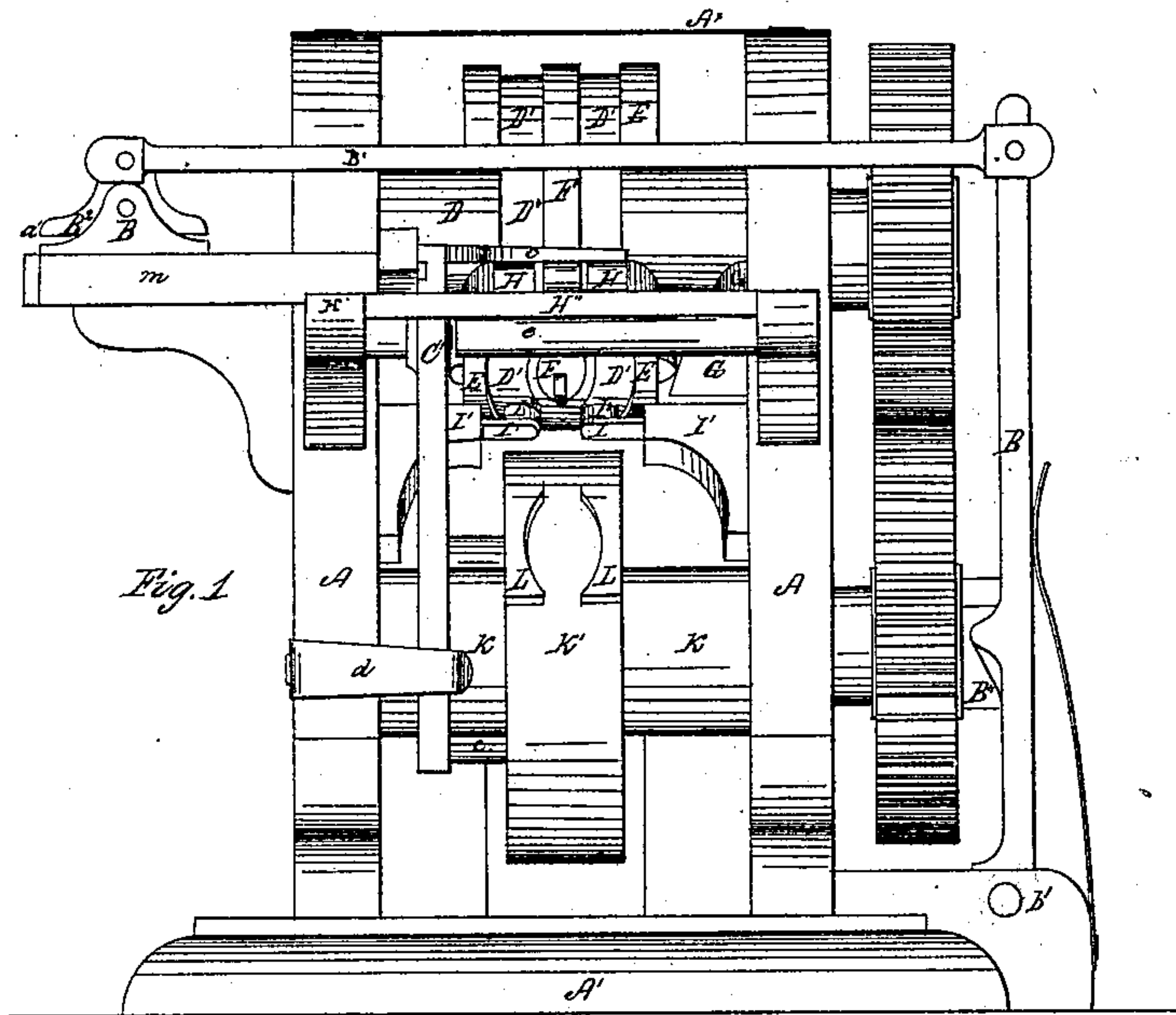


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MACHINE FOR MAKING HORSESHOES.

No. 38,873.

Patented June 9, 1863.



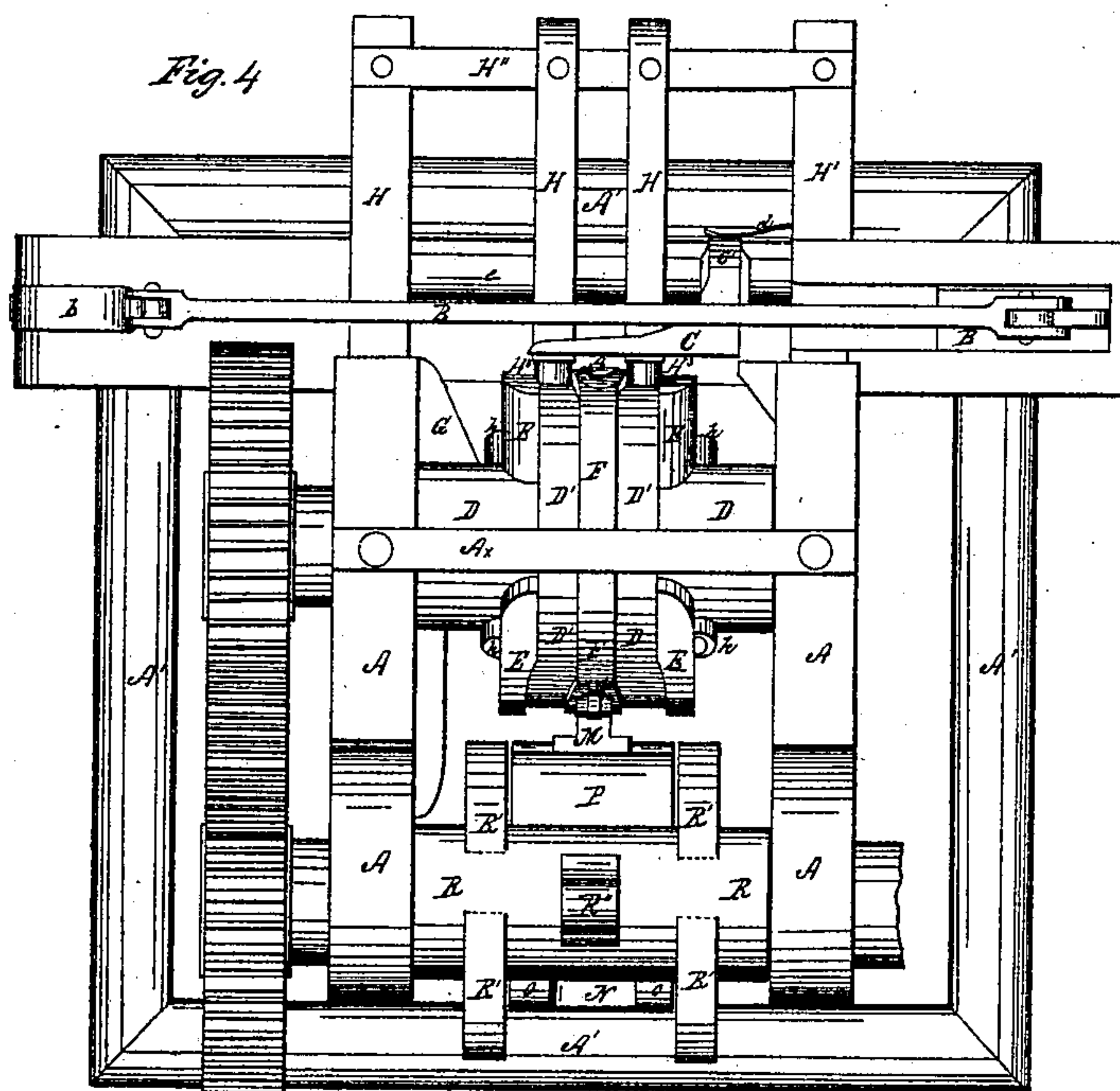
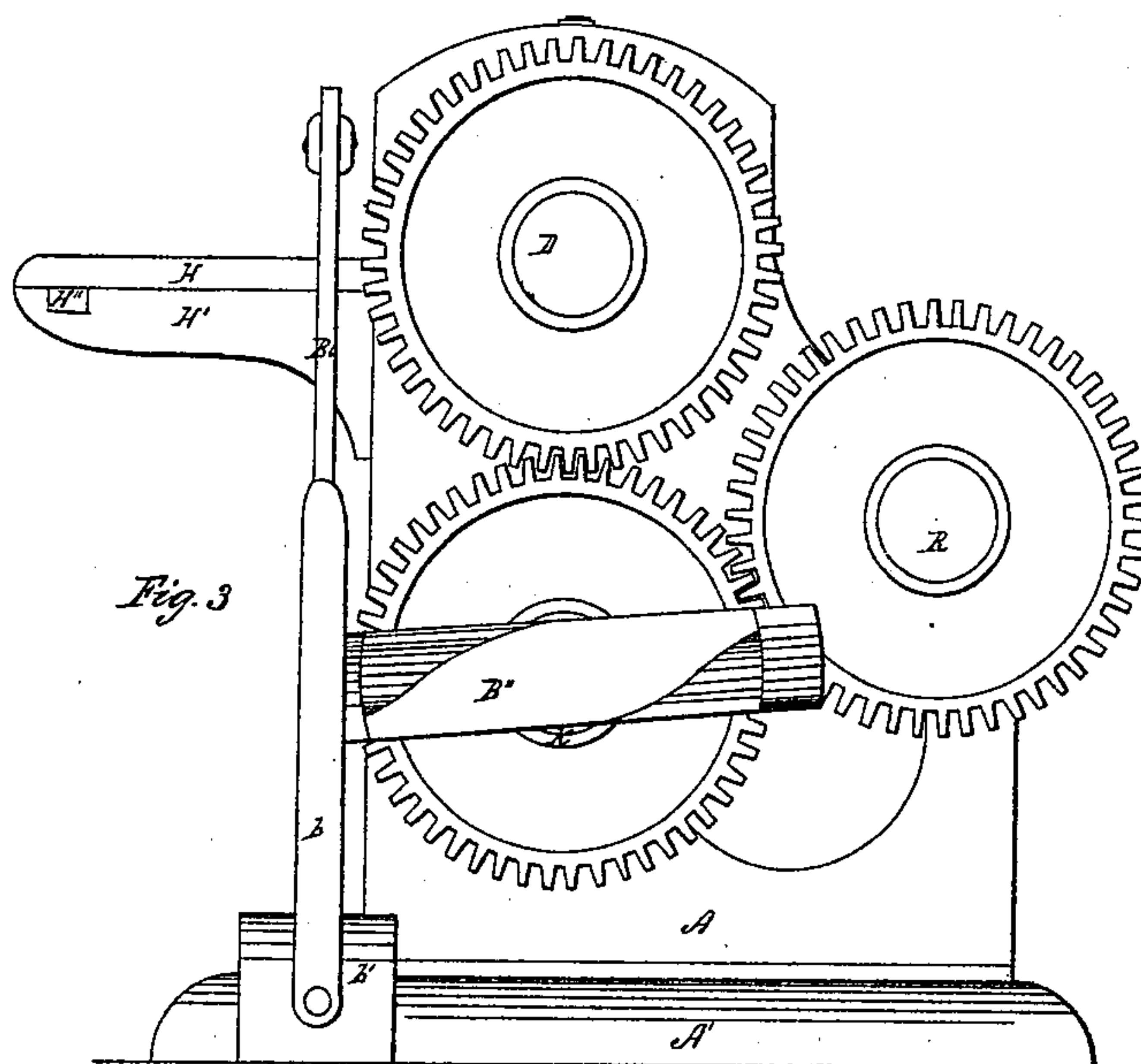
Witnesses;
Marcus P. Norton
Chas. O. Kellum

Inventor;
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B. MEE.
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UNITED STATES PATENT OFFICE.

BARNEY MEE, OF TROY, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOES

Specification forming part of Letters Patent No. 38,873, dated June 9, 1863.

To all whom it may concern:

Be it known that I, BARNEY MEE, of the city of Troy, county of Rensselaer, and State of New York, have invented new and useful Improvements in Machinery for Manufacturing Horse and Mule Shoes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being hereby had to the accompanying drawings, made upon two separate sheets for the purpose of greater convenience, which said drawings make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is a front view of the machine, hereinafter described. Fig. 2 is an opposite view of the same machine from the rear. Fig. 3 is a side view of the same from the gear side, showing gear-wheels by which the entire machinery is operated. Fig. 4 is a plan or view from the top of the machine, looking downward into the same. Fig. 5 is a vertical section through the center rollers or cylinders, on which the dies for forming and shaping the shoes are made fast, and also through other parts of the said machine, all of which are hereinafter fully described and set forth. Fig. 6 is a vertical section lengthwise through the cylinders or rollers containing the dies by which the shoe is formed, shaped, and completed, in the manner substantially as hereinafter described and set forth. Fig. 7 is a perspective view of the whole machine. Figs. 8, 9, 10, 11, 12, 13, 14, 15, and 16 are sections and parts of the said machine, each of which are hereinafter fully described and set forth in their order respectively.

The nature of my invention and improvements consists in a self-feeding device having moving head and adjustable jaws or nippers, so as to feed the bar of iron from which the horse or mule shoe is made to the machine as the same may require.

It also consists in the employment of an adjustable bender in connection with the slotted bar and die, hereinafter described, so that the iron from which the shoes are made will be bent by the said bender, and then carried forward and placed between the dies, and then held until the dies commence compressing it, when the said bender recedes and permits the iron to spread while being formed

and shaped into shoes, and firmly held while being creased, and partially punched for the nail-holes, in a manner and by the means substantially hereinafter described and set forth.

It also consists in the employment of side formers, attached to the sides of the upper-die roller, so that any size or shaped shoe can be made without requiring additional rollers, only requiring the change of the side formers and the dies to correspond to the size and shape of the shoe to be made.

It also consists in adjustable side supports in connection with side formers, and with the die, hereinafter described, so that the shoe, while passing through the machine or dies, shall be supported on the outer edge thereof and so bent or shaped as to fit or correspond to the lower die.

It also consists in the employment of an inclined bed-plate, which shall receive the shoe immediately after the same shall have passed from the rollers, upon which the shoe is held by means of a stopper while the said shoe is made straight and true, in the manner hereinafter set forth.

It also consists in an adjustable die plate in connection with the incline bed-plate and with cams, hereinafter described, so that shoes are straightened and made true as they come from the said machine.

It also consists in the employment of a movable stopper in connection with cams, so as to catch and hold the passing shoe during the operation of being made straight and even.

To enable others skilled in the art to which my invention and improvements relate to make and use the same, I will here proceed to give the construction and operation of the same, which is as follows—to wit:

I construct the frame A of iron of suitable size and strength to answer the required purpose. I construct the self-feeder with a movable head, B, to which I attach the double-acting jaw or nipper B², which is operated by means of the horizontal lever B', Figs. 1 and 2. The heated bar passes into the said movable head at a', same figures. The said horizontal lever B' is drawn back by the perpendicular lever B b, which is operated by means of the cam B'', Figs. 1 and 2, which said cam-lever and movable jaw so operate as to move the said jaw or nipper to grip the heated bar,

at which time the said movable head will be drawn along in the guide *m*, in which the heated bar is drawn forward from the furnace, when the same is heated, against a gage a given distance, which gives the length of iron needed to make the desired shoe, at which time the said heated bar is cut off by the cutting-lever or shears *C'*, Figs. 1 and 3, and then the said feeder returns to its former place, at the same time allowing the said movable head and jaw to slide on the said heated bar without hinderance, and thus the operation for the whole length of each heated bar continues.

The bender *g*, Figs. 2, 4, 5, 6, and 12, I construct of steel, of any size and strength to answer the required purpose. It turns on the pivots *g' g'*, Figs. 6 and 12, within the upper or male die, *D'*, Figs. 1, 2, 4, and 6, and is operated by the slotted bar *h*, Figs. 2, 4, 5, 6, and 12, into which the lower end of said bender passes through the diagonal mortise *h'*, Fig. 12, in the said bar or slide *h*, same figure. The said slotted bar is operated by means of the cam *G*, Fig. 1, which moves the said slotted bar at the time, distance, and place required, and which bar is returned to its place at the desired time by means of a spring, whereby the said bender *g* is carried somewhat back and away from the top of the shoe, after the said shoe shall have been put into its proper place, as hereinafter described. This bender *g* is for the purpose of bending the iron from which the shoe is to be made, while passing between the side rollers, *H H*, Figs. 1, 3, and 4, and also to move forward on the die the blank shoe before the same comes in contact with the lower or female die, *L*, Figs. 1, 5, and 6, so that when the junction of the male die *f*, Figs. 2, 5, and 6, and the said female die *L*, and the blank shoe takes place, the bender will be drawn back out of the way of the shoe, and at the same time permit the iron to spread while being formed and shaped into shoes.

The side formers, *E E*, Figs. 1, 2, 4, and 8, are so constructed of iron or steel as to be removed from the roller *F*, Figs. 1, 2, and 4, for the purpose of being replaced by other side formers of different sizes and shapes, to make shoes of any size and shape required, whereby the necessity of separate and distinct rollers for various sizes is avoided, thus avoiding all changes of rollers for the different sizes of shoes. These formers are securely fastened to the side of the upper roller, *D*, by means of screw-bolts. A center die, *f*, Figs. 1 and 2, is used to correspond with the said side formers as to size and shape of shoe to be made, which, when done, will leave space between the same channels or grooves, *D' D'*, Figs. 1, 2, and 4, for the rollers *H³ H³*, on the end of the adjustable bars *H H*, Fig. 4, to pass along the outer edge of the heated bar while the said bender is bending the heated bar for the shoe as aforesaid, and which said rollers *H³* are guided and governed by the said formers *E E*, and thereby conform to the size of shoe being

made. When the said side formers are removed for a different-sized shoe, the said center die will also be removed, for this die must always conform in size and shape to the said side former, and both to the shoe to be made.

The adjustable side supports, *I I*, Figs. 1 and 13, operate in a bracket or frame, *I' I'*, Figs. 1 and 13, which frame is firmly bolted to the sides of the frame of the machine at the required place. These side supports are operated by means of the said side formers, *E E*, and shape or form the shoe for the lower or female die, *L*, Figs. 1 and 5, and also prevent the outer edge of the shoe from being split or mashed outward while being creased and partially punched. The said side or edge of the shoe cannot, therefore, bulge outward, but will be firmly retained in its proper shape and place. These side supports are kept in position by means of a coil spring, *I²*, Fig. 13, and have upon the upper surface thereof at or near the end of the same rollers *I³*, Figs. 1 and 13, which pass in the said grooves *D' D'*, and by which the side supports are operated by the side formers as aforesaid.

The incline bed-plate, Figs. 2, 5, 14, and 15, *I*, construct of iron or steel, or both, and place the same immediately in the rear of the lower die-roller, *K'*, Fig. 5, and in height to correspond to said roller. This is for the purpose of receiving the shoe as it comes from the said die-rollers so that it may be straightened and made true. The shoe, passes down upon this inclined bed *N* until it is arrested and stopped thereon by means of the stopper *S''*, Figs. 5 and 15, at which time the flattener or plate *P*, Figs. 5, 14, and 15, is moved down upon the shoe thus held by means of the cams *R''*, Figs. 2, 4, and 5, which straighten and make the shoe perfectly true. When these cams pass the said flattener or plate, it is lifted from the said shoe by means of springs, while at the same time the cams *R'*, same figures, depress the rollers *S' S'*, Figs. 2 and 5, which are secured to the axle *S*, same figures, to which is connected the said stopper *S''*, whereby the said stopper is depressed downward and away from the said shoe, so that the said shoe, having thus been straightened and made true, is free to pass and passes off from the said incline bed to any convenient place upon the under side of the said flattener or plate *P*. I construct a projection, *P'*, somewhat in the shape of a horseshoe, which is the part of said plate which comes in contact with and flattens the said shoe, when the shoe passes in a channel or groove upon the said inclined bed away from the machine. This adjustable flattener or plate is made of iron or steel, and of strength sufficient to answer the purpose required. The scraper *M*, Figs. 5, 14, and 15, is for the purpose of removing the shoe off from the die-roller *K'*, Fig. 5, over which the shoe passes to the inclined bed and device for flattening and making the same true, as aforesaid. The cams *R'* and *R''* are properly adjusted upon the same axle *R*, as shown at Figs. 2, 4, and 5.

Having thus described the construction and operation of my invention and improvements in machinery for making horse and mule shoes, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The adjustable bender *g*, in combination with the slotted bar *h* and the die *f*, substantially as and for the purposes herein described and set forth.

2. The exchangeable side formers, *E E*, in combination with the exchangeable die *f*, substantially as and for the purposes herein described and set forth.

3. The employment of an inclined bed or plate, *N*, which shall receive the shoe from the die-rollers by means of the scraper *M*, and which shall hold the same, by means of the

stopper *S''*, during the operation of flattening or straightening said shoe, substantially as herein described and set forth.

4. The adjustable die-plate or flattener *P*, in combination with the cams *R''* and the inclined bed or plate *N*, substantially as and for the purposes herein described and set forth.

5. The employment of the movable stopper *S''*, in combination with the inclined bed or plate *N*, substantially as and for the purpose herein described and set forth.

In testimony whereof I have on this 25th day of February, 1863, hereunto set my hand:

BARNEY MEE.

Witnesses:

MARCUS P. NORTON,
CHAS. D. KELLUM.