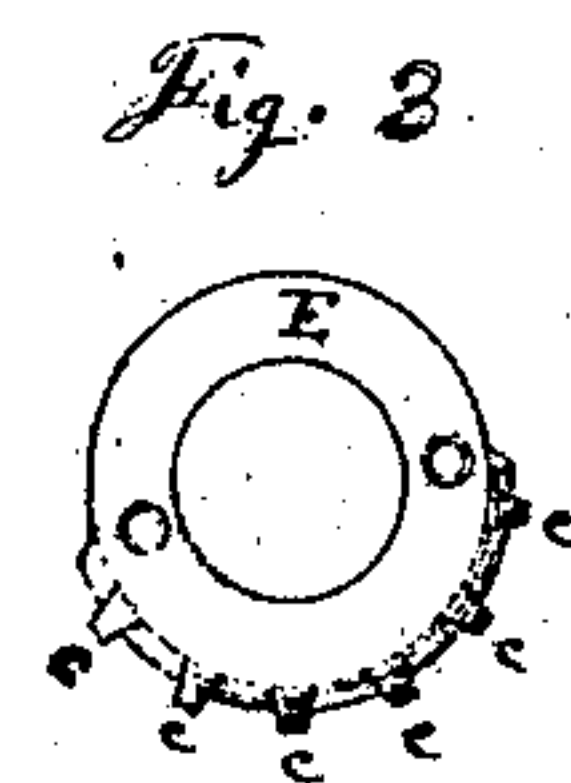
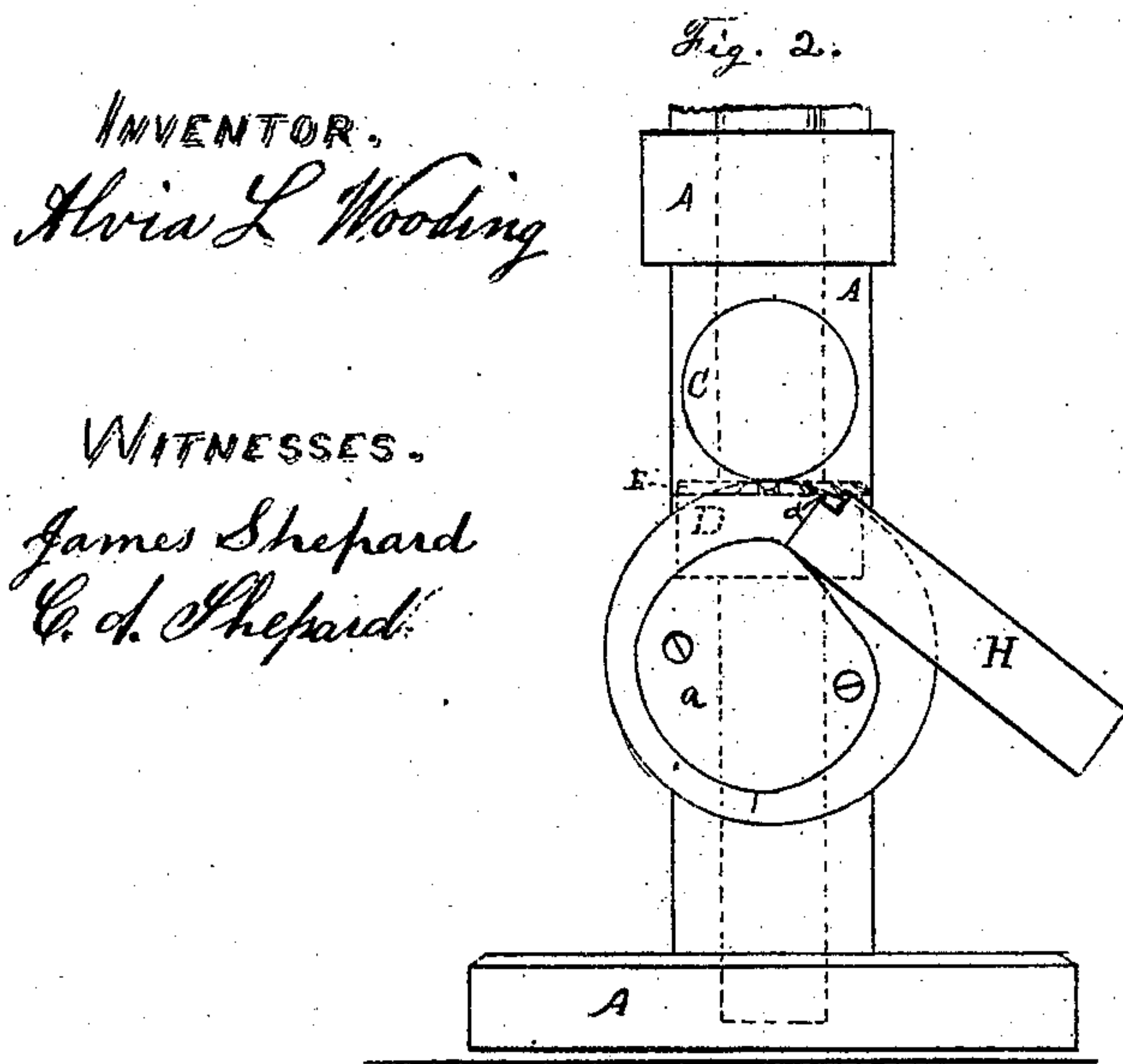
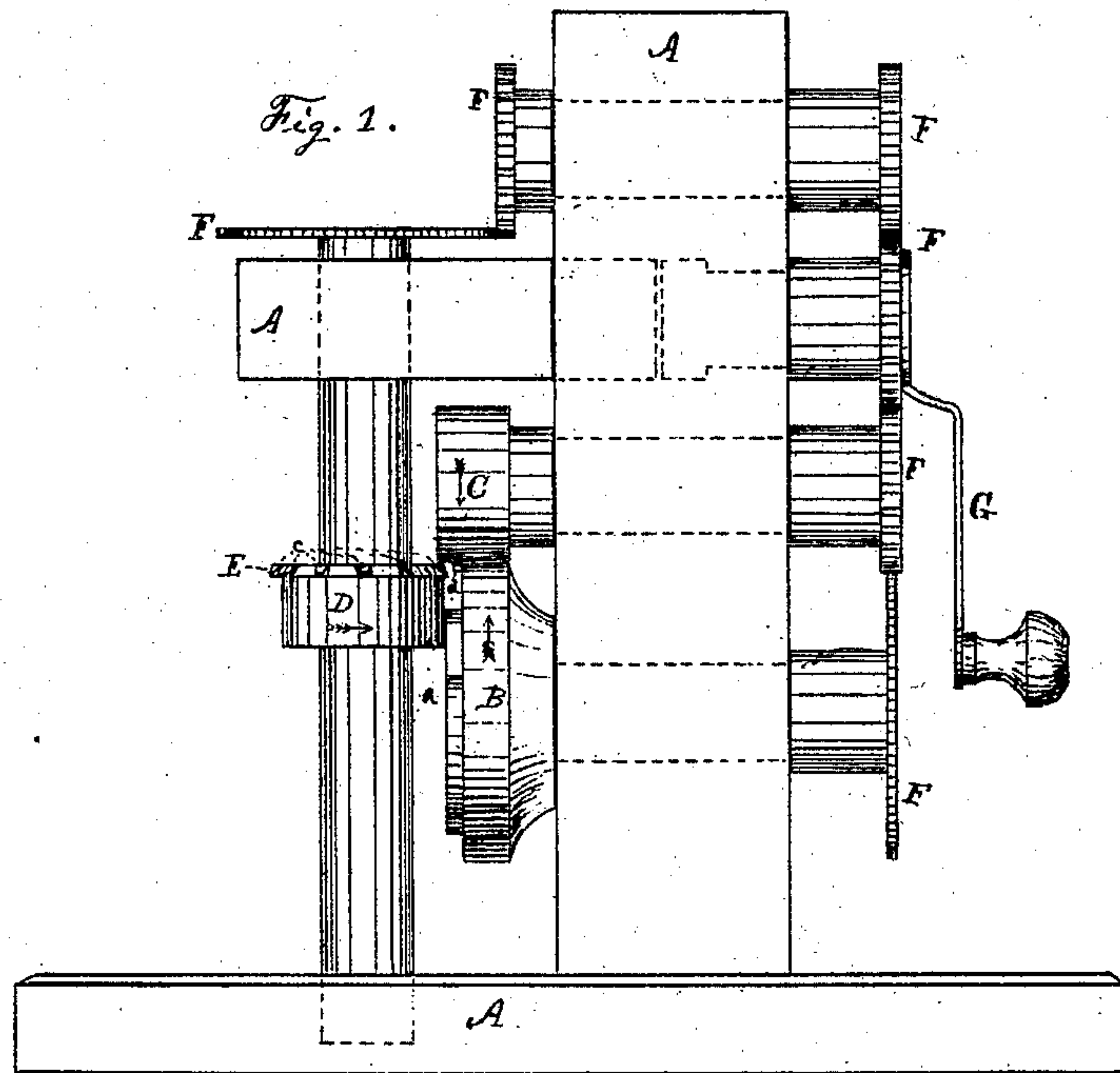


A. L. WOODING.  
Horseshoe-Machine.

No. 103,954.

Patented June 7, 1870.



INVENTOR.  
*Alvin L. Wooding*

WITNESSES.  
*James Shepard*  
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# United States Patent Office.

ALVIA L. WOODING, OF BRISTOL, CONNECTICUT.

Letters Patent No. 103,954, dated June 7, 1870.

## IMPROVED MACHINE FOR MAKING OX-SHOES.

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

I, ALVIA L. WOODING, of Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machine for Forging Ox-Shoes, of which the following is a specification.

My invention consists in the combination and arrangement of a pin or stud, an eccentrically mounted or cam-die, and three rollers, one of which revolves upon an axis at right angles to the axis of the other rollers.

Also, in the employment of a rotary creasing and punching-die, arranged in combination with the foregoing, as hereafter described.

In the accompanying drawing—

Figure 1 is a front elevation of my machine;

Figure 2, a side elevation; and

Figure 3 is a side elevation of the creasing and punching-die.

A designates the frame of the machine, in which are the bearings for the rollers, and which frame may be of any desired form.

B designates the main roller, the circumference of which roller is of about the same curve as is designed for the outside of the shoe.

On the face or end of roller B is placed a cam-die, *a*, the thickness of which is equal to the desired thickness of the shoe.

The sides or edges of the cam-die *a* are formed on one side into the shape desired for the inside of the shoe, while it is of such size that the distance between the edge of the cam-die *a* and edge of roller B will give the required width of the shoe.

Immediately above the roller B and cam-die *a*, and with its periphery in contact with that of roller B, is a smaller roller, C, which is as long or longer than the combined length of roller B and cam-die *a*.

On a shaft at right angles to the axis of rollers B and C is another roller, D, the periphery of which meets the face of cam-die *a*.

This roller D, and its shaft, are represented in broken lines in fig. 2, in order to better show the other parts.

On the upper side or end of roller D is a creasing and punching-die, E, fig. 3, the points or ends of the punches *c* on which die meet the face of roller B.

Between the punches *c* the die E is beveled to an edge to form the creasing part of said die.

The rollers are all connected by suitable gearing, F, and driven by the crank G, or pulley, as may be desired.

*d* designates a small pin or stud near the edge of the roller B, and opposite that portion of the cam-die *a* designed to form the heel of the shoe.

The operation is as follows:

The iron, of a width equal to the widest portion of the shoe, is cut into the proper length for a shoe, and one end narrowed, or one corner removed. The machine is stopped with the rollers in the position shown in the drawing, when, after being heated, the narrowed portion of the iron H is placed between the stud *d* and the cam-die *a*, with its straight edge toward said die, as shown in fig. 2.

The rollers are then rotated, when the stud *d* holds the heel-end of the shoe in place, the roller C confines the outer edge of the metal, the cam-die *a* confines the inner edge, the roller D and face of roller B confines the sides, while the punches *c*, and the beveled edge between said punches, crease and punch the shoe.

As the end of the iron H passes out from between the rollers the shoe drops from the same, formed, ready to be calked and fitted.

Some of the ordinary mechanisms for stopping the machine at a certain point at each revolution should be employed, if it is run by power.

It may sometimes be desirable to simply form the shoe without creasing and punching it; when the die E will be dispensed with, while the operations of the other parts remain unchanged.

To form shoes for the other side of the foot it is simply necessary to turn the cam-die *a* with its other side toward the face of roller B, and secure said cam-die so that the portion of it which forms the heel of the shoe shall stand opposite the stud *d*, reverse the motion of the rollers, and feed them from the back side; or, if more convenient, after the cam-die is reversed the stud *d* might be removed, and another stud inserted, so as to bear the same relative position to the cam-die when the motion of the rollers is reversed, as herein shown, for the forward movement of the same.

If desired; however, another roller, C and D, might be placed on the lower side of the roller B for the same purpose.

I claim as my invention—

1. The combination and arrangement of the stud or pin *d*, the cam-die *a*, and the rollers B, C, and D, the whole constructed and operating together, substantially as described.

2. The combination and arrangement of the stud *d*, cam-die *a*, rollers B, C, and D, and the rotary creasing and punching-die E, the whole constructed and operating together, substantially as described.

ALVIA L. WOODING.

Witnesses:

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CHAS. T. FOOTE.