(No Model.)

H. EAST, D. K. PRICE & H. R. EAST.

MACHINE FOR SHARPENING HORSESHOE CALKS.

No. 347,698. Patented Aug. 17, 1886.

Fig. 1.

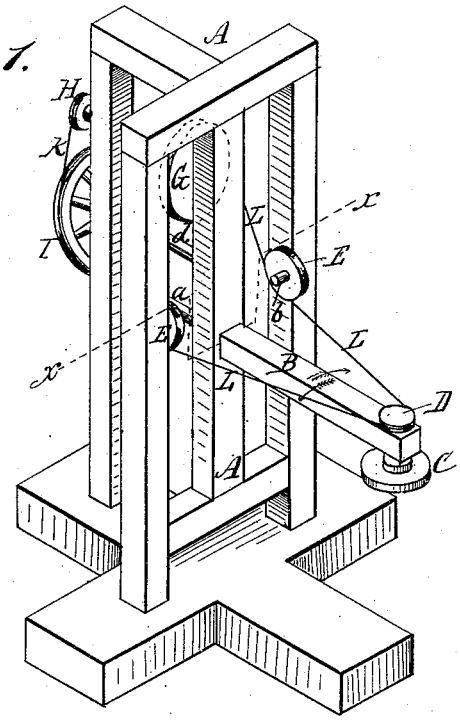


Fig. 6.

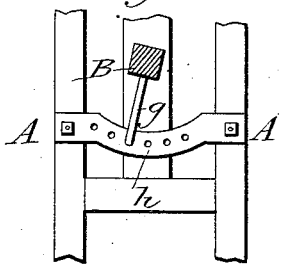


Fig. 2.

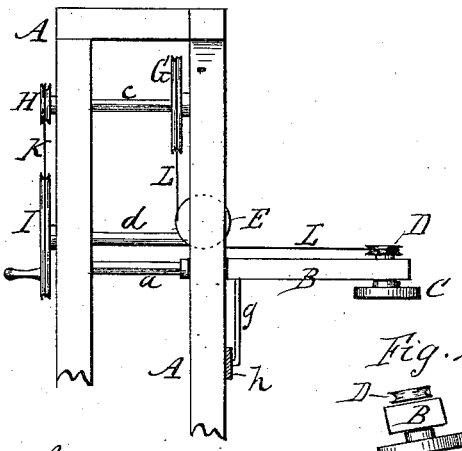


Fig. 3.

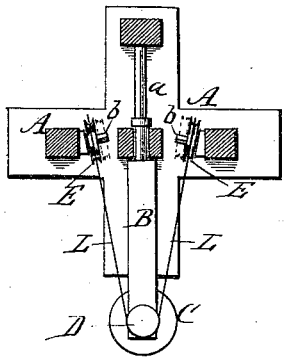
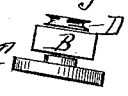


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY EAST, DANIEL K. PRICE, AND HENRY R. EAST, OF ROCHESTER, NEW YORK; SAID HENRY R. EAST, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY EAST.

MACHINE FOR SHARPENING HORSESHOE-CALKS.

SPECIFICATION forming part of Letters Patent No. 347,698, dated August 17, 1886.

Application filed February 1, 1886. Serial No. 190,413. (No model.)

To all whom it may concern:

Be it known that we, HENRY EAST, DANIEL K. PRICE, and HENRY R. EAST, all of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Machines for Grinding Horseshoe-Calks; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

Our improvement relates to a machine for grinding horseshoe-calks, to sharpen them without removing the shoe from the horse's foot, thereby saving much labor and trouble and injury to the horse's feet, which occurs where the shoes are frequently removed.

The invention consists in the construction and arrangement of the machine, hereinafter more fully described and definitely claimed.

Figure 1 is a perspective view of the machine. Fig. 2 is a side elevation of the upper portion of the same. Fig. 3 is a cross-section in line *x x* of Fig. 1. Figs. 4 and 5 are diagrams showing different inclined positions in which the grinding-wheel stands in use. Fig. 6 is a front view of the devices for adjusting the arm carrying the grinding-wheel.

A indicates the frame of the machine, which may be of any desired construction and supported by a base of any suitable kind.

B is an arm extending from the front of the machine and provided with a journal, *a*, that turns freely in suitable bearings of the frame. By this means the arm B can be turned axially to any position required.

C is a circular grinding-wheel of emery or any other suitable material, mounted in a box at the outer end of the arm and on the under side thereof.

D is a grooved pulley on the shaft of the grinding-wheel and on the upper side of the arm.

EE are two grooved pulleys, running loosely on inclined studs *b b* on opposite sides of the frame.

G is a large grooved pulley on a cross-shaft, *c*, at the top of the frame.

H is a small pulley on the outer end of the shaft *c*, and I is a driving-wheel located on another shaft, *d*. The wheel I and pulley H are connected by a band, K, by which the machine is driven. The wheel I may be driven by hand or any suitable power.

L is a band which passes over the large pulley, G, thence down under the loose side pulleys, E, and thence outward horizontally around the small pulley D on the shaft of the grinding-wheel, thus making a circuit and giving motion to the grinding-wheel as the machine is operated.

In practice the horse's foot is raised into the lap of the operator, as in shoeing, and held to the grinding-wheel, which, as it revolves, rapidly grinds the calk to a sharp edge. As the calks are of beveled form, it is necessary to turn the grinding-wheel to a corresponding angle as it revolves. This is done simply by turning the arm B on its axis, which can be done readily as the journal of the arm rests loosely in its bearings.

Figs. 4 and 5 illustrate the grinding-wheel turned to opposite angles for grinding the inner and outer beveled sides of the calk. In this manner by the simple axial turning of the projecting-arm the grinding-wheel can be fitted exactly to any bevel of the calk.

When the arm is turned, as above described, to bring the grinding-wheel to an incline the two sides of the band L that pass around the pulley D are brought toward each other by the twist of the pulley, and at the same time the two loose side pulleys, E E, following the draw of the band, will move inward toward each other on the studs *b b*, thus compensating for the turning movement and always keeping the band on the pulleys. By this means a single band alone is required whatever incline the arm may be turned to. The dotted lines in Fig. 3 indicate the position of the pulleys E E as the arm is turned.

g, Figs. 2 and 6, is a lever attached to the under side of arm B and having a hook-point at its lower end turned inward.

h is a circle plate or segment attached to the frame below the arm and provided with a series of adjusting-holes. By this means the arm B can be set or locked at any angle at which it

may be adjusted, the hook of the lever springing into the holes of the circle plate. This holds the grinder steady and prevents wabbling.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for grinding horseshoe-calks, the combination, with the frame of the machine, of an arm projecting therefrom and capable of turning axially, a grinding-wheel and pulley at the outer end of the arm, guiding-pulleys on the sides of the frame running loosely on inclined studs that allow free sliding movement of the pulleys out and in, a large pulley above the side pulleys, and a single band passing over the main pulley, thence down and around the side pulleys, and thence around the pulley on the shaft of the grinding-wheel, as shown and described, and for the purpose specified.

2. In a machine for grinding horseshoe-calks, the combination, with the frame of the machine, of an arm projecting therefrom and capable of turning axially, a lever attached to said arm and resting over a circle-plate, whereby it may be held at any adjustment, a grinding-wheel and pulley at the outer end of the arm, guiding-pulleys on the sides of the frame running loosely on inclined studs that allow free sliding movement of the pulleys out and in, a large pulley above the side pulleys, and a single band passing over the main pulley, thence down around the side pulleys, and thence outward around the pulley of the grinding-wheel, as herein shown and described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

HENRY EAST.
D. K. PRICE.
HENRY R. EAST.

Witnesses:
R. F. OSGOOD,
WM. J. MCPHERSON.