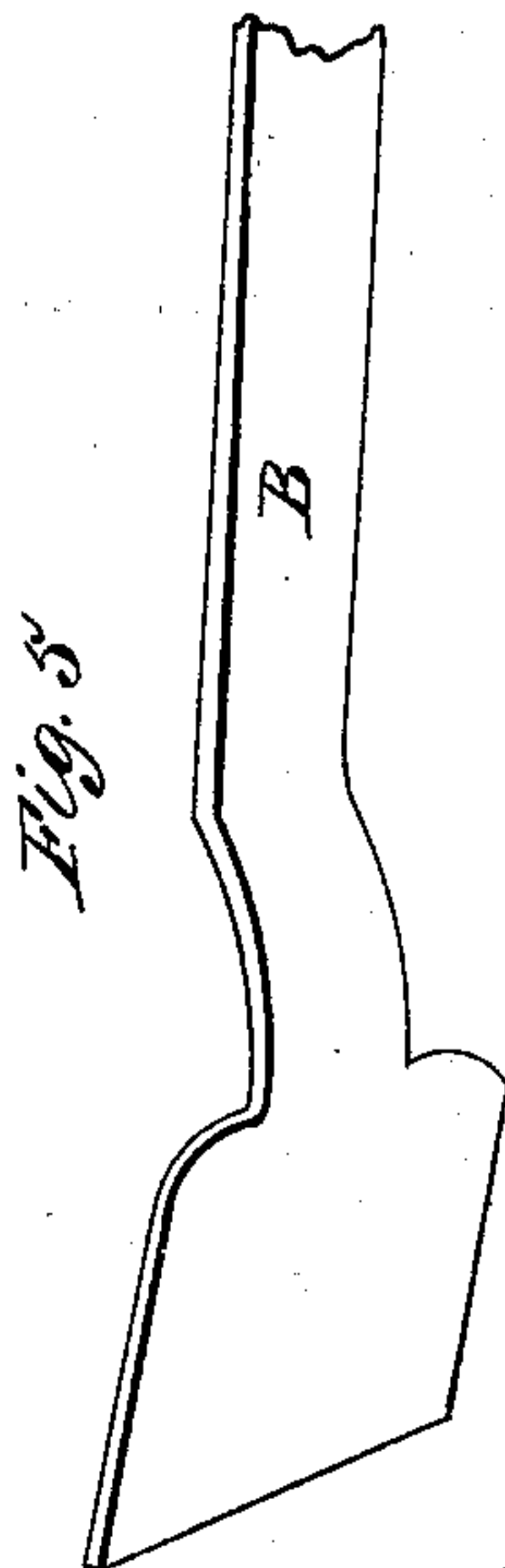
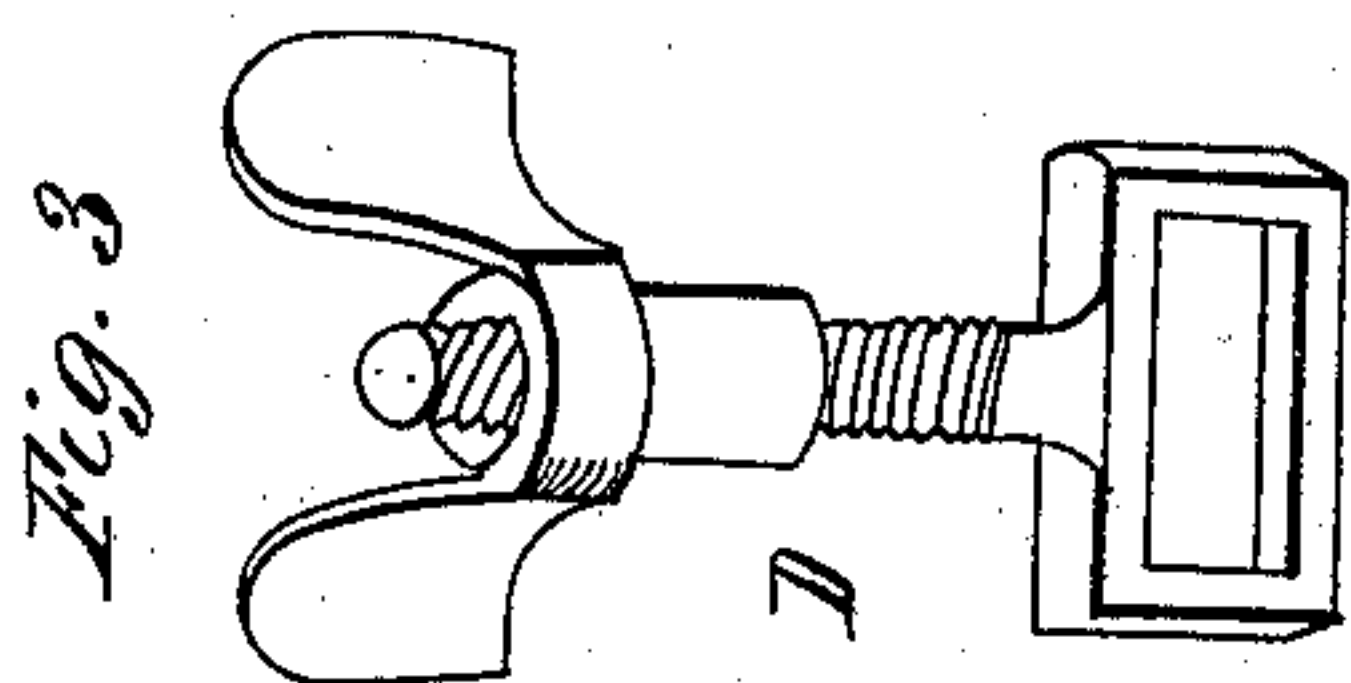
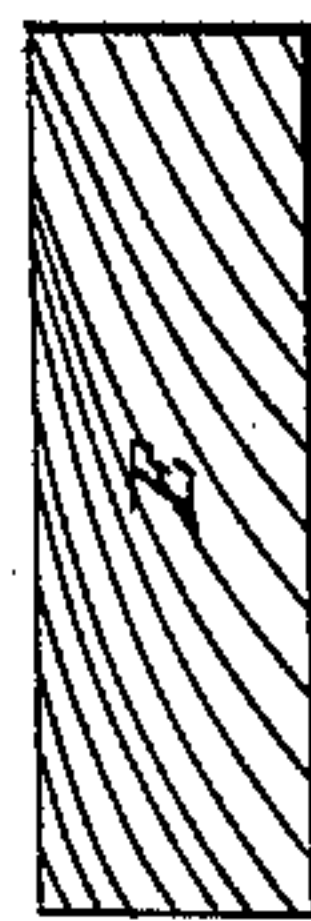
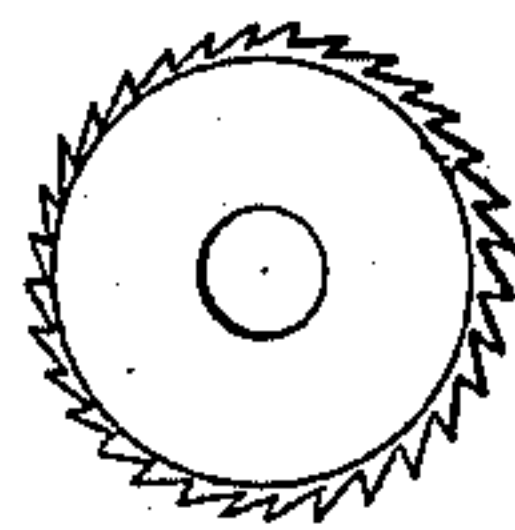
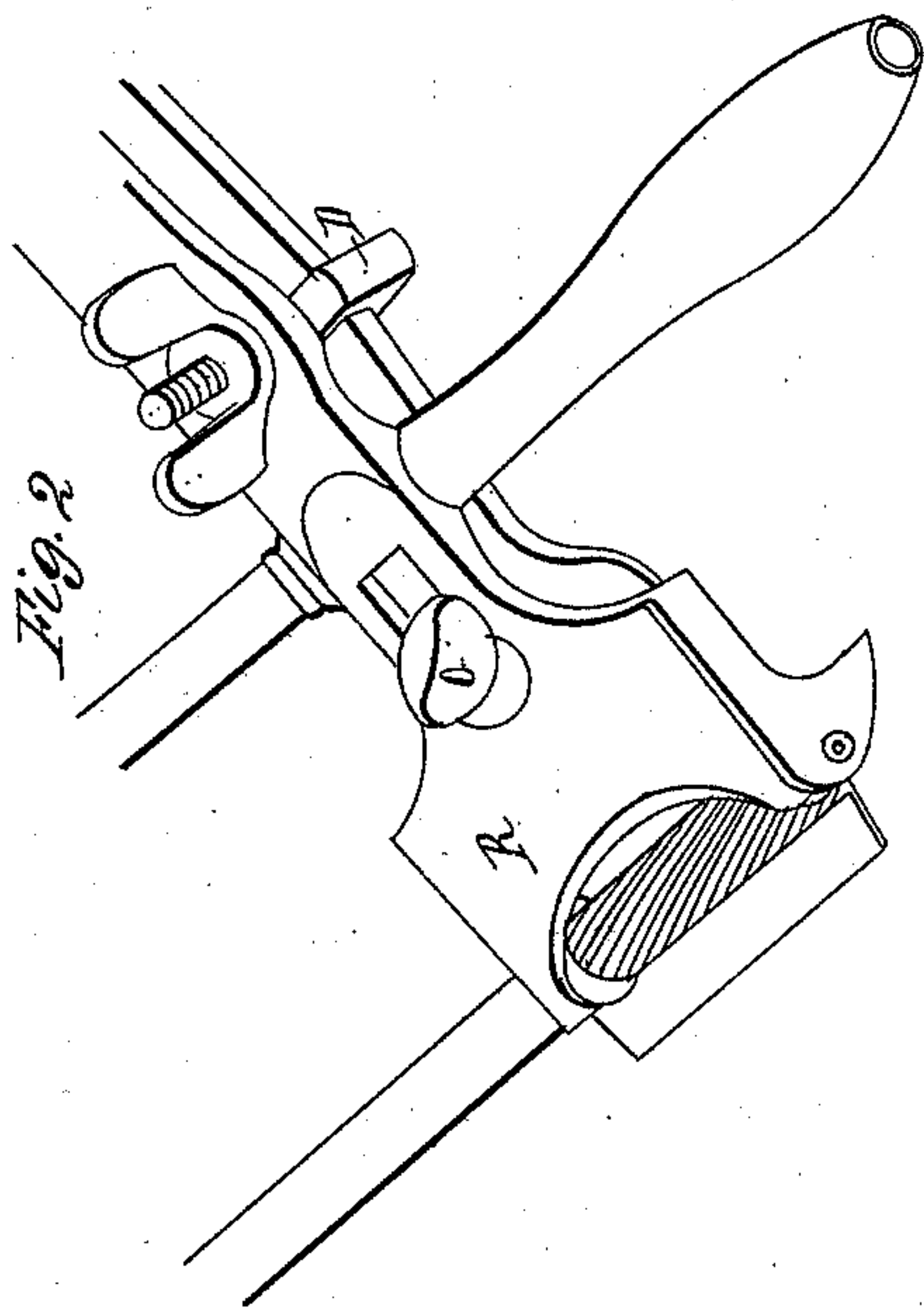


E. A. Bushnell,

Horseshoe-Calk Sharpenener.

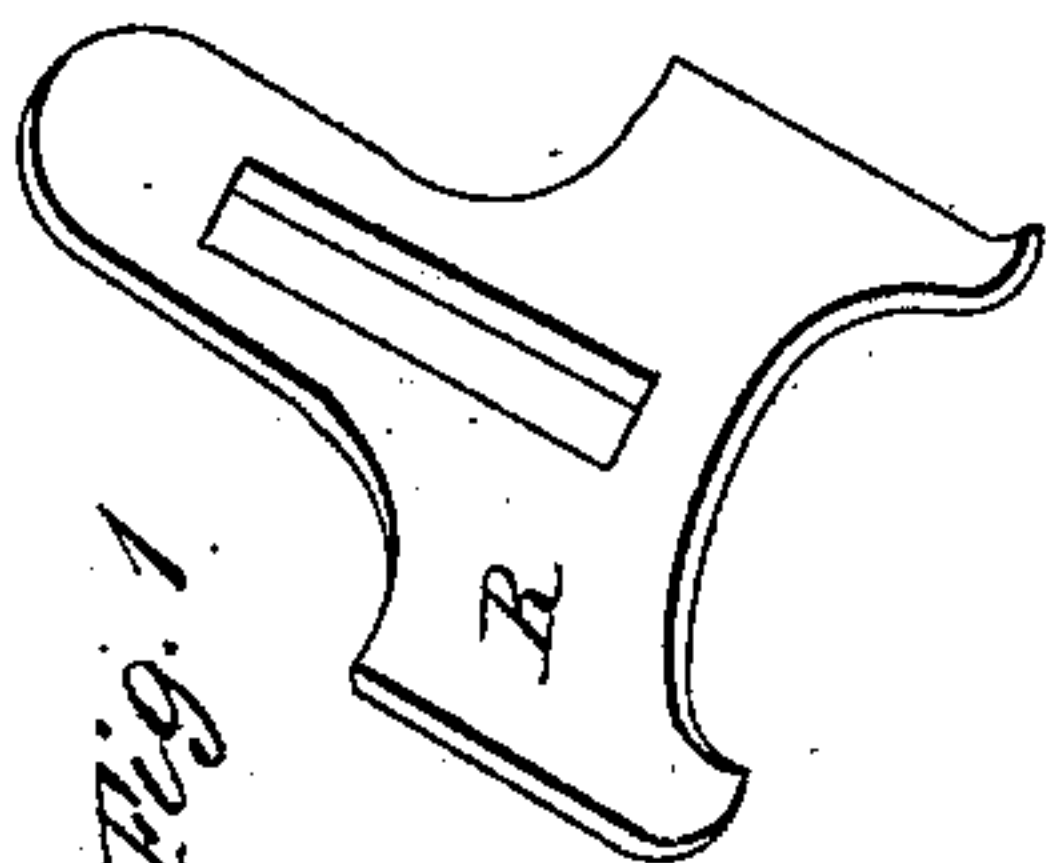
N^o 80,805.

Patented Aug. 11, 1868.



Witnesses;

*Hiram Barber
August Wagener.*



*Inventor;
Ensign A. Bushnell*

United States Patent Office.

ENSIGN A. BUSHNELL, OF HORICON, WISCONSIN.

Letters Patent No. 80,805, dated August 11, 1868; antedated July 18, 1868.

IMPROVEMENT IN MACHINE FOR SHARPENING HORSE-SHOE CALKS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ENSIGN A. BUSHNELL, of Horicon, in the county of Dodge, and State of Wisconsin, have invented new and useful Improvements in Machine for Sharpening Horse-Shoe Calks; and I do hereby declare that the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 represents the sliding-cap or gauge.

Figure 2 represents a perspective view of a portion of the machine, with my improvements attached.

Figure 3 represents the screw for holding and adjusting the spring in place.

Figures 4 and 5 represent the spring and burr, or cutter, constructed in accordance with my improvements.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements in machines for sharpening horse-shoe calks, for which Letters Patent were granted to me, No. 55,617, and bearing date June 19, 1866. In this patent the screw for adjusting the spring to the calks passed directly through the spring and into the main stock; said spring being slotted for this purpose, which had a tendency to weaken it to considerable extent. A set-screw was also used, passing through the stock, and resting against the spring, to prevent the latter from coming in contact with the burr, thus complicating the parts, and detracting from the practicability of the invention. The cutting-edges of the burr were also straight or parallel with its axis, and required a greater application of power to sharpen the calk than by the spiral cutters, which constitute my invention in this particular. My improvements are designed to obviate these difficulties, and they consist—

First, in attaching a cap, carrying the burr, to the end of the main stock by means of a slot and set-screw, to enable it to be adjusted to the varying lengths of the calks, and avoiding the necessity of slotting the spring.

Second, in constructing a guide, fitting upon the spring, and having a screw attached to its upper side, passing through the main stock, and adjusted by means of a set-screw; and

Lastly, in forming the cutting-edges of the burr spirally around it to lessen the power necessary to operate the device.

In the drawings, R represents the cap, having its front end cut out in circular form, leaving two points or curved projections fitting over the burr. The cap is slotted longitudinally, and adjusted upon the main stock to the varying lengths of the calks to be sharpened, by means of the thumb-screw O.

B represents the spring, consisting of a wide and flat plate, having an extended handle, whose shank is slightly bent, as shown in fig. 5. This spring is adapted to hold the sharpener against the calk, and secure it in place. Its extended arm is held in place upon the wider side of the main stock, by being passed through a loop, D, having a screw-bolt attached to its upper side, and passing through the main stock. The loop and spring are adjusted by means of a thumb-screw, upon the end of the screw-bolt.

E represents my improved burr, whose cutting-edges are arranged in a spiral direction around it, instead of parallel to its axis, whereby less power is required to operate it in sharpening the calks.

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

The slotted adjustable gauge R, and loop D, with the screw-bolt and set-screw, in combination with the solid spring B, main stock and burr E, as herein described for the purpose specified.

ENSIGN A. BUSHNELL.

Witnesses:

HIRAM BARBER,

AUGUST WAGENER.