

(No Model.)

C. E. GREENE.
COMPOSITION METAL HONE.

No. 551,673.

Patented Dec. 17, 1895.

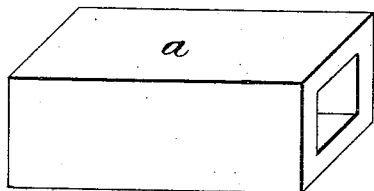


Fig. 1.

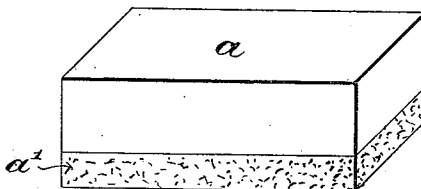


Fig. 2.

Witnesses.

Fred. Arnold.

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by Remington & Henthorn
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UNITED STATES PATENT OFFICE.

CHARLES E. GREENE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
RHODE ISLAND HONE COMPANY, OF SAME PLACE.

COMPOSITION-METAL HONE.

SPECIFICATION forming part of Letters Patent No. 551,673, dated December 17, 1895.

Application filed November 6, 1894. Serial No. 528,045. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES E. GREENE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Composition-Metal Hones or Metal Abrading-Blocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices employed for sharpening blades of cutters, &c.; and it consists essentially of a "composition-metal hone," as it may be termed, composed of lead, tin and emery, these ingredients being thoroughly combined or mingled while the metals are in a molten state, after which the mass is cast in a suitable mold.

In the accompanying sheet of drawings, Figure 1 is a perspective view of one form of my improved composition-metal hone. Fig. 2 is a modified form of the hone.

My improved hone is composed of lead, tin and emery, in about the following proportions, by weight, viz: lead, fifty parts; tin, fifty parts, and flour of emery one part.

The metals are melted and mingled together while in a molten state, after which the emery is added and the whole thoroughly mixed or incorporated, the mixture meanwhile being allowed to gradually cool. While it is yet in a semi-fluid state it is molded or pressed into the desired form and permitted to harden. I prefer to cast the composition in a flat or rectangular-shaped mold. In lieu of powdered emery I may use it in a fine granular state. In order to render the metal hone a little harder I sometimes add antimony to the ingredients above named, the amount thus added being, say, about equal to the quantity of emery used. After the said composition casting has been removed from the mold its surfaces are planed or milled off true by means of suitable tools. As thus made and completed it is ready for service.

In order to use the hone it is simply necessary to properly place the article to be sharp-

ened or abraded upon the flat surface thereof and move it back and forth under pressure, the hone itself meanwhile being stationary. The working surface may be first moistened with oil or water.

If desired the hone may be made hollow or cored, thus reducing the weight and cost, as shown in Fig. 1.

In order to expedite the sharpening operation, one face of the hone *a* may have secured thereto a thinner metal hone *a'* carrying coarser emery, as shown in Fig. 2, or it may be an independent hone. In lieu of such construction, however, one surface of the hone *a* may be always reserved and used for the first part of the sharpening operation, thereby abrading the metal of the article being sharpened more rapidly, the final or finishing part of it being effected upon the other surface of the hone.

My invention differs from grinding or polishing wheels employed for mechanically grinding and sharpening edge-tools, from the fact that such grinding-wheels are usually composed of soft metal into the edges or faces of which wheels particles of diamond-dust, emery or other suitable abrading substances are forced, the life of such wheels being comparatively short.

In my "metallic hone," as I have termed it, the abrading substance is thoroughly mixed with the composition metal while the latter is in a molten state. Therefore it can be continuously used until completely worn out, since the abrading substance extends throughout the entire hone.

I claim as new and desire to secure by United States Letters Patent—

1. The herein described composition metal hone, consisting of lead, tin and emery, substantially in the proportion specified.

2. The herein described composition metal hone, consisting of lead, tin, antimony, and emery, substantially in the proportion specified.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES E. GREENE.

Witnesses:

GEO. H. REMINGTON,
FREDERIC ARNOLD.