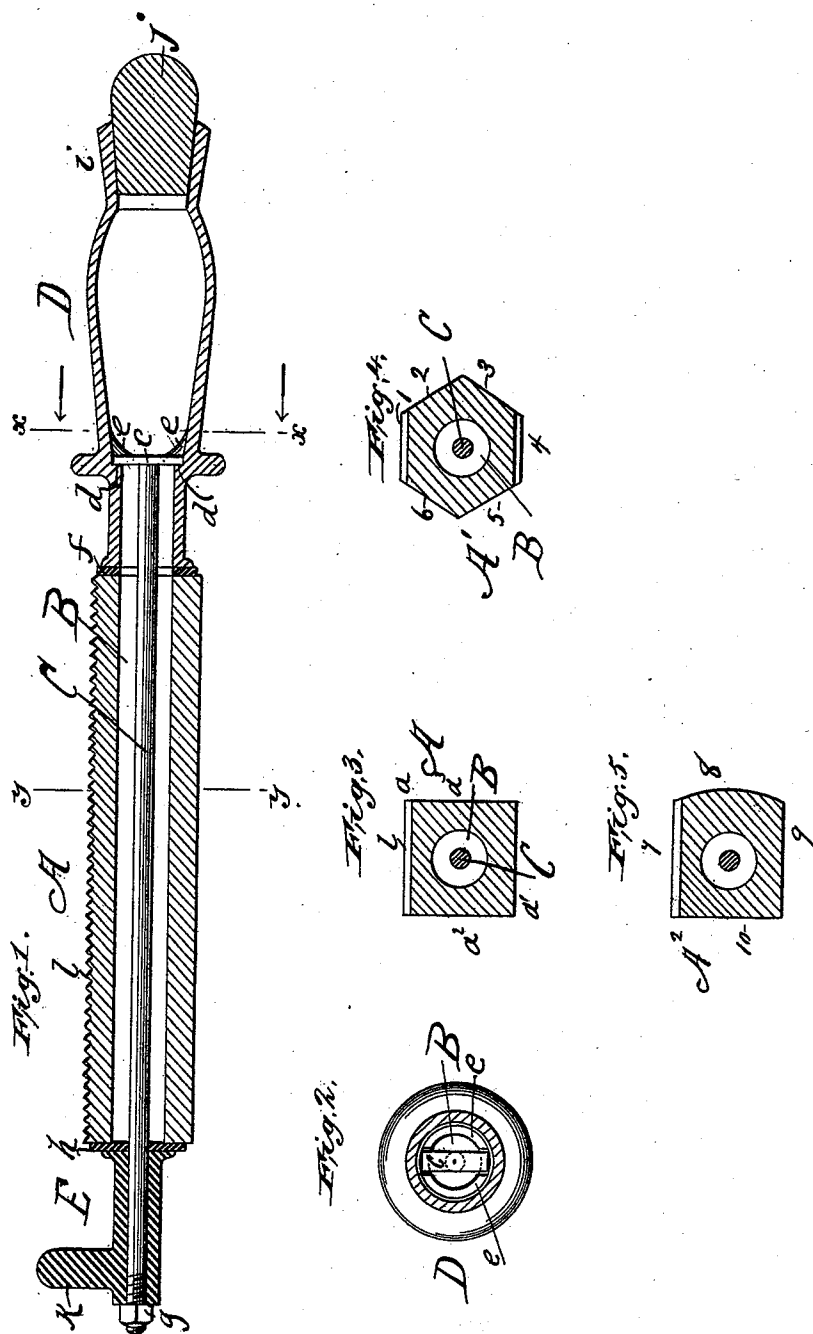


(No Model.)

R. DUTTON.
WHETSTONE.

No. 528,772.

Patented Nov. 6, 1894.



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UNITED STATES PATENT OFFICE.

RUFUS DUTTON, OF NEW YORK, N. Y.

WHETSTONE.

SPECIFICATION forming part of Letters Patent No. 528,772, dated November 6, 1894.

Application filed December 13, 1893. Serial No. 493,589. (No model.)

To all whom it may concern:

Be it known that I, RUFUS DUTTON, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Whetstones, of which the following is a specification.

My invention relates to improvements in whetstones, especially such as are used for sharpening the knives of mowing machines and scythes, though the whetstone can also be advantageously used for other purposes, such as smoothing the surfaces of castings.

Particularly my invention consists, first, in the combination with the whetstone of handles secured at each end thereof by a rod which passes through the interior of the stone, so as to leave all the faces of the stone available for use. This construction is of great utility, since the stone can be formed with many working faces, each of which can be used when the others are worn out; whereas, when the handles are connected in the manner heretofore known in the art, by rods or other fastenings outside the stone, such rods or fastenings prevent using some one at least of the faces of the stone. This arrangement of the rod through the stone and the consequent compression of the ends of the stone by the handles or their flanges is also very useful in strengthening the stone and preventing its breaking.

In the second place, my invention consists in the employment of a hollow, somewhat porous stone, in combination with means for closing the cavity in the stone, (which cavity forms a water chamber) so as to practically exclude the external air. In this manner the water in the chamber is drawn through the porous stone by capillary attraction, and to some extent even against the external atmospheric pressure, whereby the feed of the water to the working faces is rendered very regular and slow, and only enough water passes through the stone to properly wet the said working surfaces.

Referring to the drawings which accompany this specification to aid the description, Figure 1 is a longitudinal section of the whetstone and handles complete, in that case when one of the working faces of the stone is corrugated. Fig. 2 is a cross section on the

line $x-x$ of Fig. 1 and looking in the direction of the arrow. Fig. 3 is a cross section on the line $y-y$ of Fig. 1. Fig. 4 is a cross sectional view of a stone having six faces, two opposite of which are corrugated. Fig. 5 is a cross sectional view of a stone which has one face somewhat rounded. Another, and flat face, is shown as being corrugated.

Referring to Figs. 1, 2 and 3, A is the stone, formed of any suitable material, as emery composition, somewhat porous, and having a longitudinal cavity B that forms a water chamber. Through the chamber B extends the rod C, being sufficiently small to leave a good water space around it. Thus, for example, if the chamber B is five-eighths of an inch in diameter, the rod C will be about one-quarter inch. Said rod C is employed to fasten the handles D E on the stone A in the following manner: Said handle D is hollow, as shown, and has shoulders d, d on which bears the cross bar c of the rod C, and to prevent the rod C from turning, the handle D is provided with wing pieces e, e . A washer f makes a tight joint between the handle D and the one end of the stone A. At the end opposite to the handle D, the aforesaid rod C passes through a hole in the handle E and is drawn tight by the nut g and threads on the end of the rod C, h being a washer between the handle E and the stone A. Thus the rod C being arranged through the interior of the stone A does not interfere with the use of any of the surfaces. The compression of the stone A between the flanges of the handles D E greatly strengthens the stone and renders it less liable to break.

The handle D is formed, as shown, to be grasped by the right hand of the operator, and with a neck i to receive a cork j . The handle E is provided with a finger post k projecting about at right angles from one side, and adapted to be held by the thumb and index finger of the operator's left hand. In use, the post k will be turned away from the knife, scythe, &c., that is being operated on, so that the hand is out of the way and not liable to be cut. This arrangement of the handle E with the finger post k is, therefore, of much utility and is, I believe, new in the art.

I have found that the whetstone can be advantageously used for smoothing castings,

and that when intended for such use it is desirable to have some one or more of the faces of the stone corrugated, since experiment proves that the composition of which the stone is formed comes from the molds, in which it is made in the usual manner, too smooth to at first "bite" the castings. Therefore, I prefer to form on at least one surface of the stone corrugations *l*, somewhat like the teeth of a flat file, but coarser. (See Figs. 1 and 3.) In Fig. 4 such corrugations are represented as formed on two and opposite faces of the stone, and I prefer to so arrange them, although in Figs. 1 and 3 they are shown on only one face; also, when the corrugations are arranged on two opposite faces of the stone, the said corrugations can be finer on one face than on the other, and so adapted to different classes of work. As, however, corrugations are not desirable in sharpening knives, scythes, &c., I prefer to have some of the faces of the stone smooth, without any corrugations.

It is to be understood that when using, the chamber *B* and also the handle *D* are filled with water. Then, the cork *j* being put in the external atmosphere is excluded from the water, and the capillary attraction draws the water through the stone to some extent against the pressure of the atmosphere. I find this results in a slow and regular feed which prevents too much water from passing through the stone.

When one face, *a*, of the stone wears down as much as it should, the handle *E* is turned by slacking the nut *g* until the finger post *k* is brought diametrically opposite to another face *a'*. Then the nut *g* is tightened, and the said face *a'* is employed.

In Fig. 4 I show a stone *A'* with six faces, 1, 2, 3, 4, 5, 6, two of which are corrugated. When one face wears down, the handle *E* would be turned the sixth part of a circumference, so as to bring the finger post oppo-

site to the next face, and so on, the finger post being always diametrically opposite to that face which is to be used. Of course the stone may have any number of faces.

In Fig. 5 I show the stone *A²* formed with one smooth face, 8, rounded, since I find that a face of this shape is convenient for sharpening the parts of the blades of scythes, &c., that are near the handle.

It will, of course, be understood that stones shown in Figs. 4 and 5 are secured to handles in the same manner as shown in Fig. 1 and hereinbefore described.

Now, having described my improvements, I claim as my invention—

1. In whetstones, the combination of a stone having a plurality of working faces and a handle with a finger post and adapted to be turned about the axis of the stone, substantially as described.

2. The combination in a whetstone of the perforated stone *A* containing a water chamber, washers at either end of said chamber, handles *D E*, one at each end of the stone *A*, finger post *k* on the handle *E*, water chamber in the handle *D*, and rod *C* tying the said handles *D E* against the aforesaid washers, substantially as described.

3. A whetstone consisting of a hollow stone, containing a water chamber and handles one of said handles having a water chamber which connects with the chamber in the stone and said handles tensionally connected through the stone, whereby the stone is compressed in the direction of its length, substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 22d day of November, 1893.

RUFUS DUTTON.

Witnesses:

BERNARD J. ISECKE,
PATRICK A. FAY.