Feb. 15, 1927. 1,617,592

A. J. HARDY

ABRASIVE TOOL

Filed Aug. 23, 1924

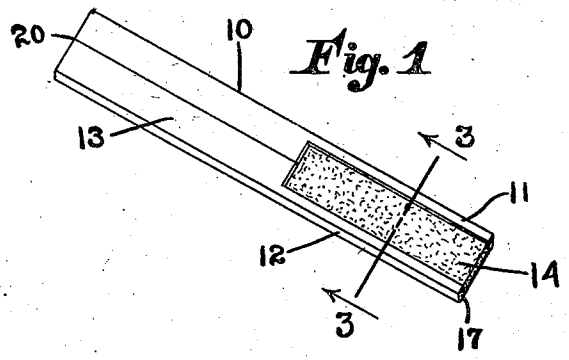


Fig. 1

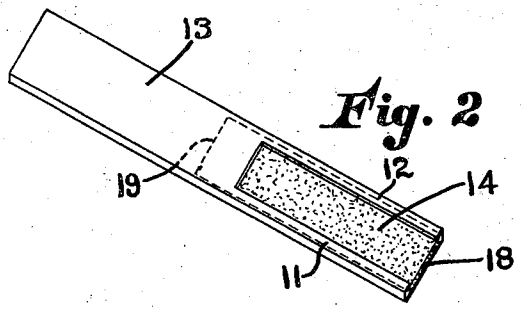


Fig. 2

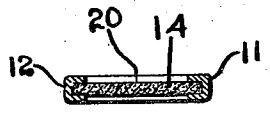


Fig. 3

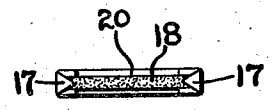


Fig. 4

WITNESSES

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UNITED STATES PATENT OFFICE.

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ABRASIVE TOOL.

Application filed August 23, 1924. Serial No. 733,664.

My invention relates to abrasive tools and more particularly to an abrasive stone mounted in a handle for filing and sharpening purposes.

It has been found that a thin abrasive stone is particularly adapted for filing or smoothing off the contact surfaces of electrical vibrator points and for cleaning spark plugs used in automobiles. Owing however to the fact that these contact points and spark gaps require the use of very thin tools, there is great danger of an abrasive stone of such thickness becoming easily broken.

It is accordingly the main object of my invention to make a tool useful for such purposes which will not be easily broken, and to provide a handle therefor which may be firmly fastened to the abrasive stone and will protect it under ordinary conditions of usage.

Another object of the invention is to provide a simple device which may be easily and economically manufactured and readily assembled and may be marketed at a low price for use in sharpening spark plugs, contact points and the like, and in general to provide a tool of this type which may be employed for various sharpening purposes.

With these and other objects in view as will be apparent to one skilled in the art my invention resides in the combination of parts set forth in the following specification and covered by the claim appended hereto.

Referring to the drawings illustrating one embodiment of my invention and in which like reference numerals indicate like parts:

Fig. 1 is a rear isometric view of a vibrator point sharpener;

Fig. 2 is a similar front view of the device;

Fig. 3 is a cross section on the line 3—3 of Fig. 1; and

Fig. 4 is an end view showing the manner of holding the abrasive stone in the holder.

In accordance with my invention I propose to mount a very thin abrasive stone in a handle in such a manner that both faces of the stone are exposed for use so that one may file both members of a vibrator at the same time. The handle for this stone is so constructed that one end of the stone is left unprotected and may be inserted into a narrow space of substantially the thickness of the stone.

One simple manner of making this device comprises bending a piece of sheet metal 10 into the form shown in the drawings, this metal member having been cut to present two elongated strips 11 and 12 projecting from the body portion of the metal. The sheet of metal is preferably bent to form a handle 13 which is substantially rectangular in cross section as shown in the drawings so as to provide two flat faces near each other which may be grasped between the fingers. The strips 11 and 12 are bent to form U-shaped members facing inwardly which are arranged to be inserted over the thin sides of the stone 14, the distance between the sides of the U-shaped strips being substantially equal to the thickness of the stone, but if the metal is resilient, this distance may be less than the thickness of the stone, so that the resiliency of the metal will serve to clamp the stone firmly in place.

The abrasive stone 14 may be slipped into the U-shaped portion from the lower end as shown in Figs. 1 and 2 and after it has been put in place the tips 17 which project from the ends of the strips 11 and 12 may be bent over the end of the stone, as shown in Fig. 4, to prevent removal thereof. The U-shaped portions 11 and 12 are made narrow so that the major portion of each face of the stone is exposed, and the tips 17 are also narrow and short so as not to project beyond the inner edges of the strips 11 and 12. This construction is such that the outer end 18 of the stone is exposed and may be inserted into a space of substantially the same width as the thickness of the stone. This insures the ability to file both elements of a vibrator or a spark plug at the same time, and to gauge the width of the gap therebetween.

The stone may be formed in accordance with standard practice of suitable abrasive material, such as silicon carbide or crystalline alumina grains of a small grit size bonded by vitrified ceramic material into a unitary structure. The stone may be of such a length that it will extend part way into the handle, as indicated by the dotted line 19 in Fig. 2, and be clamped between the parts forming the handle. For the sake

or neatness of appearance the free edges of the metal strip forming the handle may form a butt joint 20. A stone for use in filing vibrator elements is of substantially the size shown in the drawings.

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

An abrasive tool comprising a long thin abrasive block of parallelopipedon shape and a hollow one piece sheet metal holder therefor which is rectangular in cross section and fits the outside of the block, one end of the holder having two grooved arms spaced apart to hold the block therebetween and expose its opposite faces and the other end extending beyond the exposed face of the block and serving as a handle, and a narrow lip on one of the arms bent over the end of the block to hold it in place, the parts being so arranged that the abrasive block may be inserted endwise between two parts to be abraded simultaneously.

Signed at Worcester, Massachusetts, this 18th day of Aug. 1924.

ARTHUR J. HARDY.