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S. W. SAM

2,633,681

CUTTING SURFACE FOR WIRE

Filed Oct. 8, 1951

Fig. 1

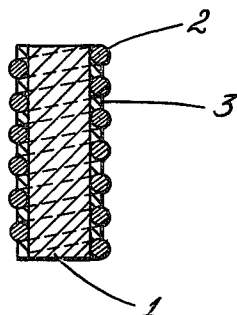
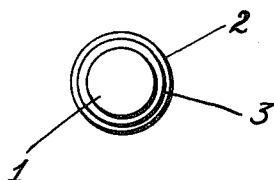


Fig. 2

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2,633,681

CUTTING SURFACE FOR WIRE

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Application October 8, 1951, Serial No. 250,365

1 Claim. (Cl. 51-204)

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My invention relates to a cutting surface for wire et cetera.

This application is a continuation-in-part of my copending application of the same title Serial Number 126,841 filed Oct. 15, 1949, now abandoned.

An object of my invention is to provide an efficient, hard, tough, strong, sharp cutting abrasive surface for a fine wire which can thus serve as a saw blade which can saw equally well in all directions without rotating the wire.

Other objects and advantages become apparent as the description proceeds.

I attain these objects by a device illustrated in the accompanying drawing, in which—

Figure 1 is an end view of a wire provided with the abrasive surface; and

Figure 2 is an axial, sectional view of the same.

Referring to Figures 1 and 2, the cylindrical metal core 1 may range in diameter from the diameter of an extremely fine metal wire to the diameter of a cylindrical metal bar of extremely large diameter. The preferred size for sawing is an extremely fine metal wire perhaps about one-hundredth of an inch in diameter which Figures 1 and 2 are intended to illustrate in particular. Metal core 1 may be made of stainless steel or zirconium or titanium or other suitable metal.

A fine filament 2 made of silica or glass or corundum or other suitable material is tightly, helically, closely and uniformly wound around metal core 1 while metal core 1 is held at its ends and stretched so as to be taut and so that its central axis is a straight line and then this assembly of the metal core 1 and the fine filament 2 helically wound around it is immersed in a suitable electroplating bath and the metal core 1 is electroplated with a suitable metal plating film coating 3 to a thickness intermediate between the radius and diameter of the fine filament 2 so that very slightly less than a half lateral portion of the helically wound fine filament 2 is bare and the remainder of filament 2, namely, very slightly

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more than a half lateral portion of filament 2 lies within metal plating film coating 3. Thus helically wound filament 2 becomes rigidly and securely locked in position on the surface of the metal core 1 with a minimum amount of filament 2 lying within metal plating film coating 3 and with a maximum amount of the bare filament 2 projecting out of the metal plating film coating 3. The metal plating film coating 3 may be made of zinc or other suitable plating metal and should be strongly adherent to the surface of the cylindrical metal core 1.

The fine filament 2 should preferably be as fine as practicable so as to be as sharp as possible perhaps a ten-thousandth of an inch in diameter.

I claim:

A fine wire having an abrasive cutting surface comprising a fine metal wire uniformly closely helically wound with a filament of abrasive siliceous material of a diameter as fine as practicable so as to be as sharp as possible, about one-tenthousandth of an inch, an electroplated metal coating strongly adherent to the wire and of a thickness intermediate between the radius and diameter of said siliceous filament whereby the filament becomes rigidly and securely locked in stationary position on the surface of the wire.

SAM WOMEN SAM.

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