Aug. 22, 1933. T. S. FULLER ET AL 1,923,719

STROPPING MATERIAL

Filed April 27, 1931

Fig. 1.

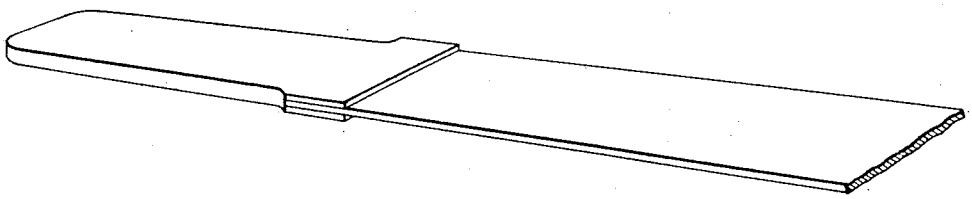


Fig. 2.

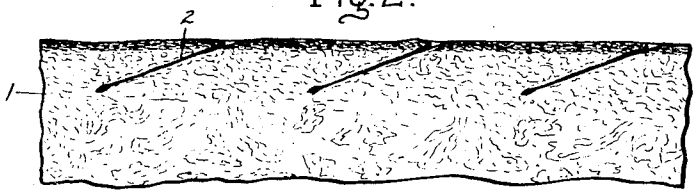


Fig. 3.

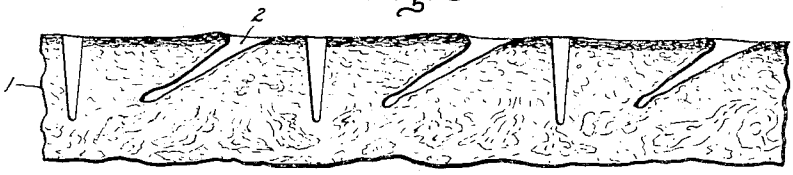


Fig. 4.

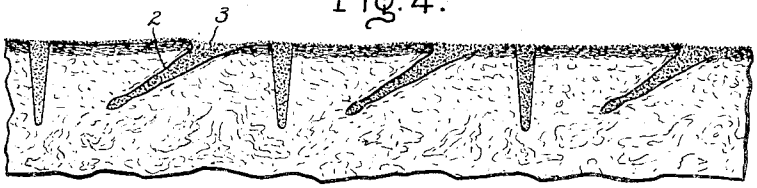
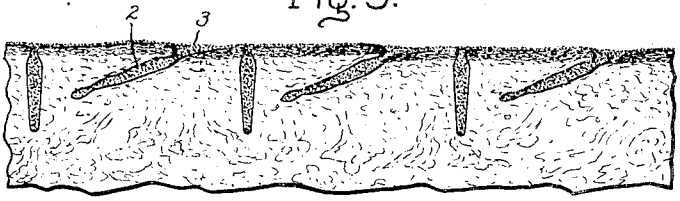


Fig. 5.



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UNITED STATES PATENT OFFICE

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STROPPING MATERIAL

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Application April 27, 1931. Serial No. 533,358

4 Claims. (Cl. 51—198)

The present invention relates to stropping material but more particularly to material adapted for use as a razor strop.

Prior to the present invention, it has been customary in the production of stropping material to rub abrasive material onto the inner or flesh side of leather and to work such material into the hide. It has also been customary to provide relatively large artificial openings or holes in leather and rub abrasive material into such openings. These openings have sometimes been in the shape of cones, the apexes of which are on the stropping surface of the leather. Abrasive material which has been applied to a strop either by rubbing it into artificial openings or by working it into the flesh or inner side of the hide easily works loose from the hide. If artificial cone-shaped openings are employed a special backing for the leather, such as canvas or the like, is necessary to hold the abrasive material in position.

It is an object of the present invention to provide an inexpensive and durable stropping material impregnated with abrasive material in such a manner that the abrasive is permanently held therein without the use of backing material.

The novel features which are characteristic of our invention are set forth with particularity in the appended claims. The invention itself however will best be understood from reference to the following specification when considered in connection with the accompanying drawing in which Fig. 1 is a perspective view partly broken away of a stropping material which embodies the features of our invention; Fig. 2 is a cross sectional view partly broken away and on a greatly enlarged scale of a tanned hide showing the hair follicles therein; Fig. 3 is a similar view showing the hide under tension and having openings therein in addition to the hair follicles; Fig. 4 is a similar view of the tensioned hide after the hair follicles and other openings have been filled with abrasive material, while Fig. 5 is a cross sectional view similar to Fig. 4 with the tension on the hide released.

In carrying out the present invention, a suitable abrasive material, for example tungsten carbide, is applied in a manner hereinafter described to the outer or finished side of a hide or piece of leather so that the hair follicles and natural pores, such as sweat glands, in the grain surface of the hide are substantially filled with the abrasive material. A leather such as tanned or preserved horse or cow hide is preferably employed although other hides may be employed if desired.

The tanned leather 1 is first stretched in any suitable manner to open the hair follicles 2 and natural pores in the hide far enough to permit impregnation. For example, a tension of about 150 lbs. is sufficient for this purpose when applied to a leather strip about $\frac{3}{16}$'' thick and 1¼'' wide. While the leather is under tension a mixture 3 consisting of a suspension of tungsten carbide in a vehicle consisting of gum dammar in benzol is applied to the finished surface of the leather. This mixture flows into the hair follicles and natural pores such as sweat glands completely filling them.

The hair follicles are bulbous in shape with the bulb positioned away from the grain or finished surface of the hide as indicated in Figs. 2 to 5 inclusive. When the tension is removed from the leather the mouth portions of the hair follicles and artificial openings contract so that the abrasive material is firmly anchored in the hair follicles and pores in the hide. Since the number of hair follicles and sweat glands in a horse or cow hide are quite numerous, the quantity of abrasive material held therein is considerable and the active abrasive surface quite large.

The gum dammar and benzol help to carry the abrasive material into the pores. The gum dammar is soluble in the benzol and acts as a binder to assist in holding the abrasive material in the pores after the solvent has evaporated. Owing to the action of the binder material and the relatively small size of the hair follicles and sweat glands there is no tendency for the abrasive material to become loosened therein.

While we prefer to employ a mixture of tungsten carbide, gum dammar and benzol, the invention is not limited to these materials. Other abrasives, for example boron carbide, may be employed if desired. Moreover, gum dammar is only one of many substances which may act as binder materials. The binder materials however must be soluble in the solvent used. Although we prefer to employ benzol as the solvent, other solvents which have a low viscosity to assist penetration into the small pores in the leather may be employed if desired.

It is important that the size of abrasive particles employed be maintained within certain limits. If the particle size is too large the abrasive acts on the razor blade in a detrimental manner. On the other hand, if the particle size is too small the abrasive material will not produce an edge having proper characteristics. We have found that sieved tungsten carbide pro-

duced by the well known stationary reduction process is entirely satisfactory for this purpose. Tungsten carbide produced in this manner will pass through silk bolting cloth of approximately 240 mesh. The actual particle size distribution of the abrasive material is preferably below 25 mu diameter, i. e. the sizes of the carbide particles used cover a range of particles whose diameters are not greater than 25 mu.

What we claim as new and desire to secure by Letters Patent of the United States, is:

1. A stropping material consisting of a piece of leather the hair follicles of which are substantially filled with abrasive material.

2. The method of impregnating a piece of leather provided with openings therein, which comprises applying tension to said leather to stretch said openings and, while said leather is under tension, applying a mixture consisting substantially of an abrasive, a binder and a solvent for said binder material, to said leather to fill said openings with said mixture.

3. The method of forming a stropping material which comprises applying tension to a tanned hide to open the hair follicles or pores therein, applying a mixture consisting substantially of an abrasive, a binder material and a solvent for said binder material to said tensioned hide to fill said hair follicles and pores, evaporating said solvent and relieving the tension on said hide.

4. The method of forming a stropping material which comprises applying tension to a piece of tanned leather so as to open the hair follicles therein, applying a mixture consisting substantially of a suspension of tungsten carbide in a vehicle consisting of gum dammar and benzol to said stretched leather to fill the hair follicles therein, evaporating said benzol and relieving the tension on said leather.

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