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BRUSH FOR REMOVING SKIN BLEMISHES

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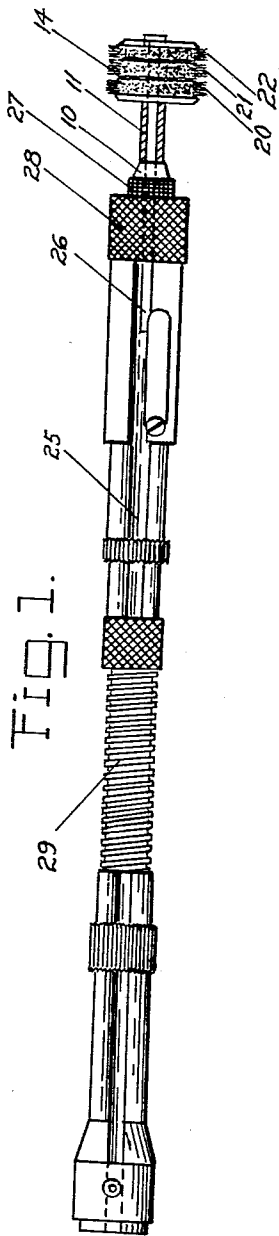


FIG. 1.

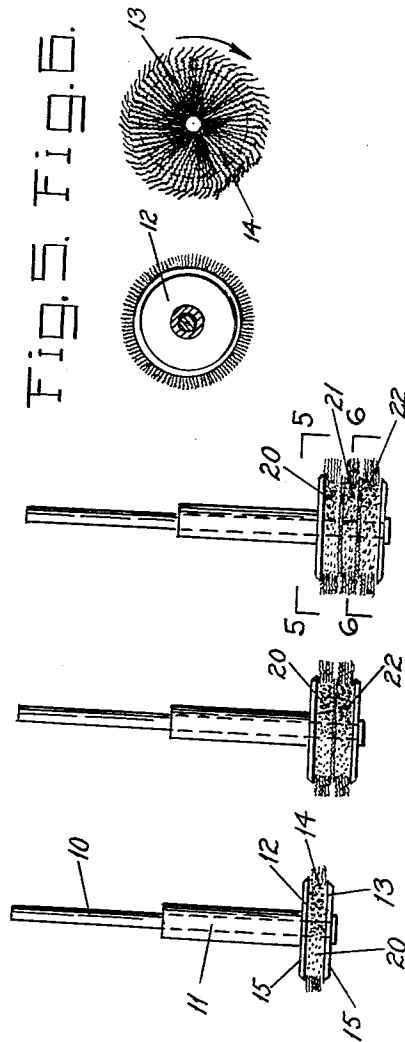


FIG. 2. FIG. 3. FIG. 4. FIG. 5. FIG. 6.

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2,712,823

BRUSH FOR REMOVING SKIN BLEMISHES

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4 Claims. (Cl. 128—303)

This invention relates to a brush for removing skin blemishes. The method of blemish removal, using the brush of this invention and hereinafter described, is the subject matter of another application and is not claimed in this application.

Heretofore there has not been a simple, rapid, and safe method of removing such blemishes such as moles, birthmarks and the like without having resort to surgical techniques. Such techniques requires anesthesia, dressing, antiseptics and the like.

It is an object of this invention to provide a brush which is adapted to be used in connection with a method for the removal of skin blemishes without resort to any surgical technique. Briefly stated the method comprises freezing the blemish area and thence applying a shearing force thereto until the blemish is removed.

The freezing of the blemish area is preferably done by the impingement of a volatile liquid thereon, the preferred liquid being ethyl chloride.

The shearing force is preferably applied to the frozen blemish area by placing it in contact with the bristles of a rotating metallic brush member. The brush member is specially constructed and the limitations subsequently given, while not absolutely essential for the carrying out of this method, are critical enough to make the method unsatisfactory if departed from.

The invention will be further described by reference to the accompanying drawings which are made a part of this specification.

Fig. 1 is a front view of the brush member which is used in this invention showing the means used to cause its rotation.

Fig. 2 is a front view of one form of the brush member used in this invention.

Fig. 3 is an alternative form of the brush member used in this invention wherein two layers of bristles are used.

Fig. 4 is another alternative form of the brush used in this invention wherein three layers of bristles are used.

Fig. 5 is a sectional view of the form of the invention shown in Fig. 4 taken along lines 5—5 of Fig. 4.

Fig. 6 is a sectional view of the form of the invention shown in Fig. 4 taken along lines 6—6 of Fig. 4.

Referring now to the form of the invention shown in Fig. 2 where only one layer of bristles are employed in the brush of this invention there is shown shaft member 10. Shaft member 10 bears a widened portion 11 whose use will be subsequently explained. Holding members 12 and 13 are secured to shaft member 10.

Radially extending bristle members 14 are disposed between holding members 12 and 13 and are secured between them by pressure. A number of layers of these bristles may be disposed between holding members 12 and 13 so that a wider brush area is produced. Bristle members 14 are pointed in the direction of rotation of shaft member 10 at an angle of from 20—40 degrees.

Bristle members 14 project from the circumference of holding members 12 and 13 for a distance of between

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$\frac{1}{8}$ and $\frac{1}{32}$ inch. The bristles themselves have a diameter of from .002 to .004 inch.

Fig. 3 shows a similar brush to that of Fig. 2 except that a greater number of layers of bristles are used. In this case the layers are divided into two clumps 20 and 22.

Fig. 4 shows a similar brush to that of Fig. 2 except that a greater number of layers of bristles are used which are divided into three clumps 20, 21, and 22.

The manner of rotating the brushes shown in Figs. 2, 3, 4, 5 and 6 will now be explained by reference to Fig. 1. This figure shows a brush similar to that shown in Fig. 4 in position upon holder 25. Holder 25 bears shaft 26 within which it is rotatable. Shaft 26 bears chuck 27 at its lower end which is provided with jaws (not shown) which can be closed upon shaft member 10 holding it fast to shaft member 26. The widened portion 11 upon shaft member 10 acts as a stop member preventing shaft member 10 from being inserted too far into chuck 27, the proper distance of insertion being thereby determined.

Shaft 26 may be rotated by being connected to a conventional rotary motor (not shown) by means of the conventional belt or gear drives. The speed of rotation of shaft 26 is held as close to 12,000 R. P. M. unloaded as possible.

Knurled portion 28 is provided upon holder 25 so that it can be guided by the operator as will be subsequently explained. Holding portion 29 is also provided for the same reason.

The method of this invention will now be explained by reference to the apparatus of Fig. 1.

The blemish area is frozen by spraying a low boiling point volatile liquid, such as ethyl chloride, upon the area until it has been brought to a temperature below its freezing point. The freezing of this area also produces anesthesia so that no further anesthetic is required. A brush made of a non-corrodible material such as stainless steel, similar to those shown in Figs. 2, 3 and 4 is then selected and secured within holder 25. The thickness of the bristles area used is determined by the extent of the blemish area. The bristles are made to contact the blemish area and remove the blemished tissue. When the operator notes that the blemished tissue has been removed he stops the operation.

The cutting action of the non-corrodible metallic bristles in the brush member of this invention is greatly enhanced by the fact that the bristles are pointed in the direction of rotation of the brush at an angle of from 20—40 degrees.

It is pointed out that the various dimensions of the bristles are extremely important. Thus a thickness of each bristle of from .002 to .004 inch, where the bristles are made of stainless steel, is extremely important since the cutting action of the bristles is accompanied by a flexing thereof. If the bristles are too thin they do not have the power to cut while if they are too thick they will tear the tissue below the blemish. For the same reason the projection of the bristles from the holding members and their angle of inclination to the direction of rotation is likewise important.

The foregoing specific embodiments of this invention as set forth in the foregoing specification are for illustrative purposes and for purposes of example only. Various changes and modifications can obviously be made within the spirit and scope of this invention and would occur to those skilled in this art.

I claim:

1. A metallic brush comprising a rotatable shaft member, a plurality of disk shaped holding members secured to said shaft member, and a plurality of radially extending metallic bristle members secured between said holding members, projecting therefrom for a distance of $\frac{1}{8}$

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to $\frac{1}{32}$ inch, and pointed in the direction of rotation of said shaft member.

2. A metallic brush comprising a rotatable shaft member, a plurality of disk shaped holding members secured to said shaft member, and a plurality of radially extending metallic bristle members secured between said holding members, projecting therefrom for a distance of $\frac{1}{8}$ to $\frac{1}{32}$ inch and pointed in the direction of rotation of said shaft member at an angle of from 20-40 degrees.

3. A metallic brush comprising a rotatable shaft member, a plurality of disk shaped holding members secured to said shaft member, and a plurality of radially extending metallic bristle members of a diameter of from .002 to .004 inch secured between said holding members, projecting therefrom for a distance of from $\frac{1}{8}$ to $\frac{1}{32}$ inch and pointed in the direction of rotation of said shaft member at an angle of from 20-40 degrees.

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4. A metallic brush as described in claim 3 including a number of layers of bristles one above another.

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