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COMBINED SCRUB BRUSH AND FINGERNAIL CLEANER

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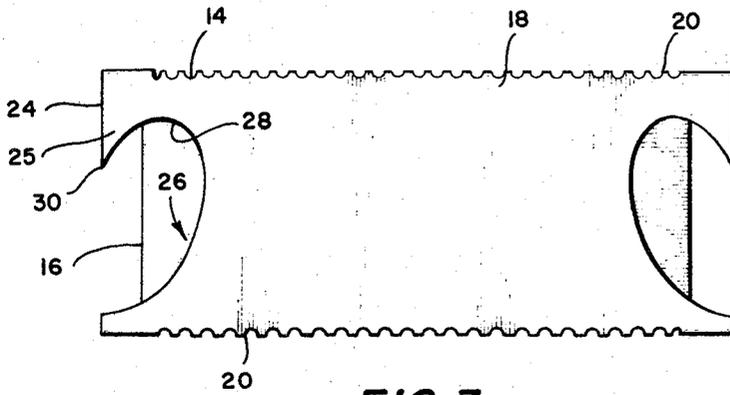


FIG. 3

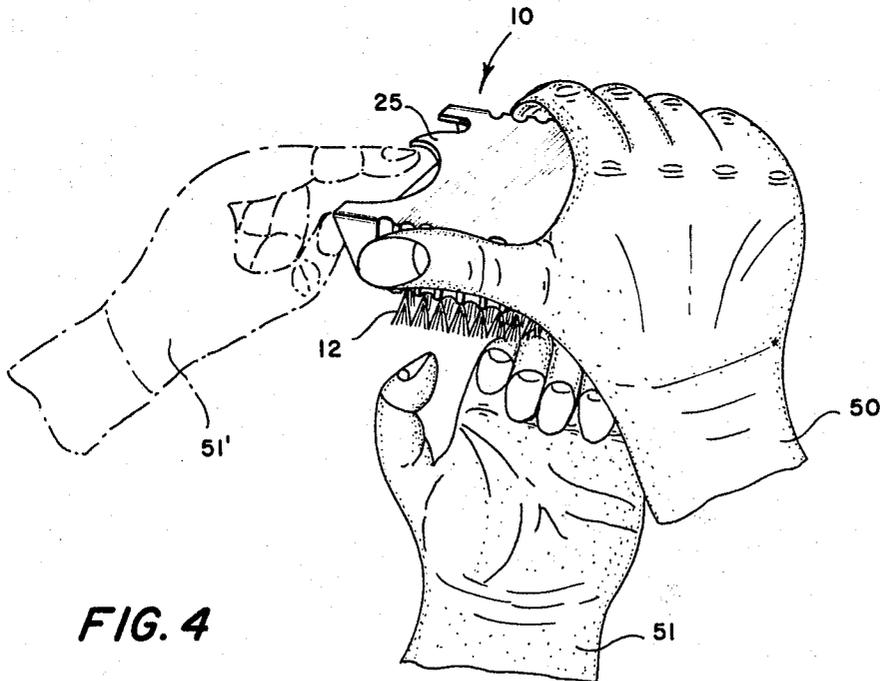


FIG. 4

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COMBINED SCRUB BRUSH AND FINGERNAIL CLEANER

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ABSTRACT OF THE DISCLOSURE

A combined surgical handbrush and fingernail cleaning device. The fingernail cleaning device is formed as a sharp prong at one end of the top of the brush, the prong extending in a plane generally perpendicular to the direction in which the brush bristles extend so that the device can be held in one hand without changing the position of the brush in that hand while employing both the bristles and the sharp fingernail cleaning prong to clean the fingernails of the other hand.

This invention relates generally to a hand brush for use by physicians, surgeons and dentists for cleaning and sterilizing their hands. In particular this invention relates to a compact and convenient-to-use combination surgical scrub brush and fingernail cleaner for use by physicians, surgeons and dentists for cleaning and sterilizing their hands in preparation for an operation.

In cleaning his hands in preparation for an operation the surgeon must always carry out a two step procedure of first scrubbing his hands with a brush, and then cleaning his fingernails. He will normally employ a brush of the present type with soap for cleaning his hands after which he will use a separate instrument such as a stick of some type for cleaning his fingernails.

Small hand brushes of the present type per se have been known previously for performing the scrubbing step. These brushes, which are approximately four inches in length and two inches in width, are designed to be held conveniently in one hand for cleaning the opposite hand. However while the previous scrub brushes have been satisfactory for performing the scrubbing step, they have in no way contributed to any improvement in the overall two step cleaning process since use of the previous scrub brushes has not eliminated the need for a separate fingernail cleaning instrument.

In the past, brushes have been designed in which a portion of the handle of the brush has been constructed to hold a separate fingernail cleaner. This construction however has proved unsatisfactory in terms of cost and has been inconvenient in use. The surgeon must still separate the fingernail cleaner from the holder in the back of the brush and set the brush aside while using the fingernail cleaner.

Further, devices have been designed for non-surgical use in which brush bristles are attached at one place on the device and a fingernail cleaner formed at another position on the device. However in these previous devices the particular positions of the bristles and the fingernail cleaners on the device have been chosen for purpose of appearance or other reasons, but not for providing a device suitable for use as a surgical scrub brush. As one would expect, then, these previous devices have not proved satisfactory for surgical use. Surgical brushes should be as compact as possible since they must be sterilized and placed in a small package such as a vacuum pack envelope and/or stored in a compartment of a dispensing machine. Previous devices combining bristles and a fingernail cleaner have been rather bulky, and therefore impractical and unsatisfactory for surgical use which re-

quires a compact sterilized brush. In addition, these non-surgical devices have proved inconvenient for surgical cleansing since the bristle portion had to be used while holding the device in one manner after which the device had to be manipulated and repositioned to carry out the fingernail cleaning step.

According to the present invention a surgical hand brush has been designed which overcomes the disadvantages present in the previous brushes and thereby provides an improved brush for surgical use. A hollow back portion generally tubular in shape and having a rectangular cross-section includes a top plate and a base. The base of the hollow back portion carries the bristle tufts which form the brush. The bristles extend downwardly from the base away from the back portion. The top plate is spaced from and substantially parallel to the base and connected to it by side panels enclosing the hollow back portion along its longitudinal edges.

At least one end of the hollow back portion is open. And, according to the present invention, a novel and specifically designed fingernail cleaning prong is formed as an integral part of the top plate of the back portion in such a manner that (1) no part of the fingernail cleaning prong extends outwardly beyond the free edge of the top portion (the free edge being that edge of the top adjacent an open end), and (2) the fingernail may be conveniently and easily maneuvered around the prong to carry out the fingernail cleaning step.

To form the prong having the above characteristics a large groove is first cut out of the top, extending inwardly from the free edge. One side of this groove serves as the first side of the prong. The second side of the prong may be the free edge itself or it may be the side of a second groove formed adjacent the first groove.

For convenience in use the prong should point sideways, back towards the large groove, so that the finger can be maneuvered in the large groove around the prong; and of course, the sides of the prong should form a sharp angle at the point so that the prong itself can get underneath the fingernail of the user.

In one embodiment the free edge itself acts as one side of the prong. To form the sharp angle the prong side of the large groove must then slope up away from the free edge at a very sharp angle to the free edge. Behind the prong the edge of the large groove swings around, forming a rounded out section adjacent the prong, and then comes back out to the free edge.

In other embodiments it may be desirable to have the prong point in a direction closer to the longitudinal axis of the brush rather than straight across the brush as in the previous embodiment. This may be accomplished by having the prong side of the large groove extend inwardly from the free edge at a more gradual angle before it swings around to form the rounded out section of the large groove adjacent the prong. However, in this embodiment, to form a sharp prong, a second groove must be cut into the free edge to form the other side of the prong. This groove need not be large since its only function is to assure that the point of the prong is formed by sides meeting at a sharp angle.

By this construction the present invention provides a combined hand brush and fingernail cleaner which is extremely simple in its construction, convenient and easy to use, and which is very compact and thereby most advantageous for surgical use wherein the brush would be stored in a vacuum pack envelope and/or within a dispensing machine.

In addition, a hand brush according to the present invention may be handled for pre-surgical cleansing in a very convenient manner not possible with any of the previous brushes. The surgeon first grasps the brush with the palm of one hand and scrubs the other hand. Then

without changing the position of the first hand the surgeon may clean the fingernails of the second hand by merely bringing the fingernails of the second hand into contact with the fingernail cleaning prongs in the back portion of the brush. This procedure is then repeated a second time to clean the other hand.

Accordingly, it is an object of this invention to provide a surgical hand brush for pre-surgical cleansing by the surgeon which overcomes the disadvantages of the previous brushes by combining the brush and fingernail cleaner into a single, unitary, convenient to use, compact unit.

It is another object of this invention to provide a surgical hand brush and fingernail cleaning unit in which the steps of scrubbing and fingernail cleaning may be carried out in a more convenient manner.

It is still another object of this invention to provide a surgical hand brush provided with a hollow handle opened at the ends thereof wherein a fingernail cleaning attachment may be formed as an integral part of the top plate of the hollow handle.

Other objects and advantages of the invention will be apparent during the following description given with relation to the accompanying drawings of which:

FIG. 1 is a perspective view showing one embodiment of the invention.

FIG. 2 is a top view of the surgical brush shown in FIG. 1.

FIG. 3 is a top view of a second embodiment of the invention.

FIG. 4 illustrates the surgical brush of this invention in use.

Referring to FIG. 1 one embodiment of the combined surgical hand brush and fingernail cleaner of the present invention is shown. A hollow back portion 14 is formed by a base 16 and a top plate 18 which is normally, but not necessarily, parallel to the base 16. The sides of the back are formed by elongated side panels 20. One or two side panels may be employed. The purpose of the side panel is to aid the first hand in holding the brush while the cleansing steps are performed on the second hand. Ridges 21 may be provided on the side panel 20 to aid in gripping the back portion of the brush. At least one end, and possibly both ends 22 of the back portion 14 will be opened. This opened end is bounded on one side by a free edge 24 of the top portion 18.

FIGS. 1 and 2 show an embodiment in which it is desired to have the prong 25 point outwardly from the free edge 24 rather than straight across the free edge. Two grooves are formed in the top 18 extending inwardly from the free edge 24. A large groove 26 has a prong side 28 which is slanted back from the free edge from point 30 at a gradual acute angle. So that the sides of prong 25 will form a sharp angle at point 30, a second groove 32 is formed in the free edge 24 adjacent the first groove. A prong side 34 of the second groove 32 starts from point 30 on the free edge and slopes upwardly at an angle slightly smaller than that of the side 28 so that sides 28 and 34 form a narrow prong 25 therebetween. Behind the prong 25 the side 28 forms a rounded out portion in which the fingernail may maneuver.

In this manner a narrow fingernail cleaning prong 25 is provided which points outwardly from the free edge but which does not protrude outwardly past the free edge of the top 18 and which provides a rounded out portion in the large groove adjacent the prong, in which the fingernail may be maneuvered.

As shown in the present embodiment the first groove is greater in size than the second groove. The enlarged groove is provided so that the finger may be conveniently maneuvered around the point 30 of the prong 25. It is only important that the groove towards which the point 30 faces be enlarged.

FIG. 3 shows an embodiment of the invention similar in all respects to the embodiment of FIGS. 1 and 2 except that the prong 25 points across, rather than outwardly

from, the free edge 24. In this design the free edge 24 itself, rather than a second groove, forms the second side of the prong 25.

To provide the sharpness of point 30, and the rounded out area in groove 26 behind the prong, the side 28 of the large groove must extend inwardly from the free edge at an angle much sharper (with respect to free edge 24) than was necessary in the embodiment of FIGS. 1 and 2.

FIG. 4 illustrates the convenient manner by which the present invention may be employed for the pre-surgical cleansing steps. The right hand, 50, holds the brush in the shown position while the left hand is first scrubbed, at position 51, and then moved to position 51' for fingernail cleaning while the position of the right hand 50 on brush 10 remains unchanged.

Although only two preferred embodiments have been shown in this disclosure it is apparent that many modifications and changes may be possible without departing from the spirit or scope of the invention. For instance, a second prong may be provided at the other free end or only one side panel need be employed.

What is claimed as new and desired to be secured by Letters Patent is:

We claim:

1. A combination surgical handbrush and fingernail cleaning device comprising: a back portion having an elongated base, an elongated top generally parallel to the elongated base and at least one elongated side panel connecting together the base and the top and forming therewith an elongated channel, at least one end of said channel forming an open end of the back portion, the end of the said top adjacent the open end constituting a free edge, a large cut out groove formed in the said top and extending inwardly from the free edge, the depth of the groove from the said free edge being of a sufficient size to permit the insertion of the tip of a finger above the fingernail, a sharp nail cleaning prong formed as a part of the top and bounded on one side by a side of the groove where the said groove intersects the free edge, and the said face having a plurality of brush bristles extending from the base in a direction away from the said top, whereby the said sharp nail cleaning prong extends in a plane substantially perpendicular to the direction in which the bristles extend so that the back may be held in one hand while the fingernails of the other hand are both scrubbed with the bristles and cleaned with the nail prong without changing the position of the said back in the said one hand.

2. A combination surgical hand brush and fingernail cleaner as claimed in claim 1 wherein the second side of the said prong is formed by the free edge.

3. A combination surgical hand brush and fingernail cleaner as claimed in claim 1 wherein a second cut out groove is formed in the said free edge adjacent the first groove so that one side of the second groove forms the second side of the said prong.

4. A combination surgical hand brush and fingernail cleaner as claimed in claim 1 wherein both ends of the said back are open ends having free edges on the tops adjacent thereto, and the said groove and prong is formed at both ends of the back.

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