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W. E. WHITEMORE.

BRUSH.

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Fig. 1.

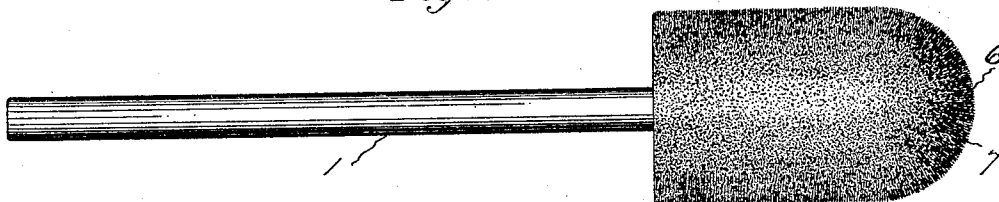


Fig. 2.

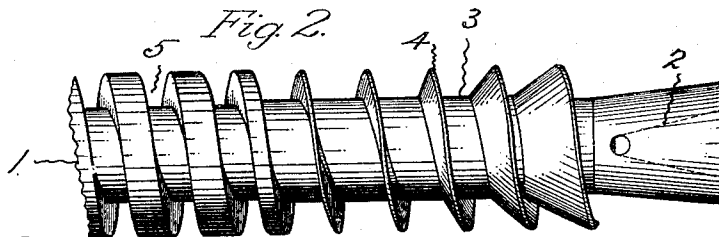
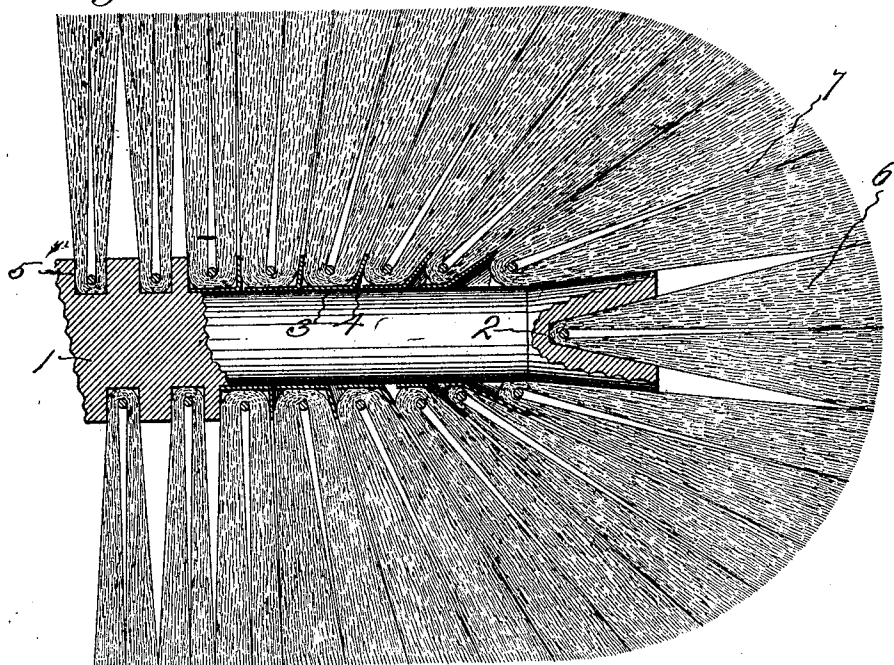


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BRUSH.

No. 818,497.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM E. WHITEMORE, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Brush, of which the following is a specification.

This invention relates to a brush which is particularly designed for cleaning the interiors of bottles, jars, glasses, and the like. The most difficult part of a receptacle of this nature to be cleaned is not the bottom or the side, but the corner where the bottom and side join. A brush for this purpose must have a substantial body of bristles for cleaning the side, a substantial body for cleaning the bottom, and an equally substantial body for cleaning the corner.

The object of this invention is to provide a construction whereby in a simple and cheap way the bristles can be disposed in such manner that the brush has a neat appearance and is efficient for cleaning the corner of a receptacle, as well as the side and bottom.

The brush which is illustrated as embodying the invention has a handle formed of wood. In one end of the handle is a socket. Wound spirally upon the handle near the socket end is a thin metal strip having an outwardly-extending flange. The flange extends outwardly near the socket approximately parallel with the wall of the socket, and gradually the angle of the flange with relation to the axis of the handle increases until at the inner end the flange extends approximately at right angles with the axis of the handle. A spiral groove is turned in the wood of the handle in continuation of the spiral groove formed by the metal flange. The walls of the groove in the wood are approximately at right angles with the axis of the handle. A tuft of bristles is fastened in and other bristles are fastened about the end socket, and then bristles are bound in the groove formed by the flange of the metal strip and in the groove turned in the wood. The walls of the groove direct the projection of the bristles, and as the walls of the groove formed by the flange of the metal strip at the end gradually change from nearly parallel with to right angles with the axis of the handle the bristles will project from the end of the handle in practically an even semiglobular mass and from the side in a cylindrical mass of uniform density.

Figure 1 of the accompanying drawings

shows a side view of a complete brush that embodies the invention. Fig. 2 shows an enlarged side view of the bristle end of the handle without any bristles. Fig. 3 shows an enlarged section of the handle with some bristles.

The handle 1 is preferably turned to shape from some hard wood, such as hickory. One end of the handle is reduced in diameter and the tip end is preferably provided with a socket 2. A strip of metal 3 with a flange 4 on one edge is wound spirally about and secured to the reduced part of the handle. The flange of this strip gradually increases in angularity with relation to the axis of the handle from the tip toward the other end, so that when the strip is in place a spiral groove is formed with walls that change from nearly parallel with the axis of the handle at the outer end to right angles with the axis of the handle at the inner end. After this strip has been secured in position a groove 5 is turned spirally in the wood in continuation of the spiral groove formed by the flange of the metal strip. The walls of the groove in the wood extend at right angles to the axis of the handle.

A tuft of bristles 6 is inserted into and secured in the socket at the tip end. A bunch of bristles 7 is bound by wire upon the outside surface of the socket. The winding of bristles is then continued along the spiral groove from the tip end to the end of the groove which is turned in the wood. The binding-wire draws the doubled ends of the tufts of bristles into the spiral groove, and the walls of the groove determine the direction at which the bristles project from the handle. As the walls of the groove gradually change from about the angle of the wall of the socket to right angles to the axis of the handle the bristles will gradually change direction from substantially parallel with the axis of the handle to right angles to the axis of the handle. The groove formed by the metal flange is continuous with the groove in the wood, and as the angularity of the walls of the groove gradually changes the bristles can be laid on evenly, and they will gradually change their direction in such manner that a rounded end will be formed having bristles disposed in a uniformly dense mass and a cylindrical mass back of the end. This construction allows the bristles to be laid on absolutely uniformly and insures the proper angle of projection at the end, so that the brush

will have a neat appearance and there will be plenty of bristles to work into the corner of the bottle, jar, or glass that it is desired to clean. As the groove is a continuous spiral from one end to the other, the layer of bristles will be continuous, and a continuous wire can be used, the wire settling into the groove in such manner that it is hidden from view. This method of construction forms a strong brush which is neat and efficient and cheaply made, and stiffer bristles can be bound to the end than where annular grooves are turned directly in the wood for the bristles.

The invention claimed is—

1. A brush having a handle with a continuous spiral groove at one end, the side walls of the groove gradually changing from substantially perpendicular to the axis of the handle at the inner end to oblique to the axis of the handle at the outer end, and bristles bound into the groove, substantially as specified.

2. A brush having a wood handle with a continuous spiral groove at one end, the side walls of the groove gradually changing their angularity with relation to the axis of the handle and a portion of the side walls of the groove being formed of metal and a portion of wood, and bristles bound into the groove, substantially as specified.

3. A brush having a handle with a socket

at one end and a spiral groove extending from near the base of the socket for a portion of the length of the handle, the side walls of the groove gradually changing from substantially parallel with the walls of the socket to approximately right angles to the axis of the handle, tufts of bristles with the doubled ends of the tufts fastened in the socket, and tufts of bristles with the doubled ends of the tufts bound in the groove, substantially as specified.

4. A brush having a wood handle with a reduced portion at one end, said handle having a socket formed in the tip end of the reduced portion, a spiral groove formed by winding a strip of metal spirally on the reduced portion of the handle and a spiral groove in continuation of the metal groove turned in the handle, tufts of bristles with the doubled ends of the tufts fastened in the socket at the end of the handle, tufts of bristles bound upon the exterior of the socket, and tufts of bristles with the doubled ends of the tufts bound into the groove formed by the metal and formed in the handle, substantially as specified.

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