(No Model.)

S. D. ENGLE.

SCRATCH OR MATTING BRUSH.

No. 458.524. Patented Aug. 25, 1891.

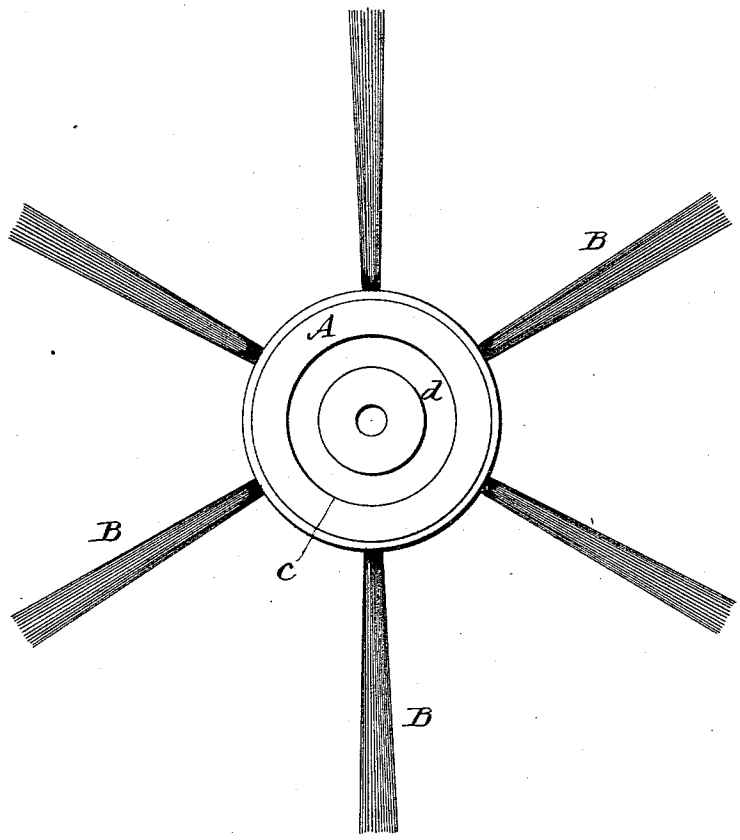


Fig. 1.

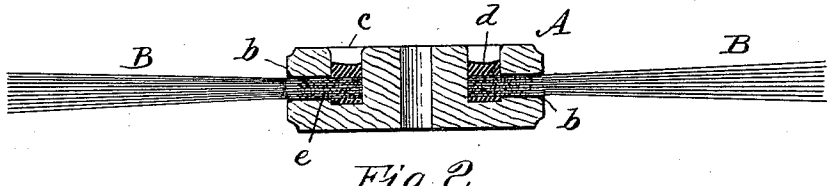


Fig. 2.

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SCRATCH OR MATTING BRUSH.

SPECIFICATION forming part of Letters Patent No. 458,524, dated August 25, 1891.

Application filed December 15, 1890. Serial No. 374,744. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN D. ENGLE, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Scratch or Matting Brushes, of which the following is a full, clear, and exact description.

This invention relates to revolving scratch or matting brushes for jewelers' and engravers' uses. Heretofore revolving brushes or brush-wheels for this purpose have been made with brass and other fine-wire tufts, which are apt to tangle, also, to corrode and to bend out of shape at the ends, and so to produce scratches instead of pits in the work. To produce the fine pits necessary for matting, it is requisite that the ends of the fiber of which the tufts are composed should be struck on the metal surface being worked by successive blows with sufficient force, and an ordinary brush, in which the fibers, no matter what the material of which they are composed, are bound up by twine in a bunch or bundle, cannot be satisfactorily used to do the work.

The invention consists in a revolving brush or brush-wheel, having its tufts arranged at suitable distances apart around and suitably secured within its hub or center, made of fine glass fiber or "spun glass," as such material is sometimes called, substantially as hereinafter described, and more particularly pointed out in the claims. Such a brush-wheel will always preserve sharp cutting ends on its fibers instead of blunting, as said ends repeatedly strike the metal they are used on, and the fibers will not corrode or become bent out of shape at their ends, which cause them, as in the case of metal tufts, to drag on the work and to produce mere scratches instead of pits; also, such a brush will work upon harder metals than other brushes. The bristles or fibers of the tufts of glass possess the property of elasticity to a much higher degree than metal bristles, and are in fact so elastic that it is not necessary to hinge the tufts or individual bristles, as has been done with the wire brushes, in order to prevent scratching after the impact of the points on the surface being ornamented. Each glass tuft delivers its blow upon the surface, then flexes so readily that it passes by said surface without further acting thereupon, thus avoiding scratching. Furthermore, the ends of the tufts wear evenly, for the individual fibers or bristles are brittle and they break, instead of bending and twisting or rounding, and are always sharp enough for proper penetration. In actual practice the glass tufts wear longer and will act upon harder surfaces than either the hinged or unhinged metallic bristles. In fact, they possess the combined advantages of the old forms of brush without their disadvanges, as well as having advantages possessed by neither of the old forms.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a side view of a rotatable matting-brush embodying my invention, and Fig. 2, a section taken parallel with the axis of the same.

A indicates the hub or center piece of the revolving brush or brush-wheel, having its bristles made of glass fibers or spun glass inserted in the form of tufts B, arranged at suitable distances apart in and around the hub. These fibers, on account of their smoothness and nature, cannot be secured and the tufts drawn into the holes *b*, which receive them by twine like other fibers or bristles. Hence, I insert and secure them as follows: I construct the hub A, which may be made of wood, metal, or other suitable material, with an annular recess *c* in one of its sides or faces adapted to receive the butt-ends of the tufts, which are projected through the holes *b*. Before inserting the butt-ends of the tufts, however, I first dip the same in shellac or other varnish *e* for the purpose of contracting said ends, so as to make them readily enter the holes in the hub made to receive them, and after the tufts have been inserted in their places I pour in pitch or cement *d* into the annular recess *c* and all around the inner projecting ends of the tufts to secure the latter and prevent them from coming out of the hub. The shellac or varnish applied to the butt-ends of the tufts before inserting them in the hub has the further effect of holding together the separate and interior fibers of

the tufts at such part where the pitch or cement *d* does not reach them and of preventing the same from flying out.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a scratch or matting brush wheel composed of a hub or center-piece and tufts of glass fiber or spun glass arranged around and secured within the hub, essentially as set forth.

2. In a scratch or matting brush wheel composed of a center-piece or hub and tufts of spun-glass fiber arranged at distances apart around and secured within the hub, the hub of the wheel constructed with substantially radial apertures adapted to receive the butt-ends of the tufts within and through them and with a recess in the face or side of the hub, with which said radial apertures communicate, adapted to receive cement for holding the tufts in place, substantially as described.

3. In a scratch or matting brush wheel, the combination of the hub A, having substantially radial apertures *b* and an annular recess *c* in its side or face, with which said radial apertures communicate, the tufts B, made of spun-glass fibers, contracted and joined together at the butt-ends of the tufts by a suitable adhesive material or varnish *e*, and a filling *d*, of cement, within the annular recess and inclosing the butt-ends of the tufts, essentially as specified.

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Witnesses:
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