No. 780,423. PATENTED JAN. 17, 1905.

W. H. HEFFERNAN.

ROTARY BRUSH.

APPLICATION FILED APR. 28, 1903.

2 SHEETS—SHEET 1.

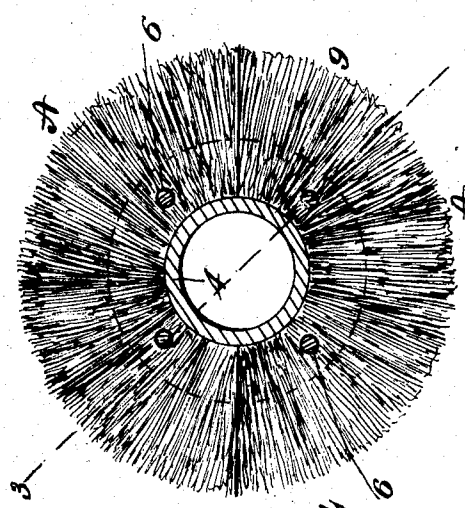


Fig. 4.

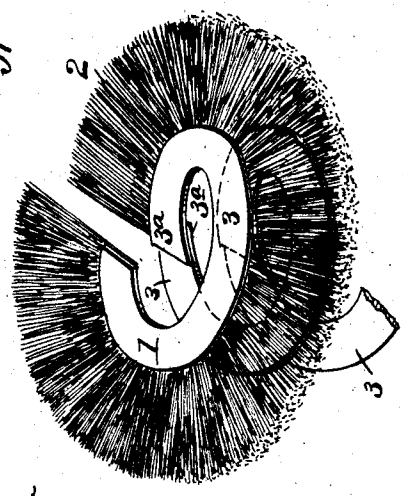


Fig. 1.

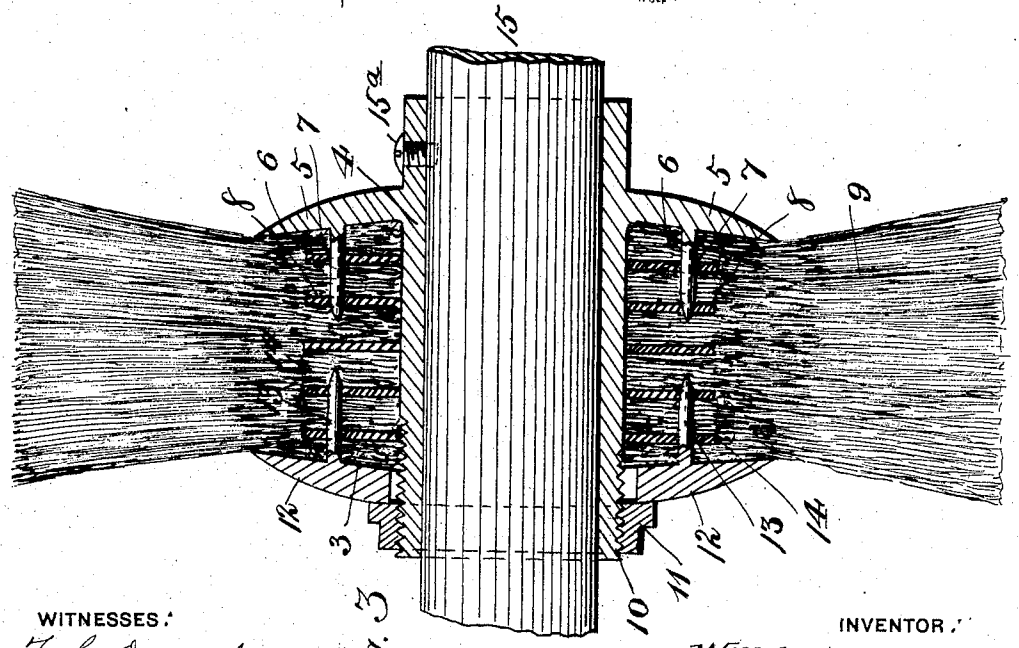


Fig. 3.

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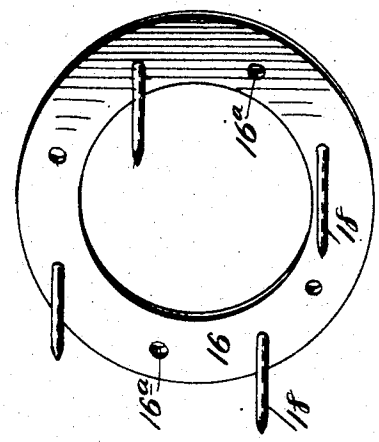
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2 SHEETS—SHEET 2.

Fig. 6.



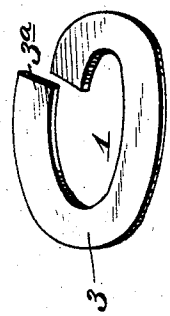
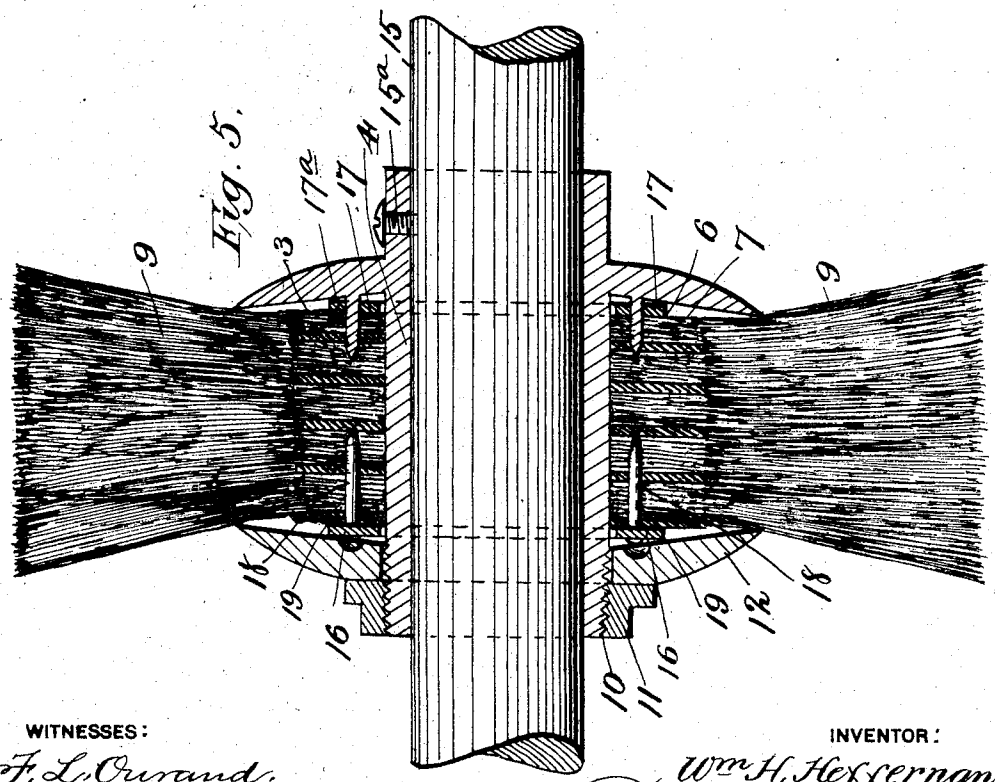


Fig. 2.

Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HEFFERNAN, OF NORTH ADAMS, MASSACHUSETTS.

ROTARY BRUSH.

SPECIFICATION forming part of Letters Patent No. 780,423, dated January 17, 1905.

Application filed April 28, 1903. Serial No. 154,699.

To all whom it may concern:

Be it known that I, WILLIAM H. HEFFERNAN, a citizen of the United States, residing at North Adams, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Rotary Brushes, of which the following is a specification.

My invention relates to rotary brushes; and the objects of the same are, first, to construct a rotary brush in such a manner that it shall be readily removable when worn out without requiring the displacement of its shaft; second, to construct a brush in sections and provide means for holding the sections in place while the brush is being permanently secured; third, to provide efficient clamping means for a sectional brush to hold the sections from working loose.

The simple and novel construction employed by me in carrying out my invention is fully described and claimed in this specification and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a perspective of the helical tape with the bristles secured thereto. Fig. 2 is a detail of one of the split rings out of which the helix is constructed. Fig. 3 is a longitudinal section through the brush, taken on the line 3 3, Fig. 4. Fig. 4 is a transverse or diametrical section taken in a plane passing through the pins of the hub-flange. Fig. 5 is a longitudinal section of the brush with a modified form of holding device thereon. Fig. 6 is a detail of the pin-ring.

Like characters of reference designate like parts in the different views of the drawings.

The numeral 1 designates a helix, or more properly a helical tape, bearing radially-mounted bristles 2, preferably secured by glue. The tape 1 may be woven; but this is so expensive as to be impractical. So I construct it of split rings 3, of textile material or fabric, (see Fig. 2,) which are united end for end by glue, the ends 3^a being overlapped. The overlapping of the ends causes the joints to be distributed around the circumference of the brush, and thereby forms a stronger and more homogeneous brush than would otherwise result. The helical tape with bristles attached thereto may be made in quantities in strips of any length and kept in stock, so that enough can be cut off to form a brush. When the tape 1 is fitted on a hub, it need not be bent, and thereby make gaps in the bristles at irregular intervals, but will snugly embrace a hub of proper diameter, after which they are clamped in place by disks placed on the hub.

In Figs. 3 and 4 is illustrated a brush constructed of two sections A, which embrace a hollow cylindrical hub 4, having a flange 5 formed integral with one end thereof and bearing a plurality, (four preferred,) of pins 6, which engage apertures 7 in the semi-annular washers 8, to which the bristles 9 are attached. The sections A are formed by cutting the body of the brush on a diameter B after this body has been formed from the spirally-coiled tapes. The other end of the hub 4 is provided with threads 10, and a nut 11 is fitted thereon and bears on an annular clamping-disk 12, which is also provided with a plurality of pins 13, which engage apertures 14 in the brush, and thereby serve to secure the sections A in their proper relative positions. After the pins 6 and 13 have been inserted in the apertures 7 and 14 the nut 11 is tightened to fix them against all movement. When in use, the hub 4 is secured on a shaft 15 by means of a set-screw 15^a, so that if the brush was made integral it could not be removed when worn out without removing the shaft from its bearings. This difficulty is obviated by my sectional construction, for after loosening the nut 11 the sections A can be disengaged from the pins 6 and 13 and new sections substituted therefor without disturbing the shaft 15, thereby saving time.

In the modified form illustrated in Figs. 5 and 6 rings 16 and 17 are employed in addition to the parts already described, which rings have apertures 16^a and 17^a, respectively, therein which are engaged by the pins 6 and 13, which hold them against turning. Pins 18 are also seated in the rings 16 and 17 and engage apertures 19 in the sections A. The above-described construction also enables new sections A to be substituted for old worn-out ones without disturbing the shaft or any of the pulleys thereon.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. In a rotary brush, a helical bristle-bearing member formed of a plurality of split-ring sections or members secured together end on end, a hub bearing a flange, a plurality of pins mounted on said flange and engaging apertures in said sections, a disk fitted on said hub and bearing on said member, and means for securing said disk to clamp said brush, substantially as described.

2. A rotary brush comprising two semi-circular half sections or members, a hollow tubular member or hub, said sections consisting of compactly-joined-together strips of textile material between which are secured radial bristles, and which sections, with their bristles, are fitted upon said hub, said hub having an end flange, and a separate disk fitted upon said hub, at its unflanged end, and means for securing said parts firmly together, as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. HEFFERNAN.

Witnesses:

BENNETT S. JONES,

L. L. BURKET.