

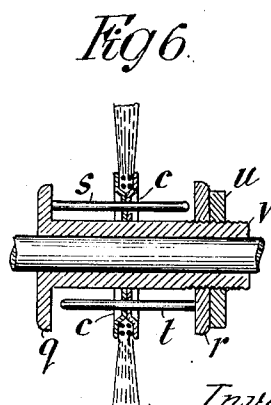
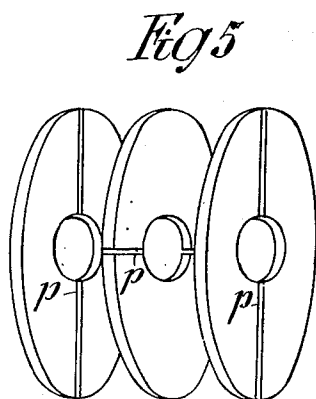
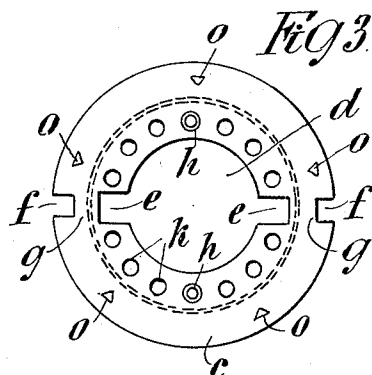
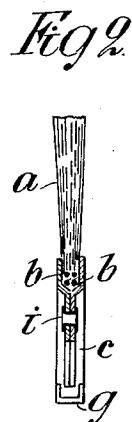
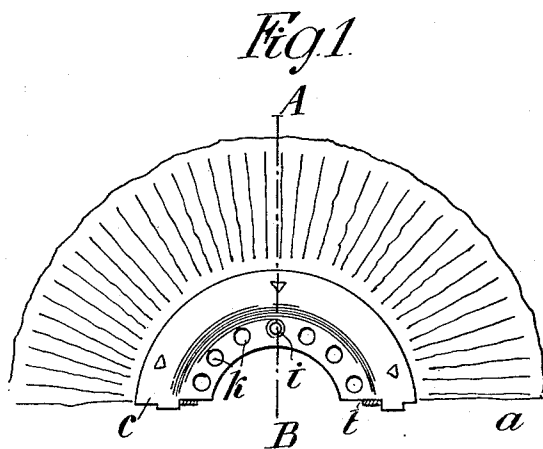
Aug. 31, 1926.

1,597,997

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CYLINDRICAL BRUSH AND UNIT MEMBER THEREOF

Filed May 15, 1924



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## UNITED STATES PATENT OFFICE.

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CYLINDRICAL BRUSH AND UNIT MEMBER THEREOF.

Application filed May 15, 1924, Serial No. 713,520, and in Denmark November 29, 1923.

This invention relates more particularly to the construction of the members or units of a bristle ring for use in making up cylindrical brushes, each member or unit, formed in accordance with the present invention, forming a half ring, these half rings being assembled back to back and side by side, and a proper number of these assembled half rings being suitably mounted on a hub to build up a cylindrical brush.

In the accompanying drawing Fig. 1 is an elevation of a half ring or unit member with the bristles suitably secured thereto. Fig. 2 is a section of the same on the line A—B, Fig. 1. Fig. 3 is a detail view of a blank from which a half ring member or unit is formed, and Fig. 4 is an edge view of the same folded. Fig. 5 is a somewhat diagrammatic view showing a separated arrangement of the units of ring segments as they will preferably be positioned for mounting on a hub, and Fig. 6 is a sectional view of a hub showing two half ring sections and the means for connecting them with said hub so that they will rotate therewith.

Referring to the drawing, each unit of ring segment is formed from a sheet metal blank *c* in the shape of a relatively wide ring, as shown in Fig. 3, and provided with oppositely located notches *e* and *f* in the inner and outer margins of the ring, thus equally dividing the blank substantially into halves which are joined by narrow contracting pieces *g* between the notches. In forming a half ring member or unit this blank is then folded together with the two halves joined at the back of the blank by the connecting pieces *g*, as clearly shown in Figs. 2 and 4. The blank *c* is so shaped that when the two halves are folded as shown more clearly in Fig. 2 the inner parts of the folded blank will be contiguous but the peripheral parts thereof will be separated to form a semi-circular trough for the reception of a string of doubled bristles *a* on twisted wires *b*. The bristles *a*, which are to be mounted in the trough of the anchoring piece thus formed, are attached together to form a string of suitable length to fill the semi-circular trough of the said anchoring piece. The folded-together contiguous inner parts of the anchoring piece are then permanently attached together preferably by eyelets or hollow rivets *i* inserted in holes *h* with which the anchoring piece is provided, and the wired bristles are secured in the periph-

eral portion of the anchoring piece by struck-out pointed lugs *o*; or the wired bristle members may be secured in the semi-circular anchoring piece in any other suitable manner, as by cement, which may, if desired, supplement the securing lugs *o*.

Two of these half rings thus formed are then placed together back to back to form a complete ring, and a suitable number of these complete rings, which have central openings *p*, will then be assembled on a hub *v* having a fixed head *q* and a removable head *r*. The fixed head *q* is provided with a series of pins *s* and the removable head *r* is provided with a series of pins *t*, these pins extending lengthwise of the hub. A suitable number of the half rings, to form a complete cylindrical brush, will then be mounted on the hub, these half rings being provided with holes *k* through which the said pins *s* and *t* will pass. After a suitable number of these divided bristle rings are assembled on the hub, to form a complete cylindrical brush, the removable head *r* will be secured in place by means of a nut *u* screwed onto the hub, and abutting against the removable head *r*.

In thus assembling the divided bristle rings on the hub the joints between the back to back half bristle rings will preferably be arranged as shown in Fig. 5. That is to say, with the rings assembled on the hub the joints between adjacent rings will be out of register with each other, so as to "break joints".

From the foregoing it will be understood that the invention provides divided bristle rings composed of members or units which can readily be assembled, to form a cylindrical brush, and which rings, when thus assembled, will be so connected with the hub of the brush as to rotate therewith when the said hub is mounted on a rotating shaft or mandrel, as shown in Fig. 6.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. A bristle ring, for use in making up cylindrical brushes, which ring is composed of connected units each comprising two superposed sheets having their inner margins contiguous and secured together, and their outer margins spaced apart, thus forming a bristle-receiving groove, combined with a string of twisted wires carrying bristles and suitably secured in and filling said groove.

2. A semi-circular unit, for use in making

up bristle rings for cylindrical brushes, consisting of a circular ring-shaped plate the two halves of which are folded together along its diameter to form two superposed sheets having their inner margins contiguous and secured together, and their outer margins spaced apart, thus forming a bristle-receiving groove, combined with a string of twisted wires carrying bristles and suitably secured in and filling said groove.

3. A cylindrical brush made up from bristle rings each composed of units constructed as set forth in claim 1, with the units placed back to back to form a complete bristle ring, combined with a hub provided

with means for connecting the units of the bristle rings to said hub so as to rotate therewith, the joints of adjacent bristle rings being out of register with each other.

4. A bristle ring composed of units constructed as set forth in claim 1, which units are provided with pointed lugs projecting from the inner sides of the sheets to engage the bristle rings outside the wires, said lugs being flat and arranged edgewise radially of the ring, so as to engage the bristle ring, without pinching the bristles between the sheets.

In testimony whereof I affix my signature.  
LAURITS HENRIK NIELSEN.