F. RITTER, Sr. & F. RITTER, Jr.

BRUSH.

APPLICATION FILED SEPT. 10, 1915.

1,206,031. Patented Nov. 28, 1916.

Fig. 1.

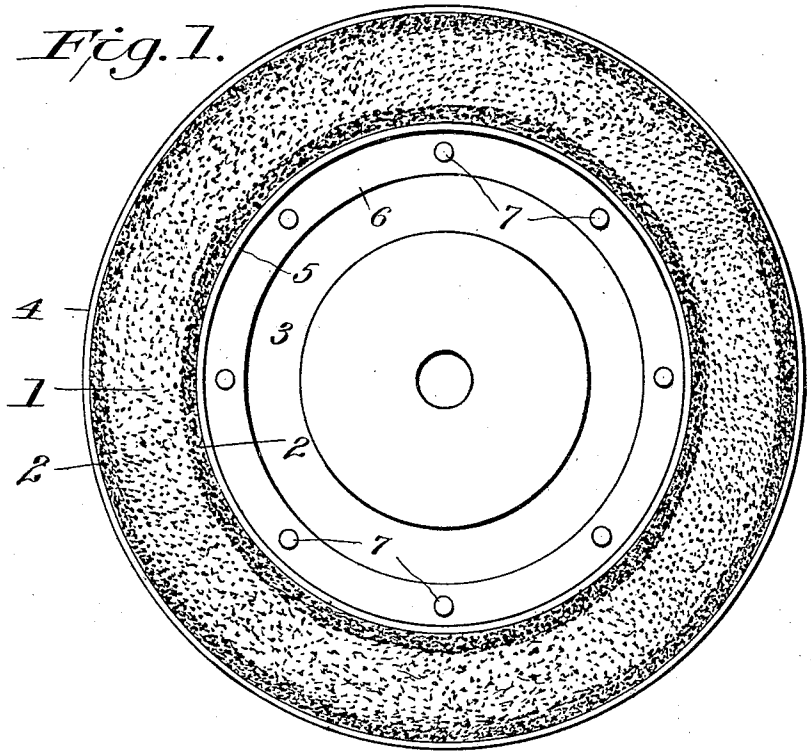


Fig. 2.

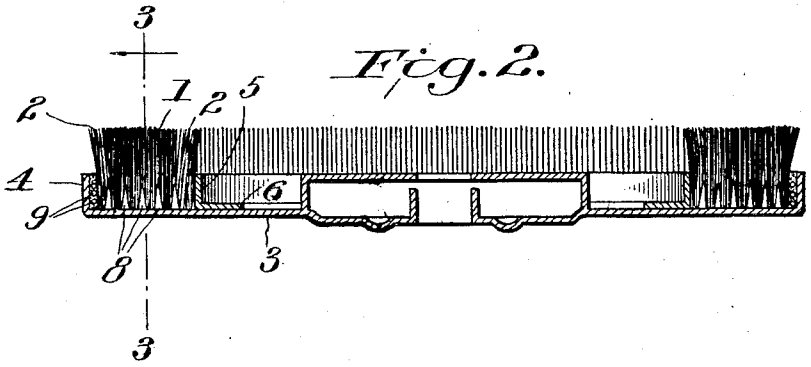
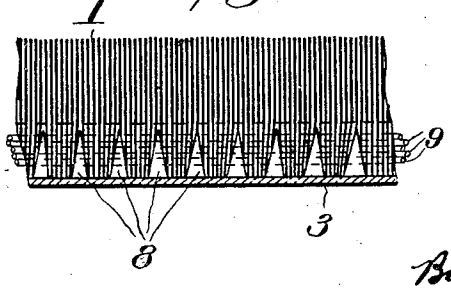


Fig. 3.



Inventors
Franz Ritter, Sr. and
Fredy Ritter, Jr.
By Otto Munk
Attorney

UNITED STATES PATENT OFFICE.

FRANZ RITTER, SR., AND FRANZ RITTER, JR., OF MUNICH, GERMANY.

BRUSH.

1,206,031. Specification of Letters Patent. Patented Nov. 28, 1916.

Original application filed February 4, 1913, Serial No. 747,597. Divided and this application filed September 10, 1915. Serial No. 50,111.

To all whom it may concern:

Be it known that we, FRANZ RITTER, Sr., and FRANZ RITTER, Jr., subjects of the Emperor of Germany, residing at Munich, in the Empire of Germany, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to improvements in rotary brushes.

The object of the invention is to improve the construction of rotary brushes and to provide a simple, practical and efficient rotary brush of strong and inexpensive construction designed to be mounted in a suitable machine for cleaning and polishing cutlery and the like and equipped with a hollow cylinder or ring of compactly arranged bristles adapted to operate more satisfactorily and wear for a greater length of time than the brushes heretofore used for such purposes.

A further object of the invention is to enable a brush of this character to be made of ordinary wood fiber without liability of the bristles easily bending or becoming worn or uneven and at the same time possessing superior advantages over the ordinary leather disks heretofore employed and over brushes, wherein groups of bristles are separately set into a supporting back or plate.

Another object of the invention is to provide a rotary brush having the bristles so closely packed that they cannot be cut even though a knife be held in a crooked position, and sufficiently elastic to yield under undue pressure, so that a hard, compact and elastic brush of high efficiency capable of rapidly cleaning and polishing cutlery will be produced.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing, and particularly pointed out in the appended claim, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing, Figure 1 is a plan view of a rotary brush constructed in accordance with this invention. Fig. 2 is a transverse sectional view of same. Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Like numerals of reference designate corresponding parts in the several views of the drawings.

In the accompanying drawing, in which is illustrated a practical embodiment of the invention, the rotary polishing brush, which is designed to be constructed by the method and with the apparatus described and shown in our application for patent filed Feb. 4, 1913, Serial No. 747,597, of which the present application is a division, but which may be made by any other suitable means, comprises in its construction a hollow cylinder or ring 1 of closely and tightly packed bristles of any suitable material such as ordinary wood fiber. The bristles are cut of a suitable length and their free or exposed ends form a flat working or engaging surface for operating on the cutlery or other articles to be cleaned and polished. In order to increase the durability of the brush the hollow cylinder or ring 1 is preferably provided at its inner and outer peripheries with wear faces 2 of better fiber material, horse hair or the like, the advantage of which is that the bristles will not bend readily or become worn or uneven. The wear faces may, of course, be omitted when a cheaper brush is desired.

The hollow cylinder or ring of bristles is secured at one end of the bristles within a metallic cap 3 and is held between an outer annular flange 4 and an inner ring or band 5 provided with an inwardly extending annular attaching flange 6 fitted flat against the inner face of the disk or body of the cap, and secured to the same by rivets 7 or other suitable fastening means. The cap 3 is preferably constructed of stout sheet metal or other suitable material and the flange 4 fits tightly against the outer periphery of the bristle cylinder. The ring or band 5 fits against the inner periphery of the cylinder of bristles and braces the same and prevents the cylinder from collapsing. The cap is provided with a centrally disposed hub member 10 having a central aperture forming a bearing 11, which alines with the hollow boss 12 disposed within the cap between the same and the hub member 10 and which leads through the cap 3 centrally thereof, whereby the brush may be

suitably mounted upon a spindle or other means (not shown) for operating purposes.

In order to afford the attached portion of the bristle cylinder "body" and firmness it has embedded therein at intervals through its entire extent tapered pegs 8 of wood or other suitable material, which are driven into the bristle cylinder before the cap is applied. The bristles and the pegs are intimately united by being immersed in a suitable adhesive mixture, preferably consisting of one part of shellac, one part rosin and two parts of best quality brush maker's pitch, as this mixture which is adapted to withstand a temperature of approximately 40° C., forms with the bristles and pegs, a rigid body which is not readily disruptible or easily bent out of shape.

When the treatment with the adhesive is completed, the ring or band is placed in position and the bristle cylinder at the end to be capped is tightly wound with cord or rope 9 or other flexible binding element closely coiled and extending down on the cylinder a suitable distance. In this condition the bound end of the bristle cylinder is plunged into soft pitch having the quality of adhering to metal and causing the adhesion of metal to another material. The cap is then placed over the cylinder and adheres firmly thereto as a result of the pressure of the pitch besides being fastened to the flange of the band.

The brushes possess very material advantages over the ordinary leather disks which are quickly cut to pieces by the cutlery being cleaned and polished and require frequent renewal. Also with the old style brushes the bristles are frequently cut by a knife edge held in an inclined position against the bristles and parts of the bristles are cut away owing to the fact that the bristles are not sufficiently compact and elastic. The improved brush is free from these defects and it cannot be cut even though a knife be held crooked, as the bristles are so closely packed together and are sufficiently elastic to yield under undue pressure. As a result of the hard elastic and compact condition of the bristles, the cleaning and polishing action is highly effective, a piece of cutlery being cleaned and polished with one application of a pair of brushes with their working or engaging faces closely juxtaposed. All spots are removed from the surfaces of the cutlery no matter what its condition may have been prior to its introduction between the brushes, the result being due probably to the elasticity of the bristles.

What we claim is:—

A rotary brush of the character described, comprising a metal disk having an annular upturned flange at its outer edge, a hub for said disk, an annular ring secured to the disk adjacent the hub and having an upturned flange, an annular cylinder of tightly compacted bristles carried on the outer edge of the disk, a flexible binding element closely coiled around the bristles, adhesive material applied to said bristles and to said binding element, said bristles being tightly clamped on the disk between the upturned flange of the disk and the upturned flange of the annular ring, said binding element, by reason of the adhesive material, adhering to the upturned flange of the disk, whereby the bristles are held against movement relative to each other and also held tightly as a whole onto the metal disk.

In testimony whereof we have affixed our signatures in presence of two witnesses.

FRANZ RITTER, SEN.
FRANZ RITTER, JR.

Witnesses:
JOS. SPIEGELBERG,
ARTHUR CRUBE.