O. GEIGER & R. R. RADINSE.

BRUSH.

APPLICATION FILED JAN. 27, 1915.

1,174,488.

Patented Mar. 7, 1916.

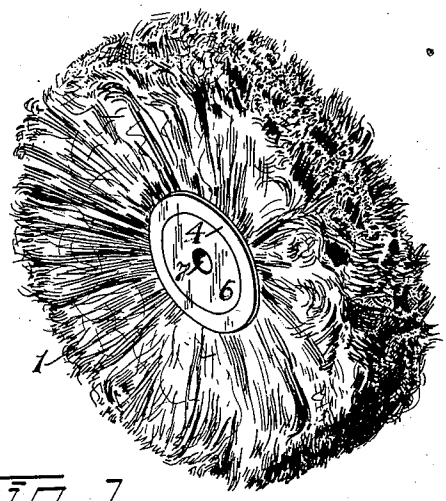


Fig. 1

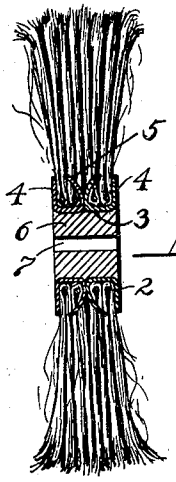


Fig. 2

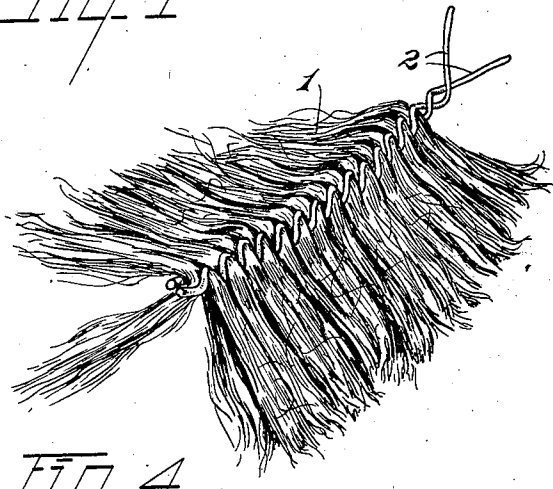
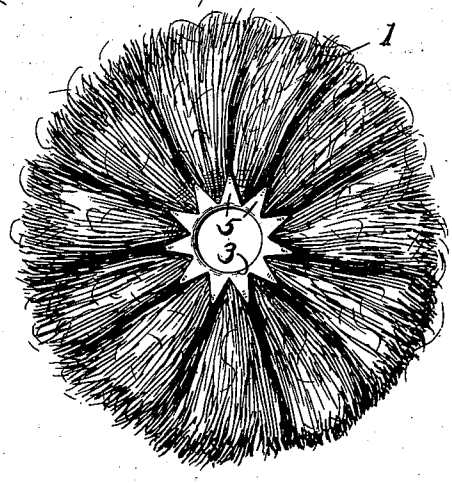


Fig. 4

Fig. 3



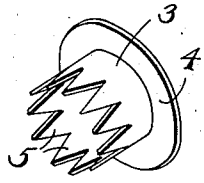


Fig. 5

Witnesses
H. J. Quall
R. L. Bruckel

Inventors,
Otto Geiger and
Rudolph R. Radinse
By Hull and Smith Attys.

UNITED STATES PATENT OFFICE.

OTTO GEIGER AND RUDOLPH R. RADINSE, OF CLEVELAND, OHIO.

BRUSH.

Specification of Letters Patent. Patented Mar. 7, 1916.

1,174,488.

Application filed January 27, 1915. Serial No. 4,614.

To all whom it may concern:

Be it known that we, OTTO GEIGER and RUDOLPH R. RADINSE, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Brushes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to brushes, and particularly to rotary brushes of the kind used in polishing metals and other substances, and that are adapted to be fastened upon the spindles of suitable machines whereby the brushes are rotated.

The invention has for its object the provision of a very durable brush of the above character that is simple of construction and very economical of production.

A further and more limited object comprehended by our invention is the provision of a brush of the aforesaid nature that is composed of one or more brush units, comprising each a hub member from which radiate bristles, and a bushing that is adapted to be pressed into the hub member or members and which, in the case of more than one unit being employed, serves to firmly hold the units together. From this it will be seen that brushes of various sizes may be produced by the use of the same equipment. The aforesaid bushing is provided with a central aperture for the reception of the end of a threaded spindle, and preferably the bushing is of soft enough material to permit threads to be formed within the aperture by the application of the brush to the spindle.

There is shown in the accompanying drawing a brush wherein the foregoing objects are attained, and while we will proceed to describe the brush in detail, we wish to be understood as not limiting ourselves to the structural details thereof further than is required by the terms of the annexed claims and is rendered necessary by the state of the prior art.

In the drawings, Figure 1 is a perspective view of a brush of our invention; Fig. 2 is a section therethrough on a line coincident with the rotating axis of the brush; Fig. 3 is a side elevation of one of the brush units; Fig. 4 a perspective view of a fragment of a bristle carrying element; and Fig. 5 is a similar view of a hub member.

Taking up a detail description of the invention by the use of reference characters, 1 represents the bristles or strands, the tufts whereof are grasped at their middle between the turns of the intertwisted wires 2. The ends of the tufts are then turned toward each other and the tufts are crimped about the wires 2 into U shape form, as clearly shown in Figs. 2 and 4. The hub member 3, which is preferably formed of an integral piece of sheet metal, comprises a sleeve or thimble to which the numeral 3 is applied, and from one end of which extends a lateral flange 4. The opposite end of the sleeve or thimble is notched or serrated to form prongs 5. The bristle carrying element, comprising the intertwisted wires 2, is of sufficient length to extend about the circumference of the sleeve 3, and the opposite ends of the wires are twisted together to retain a circular shape to the element.

The bristle carrying element may be slipped over the sleeve 3 and against the inner surface of the flange 4. Thereafter, the prongs 5 are turned outward and pressed around the wires 2 toward the flange 4, as clearly shown in Fig. 2. Assembled in this manner, the bristles are very securely held in place. Not only do the prongs 5 assist in the accomplishment of this end, but the intertwisted wires 2 also very securely bind the bristles between them.

The parts so far described constitute what we have previously referred to as a brush unit, and as we have already explained, a complete brush may consist of one or more units. When one unit constitutes the brush, a bushing of some comparatively soft metal, such as lead, is poured or pressed into the sleeve 3, and is provided with an aperture for the reception of the spindle of a polishing machine. When a greater number of units constitute the brush (as two for instance) they are placed side by side and a bushing is poured or pressed into the alining sleeves of the two units and serves to firmly bind them together. Such a brush is illustrated in Fig. 2 wherein the bushing is designated 6, and is shown as having a smooth aperture 7; and because of the nature of the metal from which the bushing is made, said aperture is adapted to be threaded when screwed upon the end of a threaded spindle. It will be observed that in an assembly of this kind, the serrated

ends of the bushing 3 are placed on the inside of the brush or against each other so that the entire flanges 4 will appear upon the outside of the brush, thus rendering the brush neat and attractive in appearance.

From the foregoing it will be seen that our invention provides a simple and substantial construction for metal polishing brushes, and that the brushes may be cheaply and easily produced in various sizes by the use of the same equipment.

Having thus described our invention, what we claim is:

1. A brush of the character set forth comprising an integral cylindrical hub member having a lateral flange at one end and a series of prongs at the other, and a bristle carrying element surrounding the hub and confined between the flange and the prongs, the ends of the prongs being bent into proximity to the flange and between tufts of the bristles.

2. A brush of the character set forth comprising a hub member having a lateral flange at one end and a series of prongs at the other, and a bristle carrying element that is adapted to be slipped over the end of the hub member and against the flange, the prongs being arranged to be turned outward and toward the flange and into pinching contact with the bristle carrying element.

3. A brush of the character set forth comprising a cylindrical hub member having a lateral flange at one end and a series of prongs at the other, and a circular bristle carrying element that is adapted to be slipped over the end of the hub member and against the flange, the prongs being arranged to be turned outward and toward the flange and into pinching contact with the bristle carrying element.

4. A brush of the character set forth comprising a pair of cylindrical hub members having each a lateral flange at one end and a series of prongs at the other, a bristle carrying element surrounding each hub member and confined between the flange and prongs thereof, and a bushing whereon said hub members are mounted and whereby they are held together, the hub members being arranged with their prong ends in engagement.

5. A brush of the character set forth comprising a pair of cylindrical hub members having each a lateral flange at one end and a series of prongs at the other, a bristle carrying element surrounding each hub member and confined between the flange and prongs thereof, each of said hub members having a bushing receiving aperture, and a bushing of compressible and impressionable metal within the apertures of the hub members for holding them together, the hub members being arranged with their prong ends in engagement, and said bushing having a smooth bore.

6. A brush of the character set forth comprising an annular plate from the inner periphery of which extend laterally and then outwardly and toward the body portion of the plate a series of prongs, and bristles having portions confined between the body portion of the plate and said prongs.

7. A brush of the character set forth comprising an annular plate from the inner periphery of which extend laterally and then outwardly and toward the body portion of the plate a series of prongs, bristles having portions that lie alongside said plate, and bristle retaining elements confined with the aforesaid portions of the bristles between the body portion of the plate and said prongs. as and for the purpose specified.

8. A brush of the character set forth consisting of a series of hub members comprising each an annular plate from the inner periphery of which prongs extend laterally and then outwardly and toward the body portion of the plate, bristles having portions confined between the body portion of each plate and its respective prongs, and a common bushing whereon the hub members are mounted and whereby they are held together, the hub members being so arranged that the end ones of the series have their prongs presented inward and therefore concealed.

In testimony whereof, we hereunto affix our signatures in the presence of two witnesses.

OTTO GEIGER.
RUDOLPH R. RADINSE.

Witnesses:
J. B. HULL,
BRENNAN B. WEST.