

Oct. 27, 1931.

R. G. MERTES

1,829,665

CUP SHAPED ROTARY BRUSH

Filed July 28, 1930

2 Sheets-Sheet 1

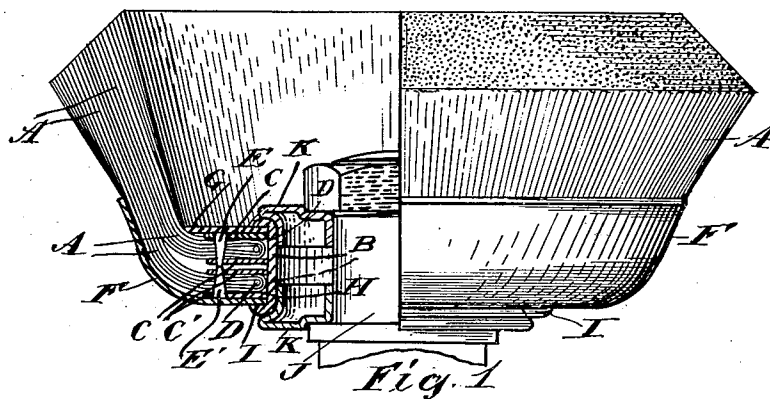
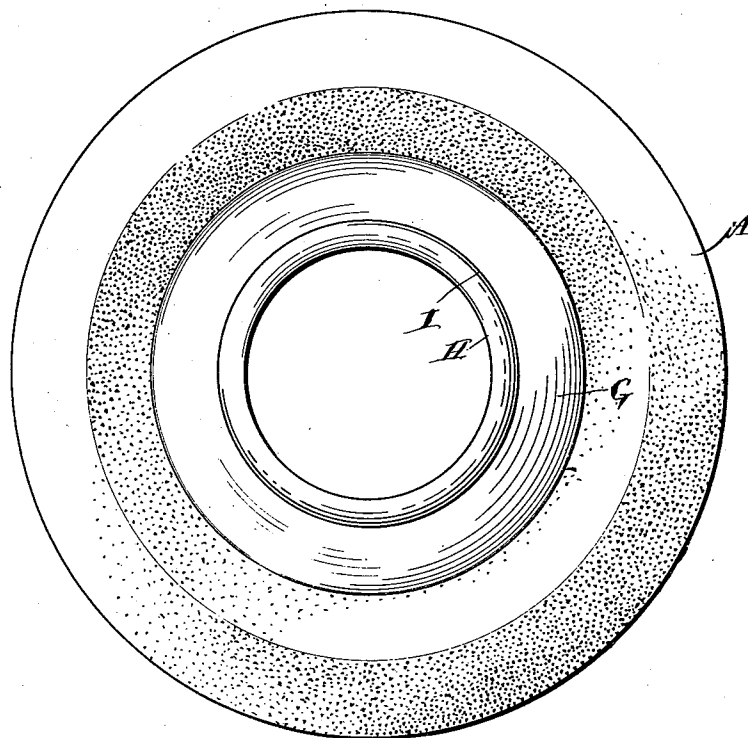


Fig. 2

Inventor
Robert G. Mertes
by Wm. M. Monroe
Attorney

Oct. 27, 1931.

R. G. MERTES

1,829,665

CUP SHAPED ROTARY BRUSH

Filed July 28, 1930

2 Sheets-Sheet 2

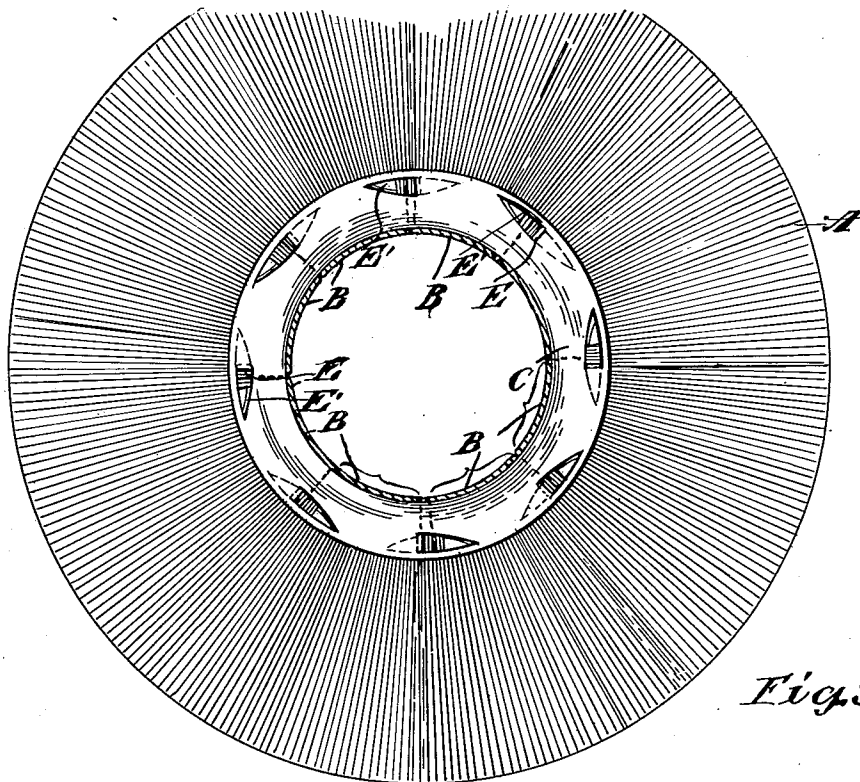


Fig. 3

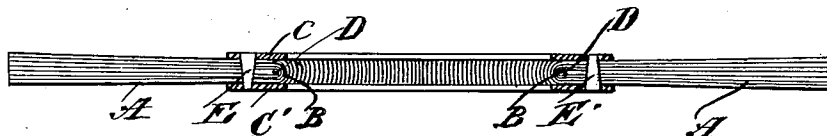


Fig. 4

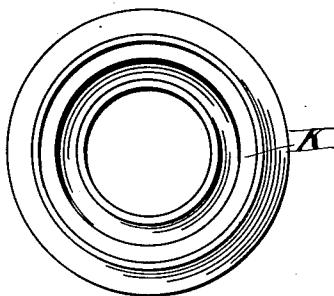


Fig. 5

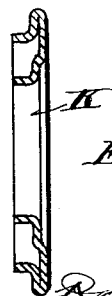


Fig. 6

INVENTOR.

Robert G. Mertes

BY

Wm. W. Morris

ATTORNEY.

UNITED STATES PATENT OFFICE

ROBERT G. MERTES, OF CLEVELAND, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE PITTSBURGH PLATE GLASS COMPANY, OF PITTSBURGH, PENNSYLVANIA, A
CORPORATION OF PENNSYLVANIA

CUP SHAPED ROTARY BRUSH

Application filed July 28, 1930. Serial No. 471,304.

This invention relates to brushes and more particularly to a cup shaped brush adaptable for use with rotary tools or the like, and which will embody many advantageous features over similar brushes now in commercial use.

It is among the objects of this invention to provide a cup shaped brush wherein the bristles will be anchored at a point intermediate their respective ends to thereby strengthen and avoid the partaking of torsion on the part of the individual bristles. It is a further object of this invention to provide a cup brush which may be adapted to be used on arbors of various diameters. It is still a further object of this invention to provide a cup brush which can be quickly and economically constructed and which will possess longer wearing qualities than cup brushes in prior use.

Other objects more or less ancillary to the foregoing and the manner in which all the various objects are realized will appear in the following detailed description, which considered in conjunction with the accompanying drawings sets forth the preferred embodiment of the invention.

The illustrated embodiment of the invention comprises a brush composed of disc shaped brush sections having radially extending bristle bodies. The sections are enclosed between external side plates, one of which is of greater diameter than the other and mounted on an axial sleeve or tubular member. The extremities of the tubular member are beaded to form a unitary structure of the bristle body, plates and tubular member. The larger plate has an inwardly flared portion which causes the bristle material to take the form of a cup. In the finished brush the bristle body is securely compressed and clamped between the flared wall of the larger plate and the peripheral edge of the smaller plate so as to preclude any movement of the individual bristle members within the confined space of the cup brush.

In the accompanying drawings:

Figure 1 is a fragmentary perspective view partly in section illustrating the preferred embodiment of the invention;

Figure 2 is a top plan view of the embodiment illustrated in Figure 1;

Figure 3 is a plan view of one of the disc shaped sections which may be used in the cup brush;

Figure 4 is a transverse section of the view shown in Figure 3;

Figure 5 is a front elevation of an adaptor for employing the cup brush with arbors of different sizes;

Figure 6 is a transverse section of the view shown in Figure 5.

With reference to the drawings, especially Figures 1 and 3 there is illustrated therein a preferred form of brush section which I desire to use in my invention. The section A comprises the annular side plates C and C' that are mounted in spaced relation and have disposed therebetween the bristle material B. The bristle material B which preferably consists of fine wire, tampico, hair or like material is arranged radially around the periphery of the side plates, the lower ends of such material being looped about the wire D and disposed between the plates as shown.

The side plates C and C' are preferably made up of annular blanks having central apertures to permit the introduction of a sleeve H. The ears or lugs E and E' which, as will be noted, are struck out from the mid portion of the annular rings and extend inwardly therefrom, the struck out portions leaving openings in the rings. When the side plates C and C' are assembled on the bristle material the lugs are adapted to extend through the bristle body and engage the outer surface thereof in the corresponding openings of the opposite plate.

The brush sections A are then assembled on the sleeve H between the external side plates F and G which are formed of metal stampings and are substantially wider than the ring plates C and C'. The central tube or sleeve H has its extremities beaded as at I, I to securely lock the plates and sections into a unitary structure. The larger or outer plate F is flared upwardly in its outer portion to extend into or beyond the plane of the inner plate G. As shown this portion extends

well beyond such plane and supports the brush body and compresses the bristle material between the inner wall thereof and the peripheral edge of the smaller or inner plate

5 G. In the formation of a cup brush the looped portion of the bristle member disposed about the wire D is secured between the plates F and G under such pressure as to

10 securely hold the bristle material at this point. The bristle material is secured against movement at a second point, namely, between the peripheral edge of the plate G and the flared wall of the plate F so that be-

15 tween this latter point and the wire D the bristle material will be precluded from partaking of any torsion. The construction of a brush wherein the wires are not permitted to partake of torsion, greatly prolongs the wear-

20 ing qualities and life of the cup brush.

The sleeve H may be of any standard diameter desired and can be attached to the mandrel J by means of the interpositioned disc shaped adaptors K, K, which center the cup brush on the mandrel. The adaptors are

25 formed of sheet metal having reinforced edges K' and are provided with a central opening of any desired smaller diameter than that of the sleeve H making it possible to use the brush with several mandrels of dif-

30 ferent diameters.

Although the foregoing description is necessarily of a detailed character in order to completely set forth this invention it is to be understood that the specific terminology is

35 not intended to be restrictive or confining and it is further understood that various rearrangements of parts and modifications of structural detail may be resorted to without departing from the scope or spirit of the in-

40 vention as claimed herein.

Having described the invention what I claim as new and desire to secure by Letters Patent is:

1. A cup shaped bristle brush comprising

45 a brush body and parallel plates having their central portions clampingly secured together, one plate having a flange surrounding the other plate and extending at least to the plane of the said other plate and clamping

50 the brush body between said flange and the outer periphery of the other plate.

2. A cup shaped bristle brush comprising a brush body and inner and outer plates having their central portion clampingly secured

55 together, the outer plate extending across and in brush-body-supporting position beyond the plane of the inner plate, the outer plate clamping and supporting the brush body against the outer periphery of the inner plate.

3. A cup shaped bristle brush having a substantially flat central portion and comprising a flat, disc-like inner plate, an annular cup shaped brush body having a flat central portion, and an outer cup shaped plate having

60 a flat central portion and an outer portion

extending across the plane of the inner plate and clamping the brush body against the outer edge of the inner plate, the central portions of the plates and brush body being secured together in clamped relation.

4. A cup shaped bristle brush comprising an annular bristle body and inner and outer plates secured in clamping relation against the opposite sides of the said body, the inner plate being a flat disc of less radius than the outer plate and the brush body, and the outer plate having a flat central portion substantially coextensive with and parallel to the inner plate and having an outer peripheral portion extending at an angle to the central portion across and beyond the plane of the inner plate, the brush body extending beyond the plates and being clamped between the inner surface of the outer plate and the annular outer edge of the inner plate.

In testimony whereof I affix my signature.
ROBERT G. MERTES.