(No Model.)

H. C. TOPP.

BRUSH.

No. 587,048. Patented July 27, 1897.

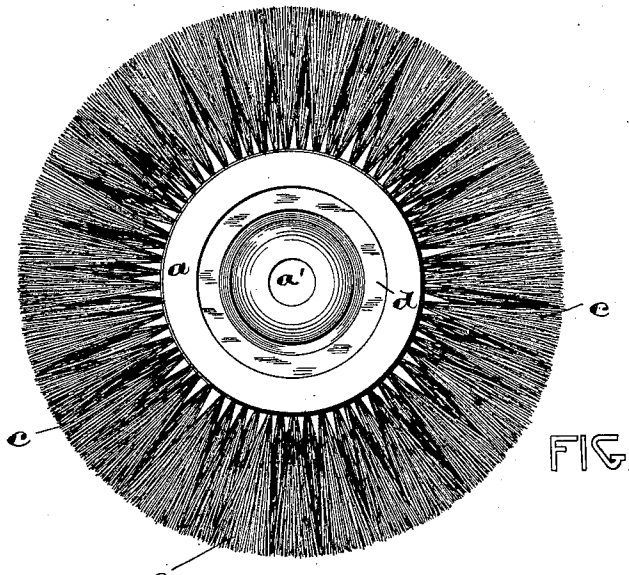

FIG. 1

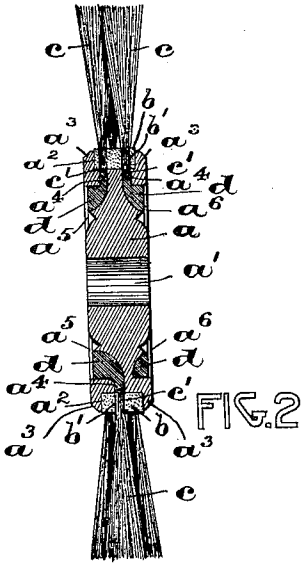

FIG. 2

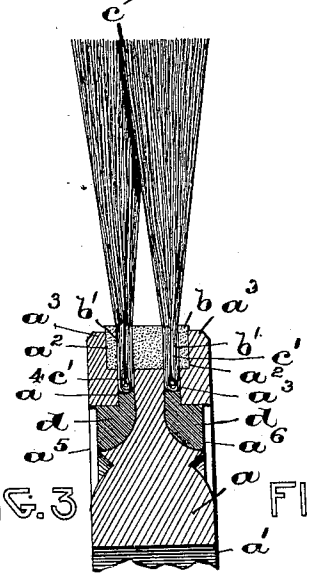

FIG. 3

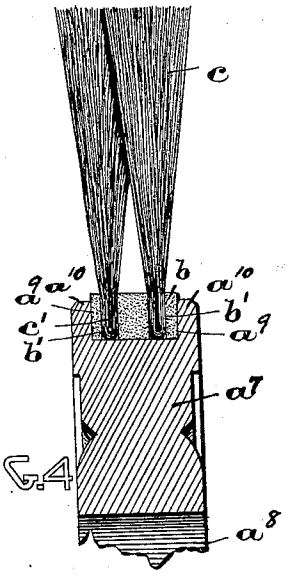

FIG. 4

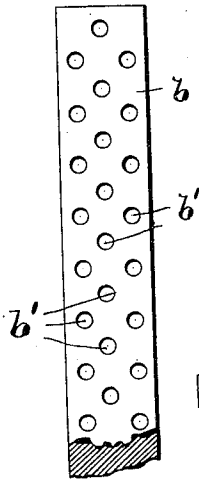

FIG. 5

WITNESSES:

Wm. H. Campfield Jr.

B. Mortimer Dubsdell

INVENTOR:

HENRY C. TOPP.

BY

Fred C. Fraentzel

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY C. TOPP, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE HANSON & VAN WINKLE COMPANY, OF NEW JERSEY.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 587,048, dated July 27, 1897.

Application filed April 15, 1896. Serial No. 587,591. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. TOPP, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Brushes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in circular brushes, such as are used on lathes, to produce upon the article held against it what is commonly termed a "satin finish" or "scratch-brush" finish; and the invention consists in the novel arrangement of the wire bunches embedded in a cushion-like material, such as soft elastic rubber or the equivalent thereof, arranged around the cylindrical periphery of the hub of the brush.

The object of my invention is to construct a strong and serviceable circular brush for polishing or the like in which, by arranging the ends or knots of the wire bunches of the brush in the soft cushion around the periphery of its hub, all danger of the wire snapping or breaking off at the hub is clearly avoided.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my novel construction of circular brush, and Fig. 2 is a vertical section of the same. Fig. 3 is a sectional view, on an enlarged scale, of a portion of the brush to more clearly illustrate one manner of securing the ends of the wire bunches or the knots in the cushion-support arranged around the periphery of the hub. Fig. 4 is a similar view illustrating a slightly-modified form of construction over that illustrated in Fig. 3. Fig. 5 is a side view of a portion of the cushioning material provided with holes or perforations through which the ends of the wire bunches are passed or may be secured therein.

Similar letters of reference are employed in all of the above-described views to indicate like parts.

In said drawings, a indicates the ordinary circular hub of the wheel or brush provided with the central hole a' for arranging it upon an arbor. Said disk or hub a is provided in its periphery with an annular groove or recess a^2, formed by the two parallel shoulders a^3, as will be clearly seen from an inspection of Figs. 2, 3, and 4. In communication with said groove or recess a^2 are any desirable number of holes or perforations a^4, formed in the body of the hub a, which connect with the larger openings a^5 and a^6, annularly formed on both sides of the body of the hub a, as and for the purposes to be more fully described hereinafter. In said annular groove or recess a^2 I have arranged a cushioning material b, which may be of soft and elastic rubber or any other similar material to produce a cushioning effect. Said material b is sprung into the groove a^2 and held therein by its own elasticity, or it may be securely cemented in said groove, as will be clearly evident. Said cushioning material b is provided with suitably-arranged holes or perforations b', as represented in Fig. 5, which correspond in number and position to the holes or perforations a^4 in the hub a of the wheel.

As will be seen from Figs. 2 and 3, the wires c are bunched together, as at c', in the usual manner to form a knot, and said bunched ends are passed through the holes or perforations b' in the cushioning material b, so that they extend into the holes or perforations a^4 in the hub a, as clearly shown. Here the wire bunches are secured in place in the usual manner, and the openings a^5 and a^6 on the sides of the hub a are then filled in with a soft-metal layer d, such as lead or other like metal, to more securely hold the wires in place on the hub of the brush.

In Fig. 4 I have illustrated a slightly-modified form of construction in which I dispense with the holes or perforations a^4 in the hub a' of the brush. In this construction the central hole for the arbor is indicated by the letter a^8, and the ends c' of the wire bunches c are arranged and secured in the holes or perforations b' of the cushioning material b, and the latter is then placed in the annular groove or recess a^9, formed by the shoulders a^{10}, between which it can be secured in any desirable manner.

It will be seen that in my novel construction of rotary brush the hub and its annular shoulders are all made in one integral piece, and the cushioning material *b* is forced between said shoulders, where it is removably but operatively held and can be quickly detached when the wire bristles have become worn and can be replaced by a new piece of cushioning material provided with bristles without necessitating the separation of the several parts of the hub, as in the constructions of brushes of this character now made. By this means I have devised a cheaper and more satisfactory construction, and there is no danger of the screws becoming loose and detached when the brush is being rapidly revolved on its arbor.

In rotary brushes when made in the manner hereinabove described it has been practically demonstrated that the soft and elastic cushioning material *b*, surrounding the hub of the brush, allows of a vibratory action of each separate bunch of wires at the point where it passes into said cushion-support, and the wire bunches upon being revolved against a hard substance will not break at their point of support.

It will be clearly understood that these brushes can be put to different uses, such as polishing metal ware of any description to produce "satin-finished" surfaces thereon, but they may also be used to clean castings and for many other purposes.

Having thus described my invention, what I claim is—

1. A circular brush, comprising therein, a solid hub, *a*, having annular shoulders on its cylindrical surface forming a groove or recess, a cushioning material *b*, forced in said groove or recess, and removably held therein by friction, and wire bunches *c* in said cushioning material, substantially as and for the purposes set forth.

2. A circular brush, comprising therein, a solid hub, *a*, having annular shoulders on its cylindrical surface forming a groove or recess a^2, and holes or perforations a^4, a cushioning material *b*, forced in said groove or recess, and removably held therein by friction, and having holes b' corresponding to the holes a^4 in said hub *a*, and wire bunches extending through said holes b' and fastened in said holes a^4, substantially as and for the purposes set forth.

3. A circular brush, comprising therein, a hub, as *a*, having an annular groove or recess a^2, and holes or perforations a^4, openings a^5 and a^6 on the opposite sides of said hub, a cushioning material *b*, in said groove or recess, and having holes b' corresponding to the holes a^4 in said hub *a*, wire bunches extending through said holes b' and fastened in said holes a^4, and soft-metal layers *d* in said openings a^5 and a^6, all arranged, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 14th day of April, 1896.

HENRY C. TOPP.

Witnesses:

FREDK. C. FRAENTZEL,

WM. H. CAMFIELD, Jr.