S. E. RUTTER.

BRUSH.

APPLICATION FILED DEC. 6, 1917.

1,292,887. Patented Jan. 28, 1919.

FIG. 1.

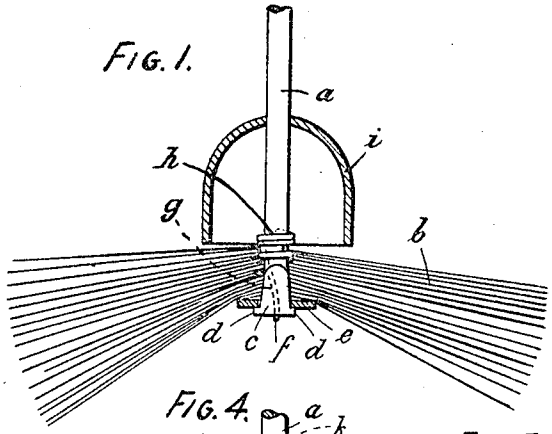


FIG. 3.

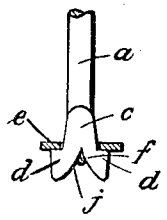


FIG. 4.

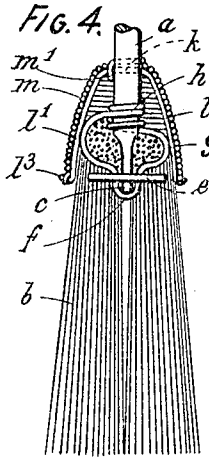


FIG. 5

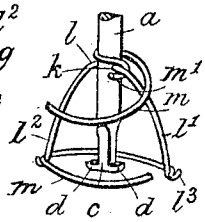


FIG. 9

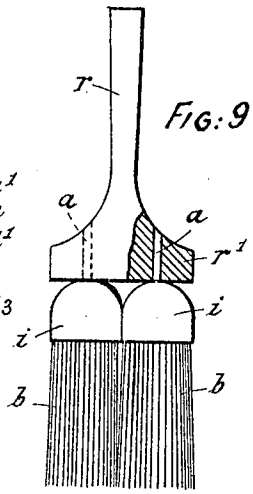


FIG. 2.

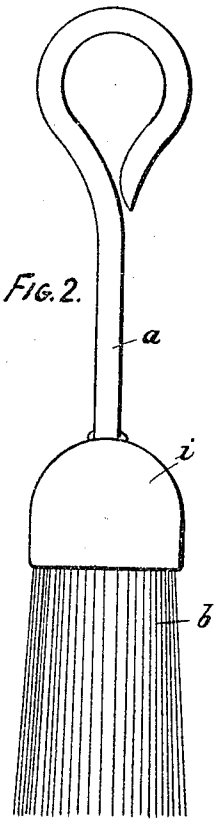


FIG. 6.

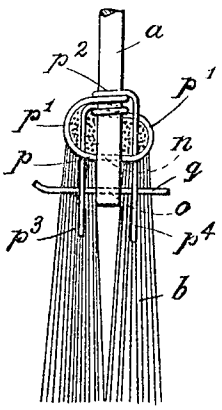


FIG. 8.

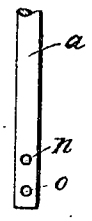
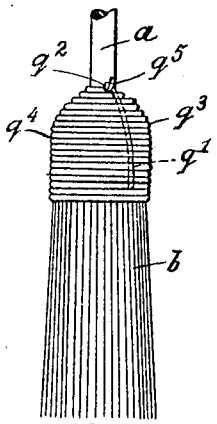


FIG. 7.



Inventor:

Sydney Ernest Rutter,

Stuart Middleton Donaldson & Spear

Atty's.

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

UNITED STATES PATENT OFFICE.

SYDNEY ERNEST RUTTER, OF LONDON, ENGLAND, ASSIGNOR TO WILLIAM GEORGE HARRIS, OF LONDON, ENGLAND.

BRUSH.

1,292,887. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed December 6, 1917. Serial No. 205,879.

To all whom it may concern:

Be it known that I, SYDNEY ERNEST RUTTER, a subject of the King of Great Britain and Ireland, residing at 70 Shenley road, Camberwell, London, S. E. 5., England, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to brushes of the kind in which the hairs or bristles are doubled over the end of a handle and are secured thereto by wire or the like and in which a wire sheath or ferrule is provided for inclosing it.

In contradistinction to the means hitherto employed and the manner of producing brushes of this kind, according to this invention the end of the stem to which the bristles are to be secured is flattened and a wire loop adapted to receive the bristles is placed over the flattened end and through a ring or washer resting thereon and is finally fixed to the stem after which a cap or ferrule is forced down over the bristles and the loop, thereby consolidating the bristles into a mop or brush. For the purpose of replacing the cap or ferrule by a wound wire sheath a hole is made in the stem immediately above the connecting end of the first wire loop and a fork or saddle produced from a second wire is inserted through the hole so that its prongs extend laterally over the bristles and the wire loop in order to form a frame or carrier for the wire sheath. This wire sheath is produced from a third wire, one end of which is anchored against the stem on one of the shanks of the fork referred to and is then densely wound over the fork and the top of the bristles, its other end being hooked over the free end of one of the shanks of the fork. Or the end of the stem may be perforated at two points, the wire loop being formed by inserting one wire through one of the holes, and the sheath by inserting a second wire through the second hole and then winding it around the top of the bristles as will be hereinafter more fully understood by reference to the accompanying drawing, in which:—

Figure 1 shows graphically one mode of making a brush according to this invention, and

Fig. 2 shows a finished brush thus produced.

Fig. 3 shows in detail a modified configuration of the end of the stem adapted to receive the wire loop and the washer.

Fig. 4 shows in section a second mode of producing a brush by means of three wires, the manipulation of which is illustrated in Fig. 5.

Fig. 6 shows a third manner of producing the brush which is represented in Fig. 7.

Fig. 8 shows the end of the stem provided with two holes for this purpose, and

Fig. 9 shows the manner in which two or more brushes thus produced may be connected to form a single brush of larger dimension.

Like reference letters are used to indicate the same or similar parts throughout the drawings.

According to Figs. 1 and 2, the stem *a* adapted to receive the bristles *b* has its end *c* flattened so as to form lugs *d* adapted to support a washer or spreading ring *e* which is slipped over the handle so as to rest on the lugs *d* before the wire *f* and cap *i* are applied. A piece of wire *f* is then placed over the flattened end *c* and threaded through holes in the washer whereupon it is formed into a loop *g* adapted to receive the bristles *b*, the ends of the loop of the wire being then secured to an upper part of the stem by coiling them around the latter, as shown at *h*. A cap *i* is then forced down over the wire loop and the bristles whereby the latter are forced into the position shown in Fig. 2 while the cap *i* is secured in place on the stem by pinching the latter immediately above the cap or by soldering or in any other convenient manner.

Fig. 3 shows the flattened end of the stem provided with a deep recess *j* between the lugs *d* in order to enable the wire *f* to be securely anchored.

According to Figs. 4 and 5 the wire loop *g* is formed as before and a hole *k* is made in the stem some distance above the coil *h*. Inserted through this hole is a fork shaped wire frame *l* so that its shanks *l'* and l^2 extend downwardly over the loop *g* and over the bristles. Each of the shanks, such as *l'*, has its end provided with a hook l^3.

Anchored by means of a hook shaped member *m'* against the stem *a* on one of the shanks, such as *l'*, of the fork *l*, is a wire *m* which is then coiled around the stem and around the fork *l*, and the bristles, as shown

in Fig. 4, so as to form a dense wire sheath. The end of this wire sheath is by preference hooked into the hook l^3 of the shank l as shown. In this way a very solid wire structure is produced, although, of course, a ferrule or cap may also in this case be employed in the place of or in addition to the sheath m.

In Figs. 6, 7 and 8 the end of the stem a is provided with two holes n and o. Inserted through the upper perforation n is a wire p and this wire is first formed into a loop p' to hold the bristles b and immediately above the loop the ends of this wire are coiled around the stem as shown at p^2 and are then bent downwardly in parallelism with the bristles as shown at p^3 and p^4. A second wire q is then inserted through the perforation o in the stem a. The shorter limb q' of this wire is then bent upwardly so as to bear on the bristles and has its hook shaped end q^2 placed close to the stem a while the longer limb q^3 of the wire q is densely coiled around the limb q' and the bristles in order to form a sheath as shown at q^4 in Fig. 7 and has its hooked end q^5 connected to the hooked end q^2. The sheath q^4 and the connection q^2 and q^5 may subsequently be solidified by soldering or a cap, such as i, may ultimately be placed over this sheath, if desired.

The wire shanks p^3 p^4 may likewise ultimately be doubled back and connected to the straight wire portion q or they may be cut off immediately below the latter so as not to protrude beyond the wire sheath.

As shown in Fig. 9 two or more brushes produced by either of the methods above referred to may be readily connected to a common handle r by having their spindles or stems a suitably secured in the head r of the common handle, as will be readily understood.

What I claim and desire to secure by Letters Patent is:—

1. A brush comprising a stem, a wire having its intermediate portion connected with said stem and bent to form bristle engaging loops on each side of said stem, bristles held within said loops, the ends of the wire being coiled around the stem above the bristles, and means encircling the bristles to hold the free ends thereof in substantial parallelism.

2. A brush comprising a shouldered stem, a washer on the stem supported by the shouldered portion, a wire, and a wire formed with bristle engaging loops above said washer, and bristles held by said loops, the ends of the wire being coiled around the stem above said bristles.

3. A brush comprising a stem, a washer held thereon having holes, a wire threaded through said holes, and bent to form bristle receiving loops above said disk or washer, the ends of the wire being coiled around said stem above the bristles.

In testimony whereof I have affixed my signature in presence of two witnesses.

SYDNEY ERNEST RUTTER.

Witnesses:
MARGUERITE MCKROBER,
JUSTIN E. POLLAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."