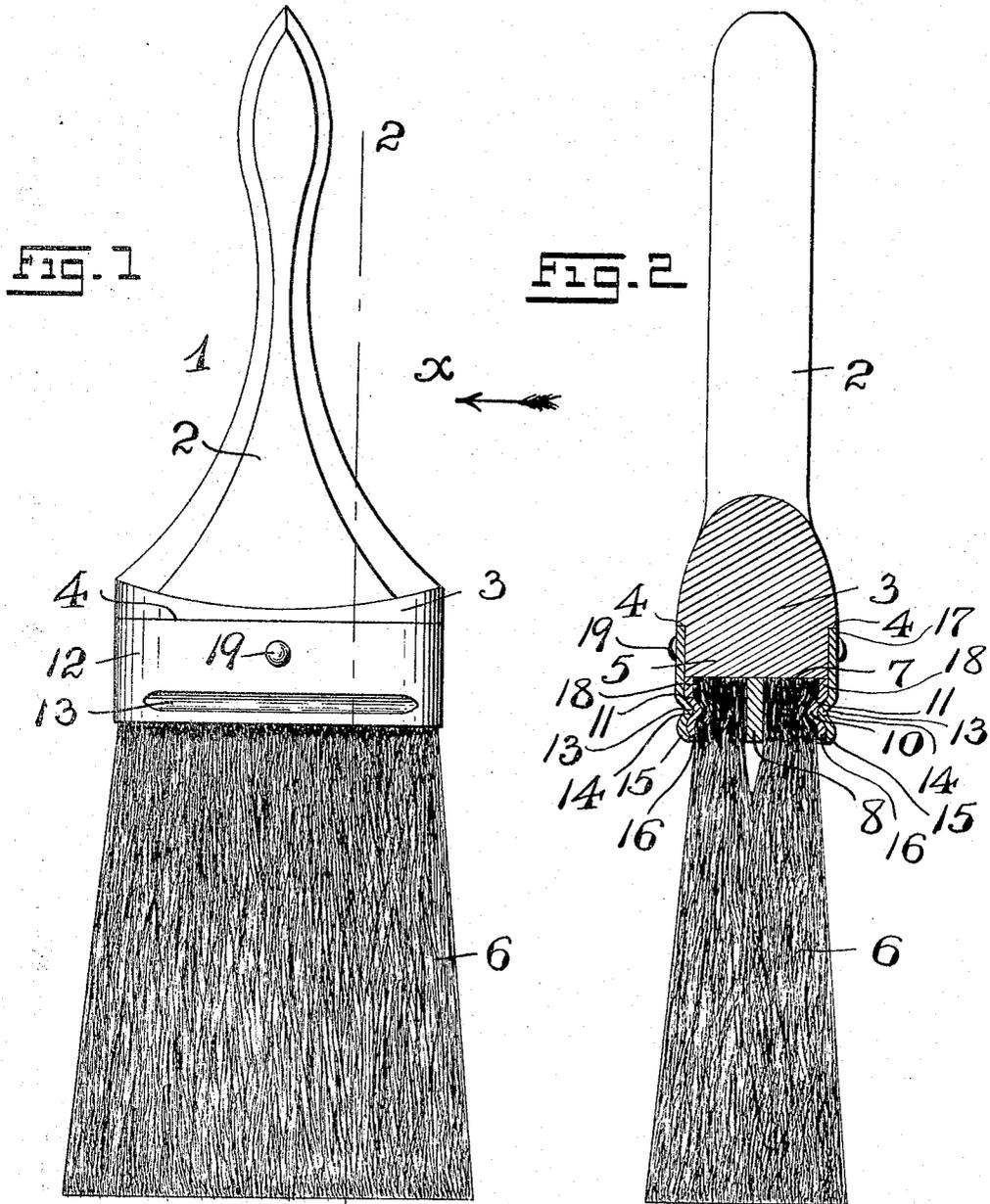


E. MILTNER.
BRUSH.

APPLICATION FILED NOV. 1, 1907.

2 SHEETS—SHEET 1.



WITNESSES:
F. H. W. Fraentzel
Anna H. Etter

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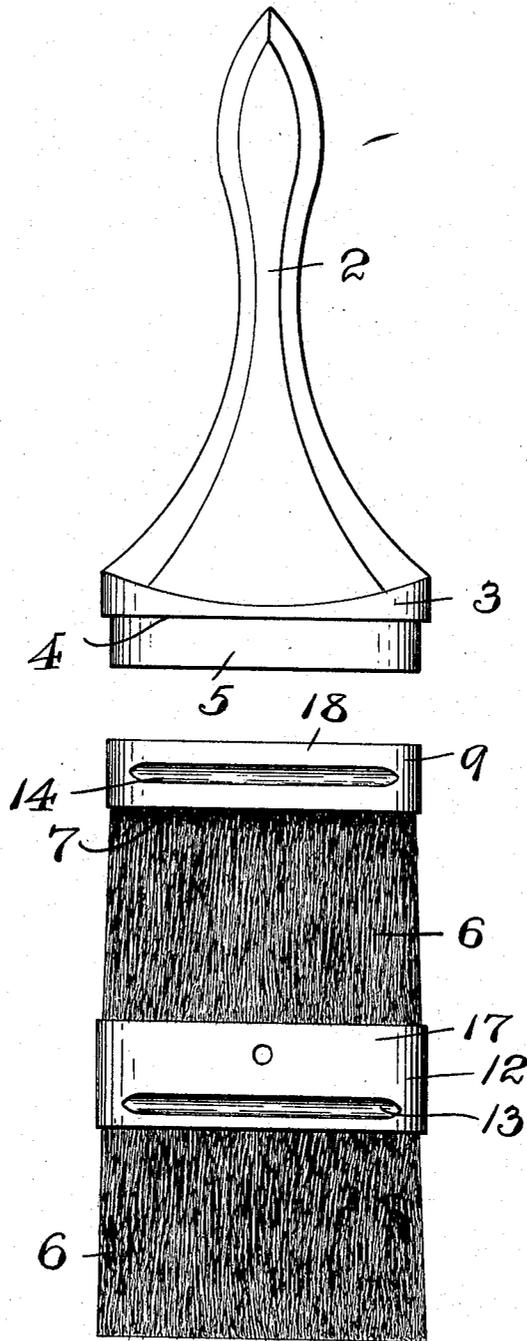
INVENTOR:
 Ernest Miltner,
 BY
Fraentzel and Richards,
 ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 3



WITNESSES:

F. H. W. Fraentzel
Anna H. Alter

INVENTOR:

Ernest Miltner,
BY
Fraentzel and Richards,
ATTORNEYS

UNITED STATES PATENT OFFICE.

ERNEST MILTNER, OF NEWARK, NEW JERSEY, ASSIGNOR TO RUBBER & CELLULOID HARNESS TRIMMING CO., A CORPORATION OF NEW JERSEY.

BRUSH.

No. 894,968.

Specification of Letters Patent.

Patented Aug. 4, 1908.

Application filed November 1, 1907. Serial No. 400,299.

To all whom it may concern:

Be it known that I, ERNEST MILTNER, 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 characters of reference marked thereon, which form a part of this specification.

This invention relates, generally, to improvements in brushes of the various kinds; and, the invention relates more particularly, to a novel construction of brush comprising a bunch of bristles having a knot or upper end surrounded by a band or ferrule, preferably of metal, and an improved means for positively and permanently securing the usual rubber-dipped or cement-end-portion or knot of the brush within said ferrule against displacement, and combining therewith an outer ferrule which is secured to the butt-end of a handle and is provided with a novel retaining means which engages with similar holding means of the inner band or ferrule, when said outer ferrule is arranged over and registers with said inner ferrule.

This invention has for its principal object to provide a novel brush of the general character herein set forth; and, one, in which the rubber-dipped or cemented end-portions of the bristles are tightly and securely united during the vulcanizing process with the said inner band or ferrule, said band or ferrule serving to compress the knot and maintain its shape.

A further object of this invention is to provide a novel arrangement and method of locking the outer ferrule upon the inner ferrule of the brush by slipping the outer ferrule over the loose or disconnected ends of the bunch of bristles, and finally springing or forcing said outer ferrule into its holding engagement with said inner ferrule.

Other objects of this invention not at this time more particularly enumerated will be clearly understood from the following detailed description of this invention.

With the various objects of my present in-

vention in view, the said invention consists primarily in the novel brush hereinafter set forth; and, furthermore, this invention consists in the various arrangements and combinations of devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in the following specification, and then finally embodied in the clauses of the claims which are appended to and which form an essential part of this specification.

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

Figure 1 is a face view of one form of brush showing one embodiment of the principles of the present invention. Fig. 2 is a transverse section of the brush, said section being taken on line 2—2 in said Fig. 1, looking in the direction of the arrow *x*. Fig. 3 is a face view of the various parts of the brush, said view showing the inner ferrule in its fixed position upon the upper end of the bunch of bristles, the outer ferrule being slipped upon the loose end-portions of the bristles, and the handle of the brush being shown in its detached relation.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring now to the said figures of the drawings, the reference-character 1 indicates the complete brush, the same comprising a handle 2 of any desired configuration, said handle being made of wood or other material. At its lower end, the handle is made with an enlargement 3, from which extends a butt or end-portion 5, forming with said enlargement a suitable shoulder 4. The bunch of bristles, hair, fiber, or the like, is indicated by the reference-character 6, and 7 is the usual soft-rubber dipped or cement-treated knot, in which may be arranged and secured, during the process of vulcanization or the hardening process of the knot, a plug or block 8 of wood, or other suitable material, to provide the bunch of bristles with the usual and centrally disposed space within the bunch of bristles for rendering the bunch more pliable to action, during the forward and backward strokes of the brush, while painting, brushing, or the like.

Surrounding the upper portion of the treated knot of the bunch of bristles is an in-

ner ferrule of band 9, which is preferably made of metal. It will be understood, however, that said ferrule or band may be made of any other suitable material. As illustrated in the several figures of the drawings, the said ferrule or band may be made with inwardly extending members or ribs, as 10, which provide a bristle-compressing means, forming with the upper inner portions of the ferrule or band outwardly flaring elements 11, for the purposes hereinafter to be more fully described. Surrounding the said inner ferrule or band, and operatively secured thereto, is an outer ferrule or band 12, which may be made of metal or any other material suitable for the purposes of the present invention. This outer ferrule or band is also formed with inwardly extending members or ribs, as 13, which register with the recessed or depressed portions 14 formed by the members or ribs 10 of the inner ferrule or band 9, said parts being interlocking, so that the outer ferrule or band is securely fixed upon and against displacement from the inner ferrule or band, as will be clearly evident.

As shown, the lower marginal edge-portion 15 of the outer ferrule or band registers with the lower marginal edge-portion 16 of the inner ferrule or band.

The upper surrounding portion 17 of the outer ferrule or band 12 extends above the upper edge of the inner ferrule or band 9, whereby a suitable receiving socket is provided in which the butt or end-portion 5 of the handle is arranged, the said edge-portion 16 surrounding the said butt and having its upper marginal edges usually fitted against the previously mentioned shoulder 4. The outer ferrule or band 12 is secured upon said butt 3 by means of any suitable fastening means, usually a pin or rivet 19; but, it will be understood that any other securing devices may be employed for this purpose.

The method of making the brush and the manner of assembling the various parts briefly is as follows:—Into the said inner ferrule or band 9, which may be of any suitable configuration, according to the kind of brush which it is desired to make, I stack a sufficient quantity of bristles, fibers, hairs, or the like, leaving the knot-end of the bunch of bristles extending from the ferrule. This knot-end is then dipped into a soft-rubber or other suitable cement for cementing together the ends of the fibers or bristles, and the plug 8 inserted in place, although it will be evident that the plug may be arranged between the bristles before being dipped. This liquid cement is usually an india-rubber or other suitable solution adapted for the purpose of vulcanization, and producing a hard rubber-set knot in which the ends of the bristles are to be firmly embedded. After the knot has thus been treated or soft-rubber-dipped,

the inner ferrule or band 9 is slipped down over the treated knot of united or cemented bristle-ends, the inwardly extending members or ribs 10 compressing the soft mass and at the same time squeezing the upper and outer mass of bristle-ends and the cementitious matter directly above the shoulder formed by said members or ribs 10, into holding or retaining engagement therewith, and into that portion formed by the outwardly flaring portion of the ferrule. In this manner, I produce a solidly compressed soft-rubber or other cementitious-dipped knot, the knot being securely held against displacement from said ferrule or band. The knot-end of the bunch of bristles and its surrounding ferrule or band are then placed upon a steam or other heated table, and vulcanized. The swelling-up of the rubber cement still further causes the binding and holding relation of the various parts, and a hard knot is formed in which the ends of the bristles are perfectly set and positively retained against displacement from within the inner ferrule or band. When the knot has in this manner been secured in the inner ferrule, the outer ferrule or band is slipped over the loose ends of the bristles, as shown in Fig. 3 of the drawings, and the outer ferrule is finally sprung or forced over the inner ferrule, whereby the parts become interlocked, in the manner already described. The butt-end of the handle is then inserted in the space or receiving socket formed above the hard knot and its ferrule, the parts being secured in their assembled relation in the manner previously described.

I claim:—

1. A brush comprising a handle and a bunch of bristles, a band surrounding the knot of said bunch of bristles, said band being provided with an inwardly projecting rib for compressing the bristles, and said band being formed in its outer surface with a depression, a hardening material between the knot-ends of the bristles, and an outer band surrounding said inner band, said outer band being provided an inwardly projecting rib registering and interlocking with the depression in said inner band, substantially as and for the purposes set forth.
2. A brush comprising a handle and a bunch of bristles, a butt-end on said handle, a band surrounding the knot of said bunch of bristles, said band being provided with an inwardly projecting rib for compressing the bristles, and said band being formed in its outer surface with a depression, a hardening material between the knot-ends of the bristles, an outer band surrounding said inner band, said outer band being provided with an inwardly projecting rib registering and interlocking with the depression in said inner band, the upper portion of said outer

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band extending above the upper edge of
the inner band to provide a receiving por-
tion in which the butt-end of the handle is
arranged, and means for securing said butt-
5 end to said outer band, 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 31st day of October, 1907.

ERNEST MILTNER.

Witnesses:

FREDK. C. FRAENTZEL,
EDWARD G. ROBERTSON.

RUBBERSET

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