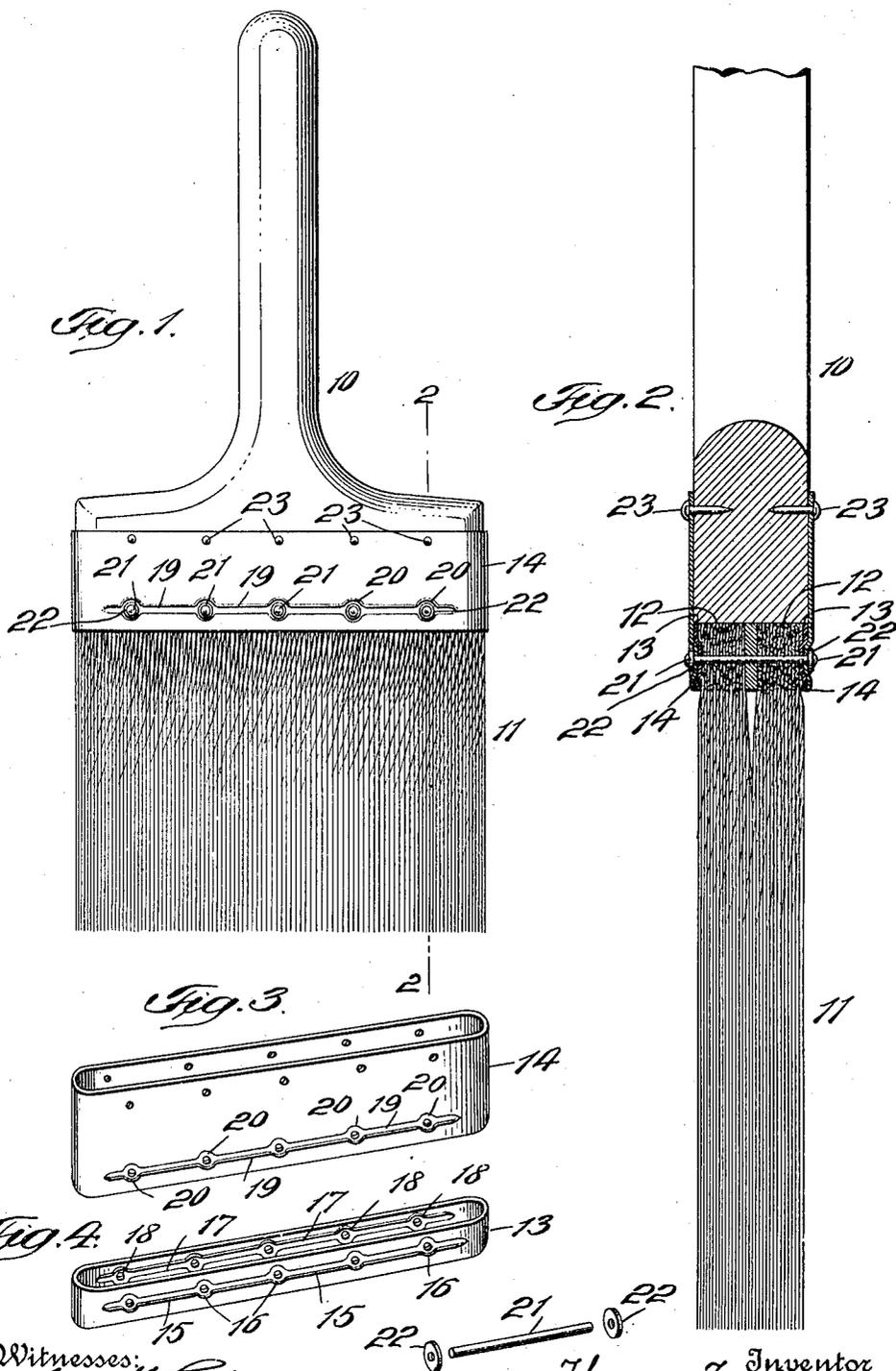


T. F. BARRY,  
BRUSH.

APPLICATION FILED SEPT. 18, 1914.

1,314,939.

Patented Sept. 2, 1919.



Witnesses:  
*Julian A. Smith*  
*Arthur Marion*

Fig. 5.

Thomas F. Barry  
Inventor  
By his Attorney *Wm. C. Hill*

# UNITED STATES PATENT OFFICE.

THOMAS F. BARRY, OF NEWARK, NEW JERSEY, ASSIGNOR TO ANDREW ALBRIGHT, OF NEW YORK, N. Y.

## BRUSH.

1,314,939.

Specification of Letters Patent.

Patented Sept. 2, 1919.

Application filed September 18, 1914. Serial No. 862,273.

*To all whom it may concern:*

Be it known that I, THOMAS F. BARRY, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

The invention relates to improvements in brushes, more especially of the kind employed in calsoning, painting and the like, and it consists in the novel features and structure hereinafter described and particularly pointed out in the claim. My invention is more particularly applicable to and useful in the manufacture of broad flat brushes comprising a handle, a bunch of bristles secured at their inner ends by vulcanized rubber, forming a knot, a metallic band closely encompassing said knot and a metallic band or ferrule secured to the shank of the handle and also to said bunch of bristles and connecting the two together. A special object of the invention is to provide adequate means whereby the bunch of bristles may be efficiently secured to the handle, many difficulties having been encountered in thus securing broad flat bunches to broad flat handles. In practical use the strain on the broad flat bunch of bristles is considerable and the tendency is sometimes to wrench the bunch from the handle. The handles are made of wood and the users of these brushes sometimes leave the brush standing in water or calsonine over night, and this results in the swelling of the handle and in the breaking away or loosening of the same from the means securing the handle to the bunch. During a great deal of the time the brush is in use the handle is subjected to moisture which tends to impair the efficiency of the means securing the handle to the bunch and to otherwise depreciate the brush in respect to its durability. In accordance with my invention I specially construct the band which encompasses the knot on the bunch of bristles and the band or ferrule which encompasses the shank end of the handle and said band on the knot so that they may have special interlocking relation and that the band or ferrule on the handle, the band on the knot and the knot itself may be effectually secured together by rivets extending transversely through the same and properly headed at both ends at the outer side of the band or ferrule on the handle, washers being ap-

plied on the ends of the rivets and said band or ferrule having countersunk recesses to house said washers. The brush has been produced with the view of providing a brush of increased longevity and therefore of increased usefulness to the owner.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a front elevation of a brush constructed in accordance with and embodying my invention;

Fig. 2 is a vertical section through the same on the dotted line 2—2 of Fig. 1;

Fig. 3 is a detached perspective view of the band or ferrule which connects the handle and bunch of bristles together;

Fig. 4 is a detached perspective view of the inner band which encompasses the knot on the bunch of bristles, and

Fig. 5 is a detached perspective view of one of the rivets, with the washers for the ends thereof, which are utilized for securing the bunch of bristles and the band or ferrule on the handle together.

In the drawings, 10 designates the handle of the brush, 11 the bunch of bristles, 12 the knot formed on the upper end of said bunch, 13 the inner metallic band closely encompassing the said knot and 14 the metallic band or ferrule which encompasses the band 13 and the shank end of the handle and is secured both to the handle and bunch.

The handle 10 is of customary form and construction, and the bunch 11 is in itself of known character, the knot 12 being formed by dipping the end of the bunch in soft rubber and thereafter vulcanizing the brush on a steam or other heated table. The bristles at the knot end of the bunch are held together during the vulcanization by means of the band 13 which is slipped down upon the knot end of the bunch after the said end has been dipped in the soft rubber. The band 13 is of the special configuration shown, having in each of its sides an external elongated groove 15 in which is interposed a series of sockets 16, said groove and sockets being formed by pressing the sheet metal inwardly which has the effect of creating on the inner face of each side of the band 13 an elongated rib 17 having interposed therein a series of projections 18.

The grooves 15 and sockets 16 perform an important function, to be hereinafter described, and the ribs 17 and projections 18 created by the formation of the grooves 15 and sockets 16 perform the important duty of aiding in maintaining the integrity of the knot 12 and in said knot being effectually secured to the band 13. When the band 13 is slipped upon the soft-rubber-dipped end of the bunch of bristles it fits said end very tightly and the soft rubber and bristles fill in around the ribs 17 and projections 18 and thereafter when the rubber is vulcanized the heat of the steam or other table acting on the rubber causes the latter to bind with extreme tightness against the inner surfaces of the band 13, with the result that finally the hardened knot becomes very firmly held in the band 13 and extends above and below the ribs 17 and projections 18. The ribs 17 and projections 18 become embedded in the knot 12 and hence it becomes substantially impossible to withdraw the knot from said band, especially after the parts of the brush have been assembled.

The outer band or ferrule 14 is wider than the inner band 13 and it encompasses said band 13 and the lower portion of the handle 10. The band or ferrule 14 is distinctive in that it is formed in the opposite sides of its lower portion with external longitudinal grooves 19 having interposed therein a series of sockets 20, these grooves and sockets being pressed into the band or ferrule 14 and creating on the inner faces of the sides of said band or ferrule 14 ribs and projections corresponding in form with the said grooves 19 and sockets 20, as will be understood from the like operation illustrated in connection with the band 13 in Fig. 4. The grooves 19 and sockets 20 match the grooves 15 and sockets 16 of the band 13 and the inner ribs and projections formed in the sides of the band or ferrule 14 by said grooves 19 and sockets 20 enter and interlock with the grooves 15 and sockets 16 of the band 13 when said band or ferrule 14 is applied to position on said band 13. The interlocking of the band 13 with the band 14 at the grooves 15 and sockets 16 is important in that thereby said bands enter into very firm and closed relation to each other and the bunch carrying the band 13 becomes more firmly secured within the band 14. After the band or ferrule 14 has been applied to the band 13 inclosing the knot 12, I drill holes transversely through said bands and knot at the center of the sockets 20 and

16 of said bands, these holes being illustrated in Figs. 3 and 4, and thereupon I insert rivets 21 through the holes thus formed and apply upon the ends thereof washer plates 22 which fit within the sockets 20 and are held in place by the upsetting thereon of the ends of the rivets 21. The rivets 21 headed or upset at their ends on the washers 22 securely connect the band 14 with the band 13 and knot 12 and do this in a manner which improves the appearance of the brush and is entirely efficient. The rivets and washers cooperating with the sockets 20, 16 form an efficient securing means and leave no objectionable projecting parts, such as the commonly used bent over ends of nails, to impair the appearance of the article as well as the security of its assembled parts.

The band or ferrule 14 is secured to the shank of the handle 10 by means of small nails or the like 23, and when all of the parts of the brush have been assembled and secured together, the article as a whole is one of durability and capable of long continued use without danger of the bristles shedding or the bunch becoming detached from its proper position.

What I claim as my invention and desire to secure by Letters Patent, is:

A brush comprising a handle having a shank portion, a bunch of bristles having its knot end applied to the end of said shank portion, an inner metal band surrounding the outer surface of said knot and in its sides having inwardly pressed ribs and a series of projections entering and engaged by the material of the said knot and corresponding outer grooves and sockets, an outer band or ferrule on said handle having in its sides inwardly pressed grooves and a series of sockets creating inner ribs and projections corresponding and interlocking with the grooves and sockets in said inner band, a series of rivets extending through both said bands and said knot at said sockets and headed thereat and securing the parts together below said handle, and a series of nails independently securing said outer band or ferrule at its upper portion above said inner metal band to said handle.

Signed at Newark, in the county of Essex and State of New Jersey this 9th day of September A. D. 1914.

THOMAS F. BARRY.

Witnesses:

THOMAS B. DENTON,  
EMMA R. STEVENSON.

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