

H. M. SCHWARTZ.
BRUSH.
APPLICATION FILED APR. 8, 1908.

928,550.

Patented July 20, 1909.

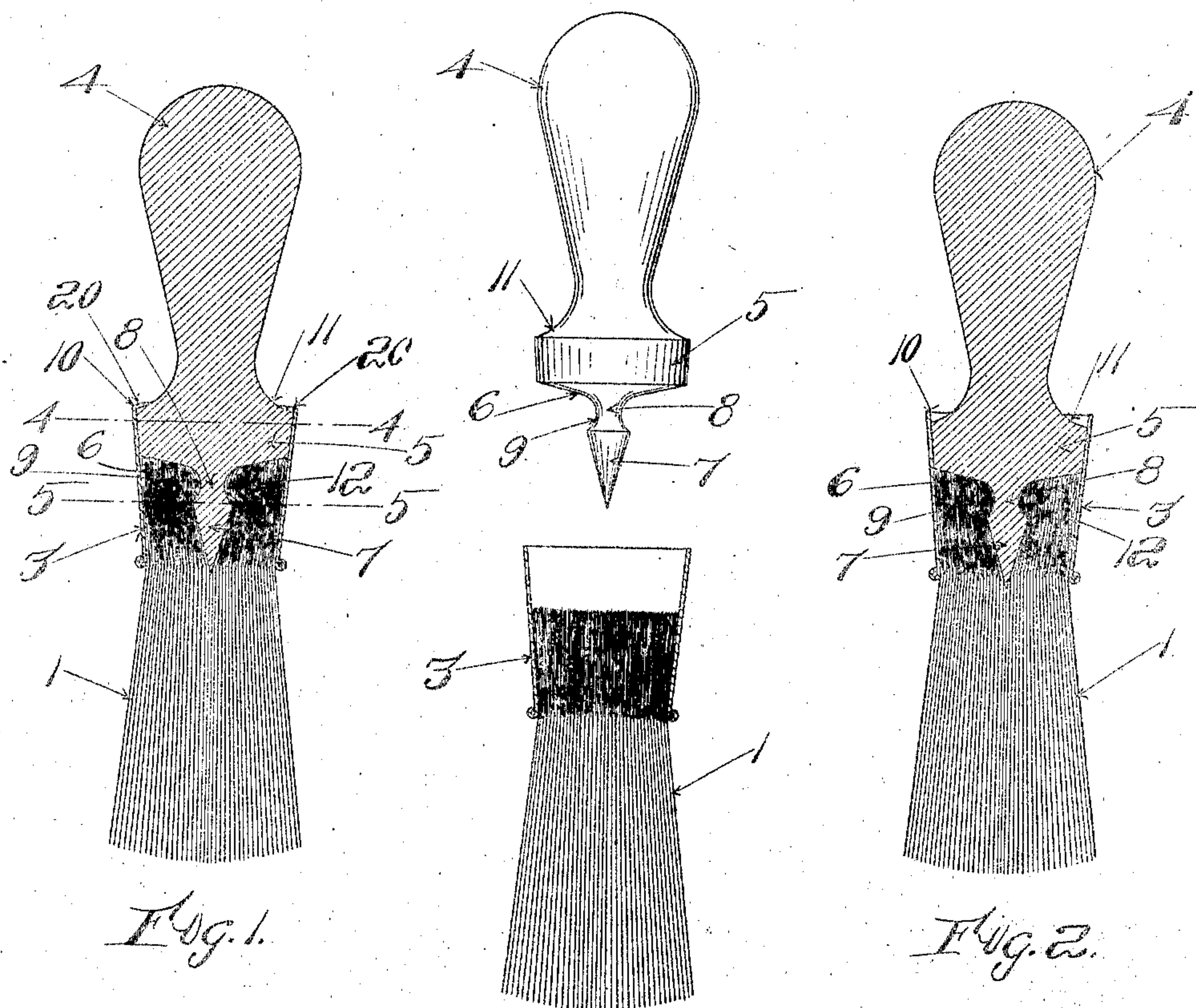


Fig. 1.

Fig. 2.

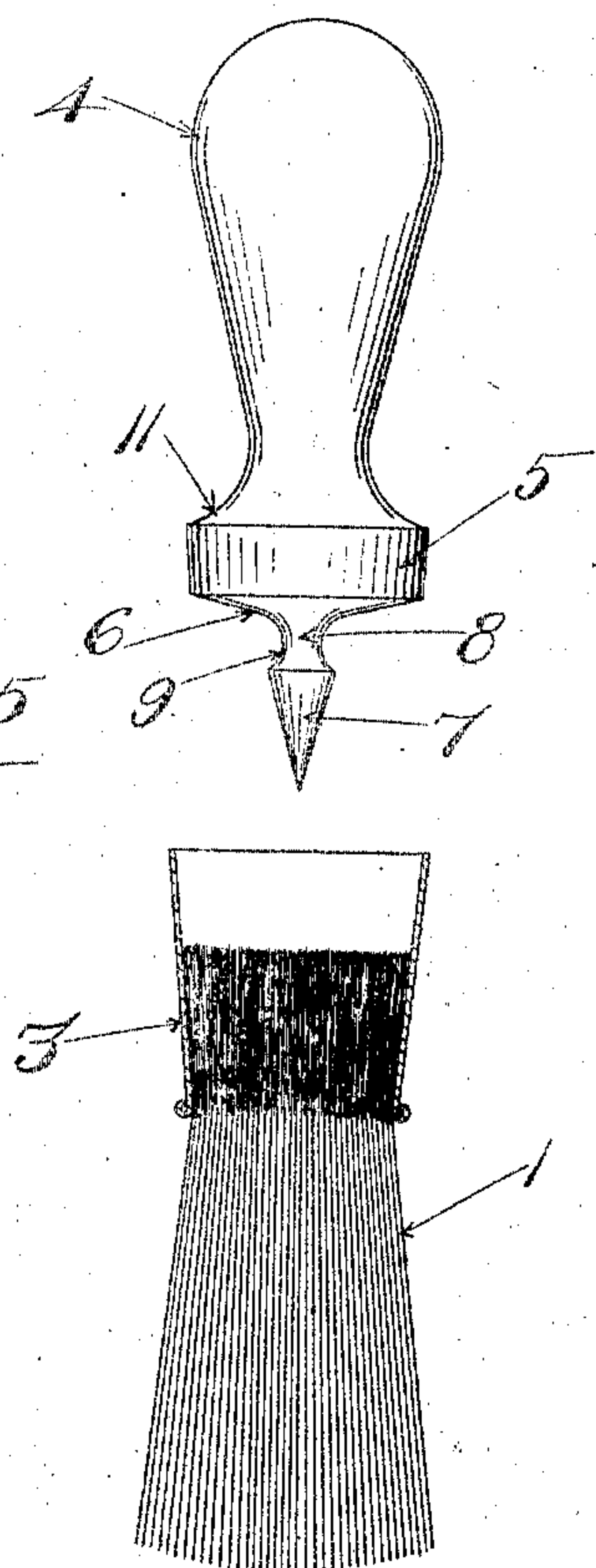


Fig. 3.

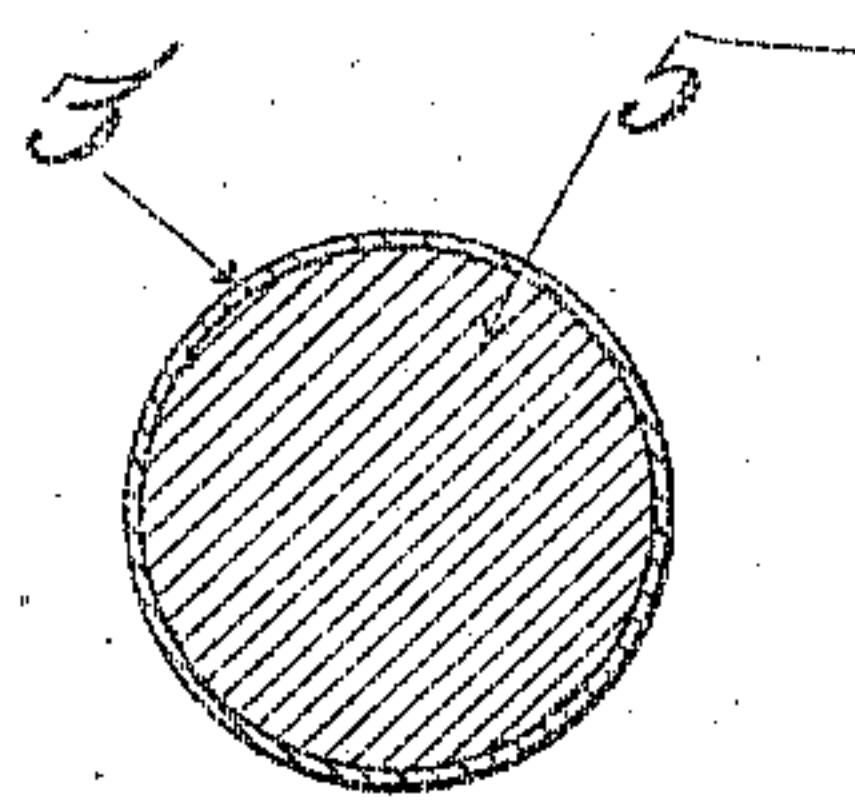


Fig. 4.

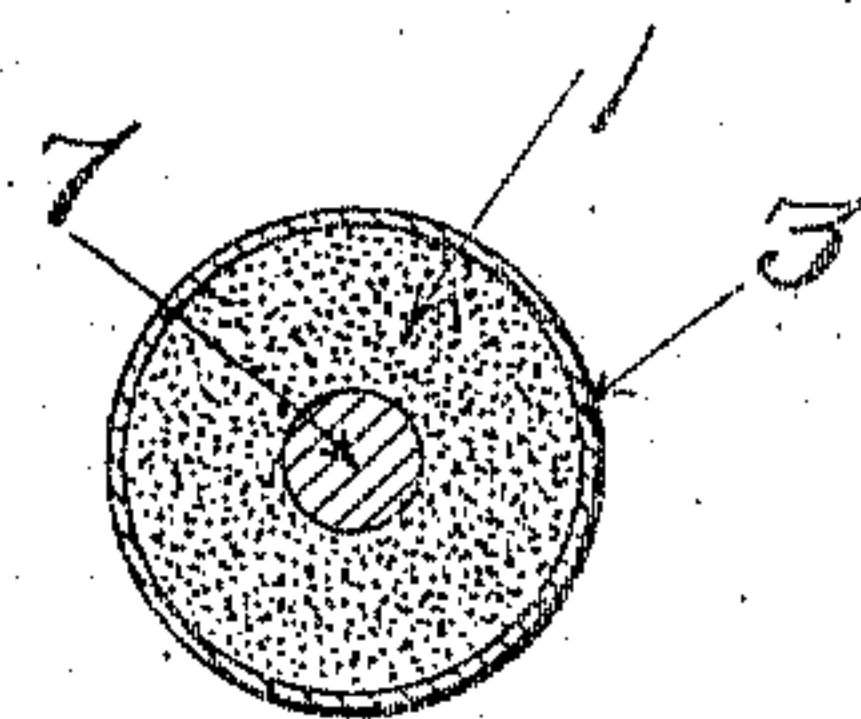


Fig. 5.

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UNITED STATES PATENT OFFICE.

HERMAN M. SCHWARTZ, OF NORTHAMPTON, MASSACHUSETTS, ASSIGNOR TO THE FLORENCE MANUFACTURING COMPANY, OF NORTHAMPTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BRUSH.

No. 928,550.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMAN M. SCHWARTZ, a citizen of the United States, residing at Northampton, county of Hampshire, State of Massachusetts, have invented certain new and useful Improvements in Brushes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention has special reference to the manufacture of shaving brushes and other brushes of cylindrical form or circular in cross-section.

15 The object of the invention is to so construct the brush as to prevent the bristles from becoming separated from each other or detached from the handle.

20 The invention will be fully understood from the following description taken in connection with the accompanying drawings, and the novel features will be pointed out and clearly defined in the claims at the close of the specification.

25 In the drawings,—Figure 1 is a longitudinal section of a brush embodying the invention. Fig. 2 is a longitudinal section showing the parts assembled before the rearwardly projecting edge of the barrel is crimped over the shoulder of the handle. Fig. 3 shows in section the tuft of bristles inserted in the barrel before the handle is inserted, the handle being shown in full lines ready to be introduced into the handle in the manner shown in Fig. 2. Fig. 4 is a cross-section on line 4—4 of Fig. 1. Fig. 5 is a cross-section on line 5—5 of Fig. 1.

35 Referring to the drawings,—in carrying out the invention, the tuft of bristles 1, which is to form the brush portion, has its butt ends saturated with cement or some other suitable adhesive, and while the cement is still in a plastic or semi-liquid state, the tuft of bristles is forced through a tapered or frustum shaped barrel 3 which is subsequently to form the ferrule of the brush, the bristles being inserted through the larger end of the barrel 3, the butt ends of the bristles to the rear, the tuft of bristles being sufficiently large so that they will have to be crowded together in order to draw the uncemented portions out through the narrow end of the barrel, as shown in Fig. 3. The cemented portions of the bristles are shown by the heavier lines.

55 The handle 4 is formed with a tapered or

frustum shaped plug or body portion 5 circular in cross-section and adapted to fit snugly into the rear or larger end of the barrel 3. The forward end of said body portion 5 is formed with a shoulder 6, preferably tapered forwardly, and terminating in a conical wedge 7 of considerable less diameter connected with the body portion 5 by a neck 8 formed by a circumferential groove 9, the larger diameter of the conical wedge 65 being considerably less than the smaller diameter of the plug portion.

After the tuft of bristles has been inserted into the barrel 3 as already described, before the cement has had time to harden, and while the cement is still in its plastic or semi-fluid condition, the tapered plug portion 5 with the conical wedge 7 is inserted through the rear end of the barrel so that the conical wedge 7 penetrates in among the cemented butts of the bristles and is driven or forced in the shoulder 6 crowding against the rear ends of the bristles the conical portion 7 spreading the cemented butts so that they will be pressed outward between the wedge 7 and the barrel 3. The portions of the butts between the neck 8 and the barrel will also be crowded and the resistance to the pressure will cause the portions between the neck 8 and the barrel to bend inwardly, completely filling the groove 9 of the neck. After the plug 5 has been forced in its proper distance so that the shoulder 11 is within the barrel and the shoulder 6 pressing on the rear edge of the butts as above described, the rearwardly projecting edge 10 of the barrel is crimped over, as indicated at 20 upon the shoulder 11 to prevent withdrawal of the plug 5. When the cement hardens or sets, the cemented mass of the butts of the bristles will become solid, forming a solid bead 12 fitting in the groove 9 of the spreader and forming a lock which aids very materially in preventing the loosening or displacement of the bristles from the brush or the separation of individual bristles from the mass.

What I claim is;

A brush comprising a frustum shaped ferrule whose inner face is smooth throughout, a tuft of bristles having the butts saturated with cement and inclosed in said ferrule, the uncemented portions of the tufts projecting through the smaller end of the ferrule, a handle having a frustum shaped plug por-

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tion which fits snugly in the rear end of the ferrule and has a slightly tapered shouldered forward portion which engages the butt ends of the bristles and terminates in a
5 conical wedge at the forward end which enters the mass of cemented butts of the bristles and has a circumferential concave groove at the rear end of the conical wedge portion, the largest diameter of the conical
10 wedge being less than the smallest diameter of the plug portion, the cemented butts of the bristles filling said groove and the space

between the wedge and the ferrule, the portions of the bristles which enter the groove being bent in a curve, thereby forming a 15 bead curved in cross section which engages the said groove.

In testimony whereof I affix my signature, in presence of two witnesses.

HERMAN M. SCHWARTZ.

Witnesses:

WILLIAM A. MACLEOD,
ALICE H. MORRISON.