

1,202,244.

Fig.1.

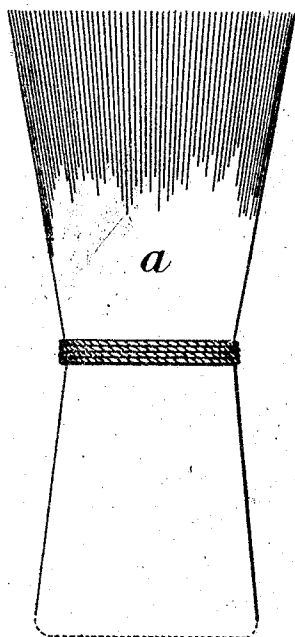
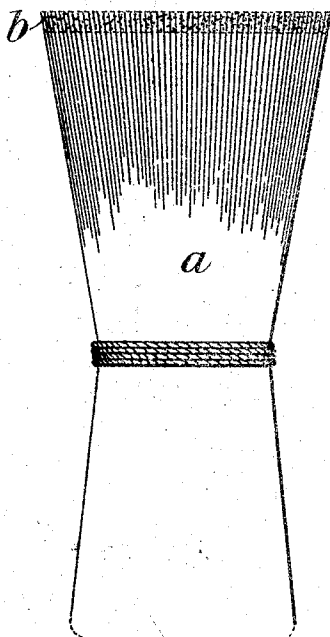


Fig.2.



b Fig. 3.

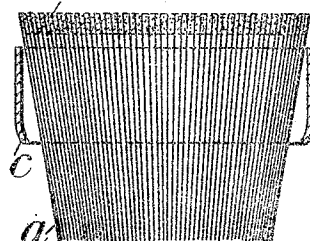


Fig. 4.

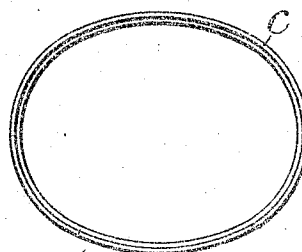


Fig.5.

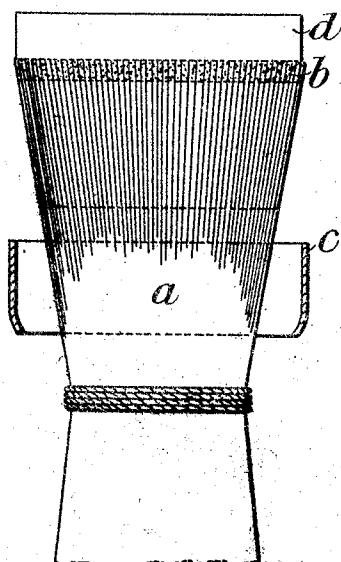


Fig.6.

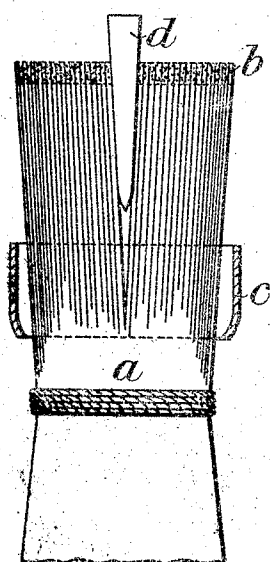
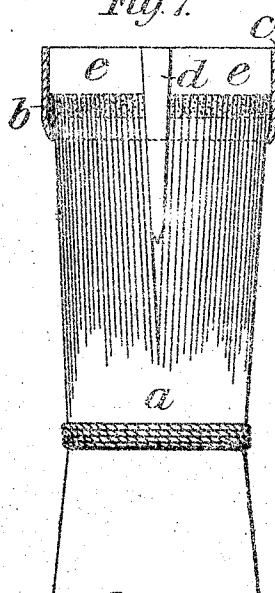


Fig. 7.



J. K. Moore
Robt. E. Barry.

Inventor.

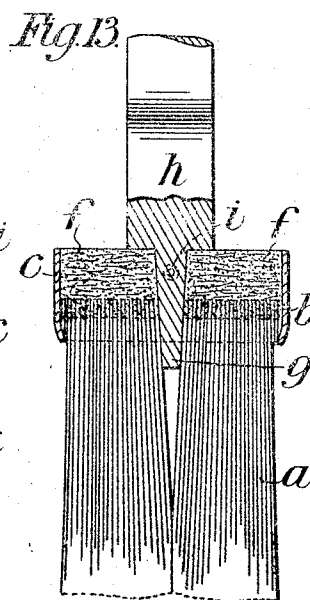
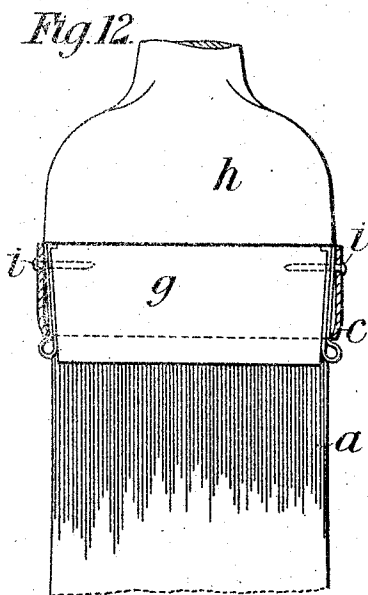
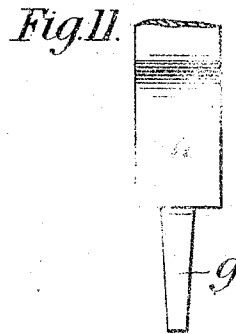
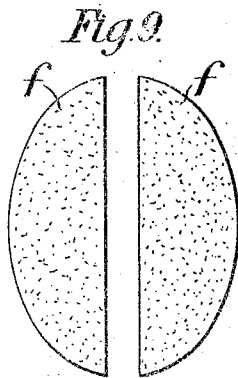
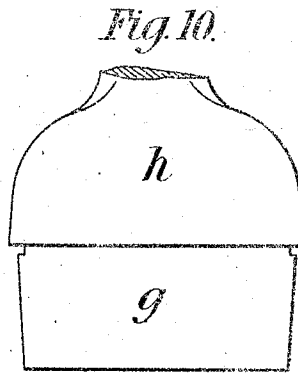
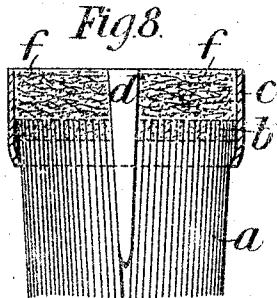
Albert H. Munroe
34
Whitaker Street

A. H. TIMMIS.
 PROCESS OF MANUFACTURING BRUSHES.
 APPLICATION FILED FEB. 11, 1916.

1,202,244.

Patented Oct. 24, 1916.

3 SHEETS—SHEET 2.



Witnesses:

J. K. Moore
 R. L. Barry

Inventor:

Albert H. Timmis
 By
 W. H. Timmis

A. H. TIMMIS.
 PROCESS OF MANUFACTURING BRUSHES.
 APPLICATION FILED FEB. 11, 1916.

1,202,244.

Patented Oct. 24, 1916.
 3 SHEETS—SHEET 3.

Fig. 14.

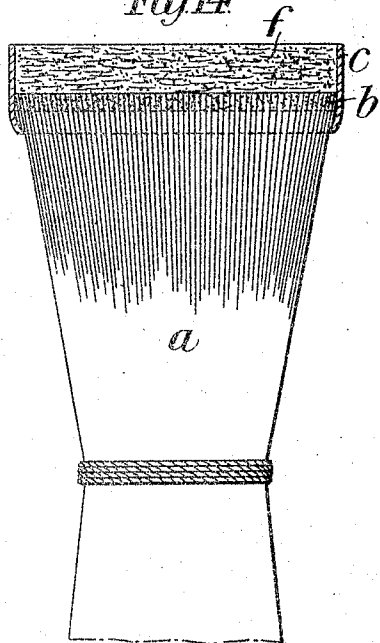


Fig. 15.

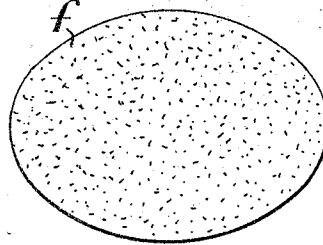


Fig. 18.

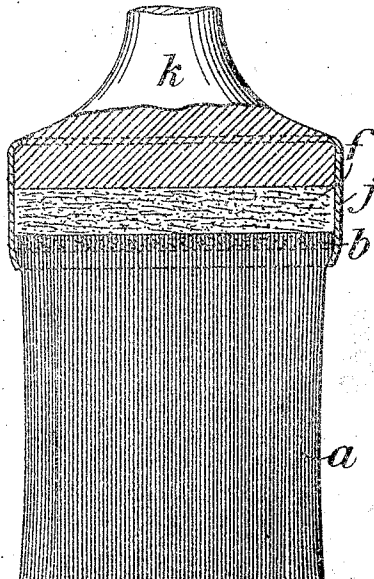


Fig. 16.

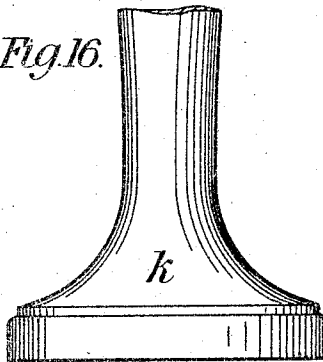
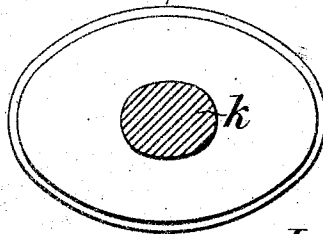


Fig. 17.



Witnesses.

J. K. Crook
 Robt. Barry

Inventor.

Albert H. Timmis
 by [Signature]
 atty.

UNITED STATES PATENT OFFICE

ALBERT HENRY TIMMIS, OF HARROW, ENGLAND, ASSIGNOR TO RUBBER SET BRUSH CO. LIMITED, OF LONDON, ENGLAND.

PROCESS OF MANUFACTURING BRUSHES.

1,202,244.

Specification of Letters Patent.

Patented Oct. 24, 1916.

Application filed February 11, 1916. Serial No. 77,803.

To all whom it may concern:

Be it known that I, ALBERT HENRY TIMMIS, a citizen of the United States of America, residing at Fairmount, Harrow View, Harrow, Middlesex, England, have invented new and useful Processes of Manufacturing Brushes, of which the following is a description.

This invention relates to brushes such as are used by painters, decorators, grainers and the like, and also to mill and machine brushes.

In such brushes as now generally manufactured it is usual to cover some part of the length of the knot or bunch of bristles or fibers in a ferrule or binding, or to introduce a portion of its length into a block or back, and which part of the bristles is, therefore, not available for use.

The object of this invention is to effect an economy in the cost of manufacture and to this end my invention consists in attaching the bristles to a vulcanizable block in such a manner that the said vulcanizable block constitutes an extension piece upon the knot of bristles and serves as a medium whereby the bristles may be attached to a handle so that brushes with a given available or usable length of bristles can be made from shorter bristles than has heretofore been possible.

According to this invention I first of all unite the knot or bunch of bristles or fibers at one end by dipping them into a vulcanizable cement in a manner which has heretofore been proposed, and I then apply to the end of the bristles thus cemented together a vulcanizable block composed, say, of short bristles or cuttings mixed with a vulcanizing material, such as rubber, the cemented end and the said block being subjected to the necessary heat and pressure to unite them firmly together; the bristles having the extension piece upon them can then be attached to a handle in any convenient manner.

To enable the invention to be fully understood, I will describe it by reference to the accompanying drawings, in which:—

Figures 1 to 13 are views illustrating the application of the invention to the manufacture of one form of brush, and Figs. 14 to 18 are views illustrating the application of the invention to the production of other forms of brush.

In applying the invention to the produc-

tion of the form of brush shown in sectional elevation in Figs. 12 and 13, a knot or bunch of bristles *a* which is tied in any one of the known ways, as for example, shown in Fig. 1, has the root end dipped into a vulcanizable solution to the desirable depth which, in practice, may be about one eighth of an inch, as shown at *b* in Fig. 2, which is a view similar to Fig. 1 illustrating the knot after the dipping operation. The solvent in the cement is then allowed to dry out, after which the knot is heated until the cement *b* is plastic, whereupon the knot is introduced into a former, such as a metal band *c*, as shown in Fig. 3. Fig. 4 is a plan view of the former which is of the shape which it is desired to give to the finished knot, in this particular case, oval. The former *c* is then drawn somewhat away from the cemented part *b*, as indicated in Fig. 5, thus allowing the root end of the knot to be exposed for division by a tool so as to provide a space for the reception of a metal or other like wedge *d*, which has preferably first been coated with blacklead; this wedge *d* is shown in position in Figs. 5 and 6 which are views of the knot at right angles to one another. The former *c* is then drawn back over the cemented bristles and inserted wedge *d* until it projects beyond the end of the knot *a*, as shown in Fig. 7, so as to provide two spaces *e* one on each side of the wedge. Into each of these spaces there is then introduced upon the base of the bristles a block or pad *f* of vulcanizable material, preferably composed of short bristles or cuttings mixed with vulcanizing material such as rubber, as shown in Fig. 8, which is a view similar to Fig. 7 showing these blocks or pads *f* in position in the spaces *e*. Fig. 9 is a plan view of the pad detached. The knot, vulcanizable pads and wedge in the metal former, as shown in Fig. 8, are then subjected to a vulcanizing heat by which the cemented ends of the bristles and the blocks are vulcanized hard together, after which the metal wedge *d* is removed, leaving a space for the insertion of a wedge *g* upon a handle *h* such as is shown in Figs. 10 and 11. The handle *h* is then secured in position in any convenient way, as for example, by nails *i* driven through the former *c* into the wedge *g* of the handle *h*, the former *c* in this case constituting a ferrule for the finished brush. It is preferable to subject the bristles and

block to pressure in the process of vulcanization.

In applying the invention to the production of a brush such as is shown in sectional view in Fig. 18, the knot *a* of bristles is treated in the same way as that hereinbefore described and illustrated in Figs. 1, 2 and 3 but it is not divided for the reception of a wedge as described, so that a single pad *f* of the vulcanizable material is introduced into the former *c* above the cemented ends of the bristles, as shown in Fig. 14. Fig. 15 shows the single vulcanizable pad detached. The bristles and pad are then subjected to a vulcanizing heat, as in the case previously described, and, after the said bristles and the pad have been vulcanized hard together, the former *c* is removed and the knot is passed through the ferrule *j*, shown in Fig. 18, so that the bristles project through one end thereof leaving a space at the other end for the reception of the base of a handle *k*, shown in elevation and sectional plan in Figs. 16 and 17. The handle and bristles are then secured together by turning or spinning the upper end of the ferrule on to the bristles.

In some cases the ferrule may be dispensed with, the bristles being secured to the handle by means of nails driven through the block which, as above described, has been

integrally vulcanized to the cement holding the ends of the bristles.

It will be understood that the method of applying the invention above described may be varied in accordance with the particular type of brush to be produced, and that the mode of connecting the bristles to the handle may also be varied, since the essential feature of the invention consists in the formation of the vulcanized block or pad integral with the cement binding the ends of the bristles or fibers, whereby an economy in the cost of bristles is effected, and the necessity of passing nails through the bristles is avoided.

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

The process of manufacturing brushes which consists in uniting a knot or bunch of bristles at one end by a vulcanizable cement, applying to the ends of the bristles thus cemented together a vulcanizable block to form an extension, subjecting the cemented ends of the bristles and block to heat and pressure to vulcanize and cement them together, and finally applying a handle to the said knot of bristles.

ALBERT HENRY TIMMIS.

Witnesses:

JOHN E. BOUSFIELD,
F. W. PRICE.