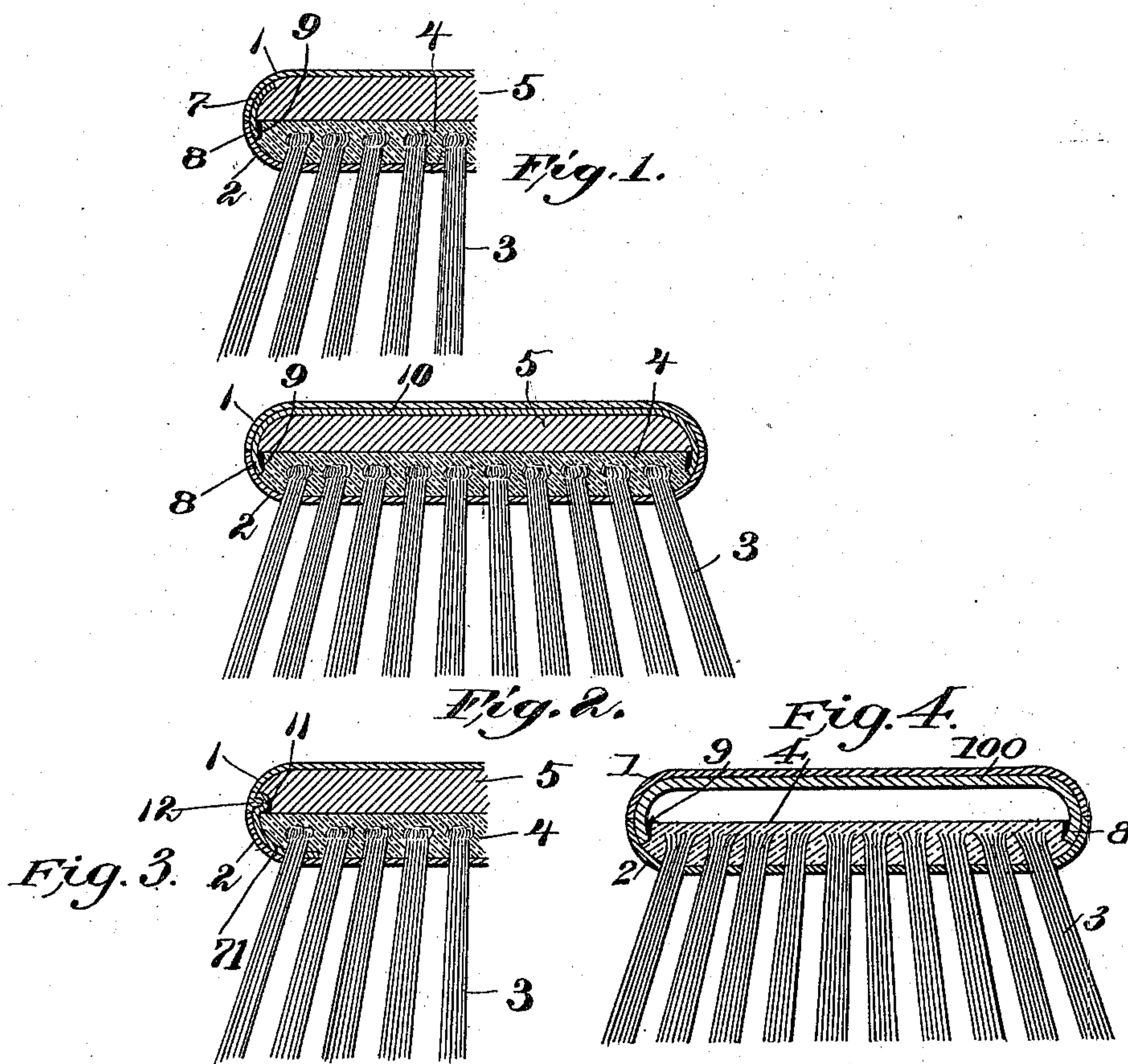


(No Model.)

A. C. ESTABROOK.
BRUSH.

No. 579,107.

Patented Mar. 16, 1897.



Witnesses:

Arthur F. Randall
A. Perry Randall

Inventor:

Alexander C. Estabrook
by Macleod Calver & Randall,
his Attorneys.

UNITED STATES PATENT OFFICE.

ALANSON C. ESTABROOK, OF NORTHAMPTON, MASSACHUSETTS, ASSIGNOR
TO THE FLORENCE MANUFACTURING COMPANY, OF SAME PLACE.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 579,107, dated March 16, 1897.

Application filed August 16, 1894. Serial No. 520,473. (No model.)

To all whom it may concern:

Be it known that I, ALANSON C. ESTABROOK, a citizen of the United States, residing at Northampton, in the county of Hampshire and 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.

My invention relates to brushes of that class in which the body of the brush consists of a metallic shell, the latter usually being constructed in two parts or shells, namely, an upper portion or half, which is termed the "back," and a lower portion or half, which is termed the "face," the latter being perforated for the reception of bristles.

Brushes have been made hitherto in which the back and face shells are secured together in the finished brush by overlapping or interlocking the edges or flanges thereof without the employment of solder or other securing means. Such brushes have also been provided with reinforces of wood or composition for the back and face shells, the wooden reinforce being secured in place by the use of an adhesive, such as shellac.

My present invention has for its object to provide a strong and durable brush of the class mentioned which shall be simple and inexpensive in construction and which will embody the desirable features of the brush above mentioned.

In the drawings, Figure 1 is a partial cross-section of a hair-brush embodying my invention. Figs. 2, 3, and 4 are similar sections showing slightly-modified forms which are hereinafter referred to.

At 1 in the drawings is shown the upper portion or back of a two-part metallic shell, and at 2 the lower portion or face thereof. The shell for the face is perforated for the reception of the tufts of bristles 3. The inner ends of the tufts of bristles project inside the said shell and are shown enlarged by burning in the well-known manner. For the purpose of holding them securely in place, as also of stiffening and reinforcing the shell 2 for the face, said shell 2 is filled or partially filled with a mass of composition 4, which is placed in the shell in a plastic condition and

then is allowed to set and harden. Various well-known compositions may be employed for this purpose. When placed in the shell, the composition flows around the inner ends of the tufts of bristles, which latter become embedded therein and thereby are firmly held in place. The shell for the back, after being molded or formed to the shape required by dies or the like, is provided with a reinforce of wood 5, which is formed to the required shape and applied thereto, it being molded therein under pressure, the shell preferably being placed in a die and the wood being molded therein to conform to the shell. In the molding operation the wood is also densified and thus is caused to form a firm but comparatively light reinforce for the metal shell, which stiffens the shell and prevents it from collapsing and being indented. Before the wooden reinforce is placed in the shell the contact-faces of the shell and wood are preferably covered or coated with an adhesive, such as shellac or the like, so that after the molding operation the metal shell and the wooden reinforce are firmly secured together. The wooden reinforce 5 and the mass of composition 4 preferably fill the two shells 1 and 2, so that when the two are placed together to form the completed brush the edges of the metal shells will abut, as shown in Fig. 1.

For the purpose of securing firmly together the parts, namely, the face and back, and also of rendering secure the joint where the edges of the shells meet, I provide a strip 7 of metal, preferably continuous, which is laid within the edge of the shell for the back before the wooden reinforce 5 is placed and molded therein. This strip 7 projects beyond the edge of the shell for the back and is firmly secured in place by being gripped between the wooden reinforce 5 and the said shell for the back, the said strip being embedded or partially embedded in the wooden reinforce when the same is molded under pressure within the said shell for the back.

For the purpose of assisting in securing the strip 7 in place its inner surface, which comes in contact with the wood, may be coated with an adhesive, such as shellac. When the parts of the brush are brought together, the pro-

jecting edge 8 of the strip 7 lies in the recess 9, which is formed for its reception in the edge of the composition reinforce 4. The edge 8 of the said strip, prior to bringing the parts of the brush together, is coated with a mass of composition or cement, so that after the parts of the brush are brought together the projecting portion 8 of the said strip 7 is firmly set and cemented in the recess formed to receive it in the composition reinforce 4. The edges of the back and face portions abut, and the strip 7 forms a backing for the joint, which strengthens it, and when the said strip 7 is continuous prevents the ingress of moisture, and thus increases the durability of the brush.

A brush made in this way is less expensive to make than other brushes of this class, while at the same time the appearance and strength of the brush are preserved.

The strip 7, if continuous, is shaped to conform to the contour of the shell for the back. The wooden reinforce 5 also is shaped to conform to the interior of the shell for the back before it is applied to said shell and molded therein. It will be obvious that the size and shape of these parts may be varied as desired to suit brushes of different kinds and shapes.

In the modification shown in Fig. 2 the strip 7 is replaced by a continuous inner layer of metal 10, covering the whole of the inner surface of the shell for the back, which layer may be secured to the back in any suitable manner, as by soldering it thereto, and when this layer 10 is of sufficient strength and thickness the wooden reinforce 5 may be omitted, the functions of the reinforce in stiffening the shell for the back being performed by the said layer. This modification is represented in Fig. 4, wherein the layer is designated 100. I consider this a less desirable form of construction than that previously described.

In the modification shown in Fig. 3 the strip 71 is placed within the edge of the shell 2 for

the face, said strip being made of somewhat greater width than in Fig. 1, so that it will extend inwardly within said shell for the face to a point inside the outer line of bristles. Perforations for the outer line or lines of bristles are made through said strip, so that when the bristles and the composition reinforce are in position the said strip is securely held in place. The upper edge of the strip 71 in this modification extends above the edge of the shell for the face, and a recess adapted to receive the upper edge of the said strip is formed near the side or edge of the wooden reinforce of the shell for the back. For the purpose of securing the two parts of the brush together a groove or indentation (shown at 11) is formed in said strip, preferably parallel with the upper edge thereof, and the edge of the shell for the back is provided or formed with an inward projection, as shown, so that when the parts of the brush are brought together the edge of the shell for the back will spring or snap into the groove or recess 11 and will thus serve to hold the parts of the brush securely together.

What I claim is—

A brush comprising two metallic shells—one for the face and one for the back—the shell for the face containing a mass of composition securing the bristles in place and reinforcing the said shell, said shell having perforations, bristles in said perforations, a reinforce for the shell for the back, and a securing-strip overlapping the joint between the shells for the face and back at the inner side thereof and having its upper and lower portions secured within the respective shells to unite the same, substantially as set forth.

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

ALANSON C. ESTABROOK.

Witnesses:

FRANK N. LOOK,

JOSEPH E. WINCHELL.