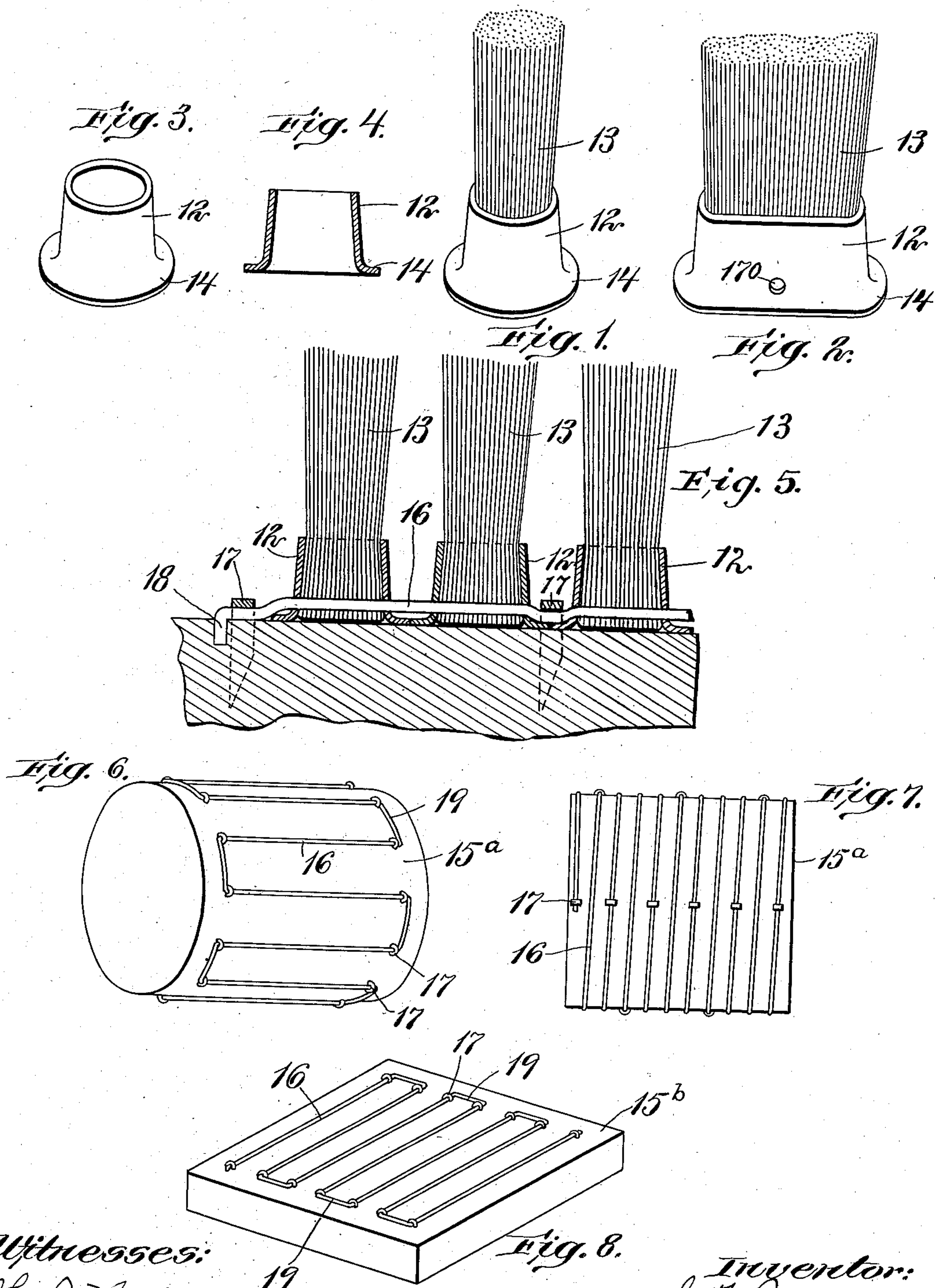


No. 840,106.

PATENTED JAN. 1, 1907.

J. F. BOWDITCH.
BRUSH.

APPLICATION FILED JULY 28, 1905.



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UNITED STATES PATENT OFFICE.

JOHN F. BOWDITCH, OF BOSTON, MASSACHUSETTS.

BRUSH.

No. 840,106.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. BOWDITCH, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to that class of brushes in which a brush head or body is provided with brush material in such manner that the brush material may be quickly and securely applied and may be removed from the head when worn, so that the head may be again supplied with fresh brush material, and, further, so that, if desired, worn or partially-worn brush material removed from one head may be applied to another head for uses requiring shorter bristles or brush material.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of one of the units of my improved brush. Fig. 2 represents a perspective view representing the unit shown in Fig. 1 after it has been flattened. Fig. 3 represents a perspective view of the socket portion of the unit shown in Fig. 1. Fig. 4 represents a sectional view of the said socket portion. Fig. 5 represents a sectional view showing some of the brush units assembled on a head or body. Figs. 6, 7, and 8 represent views illustrating different dispositions of the fastening-wires, hereinafter referred to, on the brush-head.

The same numerals of reference indicate the same parts in all the figures.

In carrying out my invention I apply a plurality of brush units each comprising a tubular sheet-metal socket 12 and a mass of tuft bristles 13, one end of which is inserted in the socket, the said end being preferably composed of the butts of the bristles, which are thicker than the outer portions, so that the portion of the mass within the socket is somewhat more bulky than the projecting portion. The base of the mass of bristles is preferably saturated with cement. The socket is preferably tapered or decreased in diameter from its base to its outer end, as shown. After the bristles have been inserted in the socket the latter is preferably flattened, as indicated in Fig. 2, by applying pressure in any suitable way to opposite sides of the socket. This flattening of the socket causes it to assume a transversely-elongated

form, with the result that a difference in the stiffness of the tuft is obtained—that is to say, the seating of the sockets with their minor axes in alinement transverse to the direction of movement of the brush in use will cause the bristles to present a greater resistance than when the sockets are seated with their major axes in alinement. The setting of the sockets with respect to their axes will control to some extent the stiffness of the brush, it being understood, of course, that in practice all of the sockets will be seated with their axes in the same general direction to provide a uniform stiffness to the brush. The inner end of the socket is preferably provided with a seating-flange 14.

15 represents a brush head or body which may be cylindrical, flat, or of any other desired form and may be composed of wood or any other suitable material. The above-described brush units are assembled upon the body 15, the seating-flanges 14 of the sockets bearing upon the body, as shown in Fig. 5. The preferred means for securing the brush units to the body comprise a wire fastening member 16, threaded through orifices 170, formed for its reception in the sockets 12 and in the portions of the brush material contained in said sockets, and staples 17, driven into said body, the staples bestriding the wire, the driving home of the staples causing the wire fastening member to be pulled down at the point of driving toward or into contact with the face of the body. This, in addition to providing a securing means, at the same time forms a positioning means, as the bend in the wire formed by its being pulled down provides a stop against longitudinal movement of the socket on the wire, as well as tightening the wire and binding the socket more firmly against the face of the body. The ends of the wire may be turned inwardly at 18 and inserted in the body 15, as shown in Fig. 5.

In Figs. 6, 7, and 8 I have shown diagrammatically different arrangements of the wire fastening members, the brush units being omitted. In Figs. 6 and 7 the brush-head is indicated at 15^a as cylindrical, and in Fig. 8 it is indicated at 15^b as flat. Fig. 7 is intended to show a single fastening member 16, coiled helically around the cylindrical body 15^a.

It will be readily understood that all of the parts are applied to the face of the body portion and that no preparation of such body for the reception of the parts need be made,

the penetrating parts being easily driven into the body. This not only permits of a rapid formation of the brush, but also permits of the sockets being arranged in any desired form by simply stringing them on the wire fastening member and stapling the latter at the desired points. This is of especial advantage in making brushes with the bristles arranged so as to form a continuous row of bristles helically around the body.

It will be seen that the brush units may be readily applied to a brush head or body and as readily removed therefrom to be replaced by similar unworn units. Inasmuch as the units are not affected or injured by their attachment and removal, it follows that units which have been shortened by wear and have been removed from one head or body may be applied to another head or body for use in a brush requiring shorter bristles.

I claim—

1. A brush comprising a body having a supporting-face, a series of connected brush units each of said units comprising a transversely-elongated socket and a tuft of bristles secured therein, said units being arranged with their minor axes in alinement transverse to the direction of movement of the brush in use, and body-penetrating fastening members at the ends and at intermediate points of the series to secure the series to the said face.

2. A brush comprising a body having a

supporting-face, a plurality of brush units, each composed of a tubular socket seated on said face, and a tuft of bristles secured in said socket, an elongated socket-connecting member engaged with a series of sockets, and staples bestriking the said connecting member and driven into the body between brush units.

3. A brush comprising a body having a supporting-face, a plurality of brush units each composed of a tubular socket seated on said face, and a tuft of bristles secured in said socket, an elongated connecting flexible wire engaged with a series of sockets, and staples bestriding said wire and driven into the body between brush units.

4. A brush comprising a body having a supporting-face, a plurality of brush units, each composed of a socket and a tuft of bristles secured therein, an elongated socket-connecting member engaged with a series of sockets, said sockets and socket-connecting member being mounted on said face, and body-penetrating fastening members engaging said connecting member and driven into the body to secure the sockets and member to said face intermediate its ends.

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

JOHN F. BOWDITCH.

Witnesses:

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