

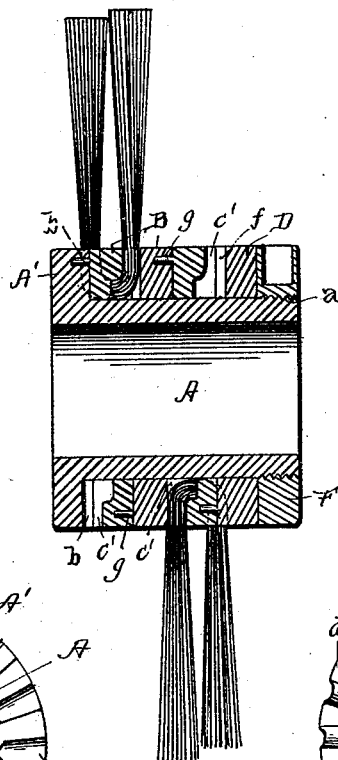
(No Model.)

J. W. GOULDING & W. C. KEMBLE.  
BRUSH.

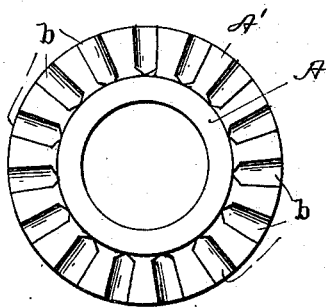
No. 553,402.

Patented Jan. 21, 1896.

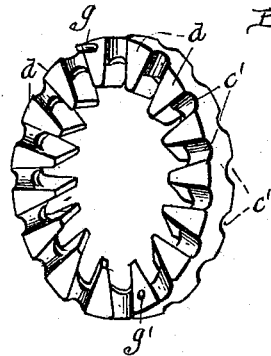
*Fig. 1*



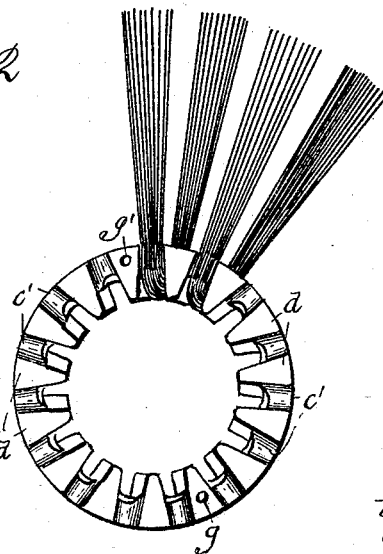
*Fig. 4.*



*Fig. 3.*



*Fig. 2*



WITNESSES

*G. M. Anderson*  
*Phil. Massi*

INVENTORS

*J. W. Goulding*  
*W. C. Kemble*  
*by E. W. Anderson*  
Attorney

# UNITED STATES PATENT OFFICE.

JOHN W. GOULDING AND WALLACE C. KEMBLE, OF TRENTON, NEW JERSEY.

## BRUSH.

SPECIFICATION forming part of Letters Patent No. 553,402, dated January 21, 1896.

Application filed February 21, 1895. Serial No. 539,302. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN W. GOULDING and WALLACE C. KEMBLE, citizens of the United States, and residents of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Brushes; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a central longitudinal section through the brush, two of the bristle-bunches only being shown. Fig. 2 is a face view of one of the head-sections with two bristle-bunches inserted. Fig. 3 is a perspective view of one of the head-sections. Fig. 4 is an end view of the central sleeve or cylinder.

The object of this invention is to provide a brush-head which will effectually secure the brushes or bristles, and one which, when the brushes or bristles become worn out, may be readily refilled, becoming then equal to a new brush and saving the cost of a new head.

With this object in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates a central sleeve or cylinder, which at one end portion has an external thread *a*, and at its opposite end a surrounding rim-flange A'. The inner face of this flange is formed with a series of open radial grooves or channels *b*, substantially semicircular in cross-section, said channels commencing at or near the inner edge of the flange, and running through the outer edge thereof.

B designates a series of head-sections, each of which is of annular form, made to fit neatly but removably upon the central sleeve or cylinder, and of substantially the same diameter as the flange A'. The number of these sections will depend upon the length and character of the brush, three being shown in the present instance. Each of said sections is formed upon both faces with radial channels

or grooves *c'*, which extend entirely across the face of the section, and which are substantially semicircular in cross-section. The raised spaces *d* between these channels are projected inward beyond the inner edge of the rim proper of the section, their inner ends fitting against the central sleeve or cylinder. These projections *d*, owing to the decrease in diameter from their outer to their inner ends, are of wedge form, and their lateral faces are oblique, owing to the fact that the channels upon one face of the section are midway of or alternate with those upon the opposite face, a single projection being common to a channel upon each face, or, in other words, the two inward projections from two channels most nearly opposite are extended to join each other. An end section D is also provided, having grooves or channels *f* on its under face similar to the grooves or channels of the flange A', and which correspond in number and position to those on the upper face of the top section B.

In building up the brush the bristles or brushes are taken in bunches of the usual character, the central portion of a bunch being placed in the space between each adjacent pair of the projections *d* of the lower section. The arms of the bunches are then bent down into the grooves upon the opposite faces of the section. The section is then placed upon the central sleeve or cylinder and is forced down upon the flange A' until the lower parts of the bunches are received in the grooves or channels of said flange. The second section is then placed upon said sleeve or cylinder without brushes, its inner grooves or channels aligning with the channels of the first section and receiving the outer portions of the brushes of the inner section. The third section is then filled with brushes in the same manner as the first and fitted to the sleeve or cylinder. The end section D is then put in place to secure the upper brushes. The whole is then secured by an annular ring F, which is fitted to receive a wrench. This ring when seated binds the entire brush securely together.

To prevent any tendency of the sections to turn upon each other or upon the sleeve or cylinder, they are provided with interfitting pins *g* and sockets *g'*.

It will be apparent that the peculiar construction of the sections is such as to hold the brushes very securely; also, that the head can be readily filled with new brushes at any time.

5 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The brush head, consisting of a central sleeve or cylinder having at one end a surrounding rim or flange whose inner face is radially grooved or channeled, a series of annular sections removably fitted to said sleeve or cylinder, and having both faces radially grooved or channeled, the spaces between said  
10 grooves or channels being projected inwardly, an end section having radial grooves or channels on its inner face, and means for binding said sections together, substantially as specified.

2. The brush head consisting of a central sleeve or cylinder having at one end a surrounding flange whose inner face is radially grooved or channeled, and at its opposite portion having an external thread, the series of  
25 annular sections removably fitted to said

sleeve, each face of each section having therein a series of radial grooves or channels, the grooves or channels upon one face alternating with those upon the other, the wedge shaped, inward projections between said  
30 grooves or channels having oblique lateral faces, the end section, and the ring fitted to said threaded portion of the sleeve or cylinder, said sections having interfitting locking devices for preventing their rotation, substantially as specified.

3. In a brush head, an annular section having a series of radial grooves or channels upon both its faces, the grooves or channels of one series alternating with those of the other, and  
40 wedge-shaped inward projections between said grooves or channels having oblique lateral faces, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN W. GOULDING.

WALLACE C. KEMBLE.

Witnesses:

S. WALKER, Jr.,

Wm. H. UMPLEBY.