

(No Model.)

J. W. DENNIS.
TOOTH BRUSH.

No. 541,727.

Patented June 25, 1895.

Fig. 1.

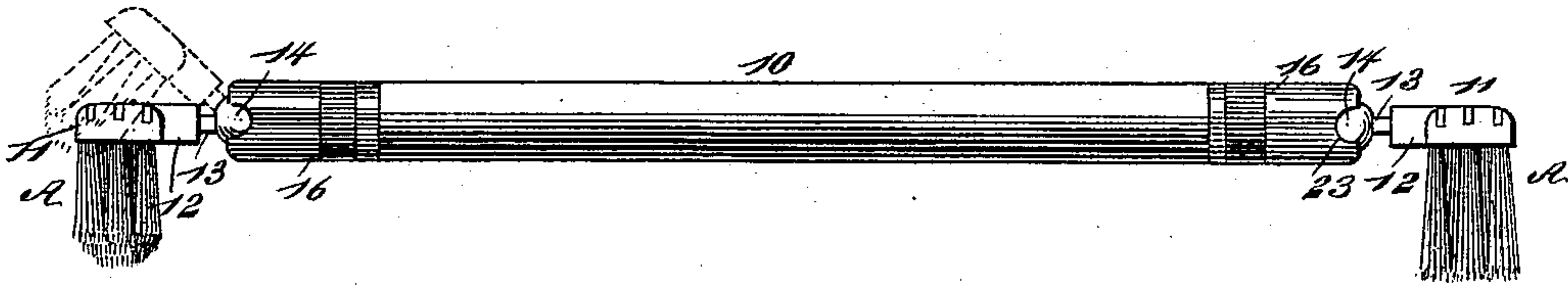


Fig. 2.

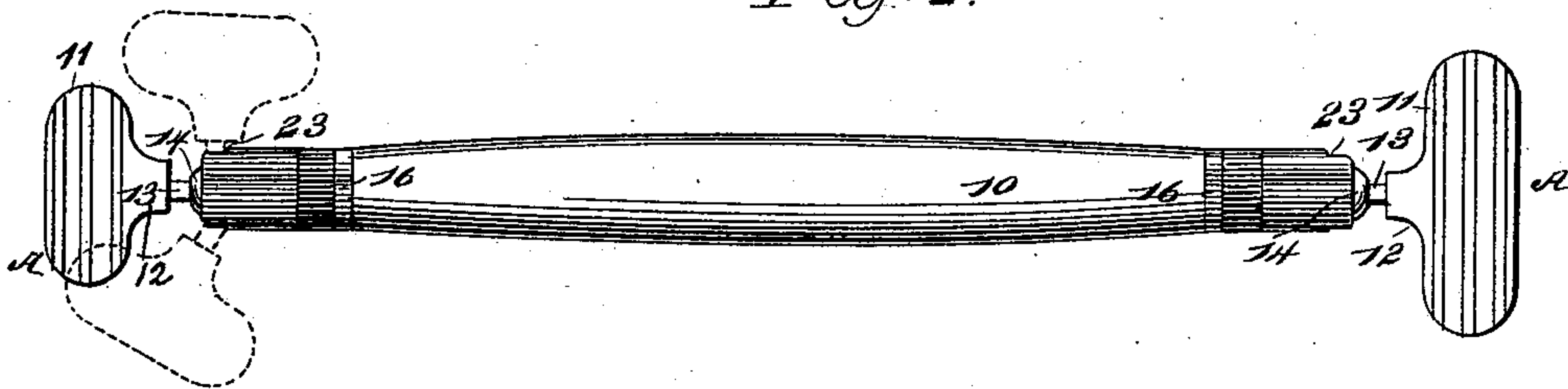


Fig. 3.

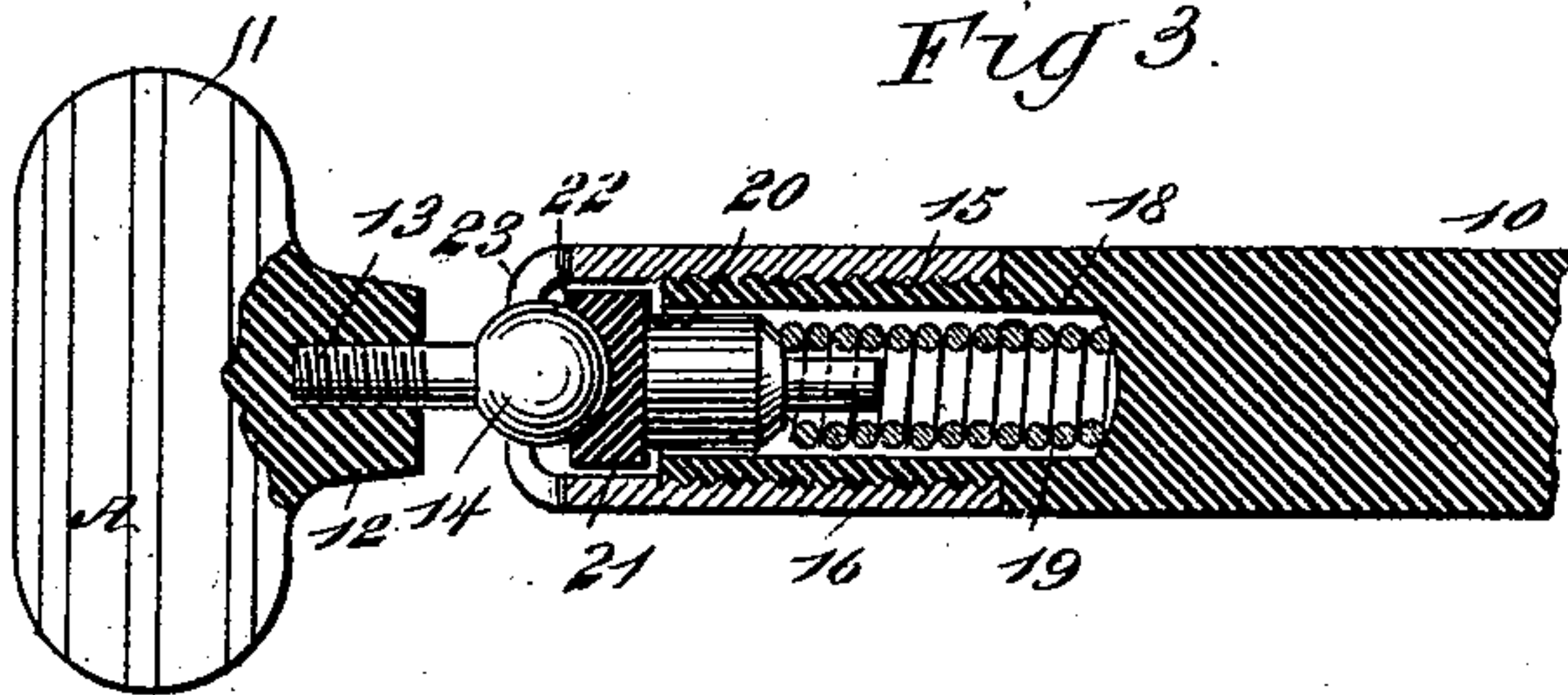


Fig. 4.

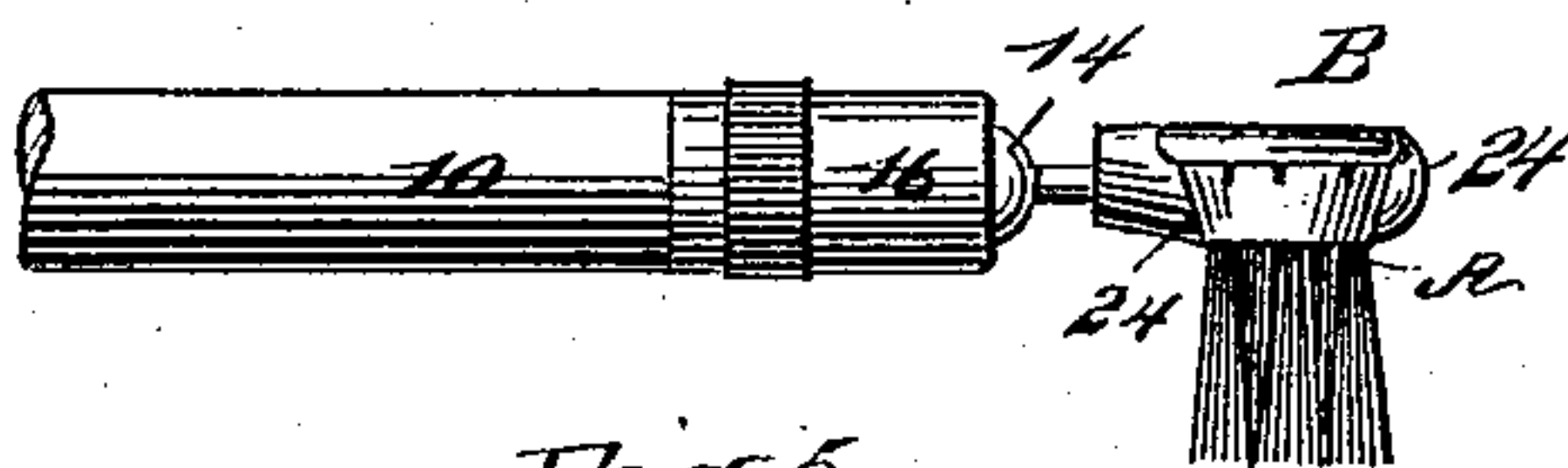
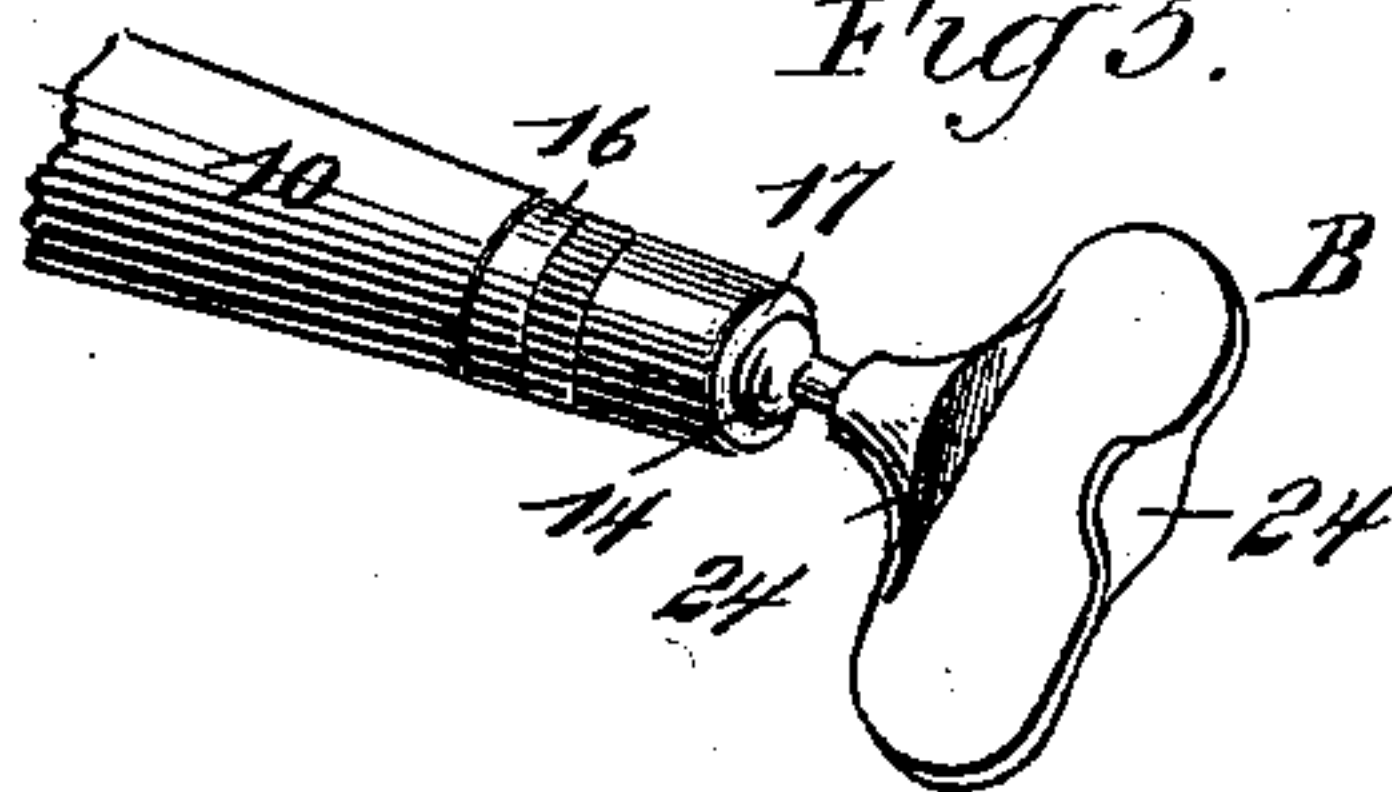


Fig. 5.



WITNESSES:

Paul J. Schat
J. H. Acker

INVENTOR

J. W. Dennis
BY
Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES W. DENNIS, OF CINCINNATI, OHIO.

TOOTH-BRUSH.

SPECIFICATION forming part of Letters Patent No. 541,727, dated June 25, 1895.

Application filed October 18, 1894. Serial No. 526,274. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. DENNIS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Tooth-Brush, of which the following is a full, clear, and exact description.

My invention relates to an improvement in tooth brushes, and the object of the invention is to provide a means whereby a tooth brush may be so connected with the handle that the said brush may be carried to various positions around the handle, and whereby the brush will have substantially a universal connection with the handle, and when placed at an angle to the handle whereby the brush will be some distance removed from the handle, enabling the brush to be readily operated in the mouth without interference on the part of the handle.

A further object of the invention is to provide a universal joint or connection between the brush and handle, which will be simple, durable and economic, and furthermore to provide a means whereby a head may be attached to the handle which will receive the heads of different brushes, thus enabling brushes of different characters to be used on the same handle.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a brush handle having a brush at both of its ends. Fig. 2 is a plan view of the brush and handle. Fig. 3 is a section through the handle and a partial section of the brush, illustrating the manner in which the two are connected. Fig. 4 is a partial side elevation of the handle, illustrating the attachment of a head thereto capable of receiving a brush head; and Fig. 5 is a perspective view of the said head and the portion of the handle to which it is attached.

In carrying out the invention the handle may be made of any desired material and may be of any suitable length, and the handle may be provided with a brush A at one

or at both of its ends, and when two brushes are employed in connection with the handle one of the brushes is smaller than the other. The brushes stand normally at right angles to the handle.

The brushes may be of any approved construction, but the head 11 of the brush proper is provided with a lug 12 at about the central portion of one of its sides, and this lug is adapted to receive a shank 13, which is attached to a ball 14. This shank is ordinarily screwed into the brush head and has a flat section near the ball, as shown in Fig. 2, in order that it may be grasped by a pair of pliers for example, facilitating the entrance of the shank into the brush head.

The end of the handle 10 is reduced and exteriorly threaded, as shown at 15 in Fig. 3, in order that a ferrule 16 may be screwed thereon. This ferrule is provided with a circular opening at one of its ends, and an inwardly extending marginal flange 17 at the same end. The flanged end of the ferrule is its outer end, and is adapted to contain the ball 14, the flange 17 serving to prevent the ball from being drawn from the ferrule when once placed therein, although its shank projects out from the ferrule, as shown also in Fig. 3. The threaded end of the handle is provided with a longitudinal chamber 18, containing a spring 19, ordinarily a coiled spring, and a plug 20 against which the spring exerts tension in an outwardly direction, the plug being reduced in order that a portion thereof may enter the coils of the spring, while the outer end of the spring has bearing against the shoulder thus formed. After the ball has been placed in the ferrule a block 21 is introduced therein, and made to bear against the inner portion of the ball, the block having a concavity 22 in its outer face to receive the ball. The plug and spring being in position in the handle and the block and ball in the ferrule, the latter is screwed upon the handle, and the plug 20 will have bearing against the block 21. It is therefore evident that the farther the ferrule is screwed upon the handle the more tension will be exerted by the spring and plug against the block, binding the block firmly against the ball, serving to hold the ball in whatever position it may be placed, but at the same time the brush at-

tached to the ball may be readily and conveniently placed at any angle to the handle.

In order that the brush may be carried at a right angle to the handle, recesses 23 are
5 made in the flanged end thereof, as illustrated in Figs. 1 and 2, and when the shank of the ball is carried into these recesses the brush will be in a vertical position when the handle is in a horizontal one; but these recesses may
10 be omitted, as shown in Figs. 4 and 5.

Instead of the brush being attached to the ball, and thereby becoming a fixture of the handle, a cap or head B may be secured to the ball, provided upon one of its faces with oppos-
15 ing lugs 24, the inner faces of the lugs being preferably under-cut to form substantially a dove-tail shaped channel, and the head of the brush A is correspondingly shaped in cross section and placed in the head B of the han-
20 dle between its lugs, as shown in Fig. 4. Under this construction a brush with one character of bristles may be used in connection with the handle for certain purposes, and that brush may be removed at will and a brush of
25 a different character substituted.

A brush constructed as above set forth may be used with advantage in the cleaning of teeth, since every surface of every tooth may be readily reached; and the brush is espe-
30 cially advantageously used in cleaning bridge-work in the mouth.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

35 1. In a brush, the combination with a handle having a chamber in its end, of a ferrule adjustably secured to the handle, a ball held adjustably in the ferrule, and provided with a shank for connection with a brush, and a
40 spring pressed follower in the chamber of the

handle and engaging the ball, substantially as described.

2. In a brush, the combination with a handle provided with a screw threaded end and having a chamber in said end, of a ferrule 45 screwing on the threaded end of the handle and provided with an inwardly projecting flange having opposite recesses, a ball held to turn in the ferrule and provided with a projecting shank, for connection with a brush, a
50 follower in the chamber of the handle and bearing against the ball, and a spring between the follower and the bottom of the said chamber, substantially as herein shown and de-
55 scribed.

3. In a brush, the combination with a handle provided with a reduced and screw threaded end and having a chamber in said end, of a ferrule screwing on the reduced end of the handle and provided with an inwardly pro- 60 jecting flange having opposite recesses, a ball held to turn in the ferrule and provided with a projecting shank, for connection with a brush, a block engaging the ball, a plug bearing against the block and having one end re- 65 duced, and a spring receiving the reduced end of the plug and having its other end resting against the bottom of the chamber of the handle, substantially as described.

4. A brush, comprising a handle, a head hav- 70 ing a longitudinal dovetail channel and provided with an extension on one side, a brush fitting in said channel, and a ball and socket connection between the extension of the head and the handle, substantially as described.

JAMES W. DENNIS.

Witnesses:

JOHN B. BONTET,

LOUIS A. BROWNBECK.