

C. R. POWERS.
DENTAL BROACH AND HOLDER.
APPLICATION FILED MAY 18, 1908.

904,990.

Patented Nov. 24, 1908.

Fig. 1.

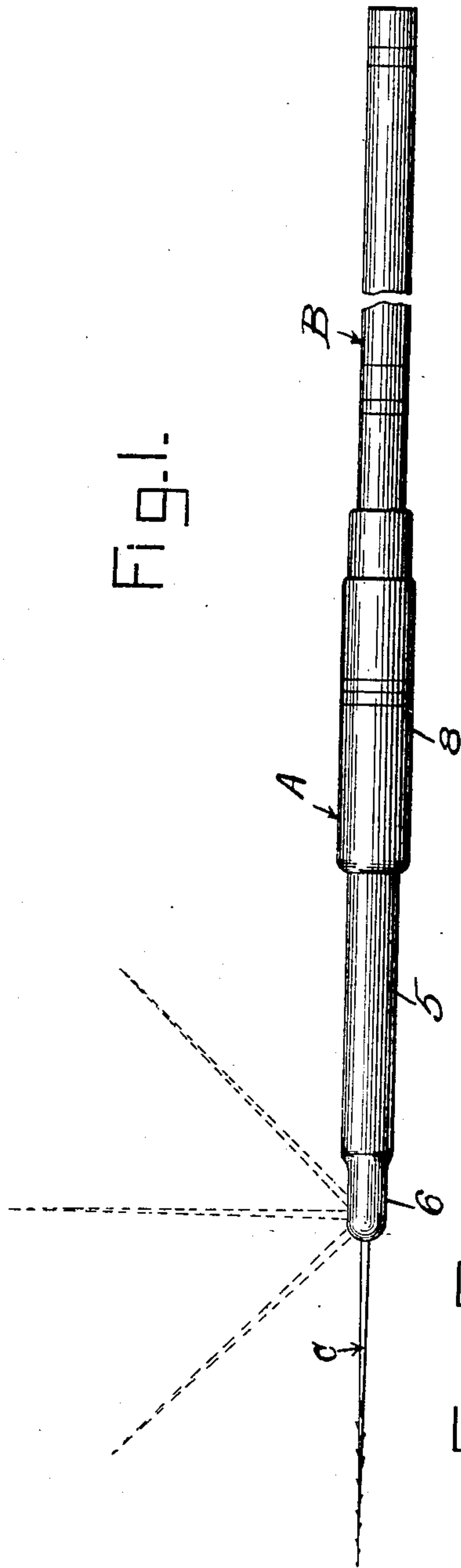


Fig. 2.

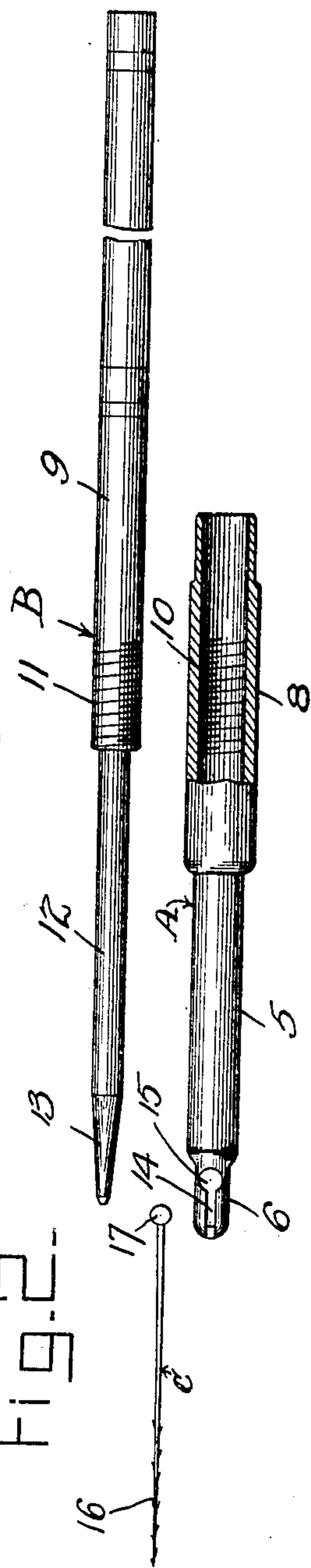
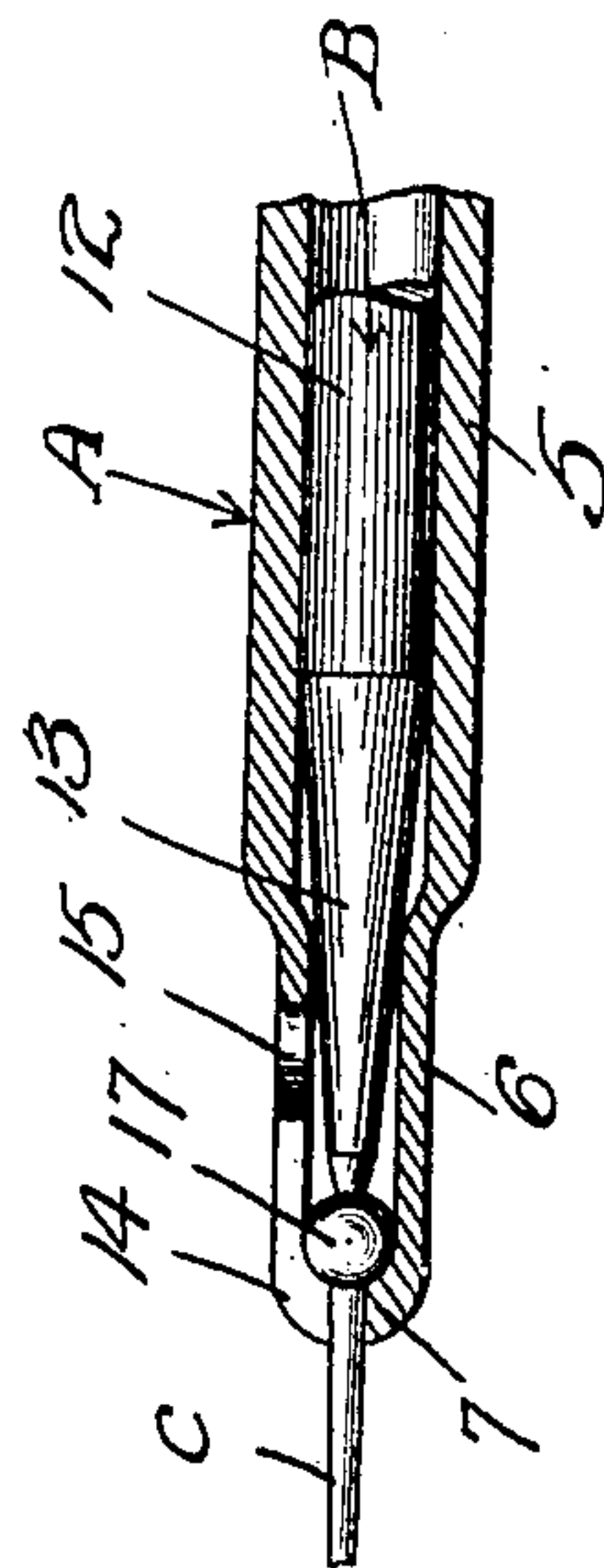


Fig. 3.



Witnesses

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DENTAL BROACH AND HOLDER.

No. 904,990.

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To all whom it may concern:

Be it known that I, CHARLES R. POWERS, a citizen of the United States, residing at Princeton, in the county of Green Lake and State of Wisconsin, have invented certain new and useful Improvements in Dental Broaches and Holders, of which the following is a specification.

This invention relates to dental broaches and to handles or holders for the same; and it has for its object to provide an improved broach and holder which shall admit of the adjustment of the broach at any desired angle to the handle or holder, thus enabling the broach to be used more readily and with more satisfactory results than is the case with broaches that are not capable of such adjustment.

A further object of the invention is to so construct the parts that the broach, when properly adjusted, will be held or retained with perfect rigidity, so that it will not be liable to be displaced in any way during operation.

A further object of the invention is to so construct the parts that the angle of the broach with relation to the handle or holder may very readily be changed after the broach has been entered into the canal of the tooth, thus doing away with the necessity of bending the broach to enter the root canal at the back of a tooth.

A further object of the invention is to so construct the parts that the broach may readily be separated from the handle after being entered into the root canal of a molar tooth, thus enabling the broach to be rotated at will so as to entangle the nerve on the broach, thus facilitating the extraction of the nerve.

Further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited,

but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawings—Figure 1 is a side elevation of a device constructed in accordance with the invention, showing the broach fitted in the handle and with dotted lines indicating various adjustments of the broach. Fig. 2 is a view in elevation, partly in section, showing the parts constituting the invention disassembled; said view being taken approximately at right angles to the device as it appears in Fig. 1. Fig. 3 is a longitudinal sectional view of the broach-receiving end of the handle or holder, showing the butt-end of the broach in position.

Corresponding parts in the several figures are denoted by like characters of reference.

The handle or holder of the improved device comprises a tubular member A and a follower B. Said tubular member comprises an intermediate portion 5, one end of which, which for convenience, will be designated as the front end, is constricted, as shown at 6, and closed at its forward extremity as shown at 7; the rearward end of the tubular member A is expanded, or of greater diameter than the intermediate portion, as will be seen at 8. The follower, which is generally designated by the letter B, consists of a rod, the greater portion of which, as shown at 9, is of suitable diameter to fit in the expanded portion 8 of the tubular member; said expanded portion being internally threaded a portion of its length, as shown at 10, to engage a male thread 11, formed upon the front end of the portion 9 of the member B. Forward of this portion extends an intermediate portion 12 of reduced diameter, to approximately fit within the intermediate portion 5 of the tubular member; and the forward end of the reduced portion 12 has a terminal conical portion 13, which is adapted to enter within the reduced forward portion 6, of the tubular member A. Said forward portion is provided with a longitudinal keyhole slot 14, expanded at the rear end to form an approximately circular aperture 15, and said keyhole slot extends into the closure 7, at the front end of the reduced tubular portion 6, a sufficient distance to enable the broach to be adjusted in axial alinement with the handle or holder, as will be presently seen.

The broach C, which consists, as is usu-

ally the case of a flexible needle provided at its point end with prongs or barbs 16, is provided at its rear end with a spherical bulb or enlargement 17, of such dimensions
 5 that it may be readily inserted through the aperture 15 of the keyhole slot 14, into the reduced portion 6 of the tubular member of the holder; being moved forwardly in the direction of the closed end of the portion or
 10 chamber 6, the bulb or enlargement 17 will engage the walls of said chamber, and it may be securely retained in such position by means of the follower B, which is inserted into the tubular member of the holder and
 15 screwed down tightly until the conical point 13 engages the bulb 17, which will thus be securely retained at any desired adjustment. It will be seen that the keyhole slot 14 is cut of such dimensions that the broach may
 20 be placed in axial alinement with the handle or holder; it will also be seen that by slightly loosening the follower, the broach may be turned practically to any angle with reference to the handle or holder, as clearly
 25 indicated in Fig. 1 of the drawings, it being further understood that the broach may be securely retained at any desired adjustment by tightening the follower.

From the foregoing description taken in
 30 connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. The improved broach and holder is
 35 of simple construction and may be manufactured at a moderate expense. The facility with which the broach may be adjusted and held in various positions with relation to the handle or holder will appear to any
 40 dental practitioner who has attempted to accomplish results by bending the broach; and an important feature of the invention resides in the facility with which the broach, after insertion in the root canal of the tooth
 45 may be separated from the handle by simply loosening the follower sufficiently to enable the handle to be disengaged from the ball or bulb upon the broach; the latter may then
 50 be seized and rotated or otherwise manipulated by utilizing the ball or bulb 17 as a

handle to be laid hold of by the fingers of the operator.

Having thus described the invention, what is claimed is—

1. In a device of the character described, 55 a holder comprising a tubular member and a follower operating therein; said tubular member comprising an intermediate portion having a reduced and terminally closed forward portion provided with a keyhole slot, 60 and an expanded internally threaded rearward portion; and said follower consisting of a rod fitting within the expanded portion of the tubular member and having an externally threaded portion coöperating there- 65 with, the forward end of the said rod being of reduced diameter to fit within the intermediate portion of the tubular member and having a conical terminal point; in combination with a broach provided with a spher- 70 ical bulb or enlargement for insertion through the keyhole slot into the reduced and terminally closed forward portion of the tubular member, and to be engaged by the terminal conical point of the follower. 75

2. In a device of the character described, a holder comprising a tubular member closed at one end and provided with a keyhole slot extending into the closure, and a follower operating in said tubular member and 80 having threaded connection therewith, in combination with a broach having a spherical bulb or enlargement.

3. In a device of the character described, a tubular member closed at one end and hav- 85 ing a keyhole slot extending into the closure, a broach having a spherical bulb or enlargement fitted into the keyhole slot and bearing upon the closed terminal end of the tubular member, and a follower operating in said 90 tubular member and engaging the spherical bulb or enlargement and thereby retaining the broach in adjusted position.

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

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Witnesses:

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