

D. A. ROSENTHAL.
 DENTAL BROACH AND HOLDER.
 APPLICATION FILED SEPT. 16, 1911.

1,035,239.

Patented Aug. 13, 1912.

FIG. 1

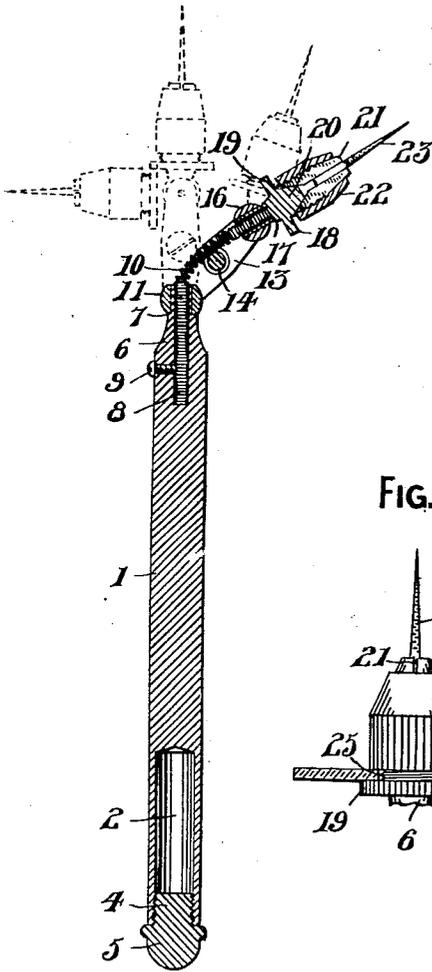


FIG. 2

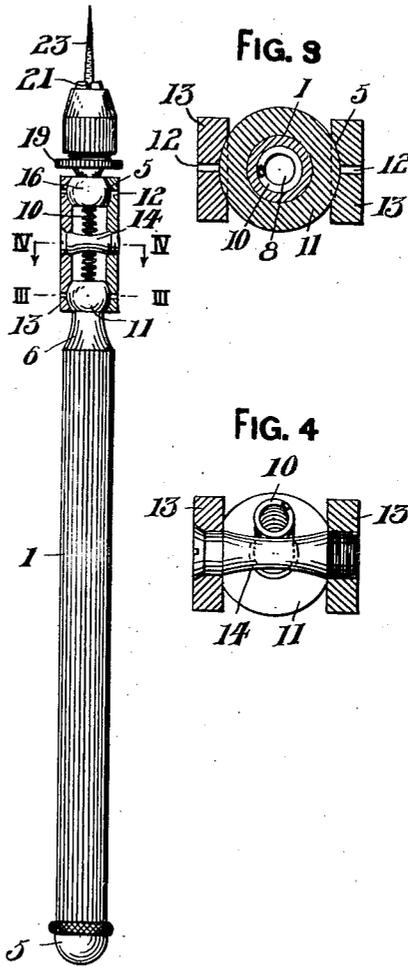


FIG. 3

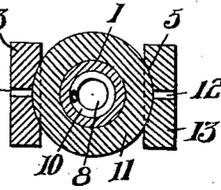


FIG. 5

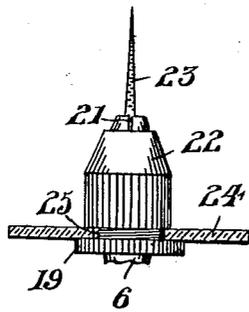
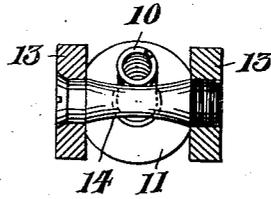


FIG. 4



WITNESSES

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DENTAL BROACH AND HOLDER.

1,035,239.

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To all whom it may concern:

Be it known that I, DAVID A. ROSENTHAL, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Dental Broaches and Holders, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a dental broach and holder, and the primary object of my invention is to provide in a manner as hereinafter set forth an instrument that will facilitate the removal or extraction of nerves from the canal of a tooth, the instrument being constructed to admit of adjustment of the broach at any desired angle and rotated whereby a nerve can be easily entwined upon or caught by the broach.

Another object of this invention is to provide in a manner as hereinafter set forth an adjustable broach that will be held or retained with perfect rigidity so that it will not be liable to displacement during operation.

The invention will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a longitudinal sectional view of the instrument showing by dotted lines adjusted positions of the broach, Fig. 2 is an elevation of the instrument partly broken away and partly in section, Fig. 3 is an enlarged cross sectional view taken on the line III—III of Fig. 2, Fig. 4 is a similar view taken on the line IV—IV of Fig. 2, and Fig. 5 is an elevation of a portion of the instrument showing in section an attachment for said instrument.

An instrument in accordance with this invention comprises a cylindrical handle 1 that is ribbed, knurled or otherwise roughened, whereby a purchase can be easily obtained upon the same. The outer end of the handle 1 has a longitudinal bore or recess 2 and the walls of this recess are screw threaded, as at 3 to receive a plug 4 carried by a cap 5. The recess 2 is adapted to receive broaches that are not in use. The inner end of the handle 1 is reduced, as at 6 and provided with an annular shoulder 7. The end of the handle has a longitudinal bore 8 and anchored in the lower end of the bore by a set screw 9 or other fastening

means is the end of a coiled spring 10 that serves functionally as a flexible shaft or connection.

Revolubly mounted upon the shoulder 7 of the reduced end of the handle 1 is a bearing 11 having diametrically opposed trunnions 12 and pivotally mounted upon these trunnions are the inner ends of oppositely disposed arms 13. The arms 13 are connected together, intermediate the ends by a screw 14 and said arms are recessed, as at 15 to provide clearance for the bearing 11, whereby said arms can easily shift upon said bearing.

Pivotally mounted between the outer ends of the arms 13 is another bearing 16, similar to the bearing 11, and this bearing receives the tubular end 17 of a head 18. The head 18 has a knurled peripheral flange 19 and a tapering portion 20 that coöperates with chuck jaws 21 and a sleeve 22 in holding a broach 23. The broach 23 is of a conventional form provided at its pointed end with prongs or barbs that facilitate the entwining or gripping of a nerve by the broach. The elements 20, 21 and 22 constitute a chuck for detachably holding the broach, and by gripping the peripheral flange 19 of the head 18, the sleeve 22 can be easily rotated either to clamp the jaws 21 upon the inner end of the broach or to release said jaws.

The spring 10 protrudes from the handle 1 and the outer end thereof is anchored in the tubular end 17 of the head 18, whereby when the handle 1 is rotated, a similar movement will be imparted to the head 18 and the broach supported thereby. The screw 14 is concave to provide a central bearing for the spring 10 when the head 18 is swung out of longitudinal alinement with the handle 1.

From the foregoing it will be observed that the arms 13 can be swung at an angle to the handle 1 and the head 18 at an angle relatively to said arms, and as the bearing 11 is revolubly mounted upon the handle 1, the head 18 can be swung in a plane around the longitudinal axis of the handle 1. This movement of the head or chuck 18 permits of a dental practitioner easily placing the broach in the root canal of a tooth and by a slight rotation of the handle obtaining a purchase upon the nerve that permits of easy extraction.

In Fig. 5 of the drawing there is illustrated an attachment for the instrument,

comprising a magnifying lens 24 that is mounted between the peripheral flange 19 and the inner end of the sleeve 22. The lens has an opening 25 to provide clearance for this lens that a tooth cavity or nerve can be easily observed and the instrument properly positioned and manipulated.

While in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements thereof are susceptible to such variations as fall within the scope of the appended claims.

What I claim is:—

1. An instrument of the type described comprising a handle, a pair of parallel arms movably connected at their rear ends to the outer end of said handle, a chuck movably supported by the outer ends of said arms and capable of holding a broach, and a flexible shaft connecting said handle and said chuck.

2. An instrument of the type described comprising arms, front and rear bearings trunnioned between the ends of said arms, a chuck carried by the front bearing and capable of supporting a broach, a rotatable handle having one end thereof mounted in said inner bearing, and means for oper-

atively connecting the chuck to the handle for imparting a rotary movement to said chuck when the handle is rotated.

3. An instrument of the type described comprising a handle, a chuck adapted to be swung at various angles to said handle, a magnifying lens carried by said chuck, and a flexible connection between said handle and said chuck whereby said chuck can be rotated in unison with said handle.

4. An instrument for the purpose set forth comprising a rotatable chuck capable of holding a broach, and a magnifying lens connected to and movable with the chuck and constituting means for magnifying the broach and the work operated on.

5. An instrument for the purpose set forth comprising a chuck, a rotatable handle, an operative connection between the chuck and handle whereby the chuck is rotated in unison with the handle, and means connected to the chuck and to the handle for angularly adjusting the chuck independent of said operative connection.

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

DAVID A. ROSENTHAL.

Witnesses:

MAX H. SROLOVITZ,
CHRISTINA T. HOOD.