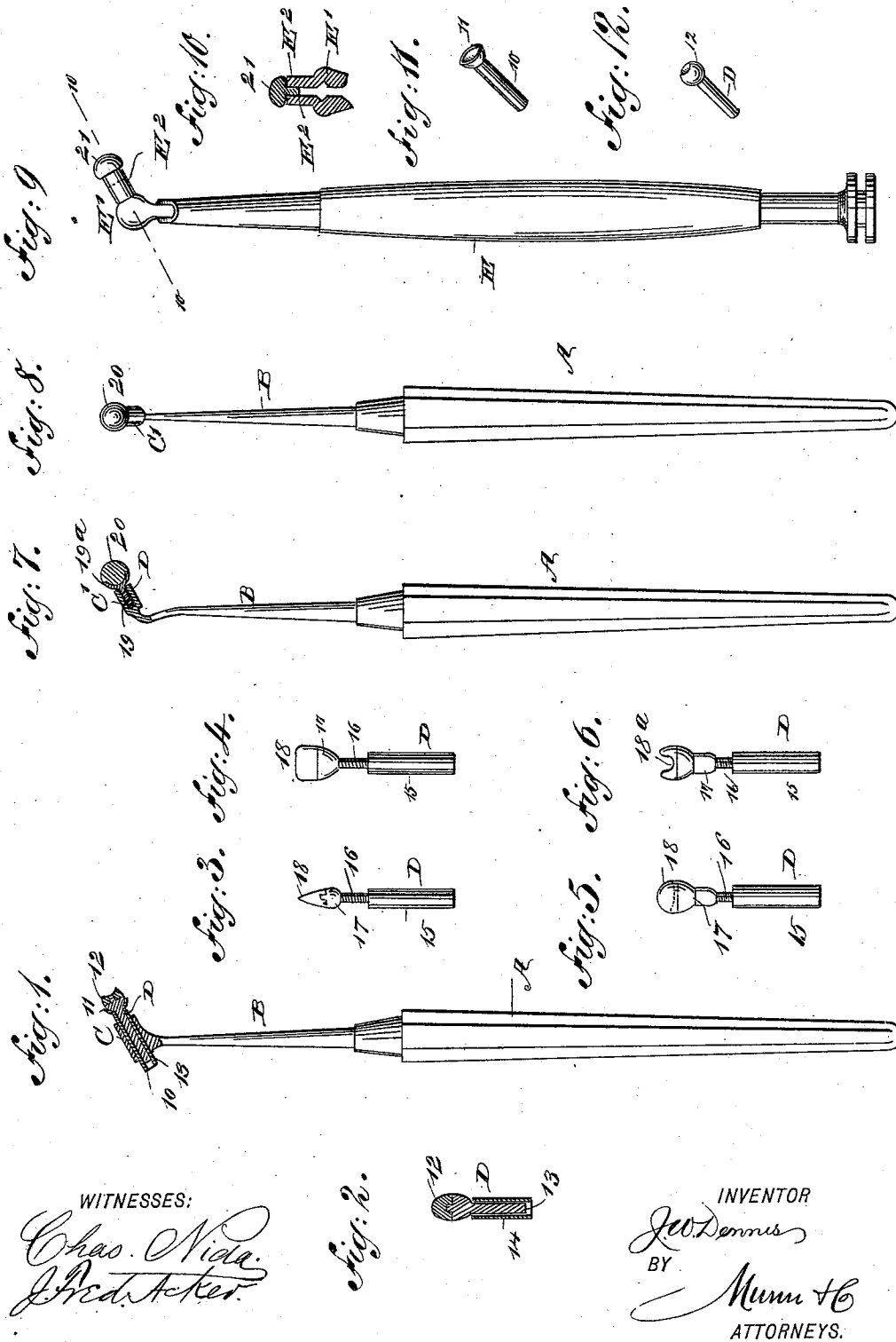


(No Model.)

J. W. DENNIS.  
DENTAL PLUGGER.

No. 532,721.

Patented Jan. 15, 1895.



# UNITED STATES PATENT OFFICE.

JAMES W. DENNIS, OF CINCINNATI, OHIO, ASSIGNOR TO CLARA E. DENNIS,  
OF SAME PLACE.

## DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 532,721, dated January 15, 1895.

Application filed July 3, 1894. Serial No. 516,436. (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 Dental Plugger, of which the following is a full, clear, and exact description.

My invention relates to an improvement in dental pluggers, and it has for its object to provide a plugger in which the working face will be of a yielding material, being especially adapted for the introduction of amalgamating filling into the cavity of a tooth, whereby the prominences and depressions of the cavity will be duplicated upon the plugger at the moment pressure is applied thereto, and whereby the yielding and impressible or working service of the plugger will carry with it the plastic and yielding amalgam, and whereby also, by reason of the said yielding or elastic surface the mercury is brought rapidly, evenly and thoroughly to the surface, thereby producing an exceedingly hard and unshrinkable filling, and whereby further the atmospheric pressure exerted by the act of recovery, or retractive action on the part of the elastic or yielding surface of the plugger, will materially serve to knead, as it were, the amalgam in place, and greatly facilitate the extraction of the mercury from the filling.

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 partial side elevation and partial sectional view of one form of the plugger. Fig. 2 is a sectional view through what may be termed a removable tip for the plugger, the said tip being of different shape than that shown in Fig. 1. Fig. 3 is an edge view of another form of tip adapted for use in a plugger and to constitute the working surface thereof. Fig. 4 is a side elevation of the tip shown in Fig. 3. Fig. 5 is a side elevation of another form of the tip. Fig. 6 is also a side elevation, viewed at right-angle to that shown in Fig. 5. Fig. 7 is a side elevation of a body

portion of a plugger, illustrating a removable tip thereon, the tip being in section. Fig. 8 is an under face view of the plugger shown in Fig. 7. Fig. 9 is a side elevation of another form of plugger, provided with a removable tip. Fig. 10 is a section taken substantially on the line 10—10 of Fig. 9. Fig. 11 is a detail view of the receiving tube shown in Fig. 1; and Fig. 12 is a detail view of the tip adapted to enter said tube.

In using the word "tip," it is intended to mean the working end of the plugger, the body of the plugger consisting of a handle A and a shank B, either straight or curved, as occasion may demand; and in the form of body illustrated in Fig. 1, the shank B is provided with a socket C at its outer end, of tubular form, the socket being at an acute angle to the shank, but the degree of inclination may be changed, and in the said Fig. 1, I have illustrated a receiving tube 10 fitted in the socket C, the tube being provided with a flaring outer end 11, and the tip D, that is removably placed in the receiving tube, consists of a working surface 12 of a yielding or pliable material, soft rubber being usually preferred, and a backing and shank 13 of hard rubber, or other hard material, the body being more or less cylindrical in order to fit the flaring end 11 of the receiving tube 10, while the shank of the tip is entered a predetermined distance into said tube. The working surface 12 of the tip in this instance is cupped or concaved in order that it may produce a maximum of suction when brought to bear upon a surface such as an amalgamating filling.

In Fig. 2 a receiving tube 14 is employed, and said tube constitutes a portion of the tip. The working surface 12 of the tip is of a yielding material such as rubber, and is firmly attached to the body and shank 13, as in the tip shown in Fig. 1, made of a harder material, but the shank in this instance is secured firmly in the receiving tube, and the body surface extends beyond the end of the tube. The working surface 12 of the tip in this instance is rounded off or rendered more or less cylindrical, in fact, the body and working surface constitute substantially an oval.

In the form of the tip shown in Figs. 3 and

4, said tip consists of a receiving tube 15, which is interiorly threaded to receive a threaded stem or shank 16, the said shank being provided with a body section 17 of a hard material, and a working surface 18, is secured to the said body in any approved manner, the working surface being of soft rubber or a like material, and the said working surface is shown wedge shaped in cross section, opposite faces being quite wide, whereby when this tip is employed, by introducing its receiving tube 15 into the socket C of the body of the plugger the working portion of the tip may be turned to bring a longitudinal portion of the working surface either transversely or longitudinally, or diagonally across the face of the tube. In fact, the working surface of the tip under this form may be shifted in a manner to bring said surface to bear upon any desirable portion of the tooth.

In Figs. 5 and 6, the tip D comprises a threaded receiving tube 15, as in Figs. 3 and 4, and correspondingly threaded shank 16 and body 17, and the working surface 18, which is of a yielding material, such as soft rubber, is made at its outer end, and is provided with a depression 18<sup>a</sup>, extending through from side to side. This tip is especially adapted for working amalgam or like fillings at the edge of a tooth, or where the filling extends beyond the crown and down one of the walls of the tooth, since while pressure is being brought to bear upon the filling at its overhanging portion or outer edge, the outer surface or wall of the filling will be prevented from moving, since the edge will be received in the depressions 18<sup>a</sup>. The working surface of this tip, as in that shown in Figs. 3 and 4, may be shifted to operate upon any portion of the tooth.

In the form of the plugger shown in Fig. 7, the shank B is provided with a socket C', differing from the socket C in that it is closed at one end, and the socket C' is interiorly threaded, and its mouth is hollowed out or chamfered. The tip D in this instance comprises a shank 19, which is screwed into the socket C', and a body 19<sup>a</sup> of a hard material, semi-circular and adapted to fit in a measure into the mouth of the threaded portion of the socket, while the working surface 20 is of a yielding or elastic material such as soft rubber, is shown in circular form and is attached to the body 19<sup>a</sup> in any approved manner.

In that form of the instrument shown in Fig. 9 a handle E is employed, provided at one end with jaws E', each of said jaws being provided with an extension E<sup>2</sup>, semi-circular in cross section; and the handle is likewise

provided with a means for compressing the jaws, or operating them to carry their extensions either to or from one another. The tip 21 in this instance is made preferably entirely of a yielding or elastic material, and may be of any desired shape, comprising, however, a body portion and a teat or lug, the latter being adapted to be received and clamped between the extensions of the jaws of the handle, as shown in Fig. 10. Under this construction it will be observed that with one handle, or a set of handles, working tips having yielded working surfaces or faces of various forms may be interchangeably used, and that an amalgam or soft filling, through the means of the said tips, may be placed in any form of cavity, no matter where located.

As heretofore stated, the yielding working face of the pluggers or other equivalent tools employed, when used to place an amalgam filling, will effectually draw the mercury to the surface of the filling, while the filling can be firmly packed in an exceedingly short space of time, leaving the filling, as the free mercury is removed therefrom, non-shrinkable and very hard.

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

1. A dental plugger provided with a socket and with a tip held to turn in the socket and having a working face of yielding material, substantially as described.

2. A dental plugger provided with a socket, a tube in the socket, and a tip having a working face of yielding material and adjustably held in the same tube, substantially as described.

3. A dental plugger provided with a socket, a tube fitting in the socket and having a flaring outer end, and a tip, consisting of a shank fitting in the flaring end and body of the tube, and a working face of yielding material on the end of the shank, substantially as described.

4. In a dental plugger, an elastic working surface provided with a depression adapted to receive the filling at the margin of a tooth, whereby the said working surface will act simultaneously on the crown and wall, as set forth.

5. In a dental plugger, a tip comprising a body portion and a lug or shank, the whole being of elastic or yielding material, substantially as described.

JAMES W. DENNIS.

Witnesses:

F. W. HANAFORD,  
C. SEDGWICK,