

No. 647,010.

Patented Apr. 10, 1900.

F. L. MARSHALL.  
DENTAL PLUGGER.

(Application filed Aug. 27, 1898.)

(No Model.)

Fig. 1.

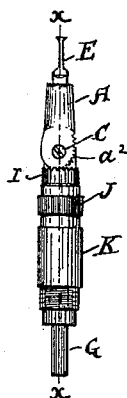


Fig. 2.

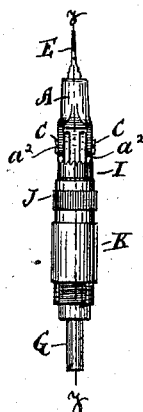


Fig. 3.

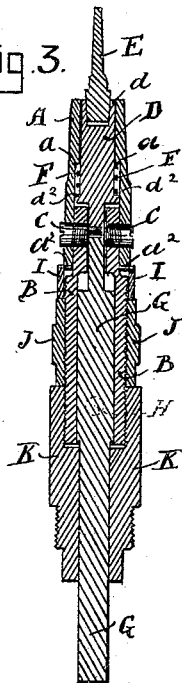


Fig. 4.

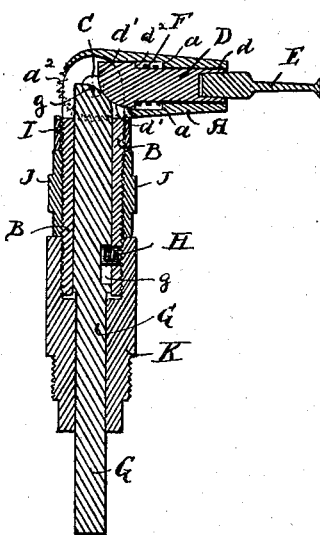


Fig. 5.

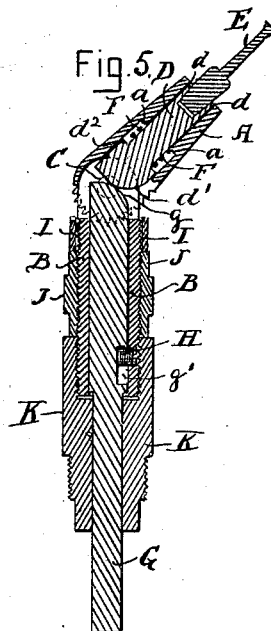


Fig. 6.



Fig. 7.

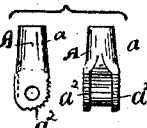


Fig. 8.

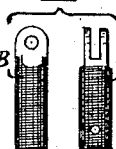


Fig. 9.

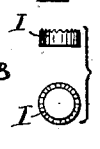


Fig. 10.

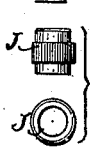


Fig. 11.

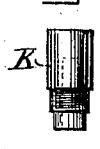
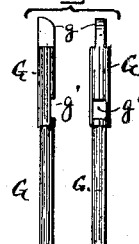


Fig. 12.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK L. MARSHALL, OF BOSTON, MASSACHUSETTS.

## DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 647,010, dated April 10, 1900.

Application filed August 27, 1898. Serial No. 689,684. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK L. MARSHALL, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dental Pluggers or Mallets, of which the following is a specification.

My invention relates to certain improvements in that class of dental pluggers or mallets in which the plugger or mallet can be set at any desired angle to the body; and the invention consists in certain details of construction, as hereinafter set forth, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a dental plugger or mallet embodying my invention. Fig. 2 is a front view of same. Fig. 3 is a longitudinal vertical section taken on line  $x x$  of Fig. 1, but drawn to an enlarged scale and showing the plugger in a vertical position. Fig. 4 is a similar view taken on line  $y y$  of Fig. 2, showing the plugger set at right angles. Fig. 5 is a similar view showing the plugger set at an angle of forty-five degrees. Figs. 6 to 12 are detail views of the various parts.

A represents the outer or free end portion, and B the inner or fixed portion, of the outer shell of the plugger or mallet. The inner end of the outer portion A is furcated to embrace the furcated upper end of the inner portion B, the furcated ends being held together by screws C, but so that they can be turned to any desired angle in relation to each other. The outer end A is hollow in order to receive the tool-holder D and permit the same to move longitudinally therein, said holder being formed with a tapering socket  $d$  at its outer end, into which the plugger-point E is secured. The inner end of said tool-holder is flat and projects rearwardly into the furcated end of the casing, and its inner end or meeting face is formed on a quadrant of a circle  $d'$ . The flat portion of the holder is of a greater width than the main body D, so as to form a shoulder  $d^2$ , and the shell A is formed with a corresponding shoulder  $a$ , so that a spring F, interposed between said shoulders  $d^2$   $a$ , will draw the tool-holder D back. The inner or fixed portion B of the shell is hollow and fitted with a plunger-rod G, the forward end of

which is flattened and projects into the furcated portion of the casing B, and its meeting face is formed on a quadrant of a circle  $g$ , as shown, to correspond to the meeting face  $d'$  of the tool-holder D, a recess  $g'$  being formed in about the center of the length of said rod, into which the inner end of a screw H enters, said screw passing through the shell B, as shown, and, working in the recess  $g'$ , limits the travel of the rod G. The outer surface of the lower portion B is screw-threaded and is fitted with a ring I, free to slide thereon. As shown, the outer end of the ring I is formed with teeth adapted to fit into teeth in the forked arms  $a^2$  of the upper portion A, so that when the teeth are in contact the upper portion B is held at the desired angle.

J is a short sleeve screw-threaded on its inner surface to fit the thread on the portion B, so that by turning said sleeve up the ring I is forced up, so that the teeth on its upper edge come into contact with the teeth on the forks or arms  $a^2$  of the piece A, and when the sleeve is turned down the teeth on said ring I can be withdrawn from the teeth on the forks or arms  $a^2$  and the outer portion A turned to a desired angle, when the sleeve is again turned up and with it the ring I until the teeth again engage each other and the parts are locked in position.

K is a piece screwed onto the end of the portion B and is formed at its lower end with a screw-thread by which it can be attached to an apparatus by which a blow can be imparted to the end of the rod G.

The operation is as follows: The sleeve J is first turned down, so as to allow the ring I to be drawn down. Then the outer or free end portion A is set in line with or at any desired angle in relation to the inner or fixed portion B. The sleeve J is then screwed up and carries the ring I with it until the teeth on the ring are in contact with the teeth on the forked arms  $a^2$  of the outer portion A. Thus the two parts A B are retained in position. Now if a blow be imparted to the lower end of the rod G the same will be transmitted to the tool-holder D by reason of the quadrant faces  $d' g$ , no matter in what position the two parts A B may be in relation to each other, as said quadrant surfaces  $d' g$  are always in contact with each other.

Owing to the specific construction of the inner end of the tool-holder and the outer end of the plunger-rod G—that is, owing to their having flat sides and quadrant-shaped meeting edges—the meeting ends of the rods are of such form that they are adapted to be embraced by the other parts of the tool without unduly enlarging the tool at this point, as would be the case where spherical or hemispherical meeting surfaces are employed. Furthermore, the sides of said meeting ends being flat serve to guide both of the reciprocating parts, so as to prevent their turning without the employment of other or special means to prevent rotation thereof.

What I claim is—

1. In a dental plugger or mallet made in two parts connected together, a tool-carrier longitudinally movable in the outer or free end portion, the inner end of said tool-carrier being flat and of quadrant form at its inner end, a plunger-rod in the inner or fixed portion, the upper end of said rod being flat and of quadrant form substantially as and for the purposes set forth.

2. In a dental plugger or mallet a casing made in two parts and adapted to be set at any desired angle in relation to each other, means for holding them in the desired position, a tool-carrier longitudinally movable in

the outer or free end portion the inner end of said tool-carrier being flat and of quadrant form at its inner end, a plunger-rod in the inner or fixed portion the upper end of said rod being flat and of quadrant form substantially as and for the purpose set forth.

3. In a dental plugger or mallet, a casing made in two parts furcated at their ends or junction and fulcrumed together, the prongs on the outer portion having teeth, a ring on the inner or fixed portion having teeth on its upper edge, means for adjusting and holding the teeth on said ring in contact with the teeth on the prongs of the upper portion, a tool-carrier longitudinally movable in the outer or free end portion, the inner end of said tool-carrier being flat and of quadrant form at its inner end, a plunger-rod in the inner or fixed portion the upper end of said rod being flat and of quadrant form, whereby a blow imparted to said rod will be transmitted to the tool-carrier substantially as set forth.

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

FRANK L. MARSHALL.

Witnesses:

HARRY A. BROWN,  
G. E. ROBBINS.