

J. P. KELLEY.
DENTAL ENGINE PLUGGER OR MALLET.
APPLICATION FILED OCT. 28, 1907.

907,815.

Patented Dec. 29, 1908.

Fig. 1.

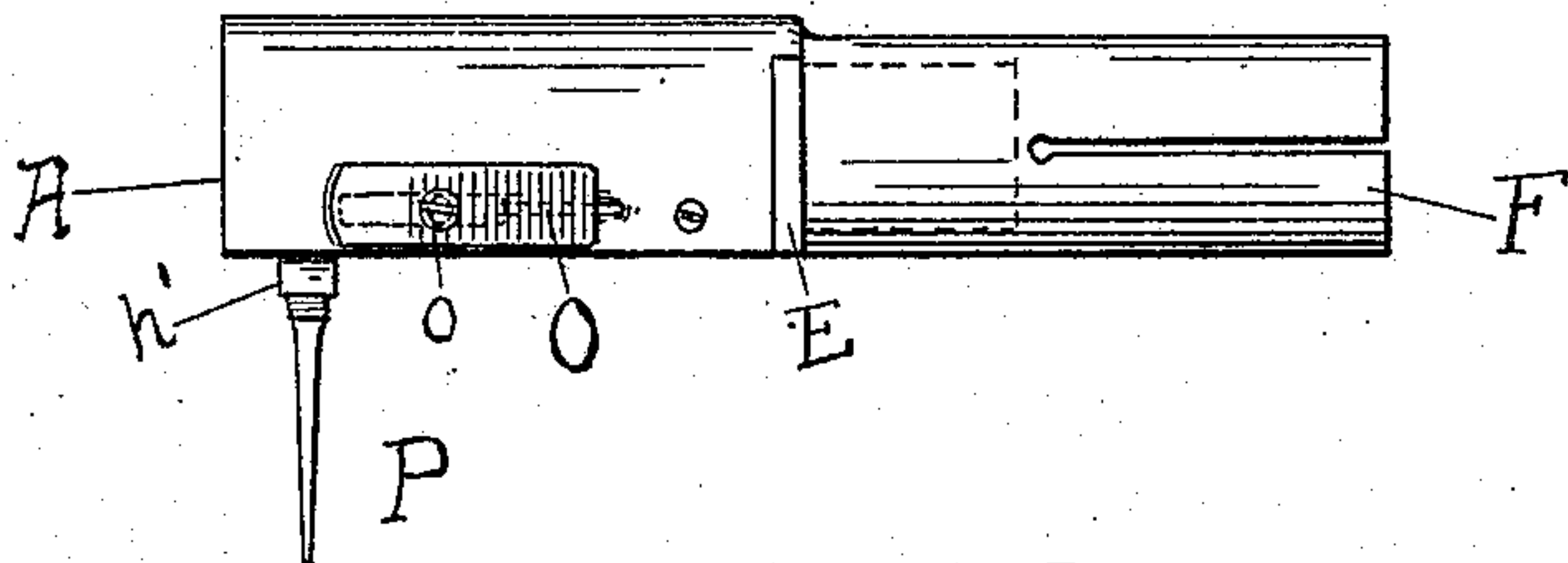


Fig. 2.

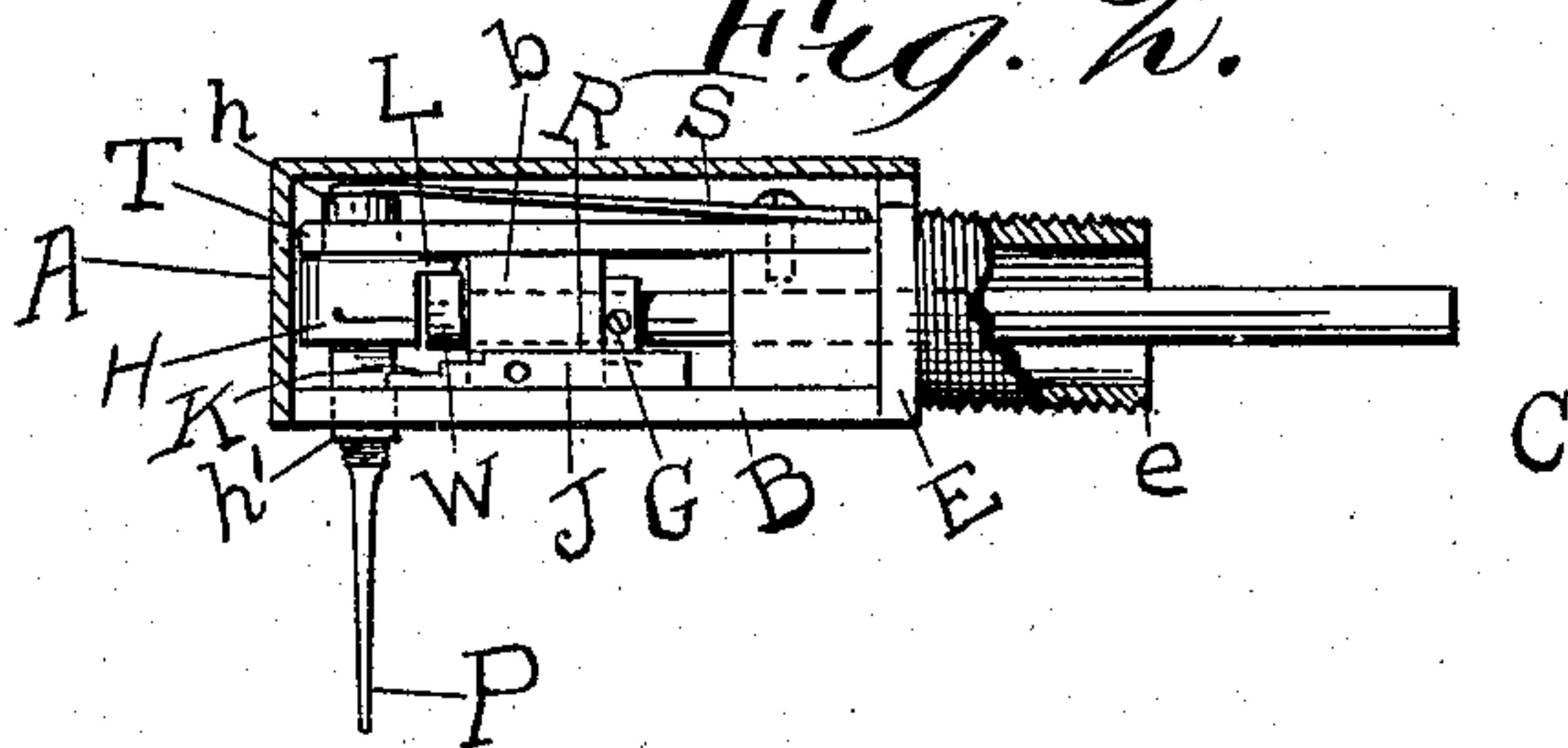


Fig. 3.

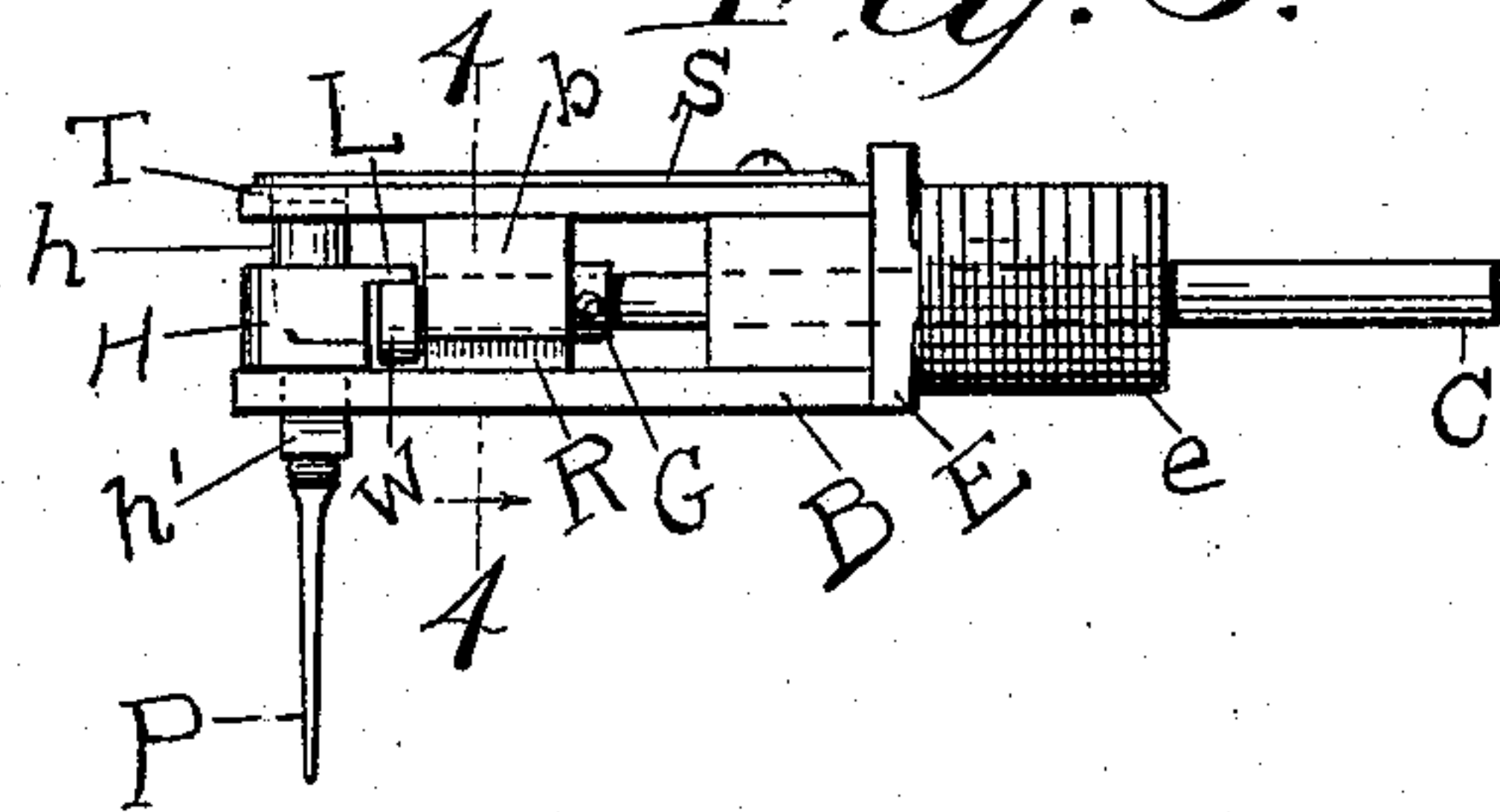


Fig. 4.

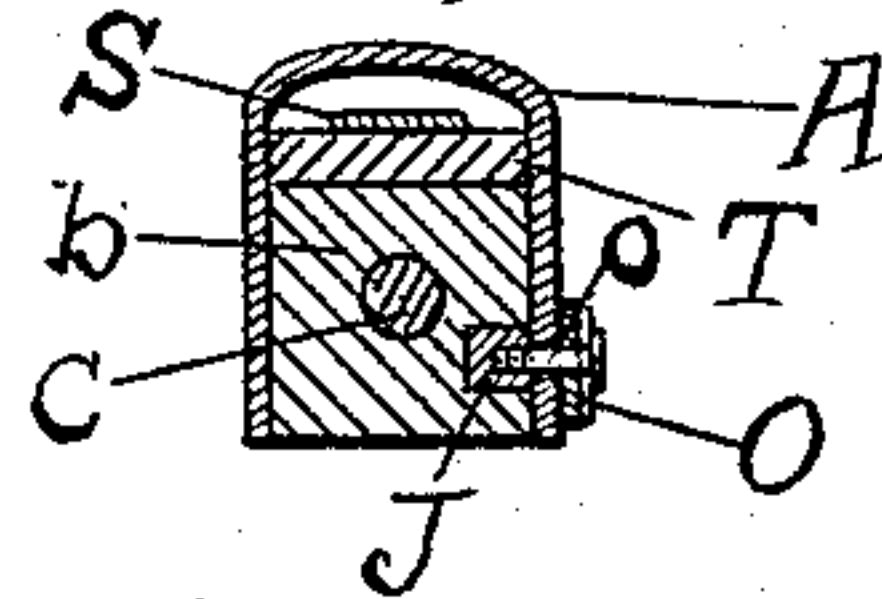


Fig. 5.

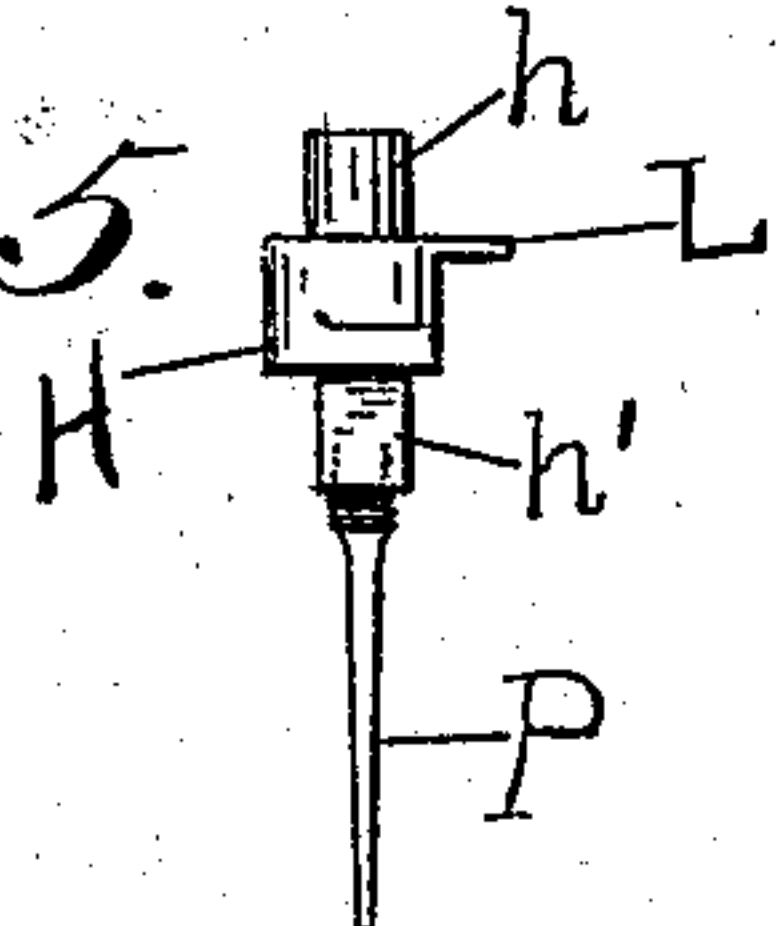


Fig. 6.

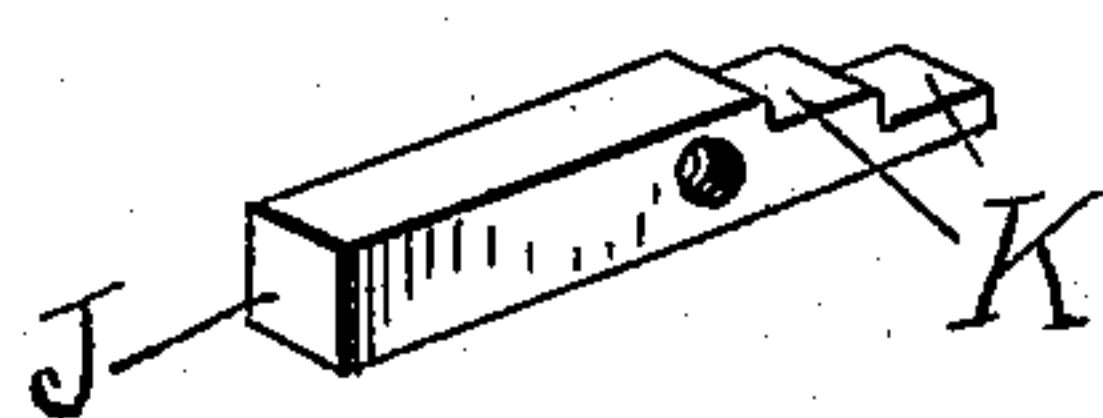
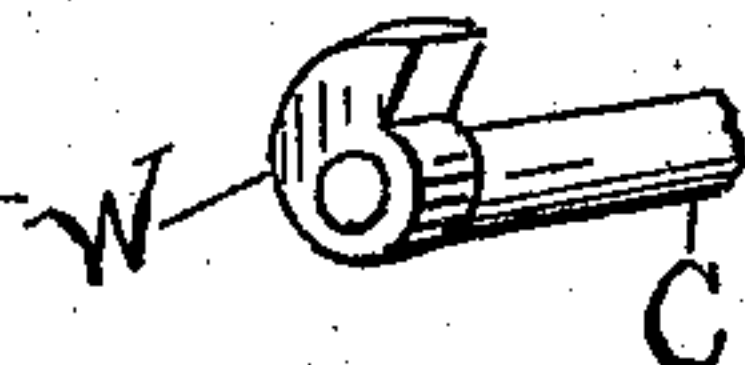


Fig. 7.



Witnesses.
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UNITED STATES PATENT OFFICE.

JESSE P. KELLEY, OF GENEVA, OHIO.

DENTAL-ENGINE PLUGGER OR MALLET.

No. 907,815.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed October 28, 1907. Serial No. 399,440.

To all whom it may concern:

Be it known that I, JESSE P. KELLEY, a citizen of the United States, residing at Geneva, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Dental-Engine Pluggers or Mallets, of which the following is a specification.

My invention appertains to improvements in dental engine pluggers of that type that strike a right-angled blow, and has for its object to produce a device of this kind which is simple in its construction and operation, and convenient of manipulation; and which is capable of dealing a variety of blows.

A further object of my invention is to provide an automatic dental plugger or mallet with which parts of the mouth inaccessible with straight action pluggers may be readily reached, and cavities in the posterior lobes of the teeth easily filled.

The invention resides in certain novel features of construction hereinafter described and pointed out in the claims at the end of this specification; and the invention is also fully illustrated in the accompanying drawings, in which like letters and figures indicate like parts throughout the several views.

In said drawings, Figure 1 represents a side elevation of my improved dental plugger inclosed in its casing. Fig. 2 is a longitudinal vertical section, showing the mechanism of my improved device with the plugger-head raised. Fig. 3 is a side elevation without the case showing the plugger-head down, and the adjustable wedge, by means of which the length of the stroke dealt by the plugger-head is varied, removed. Fig. 4 is a vertical cross-section through the casing on the line 4—4 in Fig. 3, looking in the direction of the arrow. Fig. 5 is a detail view of the plugger-head. Fig. 6 is a detail perspective view of the adjustable wedge, which regulates the length of the stroke of the plugger-head; and Fig. 7 is a similar view of the cam and part of the shaft which connects with the motor.

Referring now to the drawings, A represents the case which incloses and protects the mechanism for operating the plugger. This case is fastened by screws to the foundation plate B, and a plug E, which is inserted into the open end of the case. A little forward of the middle of the plate B, which extends throughout the length of the case, is

rigidly secured the standard *b*; and fastened to the standard *b* and the plug E is the top plate T. The plug E has a rearwardly extending, and exteriorly threaded tube or projection *e*, on which is screwed a small sleeve F, the purpose of which will subsequently appear. The mechanism so far described constitutes the frame of the instrument, in which the operating parts, consisting chiefly of a rotating shaft and cam, actuating a plugger-head, are mounted.

As shown in Figs. 2, 3, and 4, journaled in the standard *b*, and the plug E, is the rotary shaft C, which extends rearwardly through the sleeve F, and which is adapted to be connected with any suitable motor. The sleeve F serves to protect the exposed portion of the shaft, and is split so as to firmly grip the bit-stock of the motor, and still admit of easy removal.

The shaft C has attached to its forward end a cam W, and secured to the shaft C, immediately to the rear of the standard *b* is the collar G, the function of which is, in conjunction with the cam W, to restrain the shaft from any longitudinal movement.

Mounted in the fore-part of the foundation plate B and top plate T is the plugger-head H, having an upwardly extending arm *h* passing through a suitable aperture in the top plate T, and a downwardly extending arm *h'* which passes through an aperture adapted thereto in the foundation plate B. The upper arm *h* of said plugger-head is preferably made of a cylindrical form, and the lower arm *h'*, thereof, is preferably made rectangular in form, so as to prevent the plugger-head from turning. The arm *h'* serves as a bit-stock and carries the plugger point P. The central portion of the plugger-head H is enlarged, and projecting inwardly from the top of this enlargement is a lip L, adapted to be engaged by the cam W. Secured to the top plate T is the flat metal spring S, which bears on the upper arm *h* of said plugger-head H, and serves to keep the lip L in contact with the cam W.

In order to vary the length of the stroke of the plugger-head and the point carried thereby, I provide a wedge J, disposed in a suitably formed recess R in the standard *b*, and which is susceptible of longitudinal adjustment. The wedge J has formed thereon a series of steps K adapted to coincide with the inner side and the lower surface of the enlarged portion of the plugger-head H, the same be-

ing conformed to fit said steps. Said wedge is adjusted by means of the push-piece O, which is secured to said wedge by a screw o, passing through a slot in the casing and into
5 the wedge.

When the instrument is in motion, the operator governs the blow of the plugger-point by sliding the push-piece O, back and forth along the casing, and the wedge J in response
10 to the motion of the push-piece, slides under the enlarged portion of the plugger-head H, and prevents the same from making a full stroke, the stroke being thus varied according to the height of the different steps.

15 The instrument operates as follows: The shaft C is connected with a motor or dental engine whereby it is rotated, and the cam rotating with the shaft intermittently, forces the plugger-head up by means of the lip L, to
20 the top of its stroke; when the cam has made a revolution, the plugger-head is released from its upward position, and forced down by the spring S; the plugger-head being thus given a reciprocating motion.

25 Having described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. In a dental engine plugger the combination with a suitable casing, of a frame
30 seated therein; a rotary shaft mounted in said frame; a cam attached to said shaft; a spring-actuated plugger-head mounted in said frame in a plane at right angles to the axis of the shaft, and having a lip adapted
35 to be engaged by said cam; and a movable device for varying the force of the blow dealt by the plugger-head.

2. In a dental engine plugger, the combination with a suitable frame, of a rotating
40 shaft mounted therein; a cam attached to said shaft; a plugger-head provided with a projecting lip adapted to be engaged by said cam; and a spring mounted to bear on said plugger-head, whereby said plugger-head is
45 forced downward and maintained in a position in which the lip thereon is in the plane of rotation of the said cam.

3. In a dental engine plugger, the combination with a suitable frame, of a rotating
50 shaft mounted therein; a cam fixed to said shaft; a plugger-head having a projecting lip adapted to engage with said cam; means for keeping said lip in the plane of rotation of said cam; and means for varying the length
55 of the stroke of the plugger-head.

4. In a dental engine plugger, the combination with a suitable frame and casing inclosing the frame, of a rotating shaft and

cam; a plugger-head having an enlarged portion provided with a projecting lip adapted to be engaged by said cam; means for
60 holding said lip in operative connection with the cam; means for varying the length of the stroke of the plugger-head, consisting of an adjustable wedge having a series of steps
65 formed thereon; and means for sliding said steps under the enlarged portion of the plugger-head.

5. In a dental engine plugger, the herein described plugger-head having an enlarged
70 portion provided with a laterally projecting lip, and an upwardly extending and a downwardly extending arm, said latter arm being provided with means for mounting a plugger tool.
75

6. In a dental engine plugger, the combination with a frame consisting of the foundation plate B having the standard b, the end
80 plug E and top plate T, of a rotary shaft mounted in said standard and plug; a cam fixed to said shaft; the plugger-head H having the lip L, and the upwardly extending cylindrical arm h and the downwardly extending rectangular arm h', journaled respectively in correspondingly shaped aper-
85 tures in said top plate and foundation plate; and the spring S secured to said top plate and bearing on the upper arm of said plugger-head and forcing said plugger-head downward so as to bring the lip thereon into con-
90 tact with said cam.

7. In a dental engine plugger, the combination of a frame consisting of a foundation plate B having the standard b, the plug E
95 and top plate T, and a casing inclosing said frame, of a rotary shaft journaled in said standard and plug; a cam fixed to said shaft; the reciprocating plugger-head H mounted in the forward end of said frame and having
100 means for mounting a plugging tool, and an enlarged portion with a laterally projecting lip adapted to be engaged by said cam; a spring forcing said plugger-head downward and holding the lip thereon and said cam in
105 engagement; and means for regulating the blow of the plugger-head comprising a wedge J, having steps K formed thereon, disposed in a recess in the standard b, and adapted to slide on the foundation plate; and a push-
110 piece O slidably mounted on the casing, and connected through a longitudinal slot in the casing, with the said wedge.

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Witnesses:

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