(No Model.)

M. L. BOSWORTH.

DENTAL MALLET.

No. 465,337. Patented Dec. 15, 1891.

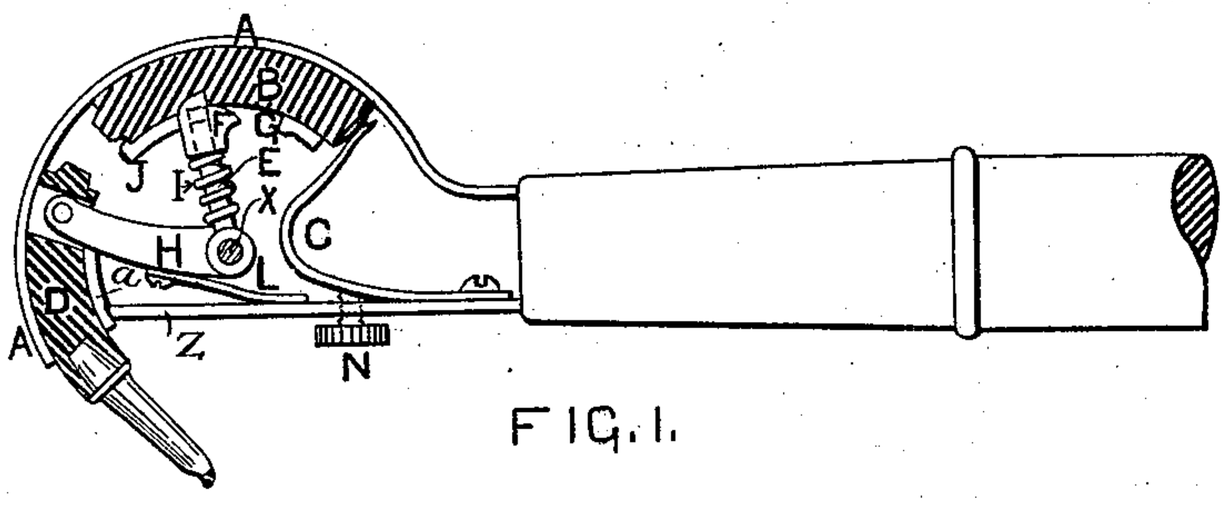

FIG. 1.

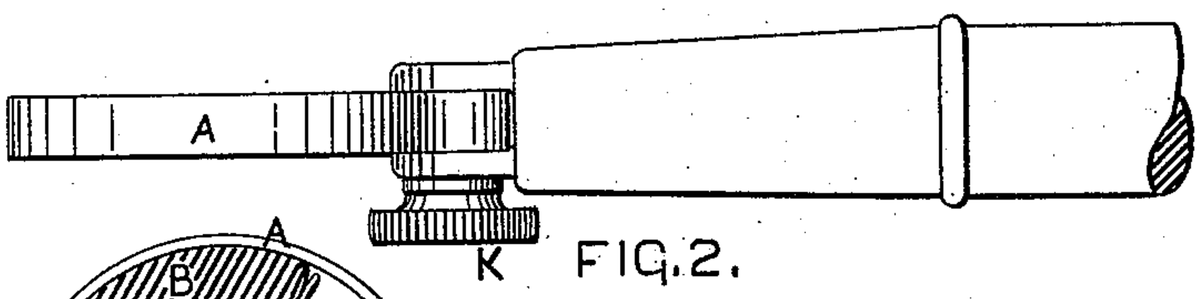

FIG. 2.

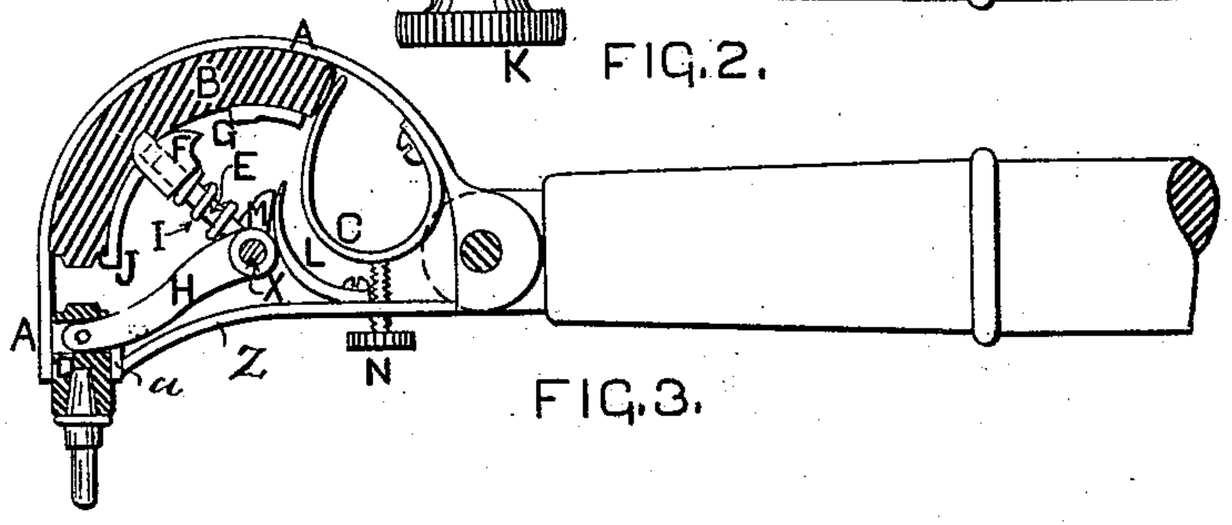

FIG. 3.

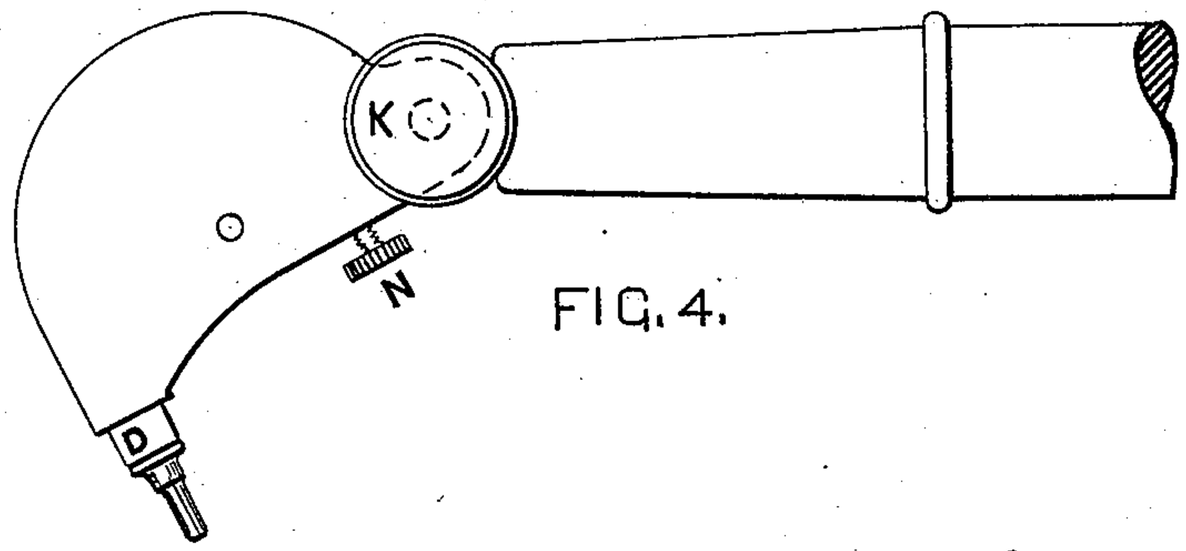

FIG. 4.

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MARTIN L. BOSWORTH, OF WARREN, RHODE ISLAND, ASSIGNOR OF ONE-FIFTH TO JOHN WATERMAN, BENJAMIN B. MARTIN, AND BENJAMIN M. BOSWORTH, ALL OF SAME PLACE.

DENTAL MALLET.

SPECIFICATION forming part of Letters Patent No. 465,337, dated December 15, 1891.

Application filed August 30, 1889. Serial No. 322,449. (No model.)

To all whom it may concern:

Be it known that I, MARTIN L. BOSWORTH, of the town of Warren, in the county of Bristol, in the State of Rhode Island, have invented a new and useful Improvement in Dental Pluggers; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

Figures 1 and 3 are views, partly in side elevation and partly in section, of my improved dental plugger. Fig. 2 is a top plan of the exterior of my invention. Fig. 4 is a side elevation of the same.

Like letters indicate like parts.

My invention relates to that class of dental instruments commonly called "pluggers," which are used in the filling of teeth to compact the gold in the cavity of the tooth.

It consists of a spring-actuated hammer movable in an arc within a head which has a suitable passage-way therefor, a plugger which also moves in a suitable passage-way, a bent lever pivotally mounted, one of whose arms is adapted to move the plugger back and forth and the other of whose arms carries a spring and pawl to engage said hammer by means of a notch in the latter and means to disengage said pawl, substantially as hereinafter specified.

In the drawings I show a handle having two metallic extensions, Figs. 2 and 3, and a semicircular head or case with an extension, which is pivotally connected to the handle-extensions by a set-screw K, whereby a hinge connection is made between the handle and tool-head, as seen in Figs. 2 and 3, thus allowing an adjustment of the tool to bring the plugging-point into any desired angle with the handle in order to more easily reach any cavity in the teeth, whatever its location may be. The screw K is tightened when the head is so adjusted. This case has two plane sides and a curved rim A, bent in the arc of a circle, and a straight base-plate Z, as fully illustrated in Figs. 1 and 3. Parallel with the inner surface of the rim A are ribs or guides G J, attached to one of the side plates.

B is a metallic hammer made in an arc shape and having a notch on its inner side, as seen in Figs. 1 and 3.

C is a spring fastened by screws to the rim of the case, as in Fig. 3, or to the base-plate, as in Fig. 1, and bent so that its free end bears against the end of the hammer B. The tension of this spring may be regulated by the screw N, as shown. The hammer B is movable in the passage-way between the rim A and the guides G J.

D is the plugger, which has a socket at its outer end to receive a plugging-point, and it is movable in the passage-way, which is formed by the rim A and the fixed guide *a*, and which passage-way is a continuation of the curved passage formed by the rim A and guides G J aforesaid. A bent lever having two arms E and H is pivoted at *x*. The arm H is pivoted to the plugger D at its outer end, and E is the other arm of the bent lever and is provided with a pawl F. The pawl has two beveled projections and a socket. The arm E enters said socket. A spiral spring I surrounds the arm E and has its bearings at one end against the arm H and at the other end against the bottom of the pawl F. One of the beveled projections of the pawl enters the notch of the hammer B, and the other is intended to strike against and move over a beveled end of the rib or guide G. A spring L may be secured to the under side of the arm H, with its free end resting on the base-plate Z, as in Fig. 1, or to the base-plate Z, with its free end bearing against a toe M of the arm H, as in Fig. 3.

The ends of the hammer B and plugger D, which are opposite each other, have bosses which come in contact with each other when the blow is struck.

The operation of the instrument is as follows: The tool is seized by the handle and the end of the plugger-point is placed in the desired position in the cavity of the tooth to press in the metallic filling, as usual. Continued pressure forces the plugger and point inwardly. This movement of the plugger

turns the bent lever E H. The arm E by the pawl F, which engages with the notch of the hammer B by the force of the spring I, moves back the hammer B and compresses the spring C. When the lateral projection of the pawl F strikes against and presses over the beveled end of the rib G, the pawl F is thereby forced down on the arm E against the pressure of the spring I, and is thus disengaged from the notch of the hammer B. The hammer, being no longer held by said pawl, is free to yield to the pressure of the spring C and is driven with much force by the spring C against the plugger D. The blow thus delivered is received upon the metal in the tooth. Now when the pressure of the instrument upon the filling ceases, the spring L normally carries the bent lever E H to its first position, and the pawl F, as soon as it comes to the notch in the hammer, is engaged therewith by the spring I.

In my invention the plugger is extensible at an angle with the handle, and the plugger receives a direct and automatic blow from a spring-actuated hammer, instead of a communicated blow, as in the dental pluggers commonly in use.

In my device the external power used to operate the implement is not derived from a dental engine, as is commonly the case in using such instruments, but simply from continued pressure upon the outer end of the plugging-point.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. In a dental instrument having a handle, the combination of a movable plugger mounted therein at an angle with said handle, a bent hammer movable lengthwise in a passage of corresponding shape, a spring having a bearing against the inner end of said hammer, a connecting-piece between said hammer and plugger, adapted to compel their travel together inwardly when the outer end of the plugger is pressed and thereby to compress said spring, and an automatic releasing device arranged to disconnect said hammer from the plugger at the end of their inward travel, substantially as and for the purpose specified.

2. In a dental plugger, the combination of a handle, a metallic case at the end thereof pivotally connected with the end of the handle and having its upper and outer edge formed in the arc of a circle, the arc-shaped hammer B, the spring C, the plugger D, the bent lever E H, the axis *x*, on which said bent lever E H is mounted, the pawl F, the spring I, the fixed guides G J, and the spring L, all arranged and operating substantially as and for the purpose specified.

MARTIN L. BOSWORTH.

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