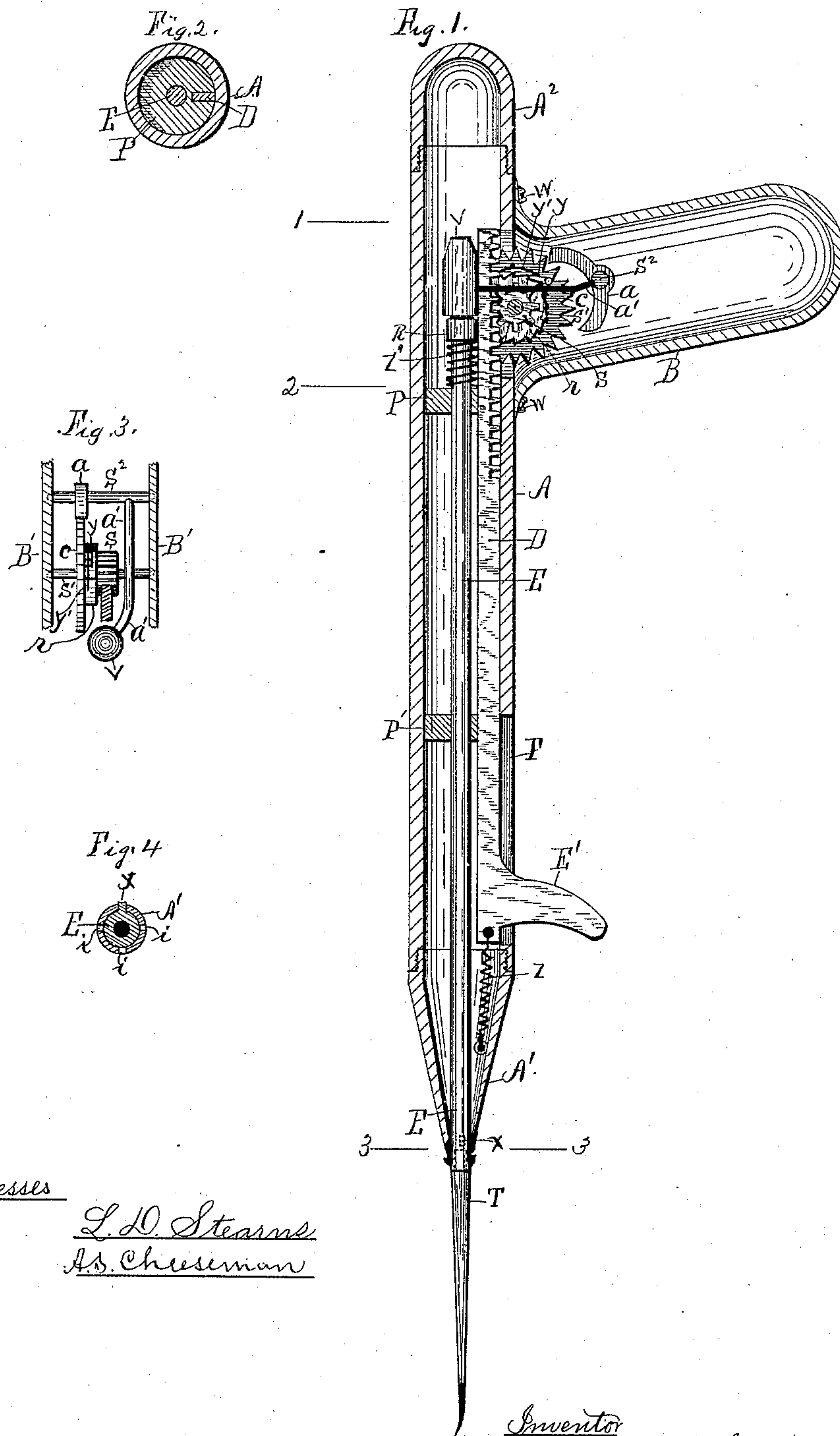


(No Model.)

E. J. GEORGE.
DENTAL PLUGGER.

No. 445,717.

Patented Feb. 3, 1891.



Witnesses

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EDGAR J. GEORGE, OF JOLIET, ILLINOIS.

DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 445,717, dated February 3, 1891.

Application filed July 18, 1890. Serial No. 359,199. (No model.)

To all whom it may concern:

Be it known that I, EDGAR J. GEORGE, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Dental Pluggers, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a central vertical section of the case of the instrument and a side view of the working parts inclosed therein. Fig. 2 is a cross-section taken on line 2 of Fig. 1, looking down. Fig. 3 is a top plan view of the operative parts within the case, taken on line 1 of Fig. 1, looking down; and Fig. 4 is a cross-section of Fig. 1 on line 3, taken through the pin on the plugger-tool and notches in the nose-piece of the case.

This invention relates to certain improvements in dental pluggers, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings, A represents the case proper of the instrument, having a nose-piece A' screwed on its lower end and a cap A² screwed on its upper end. A tubular handle B is detachably connected to the side of case A by means of screws *w w* or by any other suitable means, and an opening through the side of the case A leads to said handle, so that the working parts therein may extend into the case A. A plugger-tool E, carrying a bit T on its lower end, is arranged centrally within the case A, and is held in proper position by means of the diaphragms P and P', through which it passes. The upper end of said plugger-tool is provided with a head R, having a diameter larger than said tool.

Z' is a coil-spring sleeved on the plugger-tool and introduced between its head R and the diaphragm P, and is for the purpose of yieldingly supporting the plugger-tool and giving it a rebounding action. An enlarged portion *x'* on said tool on its lower end prevents the tool from moving too far upward.

S' is a shaft journaled at each end in the sides of the handle B, and has journaled on it the scape-wheel *c*, and has also secured on it the pinions S and ratchet-wheel *r*, which pinion and ratchet are integral with each other. A

pawl *y*, attached to the side of scape-wheel *c*, engages the teeth of said ratchet-wheel *r*, the spring *y'* serving to hold said pawl to its work. 55

S² is a shaft journaled at each end in handle B, and has secured on it the pallet *a*, which is operated by said scape-wheel *c*.

a' is an arm having its inner end secured in shaft S², and provided with a hammer V on its outer end for striking the head R of the plugger-tool E. 60

D is a reciprocating rack-bar having its upper end toothed to form a rack for meshing with the pinion S, and is arranged in case A at the side of the plugger-tool E and held in position by the said diaphragms, through which it passes. The lower end of said rack-bar is connected to the inner wall of the nose-piece A' by means of the coil-spring Z, which serves to return said rack-bar after it has been moved upward. Said rack-bar is provided with a laterally-extending trigger E', which extends out through a slot F in the side of case A and traverses within the limits of said slot. By means of said trigger the said rack-bar D may be reciprocated for the purpose of driving pinion S and scape-wheel *c* intermittently. 75

It will be observed that the shafts S' and S² are journaled in the handle B, which is detachable, so that the working parts of the plugger may be easily reached for repairs, &c. 80

The plugger-tool E is rotatable, so that the bit T may be turned to adapt it the more readily to its work. The lower end of the nose A' is provided with notches *i*, as shown in Fig. 4, and the plugger-tool E is provided with a corresponding radially-extending pin or projection *x*, which will fit said notches. This pin and the notches are for the purpose of holding the plugger-tool rotated in any position desired. 85

The plugger-tool may be moved downward and then rotated, and the pin *x* be placed in any one of said notches *i* and held therein by the resiliency of spring Z', and thus hold said tool in the required position. 95

In operation the operator grasps the handle B and extends a finger around the trigger E'. By pulling upon the trigger the rack-bar D will be caused to move upward and drive pinion S and scape-wheel *c* with it as its pawl *y* engages the ratchet-wheel *r*, which is integral 100

with said pinion. The pallet *a* is operated by the scape-wheel *c* and causes the hammer *V* to strike the head *R* of the plugger-tool *E* a succession of sharp rapid blows. When the trigger is released the spring *Z* will return the rack-bar to its first position, and as pinion *S* and ratchet-wheel *r* are permitted to turn backward by the pawl-and-ratchet mechanism the scape-wheel will stand still until said pinion is again rotated in the opposite direction by the rack-bar. Thus the mechanism is driven intermittently and causes the hammer to deliver a succession of rapid sharp blows on the head *R* of the plugger-tool and operate the bit *T* for the purpose stated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In the dental plugger shown and described, the combination of the reciprocating rack having a trigger extending out through a slot in the side of the case, the pinion for

meshing with said rack and fast on its shaft, the scape-wheel adapted to be driven intermittently in one direction by said rack and pinion, the pallet operated by said scape-wheel and provided with a hammer, and the plugger tool or rod seated on a spring and arranged to receive the blows of the hammer, all arranged to operate substantially as and for the purpose set forth.

2. In the dental plugger shown and described, the yieldingly-seated plugger tool or rod, the pivoted hammer for striking said plugger-rod, the pallet and scape-wheel mechanism for operating said hammer, and the reciprocating rack for intermittently driving said scape-wheel and pallet mechanism, substantially as and for the purpose set forth.

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Witnesses:

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