

No. 619,832.

Patented Feb. 21, 1899.

H. McLAREN.
AUTOMATIC DENTAL PLUGGER.

(Application filed Oct. 19, 1897.)

(No Model.)

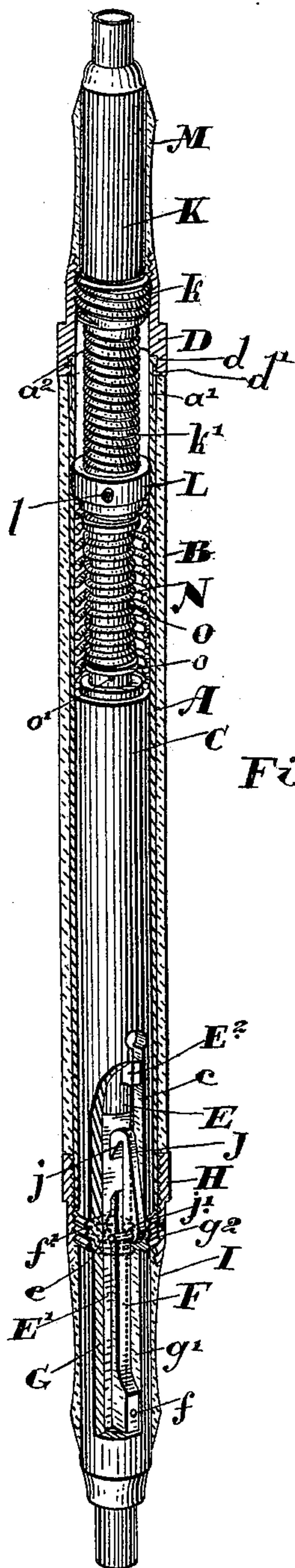


Fig. 1.

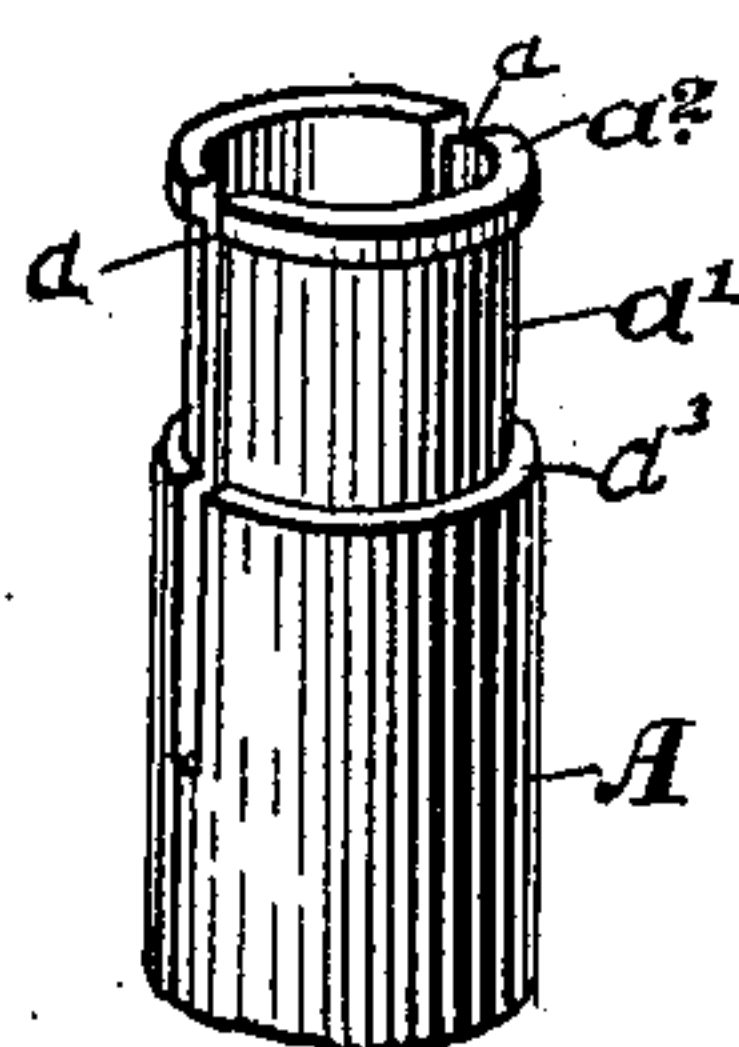


Fig. 3.

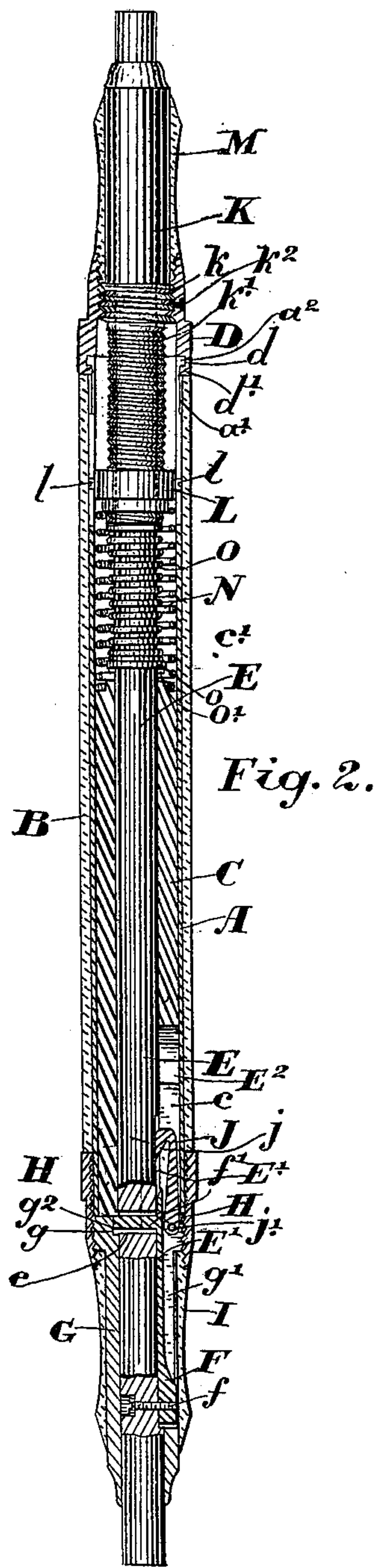


Fig. 2.

Witnesses.
H. T. S. Young
H. Harrison

Inventor.
Hugh McLaren
by
Fletcher & Co.
attys

UNITED STATES PATENT OFFICE.

HUGH McLAREN, OF TORONTO, CANADA, ASSIGNOR TO JAMES W. IVORY,
OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 619,832, dated February 21, 1899.

Application filed October 19, 1897. Serial No. 655,654. (No model.)

To all whom it may concern:

Be it known that I, HUGH McLAREN, dental manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Automatic Pluggers for Filling Teeth, of which the following is a specification.

My invention relates to an improvement in the class of dental pluggers wherein the hammer is thrown into action by direct-thrust pressure upon the plugger-point or by a pull upon a back-acting point; and it consists of the novel construction of parts, as hereinafter described, and pointed out in the claims that follow the specification.

Figure 1 represents a view in elevation, partly in section, of a dental plugger embodying my invention, a portion of the hammer-sleeve being broken away. Fig. 2 represents a longitudinal section thereof. Fig. 3 represents a detail of the upper end of the inner casing.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates an inner cylindrical casing made, preferably, of metal and provided at the upper end with slits a , diametrically opposite to each other, and an annular groove a' , whereby a flange a^2 is formed at the upper end of the casing and a shoulder a^3 at the lower end of said groove.

B designates a casing made, preferably, of hard rubber, which fits over the casing A.

C is the hammer-sleeve, which fits within the casing A and is provided with a radial slot c at the lower end thereof.

D designates a collar provided with a knurled periphery and an internal groove d and flange d' , which fit, respectively, over the flange a^2 and into the groove a' .

E designates a plunger which is hollow at both ends, so as to permit of the holding of the instrument.

F designates a flat spring which is secured to the plunger by a screw f , extending through the plunger and the thick lower portion of the spring. The upper portion of the spring has attached to or forming part of it a pin f' , which extends through a hole e in the plunger into a notch g in the upper end of the sleeve G. The spring F is situated within a

slit g' in the sleeve G, and the sleeve is provided with a threaded annular enlargement g^2 at the upper end, upon which and the lower threaded end of the cylindrical casing A fits a collar H, having a knurled periphery designed to form a means for turning the collar.

I designates a supplemental sleeve which fits to the outside of the sleeve G, constituting an extension of the casing A, being formed as shown and having its threaded upper end extending into the collar H, by which it is united to the said casing.

E' designates a flattened side or recess formed in the plunger E directly opposite the spring F and within which such spring is held.

J designates a hook having a beveled hooked end j and pivoted on a pin j' , extending through the sleeve and slit g' .

E² designates a projecting flat pin secured in the plunger E and extending into the slot c , as shown.

K designates a sleeve provided with an annular enlargement k , threaded as shown, and a reduced end k' , also threaded as shown and having located therein the circular internally-threaded nut L. This nut is provided with projecting pins l , which extend into the slits a in the side of the cylindrical casing A. The collar D, hereinbefore mentioned, is internally threaded for a portion of its length and screwed upon the annular enlargement k of the sleeve K, to which it is held securely by the pin k^2 , so that the collar and sleeve K will turn together.

M designates a supplemental sleeve which is internally threaded at its inner end and screwed into the collar D as indicated.

N designates a spiral spring extending between the nut L and the top of the hammer-sleeve C.

O designates a spiral spring located within the spiral spring N and extending between the inner threaded end of the sleeve K and the collar o , secured in position on the plunger E by the pin o' , extending through the said plunger. (See Figs. 1 and 2.)

The operation is as follows: Upon pressing upon the plugger the plunger E will ascend, carrying with it the spring F and hammer-sleeve C, against which the pin f' of the spring F abuts. The upper beveled end of the spring F in its ascent will necessarily come in contact with the hook J, thereby throwing the

pin f' out of the notch g , whereupon the spring-pressed hammer-sleeve C will be immediately released and said sleeve will be thrown instantly downwardly by the force of the spring N, so that the hammer-sleeve at the top of the slot c comes in contact with the pin E^2 on the plunger E, thus giving the desired blow.

The spring O, hereinbefore described, serves to keep the plunger in its normal position.

The spring N gives the desired force of blow, and said force may be regulated by turning the collar D and sleeve K, to which it is secured, thus imparting a longitudinal movement in either direction to the nut L along the threaded inner end of the sleeve, such nut being prevented from turning, as hereinbefore described, by the pins l , extending into the slits a .

What I claim as new is—

1. The combination with a plunger, a slitted casing, a hammer-sleeve surrounding the plunger, a short sleeve at the end of the hammer-sleeve, a pivoted hook and means carried by the plunger movable through the same for engaging the short sleeve and the end of the hammer-sleeve and causing the plunger and hammer-sleeve to move together for a portion of the travel of the latter and then to contact with said hook to disengage the plunger and hammer-sleeve, of a spiral spring acting on the hammer-sleeve, and a spring within said spring for keeping the plunger in its normal position.

2. The combination of a plunger having a transverse perforation, a spring-pressed hammer-sleeve surrounding said plunger, the inner casing, surrounding the hammer-sleeve, a short sleeve at the end of the hammer-sleeve, a spring carried by the plunger and having a lateral pin extending through the perforation therein to engage the hammer-sleeve and thereby cause the plunger and sleeve to move together, means for actuating said spring to withdraw its pin to disengage the sleeve, a spring for forcing the hammer-sleeve endwise when thus released, a projecting pin on the plunger to be engaged by the sleeve, and an outer casing.

3. In combination the plunger provided with a flat-sided recess near the outer end, the spring-pressed hammer-sleeve through which such plunger extends, the short sleeve suitably held in position and provided with a slit, the spring fitting within the slit in the short sleeve and secured on the flattened side of the plunger, and having a beveled upper end, the pin secured in the upper end and extending through a hole in the plunger into a recess in the short sleeve so as to abut the end of the hammer-sleeve, the hook pivoted in the slit in the short sleeve and provided with a beveled hooked end, the slot in the hammer-sleeve through which such hook extends, and a projection on the plunger, and an outer casing.

4. The combination of an inner and outer casing, a hammer-sleeve, a plunger having a transverse opening, the short sleeve, a spring secured at one end to said plunger and carrying near its free end a lateral portion normally located in said opening and engaging a shoulder on said short sleeve and normally in engagement with the end of the hammer-sleeve, a spring mounted to force said hammer-sleeve endwise, means for disengaging the lateral portion of the spring from the notch of the short sleeve, and an operative connection between said hammer-sleeve and plunger, whereby when the former is released it moves a distance by itself and then actuates the latter.

5. The combination of a casing, a hammer-sleeve, a plunger having a transverse opening, a spring secured at one end to the plunger and its free end carrying a lateral portion passed through said opening and normally engaging the forward end of the hammer-sleeve, a pivoted member for engaging the free end of the spring, a spring for giving the hammer-sleeve endwise movement when disengaged from the lateral portion of the first-mentioned spring, and a projection on the plunger in position to be engaged by the sleeve in its movement.

6. The combination of a casing, a hammer-sleeve, a short sleeve having a shoulder, a plunger with transverse opening, a spring secured at one end to the plunger, a lateral projection near the other end of said spring passed through said opening normally resting on said shoulder and engaging the forward end of the hammer-sleeve, a pivoted member for engaging the free end of said spring, a spring for forcing the hammer-sleeve endwise, a projection on the plunger in position to be engaged by the sleeve endwise, a projection on the plunger in position to be engaged by the sleeve, an outer casing with tubular extensions, a collar secured to one of said extensions, and a sleeve with annular enlargement having threaded engagement with said collar.

7. The combination of a casing, a hammer-sleeve, a short sleeve having a shoulder, a plunger with transverse opening, a spring secured at one end to the plunger, a lateral projection at the other end of the spring to engage said shoulder, a pivoted member for disengaging the projection from the shoulder, a spring for forcing the hammer-sleeve endwise, means for causing the hammer-sleeve and plunger to move together, an outer casing, a sleeve with threaded enlargement and threaded inner reduced end, a collar having engagement with the enlargement, a nut engaging the threads of the reduced end and having lateral projections engaging slits in the inner casing.

HUGH McLAREN.

Witnesses:

B. BOYD,
H. T. S. YOUNG.