B. F. La SALLE.
Dental-Plugger.

No. 226,177 Patented April 6, 1880.

Fig. 1.

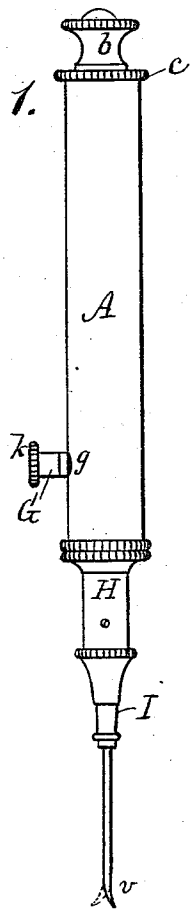


Fig. 2.

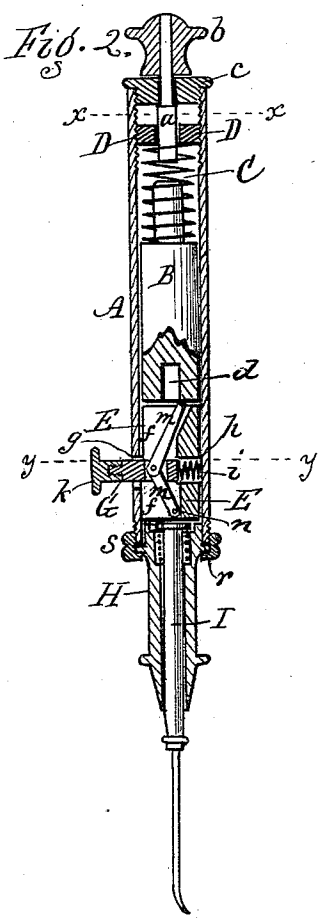


Fig. 3.

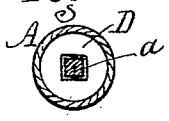


Fig. 4.

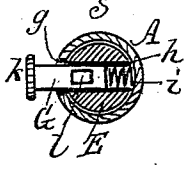
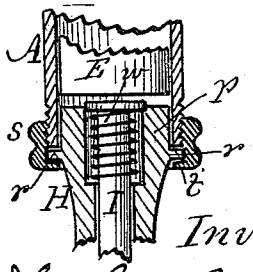


Fig. 5.



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UNITED STATES PATENT OFFICE.

B. FRANK. LA SALLE, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO GEORGE W. ARCHER, OF SAME PLACE.

DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 226,177, dated April 6, 1880.

Application filed October 6, 1879.

To all whom it may concern:

Be it known that I, B. FRANK. LA SALLE, of the city of Rochester, county of Monroe, and State of New York, have invented a certain new and useful Improvement in Dental Pluggers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an exterior view of the instrument. Fig. 2 is a central longitudinal section. Figs. 3 and 4 are cross-sections in lines *x x* and *y y*, respectively, Fig. 2. Fig. 5 is a longitudinal section of the lower portion of the instrument enlarged for clearness of illustration.

My improvement relates to dental pluggers operated by hand; and the invention consists in the construction and arrangement of the parts for operating the hammer and producing concussion upon the plugger; also, for adjusting the position of the plugger, as hereinafter more fully described.

In the drawings, A represents the body of the instrument, which is of cylindrical form, as usual.

B is the hammer, which is forced down by a coiled spring, C.

D is a follower, which screws up and down in the upper end of the tube, in order to increase or lessen the force of the blow. It is turned to any desired position by a square stem, *a*, attached to a finger-piece, *b*, outside said shank, running loosely through a nut, *c*, which screws into the top of the tube. The portion of the shank which passes through the nut is round.

In the lower end of the hammer is a central hole, *d*, for a purpose presently to be described.

E is the block or anvil which receives the blows of the hammer. It is a short cylinder, resting loosely in the tube just beneath the hammer. In one side is cut a radial slot, *f*, which extends nearly or quite the whole length of the block, as shown.

G is a pin or shaft, which passes through a hole, *g*, of the tube, and rests in a circular socket, *h*, of the block E. Under or behind the solid end of this pin is a small coiled or other spring, *i*, which rests against the tube and constantly presses the pin outward. On the outer end of the pin is a knob or thumb-piece, *k*.

In the pin G is formed a socket, *l*, in which rest the two uniting ends of a pair of toggle-arms, *m m*. The outer end of the lower arm is pivoted at *n* to the block; but the upper end of the upper arm is free, and in its normal position rests against the end of the hammer B, but close to the hole *d* therein, above described. When the pin G is pressed inward, however, the toggle-arms are straightened, and they lift the hammer against the spring C, till finally the upper end of the upper arm slips from its hold at the side of the hole *d* and falls into the hole, when the hammer rebounds with a sharp concussion on top of the block. The force of this concussion may be regulated by the mechanism at the top, as before described.

The means above described for operating the hammer is exceedingly simple and compact, as it can be readily combined in the short block or anvil E, and rise and fall with it. It is also in convenient form for the application of the finger or thumb of the operator. He has simply to press inward and release to produce the concussion and reinstate the devices for a new blow.

H is the tubular bearing or casing at the lower end of the instrument, for holding the plugger-stock I. This casing is attached loosely at the end of the main tube, so that it can be adjusted axially. The arrangement is as follows: The end of the casing has a block, *p*, which extends up into the end of the tube, and a shoulder, *r*, which abuts and rests under the end of said tube. The end of the tube has an exterior thread, upon which screws a nut, *s*, with a bottom flange, *t*, that clamps said shoulder *r* against the tube, and thus fastens the casing in place. To turn the casing the nut *s* is turned back to loosen it, when it can be turned to any position. This turning action is for the purpose of changing the position of the bent end of the plugger *v*, as shown in the full and the dotted lines in Fig. 1, the same being necessary in filling different cavities in teeth and using in different positions in the mouth of the patient, as the instrument

itself must be so held that the thumb or finger of the operator can be used to act upon the pin or shaft G.

The blows of the hammer upon the block or anvil are transferred by the latter to the upper end of the plugger-stock I, which has a coiled spring, *w*, beneath its head, to force it up to the hammer. This improvement is also applicable to jewelers' starting-tools, for driving pinions and wheels from shafts, &c.

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

1. In a dental plugger, the combination, with the hammer B, having the central opening, *d*, and block E, of the pin or shaft G, the spring *i* at the end of the shaft, and the toggle-arms *m m*, pivoted at the bottom, but resting at the top against the hammer, and so arranged, as herein described, that when pressure is applied to the pin the toggle-arms raise the hammer and then release it to produce concussion, as herein shown and described.

2. In a dental plugger, the combination, with the toggle-arms *m m*, resting against the hammer B, of the central hole, *d*, in the bottom of the hammer, for the purpose of allowing the end of the toggle-lever to fall therein to release the hammer when raised, as herein shown and described.

3. In a dental plugger, the combination, with the hammer B and the plugger I, of an intermediate block or anvil, E, arranged to move freely in the casing and communicate the blow from the hammer to the plugger, said block or anvil carrying the mechanism for operating the hammer, and provided with the shaft G, for actuating the mechanism, as herein shown and described.

4. In a dental plugger, the combination, with the hammer B and the mechanism for operating the same, of the pin or shaft G, projecting through the side of the case, and the spring *i* at the inner end of the shaft, for producing reaction of the same, as herein shown and described.

5. In a dental plugger, the combination of the plugger-stock I, the loose-turning casing H, provided with the shoulder *r*, resting against the end of the tube A, and the clamping-nut *s*, the whole so arranged, as described, that the plugger may be turned to different positions and clamped at any adjustment, as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

B. FRANK. LA SALLE.

Witnesses:
R. F. OSGOOD,
JOHN C. BURNS.