(No Model.) 2 Sheets—Sheet 1.

W. H. DIBBLE.

DENTAL MALLET.

No. 452,665. Patented May 19, 1891.

Fig. 1.

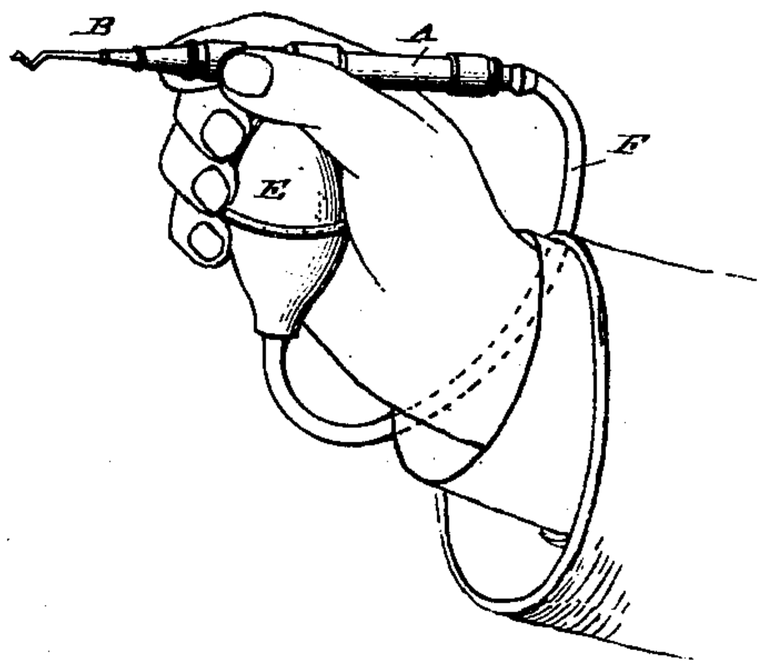


Fig. 2.

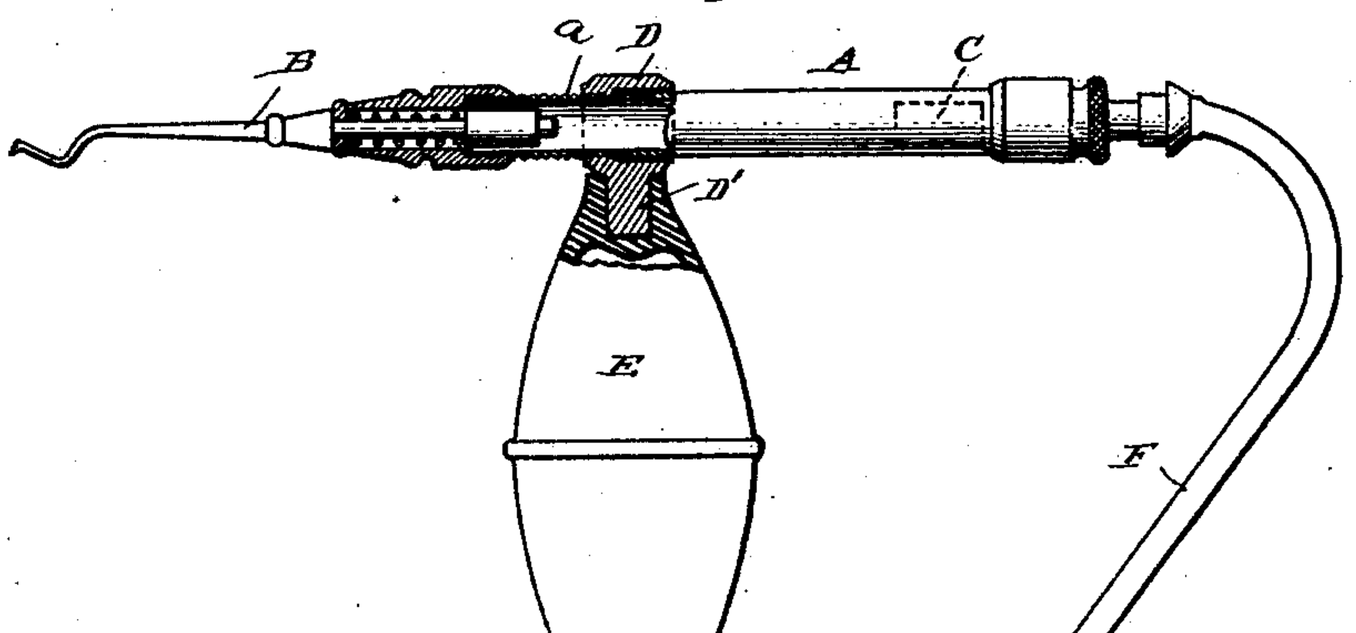
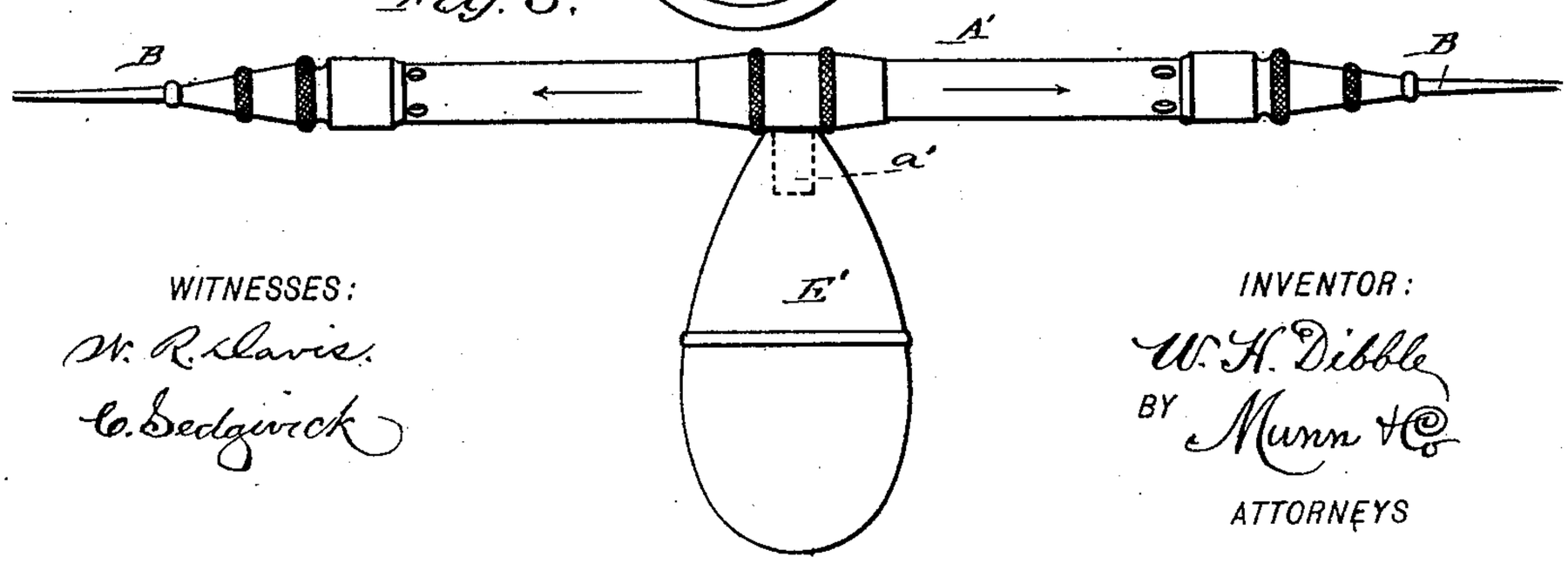


Fig. 3.



WITNESSES:

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C. Sedgwick

INVENTOR:

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BY Munn & Co.

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(No Model.) 2 Sheets—Sheet 2.

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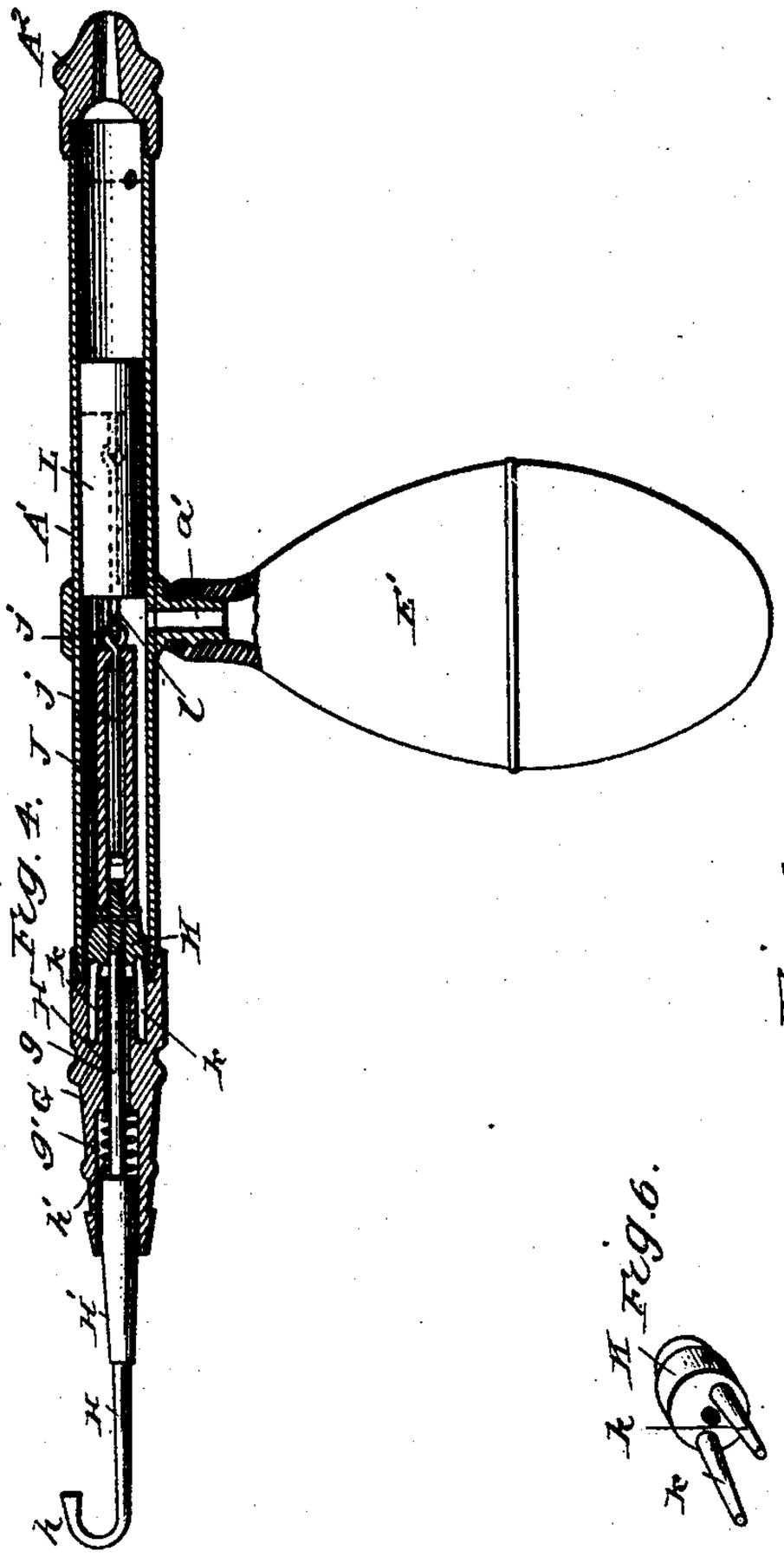

Fig. 4.

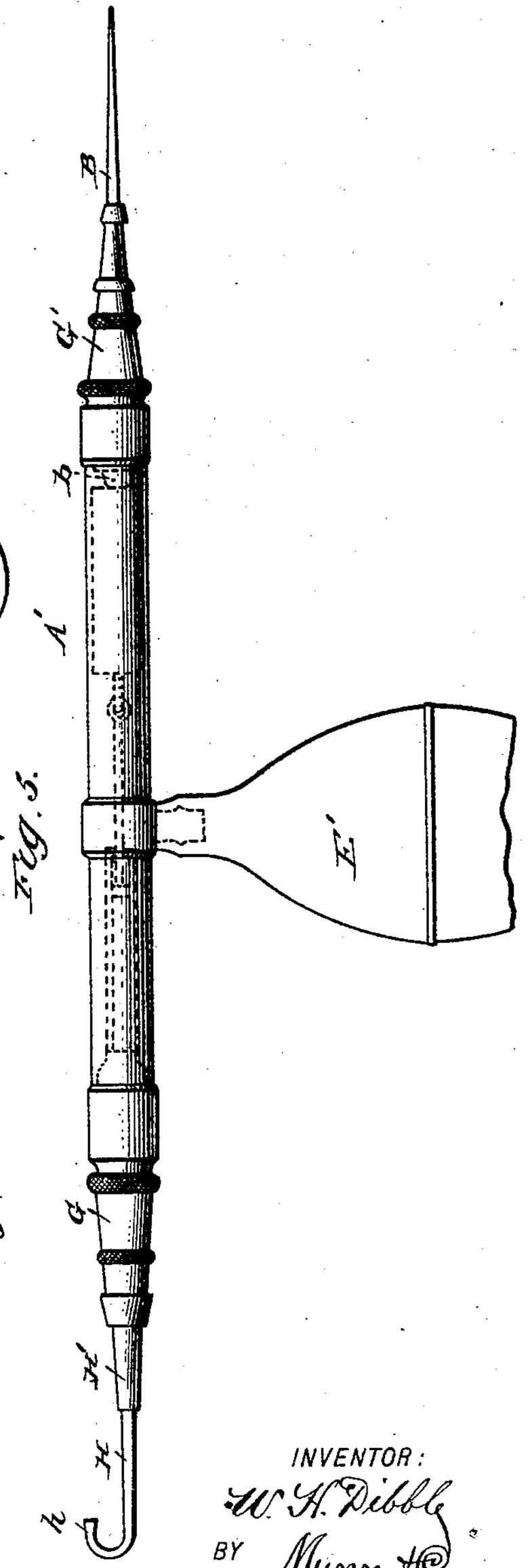

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM H. DIBBLE, OF BROOKLYN, NEW YORK.

DENTAL MALLET.

SPECIFICATION forming part of Letters Patent No. 452,665, dated May 19, 1891.

Application filed February 11, 1891. Serial No. 381,010. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DIBBLE, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Dental Mallet, of which the following is a full, clear, and exact description.

My invention relates to improvements in dental mallets, and more especially to that variety of dental mallets which are pneumatically operated. As generally constructed, the mallets of this class are connected by a tube with an air-bulb, which bulb is usually laid upon the floor and operated by pressure from the foot, but which is sometimes operated by the hand, and in using mallets of this class the dentist holds the mallet in one hand and with the foot or the other hand presses the bulb and operates the mallet. This operation is somewhat awkward, and it is difficult for the operator to regulate the stroke of the mallet as nicely as could be desired.

The object of my invention is to provide means whereby the mallet may be operated with one hand, thus overcoming the difficulties described above, and also to produce a pneumatic mallet having a back action, so that the plugger will deliver a blow when moving toward the operator, thereby enabling him to work conveniently on the back part of a tooth.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view showing the mallet as held in the hand of the operator. Fig. 2 is an enlarged detail view of the mallet, partly in section; and Fig. 3 is a detail side elevation of a double mallet constructed in accordance with my invention. Fig. 4 is a side elevation with the working parts in longitudinal section of a mallet provided with a back action. Fig. 5 is a broken side elevation of the same, but with the mallet adapted to deliver a forward blow; and Fig. 6 is a detail perspective view of the guide-block for the back-action plugger.

The mallet shown in Figs. 1 and 2 is of the ordinary construction, comprising a tube A, which has a spring-pressed plugger B at one end and which carries a plunger C, which moves forward and backward in the tube and operates the plugger. The tube A is screw-threaded near one end, as shown at *a*, and a sleeve D is mounted on the tube and is threaded to fit the tube, the sleeve having on the under side a boss D′, to which the air-bulb E is secured. The air-bulb E is connected by a flexible tube F with the rear end of the tube A, so that when the bulb is pressed the air will enter the tube and operate the plunger.

In Fig. 3 I have shown a tube A′, having a plugger B at each end, and having on one side a branch tube *a*′, (indicated by dotted lines,) which tube connects centrally with the main tube and admits air into the same to operate the plungers. The air-bulb E′ in this case is fastened directly to the tube *a*′, and it will thus form a convenient handle and may be easily operated to pump air into the tube A′.

From the foregoing description it will be seen that the bulbs E and E′ are located in relation to the mallets so that they will form convenient handles, and by grasping the bulb, as shown in Fig. 1, the plugger B may be easily placed upon a desired part of a tooth, and the bulb may be easily operated to work the plugger. It will thus be seen that the operator's other hand will be left entirely free. The pluggers B are usually bent at the outer end, and as the sleeve D, which connects with the handle or bulb E, is screwed so as to turn easily on the tube A, the plugger may be turned into a desired position, so that it may be easily brought to bear upon a tooth.

In Figs. 4, 5, and 6 I have shown a mallet adapted to deliver a blow toward the operator, thus providing for filling the back part of a tooth, and in these figures the tube A′ is provided with a removable cap A^2, which has suitable vents therein, so as to permit the ready egress of air from the tube when the plunger is operated, and the tube is provided with a branch tube *a*′ and handle-bulb E′, as already described. At the end of the tube opposite the cap is a nipple G, which is screwed upon the tube and which has a lon-

gitudinal central bore *g*, the outer portion of which is enlarged, as shown at *g'*, to form a recess for the enlargement H' of the plugger H. The plugger H is doubled upon itself at its outer end, as shown at *h'*, so that it may deliver a blow toward the operator, and the plugger is normally pressed outward by a spring *h'*, which is inserted between the enlargement H' and the inner end of the recess *g'*. The plugger H extends inward through the bore *g* of the nipple G and through the guide-block K, to which it is secured, and the inner end of the plugger is screwed into one end of a sliding tube J, which tube is closed at its inner end, except for a small aperture through which a rod *j* extends. The rod *j* is provided at one end with a button to prevent its removal from the tube, and the other end is formed into a hook *j'*, which is secured to an eye *l* on the inner end of the plunger L. The slide-block K is provided with arms *k*, which are nearly parallel, and which slide in recesses in opposite sides of the nipple G, and which prevent the slide-block and the plugger connected therewith from turning.

The slide-block is a feature common to pneumatic pluggers, and I do not claim it as a part of this invention.

The plunger L and the sliding tube J are placed in such relation to each other that when the plugger is pressed outward and is in its normal position, as shown in Fig. 4, the inner end of the space between the plunger and the tube will come directly above the branch tube *a'*, so that when air is forced into the main tube A' through the branch tube the plunger L, which fits closely in the tube, will be thrown to the end of the tube which carries the cap A^2, and the plunger, when it reaches the point near the extreme end of the tube, will cause the button on the end of the rod *j* to strike against the inner end of the tube J, and this movement will pull the tube J inwardly and thus move the plugger H in the same direction, so that the bent end *h* of the plugger will deliver a blow. The force of the blow may be regulated very nicely by the pressure on the bulb E', and it will be seen that the plugger may be operated by one hand and may be very conveniently held in position to strike a desired point on the tooth.

If desired, the cap A^2 may be removed from the tube, and a nipple G' of the ordinary form carrying the usual plugger B may be screwed onto the tube in its stead, and in this case the inner end *b* of the plugger, as indicated by dotted lines in Fig. 5, will enter the tube far enough, so that the plunger L will strike the plugger B without operating the plugger H.

I do not claim the construction of the mallets and pluggers shown in Figs. 1 to 3 as a part of my invention, as the handle-bulb may be applied to pneumatic mallets of any description.

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

1. A dental mallet comprising a tube having a central opening for the admission of air, a plunger held to slide in one end of the tube, a spring-pressed plugger held in the opposite end of the tube, and means for connecting the plunger and plugger, so that the plunger will operate the plugger when near the end of its stroke, substantially as described.

2. In a dental mallet of the character described, the combination, with the main tube having a central air-inlet, the plugger held in one end of the tube, and the plunger connected with the plugger and held to slide in the tube, of a screw-cap on the end of the tube to adjust the stroke of the plunger, substantially as described.

WILLIAM H. DIBBLE.

Witnesses
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