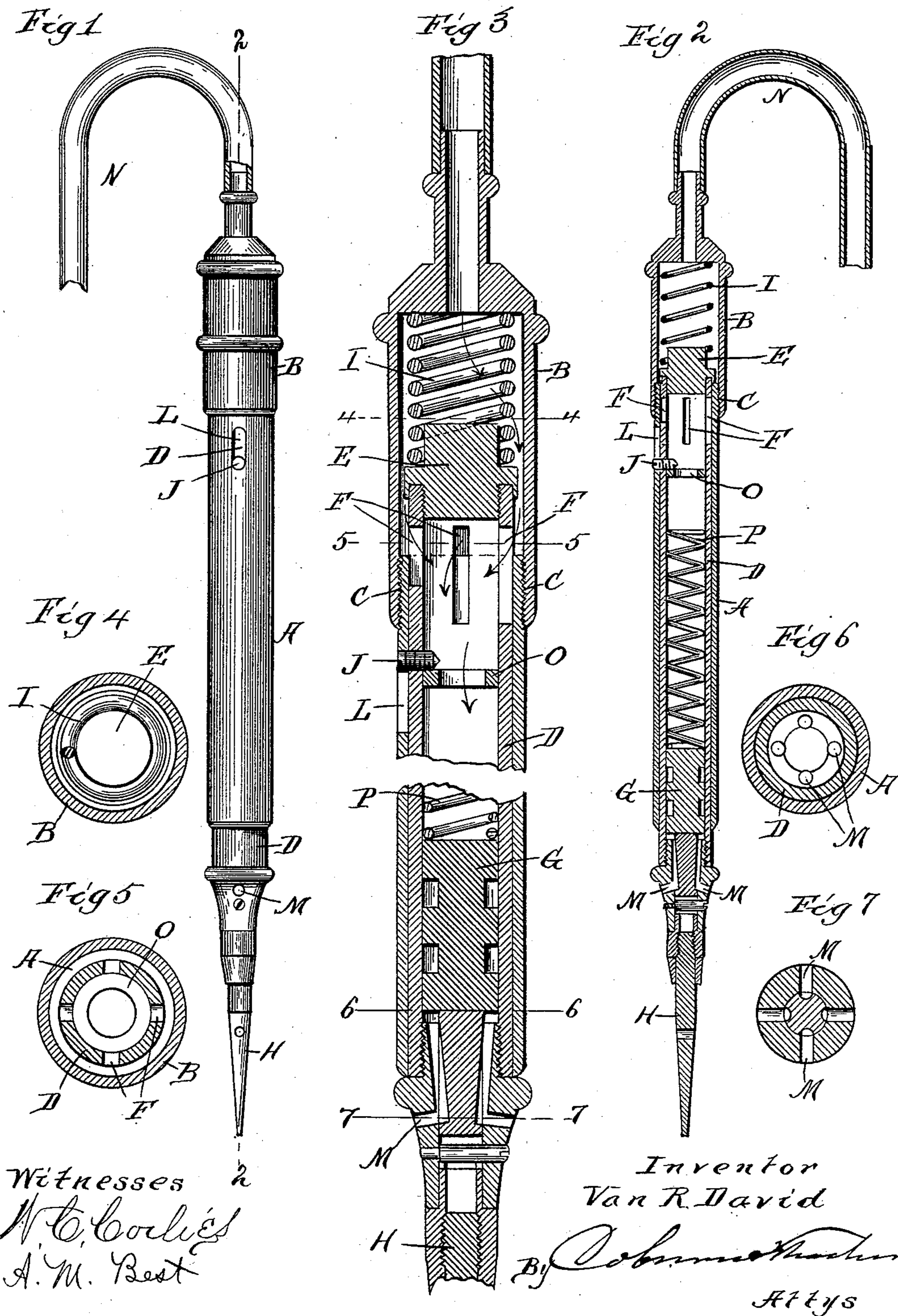


(No Model.)

V. R. DAVID.
DENTAL Mallet.

No. 453,366.

Patented June 2, 1891.



UNITED STATES PATENT OFFICE.

VAN R. DAVID, OF SANDWICH, ILLINOIS.

DENTAL MALLET.

SPECIFICATION forming part of Letters Patent No. 453,366, dated June 2, 1891.

Application filed October 24, 1890. Serial No. 369,154. (No model.)

To all whom it may concern:

Be it known that I, VAN R. DAVID, a citizen of the United States, residing at Sandwich, in the county of De Kalb and State of Illinois, have invented a certain new and useful Improvement in Dental Mallets, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a side view of my mallet; Fig. 2, a longitudinal sectional view taken at the line 2 2, Fig. 1. Fig. 3 is a longitudinal sectional view, enlarged, taken at the line 2 2, Fig. 1. Fig. 4 is a transverse sectional view
15 taken at the line 4 4, Fig. 3. Fig. 5 is a transverse sectional view taken at the line 5 5, Fig. 3. Fig. 6 is a transverse sectional view taken at the line 6 6, Fig. 3. Fig. 7 is a transverse sectional view taken at the line 7 7, Fig. 3.

20 My invention relates to pneumatic dental mallets in which the hammer is operated pneumatically in any of the well-known ways, usually by means of air being forced through a flexible tube, which connects the mallet with
25 a force-pump, which forces the air alternately in opposite directions through the flexible tube to and from the mallet.

My invention consists in the construction of the mallet hereinafter specifically described, whereby when the operator presses
30 the mallet-tool against the filling in the tooth the air is admitted through openings to the hammer and the blows commence, a slight pressure causing slight blows of the hammer
35 and harder pressure causing harder blows, the operator being able to regulate the force of the blows as desired.

In the accompanying drawings, A represents the outside shell of the mallet, which the
40 operator holds in his hand when using the tool.

B is a hollow cap, which is attached to the shell A by means of screw-thread C.

D is an interior cylinder that fits snugly within the shell A. This interior cylinder D
45 is closed at its upper end by the screw-threaded plug E.

F are open slots through the upper end of the interior cylinder D, through which the air passes into the cylinder D when the cylinder is pressed up within the shell A, as hereinafter described. The interior circumference
50 of the cap B is larger than that of the shell A,

so that when the cylinder D is pressed up within the shell A into the position shown in Fig. 3 the open slots F extend up into the interior of the cap B and air passes from the cap B directly into the cylinder D. 55

G is the hammer, which fits closely within the cylinder D, and when in operation strikes the upper end of the tool H, which is held by the cylinder D. The tool H is attached to the mallet in the usual way and is of the character ordinarily used for filling teeth. 60

I is a spring held within the cap B and presses against the upper end of the cylinder D, so as to normally hold it extended in the position shown in Fig. 2. 65

J is a stop-pin, which is attached rigidly to the interior cylinder D and extends through the slot L in the outer shell A of the mallet. This regulates the throw of the interior cylinder D in the shell A. The location of this stop-pin is such that in the normal position of the mallet the openings F are entirely within the shell A and therefore closed from the passage of any air through them; but
75 when the operator presses the tool H against the filling in the tooth sufficiently hard to overcome the tension of the spring I the cylinder D is forced upwardly in the shell A, the stop-pin J moving in the slot L until the openings F extend up within the cap B, and the air will pass through into the cylinder D or in the opposite direction from the cylinder D into the cap B. When the operator presses
85 harder against the filling of the tooth, the openings F are forced farther into the cap B and the air passes more freely back and forth through them.

M are openings for air to pass into the cylinder D below the hammer G. 90

N is a flexible tube, which connects the cap B with the air-pump, which is constructed so as to alternately force air to and from the cap B. It will be understood that this air-pump is not of such construction as to continually force the air in one direction; but the air is alternately forced from the pump-cylinder through the tube N and then forced from the cap B of the mallet to the pump-cylinder. When the air is forced from the cap B of the mallet and the openings F are in position for the air to pass through, the hammer G is raised, the air being admitted below it by the suc- 100

tion of the air from the cylinder D. Then when the air is forced in the opposite direction the hammer G is forced down, the air escaping from below it, making a blow upon the tool.

O is a stop on the inside of the cylinder D for the loose spring P to strike against.

P is a spring resting on the hammer G, which strikes against the stop O and serves as a cushion in the upward movement of the hammer G, thus preventing a blow or jar in that direction.

When the operator presses the tool against the filling in the tooth sufficiently to only open the air-passages F slightly, the blows of the hammer G will be very slight. If the operator desires harder blows, he presses a little harder against the filling of the tooth, opening the air-passages F wider, and the blows will increase in force, so that the force of the blows is readily regulated by the operator, and the operation of the hammer is entirely controlled by the operator by simply pressing the tool against the filling of the tooth.

It is obvious that the result would be the same if the positions of the openings F and M

were changed to below and above the hammer G, respectively, the openings F being placed below the hammer G, air being forced from the force-pump to and from the cylinder D, as before stated, and the openings M being above said hammer, for the purpose stated.

Having fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a dental mallet, of the shell A, the interior cylinder D, provided with openings F, the spring I, and the hammer G, whereby the operator controls the admission of air for operating the hammer, substantially as specified and shown.

2. The combination, in a dental mallet, of the shell A, the interior cylinder D, provided with openings F, spring I, cap B, and stop-pin J for controlling the throw of the cylinder D, substantially as and for the purposes specified.

VAN R. DAVID.

Witnesses:

GEORGE N. DIETERICH,
JOSEPH D. KERN.