C. M. RICHMOND.

DENTAL-PLUGGER.

No. 182,534. Patented Sept. 26, 1876.

FIG. 1

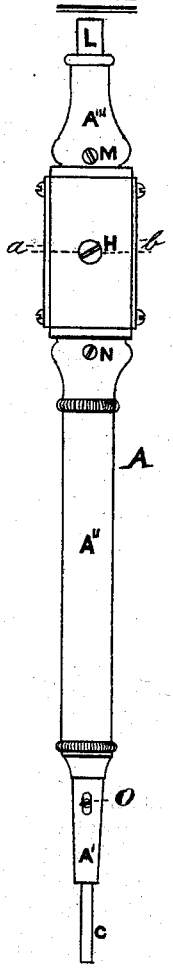


FIG. 3

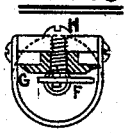
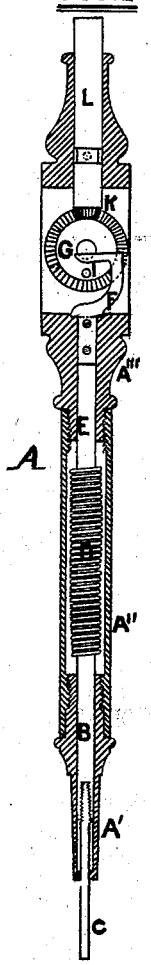


FIG. 2



WITNESSES

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W. J. Chipchase

INVENTOR

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UNITED STATES PATENT OFFICE.

CASSIUS M. RICHMOND, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO BERNARD M. GILDEA, OF SAME PLACE.

IMPROVEMENT IN DENTAL PLUGGERS.

Specification forming part of Letters Patent No. **182,534**, dated September 26, 1876; application filed October 11, 1875.

To all whom it may concern:

Be it known that I, CASSIUS M. RICHMOND, of the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Automatic Plugging Instruments for dental purposes, of which the following is a specification:

My invention relates to that class of dental plugging instruments which are operated by means of a suitable dental engine, and is designed with a view of obtaining a blow upon the plugging-tool which shall be less painful to the patient, when submitting to the operation of plugging the teeth, than is given by plugging instruments which strike with a mallet upon the head of the plugging-tool.

In the accompanying drawing, Figure 1 is an exterior view of my invention. Fig. 2 is a sectional elevation; and Fig. 3 is a sectional plan taken through the line *a b*.

In the several figures of the drawing like letters of reference indicate like parts.

A is a casing, which incloses and guides the parts. It is made in three pieces. A′, the lowest piece, carries the socket-spindle B, in which the plugging-tool C is inserted, being held in it securely, and yet easily withdrawn. The plugging-tool is shown in the drawing with a screw-thread cut on its end and screwed into the socket-spindle B, but it may be secured in any other suitable manner. The piece A′ screws into the barrel of the casing A″, which in turn screws upon the upper piece A‴. The spindle B, just above the upper end of the piece A′, is attached to a spiral tension-spring, D, the other end of this spring being secured to the rod E, the hook F being fastened on the end of the rod E by two screws, as shown.

G is a bevel-gear wheel revolving on a pivot screwed into the back plate at H. On the face of this gear-wheel there is a pin, I, which engages with the hook F at each revolution. K is the pinion, which gears with the wheel G. L is the shaft, which attaches in any suitable manner to the dental engine. It is held in place by the set-screw M, which is inserted through the casing into the annular groove cut in the shaft L at this point. The set-screw at N bears against a flattened part of the shaft E, and acts to keep the shaft from turning around and throwing the hook out of alignment. At O a little set-screw is shown, which plays up and down in a slot, and is screwed into the spindle B, so that when the pin I on the gear-wheel raises the shaft E this set-screw O will move to the top of the slot, when the spring D will be extended with the further upward movement of the shaft until the pin I, having passed from under the hook F, the spring again contracts, and gives a forcible yet elastic or yielding blow upon the plugging-tool.

The attachment of my instrument to the engine is made to the end of the shaft L, where it projects above the casing, and should be by a coiled-wire or other flexible connection.

The operation is as follows: The engine gives a rotary motion to the pinion K, which transmits it to the wheel G. The pin I, at every turn, picks up the hook F, and, carrying it to its highest point, expands the spring D, when the pin, suddenly releasing itself from the hook, drops it, the spring D contracts, and the result is a sharp blow upon the plugging-tool. The blow, though quick and forcible, is of yielding nature, which is not obtainable where hard metallic mallets are employed.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The combination, in a dental plugging instrument, of the tool-holder B, shaft E, and spring D connecting them together, for the purpose set forth.

2. The combination, in a dental plugging instrument, of the pinion K on end of shaft L, bevel-gear wheel G, with the pin I and hook F, connected to the upper end of spring D by its shank E, as and for the purpose described.

CASSIUS M. RICHMOND.

Witnesses:

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