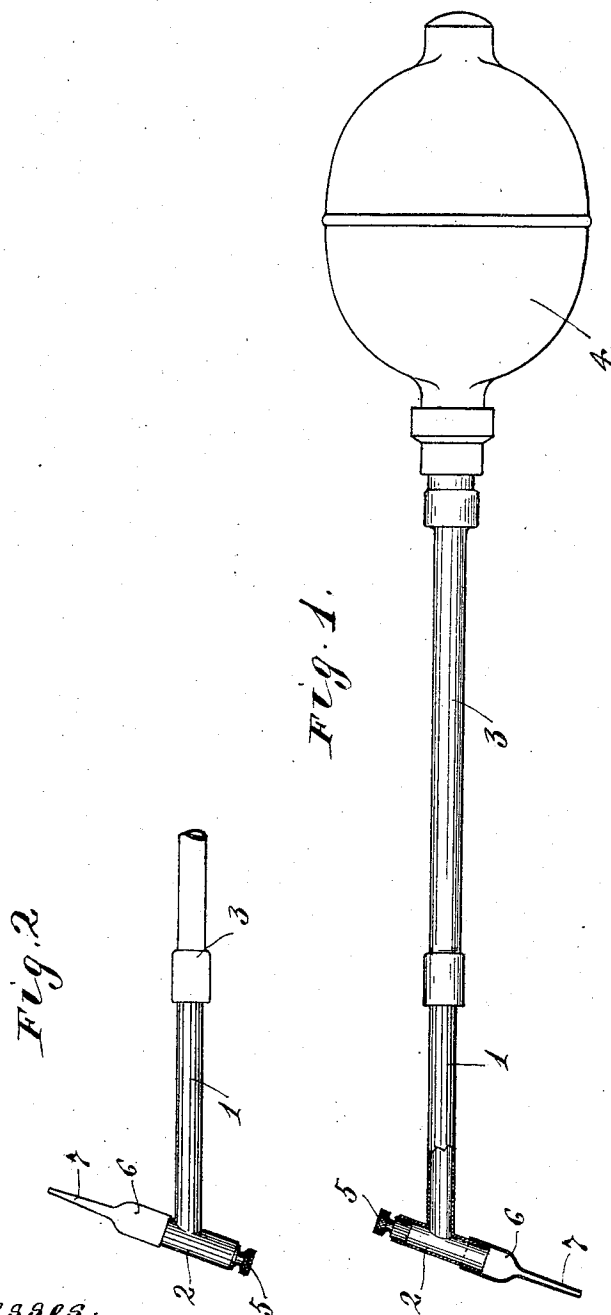


No. 861,270.

PATENTED JULY 30, 1907.

H. L. CRUTTENDEN.
PNEUMATIC DENTAL CEMENT INJECTOR.
APPLICATION FILED NOV. 19, 1906.



Witnesses.
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UNITED STATES PATENT OFFICE.

HENRY L. CRUTTENDEN, OF NORTHFIELD, MINNESOTA.

PNEUMATIC DENTAL CEMENT-INJECTOR..

No. 861,270.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed November 19, 1906. Serial No. 343,957.

To all whom it may concern:

Be it known that I, HENRY L. CRUTTENDEN, a citizen of the United States, residing at Northfield, in the county of Rice and State of Minnesota, have invented certain new and useful Improvements in Pneumatic Dental Cement-Injectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its especial object to provide an improved pneumatic dental cement injector adapted for use to force plastic material, such as cement or chlora percha, into nerve canals or other deep cavities of teeth, and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings; Figure 1 is a view principally in side elevation, but with some parts sectioned, showing the improved instrument; and Fig. 2 is a view in elevation showing a portion of the instrument shown in Fig. 1.

The improved device comprises a short metal tube 1, having at one end a tubular head 2 that extends at an oblique angle thereto and is open at both ends. Preferably a rubber or other flexible tube 3 connects the extended end of the tube 1 to an ordinary pump acting bulb 4. Either end of the tubular head 2 is adapted to be closed by a plug 5 that fits the same with a slight taper, and is preferably formed with a knurled head.

In connection with the tubular head 2, I employ a cement containing tube 6, the large end of which is adapted to telescope under friction onto either end of the said tubular head 2, and the other end of which tube 6 is provided with a capillary discharge passage formed in an attenuated neck portion 7. In my prior U. S. Letters Patents 716,677 of date Dec. 23rd, 1902, entitled "Dental cement injector"; and in 749,846 of date January 19th, 1904, entitled "Dental cement injecting tube," I have shown cement tubes of a character which I preferably employ in connection with this improved pneumatic cement injector.

As is evident, the cement or material to be injected into the root or cavity of the tooth, is placed within the

tube 6 before the said tube is applied to the tubular head 2. The said tube 6 being applied to one end of the tubular head 2, the other end of said tubular head is of course closed by the plug 5. By compression on the bulb 4, a pneumatic pressure will be produced in the tube 6 which will eject the cement therefrom into and to the very bottom of the cavity of the tooth being filled. The long and very small neck portion 7 of the said tube is adapted to be inserted into very small and very deep cavities. The tubes which I actually use are provided with attenuated neck portions 7 that are proportionately longer and smaller in diameter than shown in the drawings. In practice, I prefer to use cement containing tubes that are constructed of gelatin, and hence are transparent so that the amount and condition of the cement within the said tubes may always be observed.

In view of the oblique angularity of the tubular head 2 with respect to the tube 1 (which tube 1 serves as a hand piece), it is possible to reach all cavities both in upper and lower teeth. To reach some cavities the cement tube 6 should be applied to one end of the head 2 so that it will stand at an acute angle to the tube 1, as shown in Fig. 2; while to reach other cavities it should be applied to the other end of the head 2 so as to stand at an obtuse angle to said tube 1.

The device described has, in practice, been found extremely efficient and very convenient for the purposes had in view.

What I claim is:—

1. In a dental cement injector, the combination with a tubular head and a pump bulb connected thereto, of a cement tube fitting telescopically on said tubular head, and having an attenuated discharge neck at its projecting end, substantially as described.

2. In a dental cement injector, the combination with a tube 1 having an obliquely set tubular head 2 that projects and is open at both ends, of a plug 5 adapted to close either end of said tubular head, a cement tube 6 adapted to closely fit upon either end of said tubular head and provided with an attenuated discharge neck 7, a pump acting bulb, and a flexible tube connecting said bulb to said tube 1, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY L. CRUTTENDEN.

Witnesses:

J. G. SCHMIDT,
S. A. UTTLAND.