

No. 647,557.

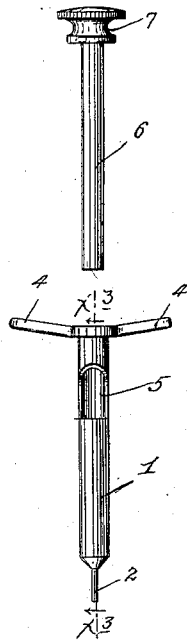
Patented Apr. 17, 1900.

H. L. CRUTTENDEN.  
DENTAL COMBINATION TOOL.

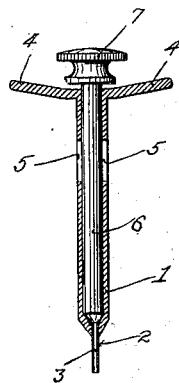
(Application filed Nov. 3, 1899.)

(No Model.)

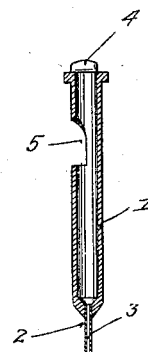
*Fig. 1.*



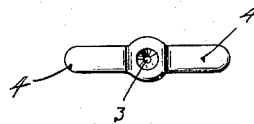
*Fig. 2.*



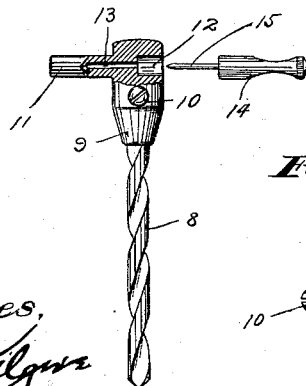
*Fig. 3.*



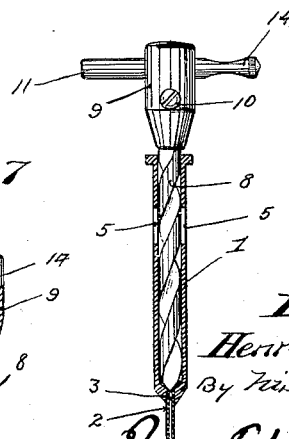
*Fig. 4.*



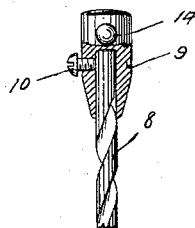
*Fig. 6.*



*Fig. 5.*



*Fig. 7.*



Witnesses,  
Harry Kilgus  
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Inventor:  
Henry L. Cruttenden,  
By His Attorney,  
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# UNITED STATES PATENT OFFICE.

HENRY L. CRUTTENDEN, OF NORTHFIELD, MINNESOTA.

## DENTAL COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 647,557, dated April 17, 1900.

Application filed November 3, 1899. Serial No. 735,705. (No model.)

*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 Dental Combination-Tools; 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 invention has for its object to provide an improved cement-injector with cleaning tool or attachment, the device being in the nature of a combination dental tool adapted for use by dentists; and to this end my invention consists in the novel devices and combinations of devices hereinafter described, and defined in the claims.

The device is capable of many uses in dental work, but is especially adapted for use in the process of crowning teeth. As is well-known, in crowning teeth after the tooth has been cut off to leave the proper stub a small hole is drilled deep into the same to receive the small anchor-stem of the crown. Cement must first be forced to the bottom of the small and deeply-drilled anchor-hole in the tooth stump or root, and this has been found to be exceedingly difficult and often impossible to accomplish within the short space of time required for the cement to set.

The device which I have provided by my invention was intended to accomplish the proper filling of the deep anchor hole or bore in the tooth with rapidity and certainty, and it has been found to fully and satisfactorily accomplish the purpose for which it was intended.

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

Figure 1 is a plan view of the cylinder and piston members of the injector, the parts being separated. Fig. 2 shows the said cylinder and piston members put together, the former being shown in central longitudinal section and the latter in full plan. Fig. 3 is a vertical section taken through the cylinder member on the line  $x^3 x^3$  of Fig. 1. Fig. 4 is a view looking at the upper end of the cylinder member. Fig. 5 is a view, partly in plan

and partly in longitudinal section, showing the cylinder member with the cleaning-tool or drill inserted into the same. Fig. 6 is a plan view with some parts broken away, showing the said cleaning-tool or drill, a removable part thereof being separated therefrom; and Fig. 7 is a side elevation of the said drill or cleaning-tool with some parts broken away and others shown in section.

The numeral 1 indicates the cylinder member or cement-tube, which is provided at its discharging end with a contracted nipple or point 2, having a small passage 3 opening therethrough. At the other end the cylinder is open and is preferably provided with oppositely-projected bars or finger-pieces 4. Below its upper end and in one side the cylinder-tube 1 is provided with an opening 5, through which the cement may be passed into the interior of the cylinder or tube.

The numeral 6 indicates the piston member of the injector, the same being in the form of a rod or plunger which closely fits the bore of the cylinder or tube 1 and is provided at its outer end with a head or enlargement 7, by means of which it may be manipulated.

To fill the cylinder or tube 1 with cement, it is not necessary to entirely withdraw the piston or plunger 6 therefrom, but is only necessary to withdraw the same far enough to expose the opening 5. Cement having been placed in the cylinder or tube, as indicated, it may be ejected under high pressure and in a small stream through the perforation 3 of the nipple 2.

To fill the cavity or deep perforation in the tooth root or stump which is prepared for the application of the cap, the point of the nipple 2 is placed in the said perforation and the cement is forced to the bottom of the same by the inward movement of the plunger or piston 6. This action is very quickly accomplished and the small and deep cavity or perforation is with certainty completely filled.

As the cement hardens very quickly it is very desirable and really necessary to have an efficient device for thoroughly cleaning out the cylinder or tube 1. For this purpose I provide a drill 8, which closely fits the interior or bore of the said tube or cylinder. At its outer end said drill is provided with a head 9, which, as shown, is removably se-

cured to the drill by a set-screw 10. The drill-head 9 is provided with a projecting stud or pin 11, and in its opposite side is provided with a socket 12, having a small axially-extended perforation 13. 14 indicates a small shaft or finger-piece, the inner end of which is adapted to closely fit into the socket 12 and is provided with a small projecting drill 15, which fits into the perforation or seat extension 13. When the drill 15 and its finger-piece 14 are in working position, as shown in Fig. 5, the said part 14 projects opposite to the stud or pin 11 and coöperates therewith to afford a good handle, by means of which the drill 8 may be turned. When the drill 15 and its finger-piece 14 are removed from the head 9, the said drill is adapted for use to bore out or clear a small discharge-passage 3 in the nipple or discharge-teat of the tube or cylinder 1. As is evident, by the use of the drill the tube or cylinder 1 may be completely cleaned, even though the cement may have hardened therein. The cement is very liable to harden within the said tube or cylinder, for the reason that the dentist will not find time to clean the same until after he has completed the job of crowning the tooth.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a dental tool, the combination with

the cylinder or tube 1 with contracted discharge end 2 and lateral opening 5 near its larger end, of the piston or plunger working within said cylinder, substantially as described.

2. In a dental tool the combination with the cylinder or tube 1 with contracted discharge end 2, lateral opening 5 and projections 4, of the piston or plunger 6 closely fitting and working within said cylinder or tube, and provided with an enlarged head 7, substantially as described.

3. In a dental tool the combination with a cylinder or tube of a cement-injector, of a drill closely fitting the interior of same for cleaning it, substantially as described.

4. In a dental tool the combination with the cylinder or tube 1 with contracted discharge end 2, of the cleaning-tool comprising the drill 8 fitting the interior or bore of said cylinder or tube and provided with the removable drill 14, 15, for cleaning the passage through said discharge end 2, substantially as described.

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

HENRY L. CRUTTENDEN.

Witnesses:

F. J. MILLER,

F. J. TYNER.