W. C. DALBEY.

DENTAL INSTRUMENT.

APPLICATION FILED APR. 24, 1913.

1,188,417. **Patented June 27, 1916.**

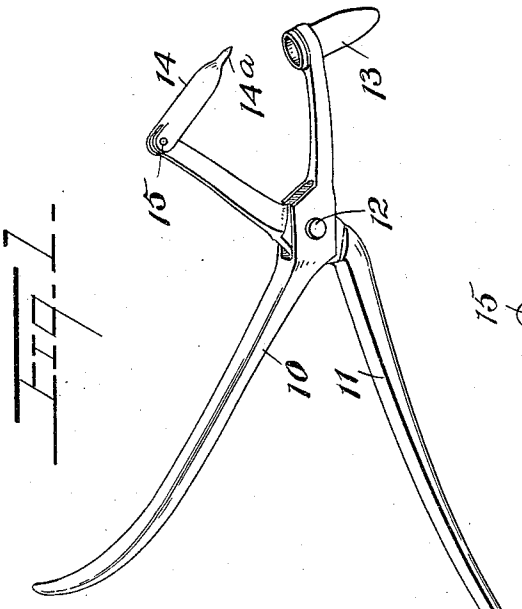


Fig. 1.

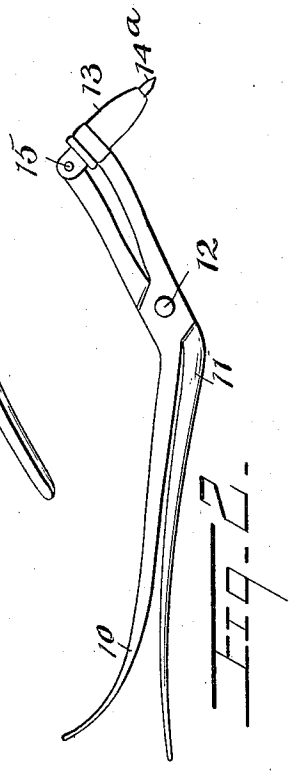


Fig. 2.

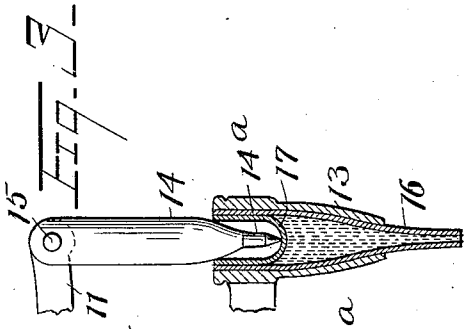


Fig. 3.

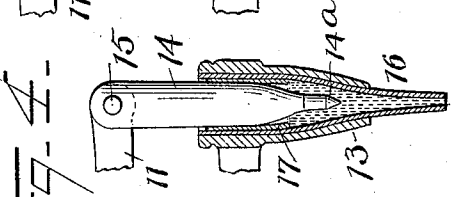


Fig. 4.

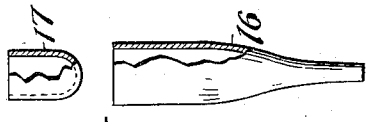


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM C. DALBEY, OF DUQUOIN, ILLINOIS, ASSIGNOR TO THE CLEVELAND DENTAL MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DENTAL INSTRUMENT.

1,188,417. Specification of Letters Patent. **Patented June 27, 1916.**

Application filed April 24, 1913. Serial No. 763,189.

To all whom it may concern:

Be it known that I, WILLIAM C. DALBEY, a citizen of the United States, residing at Duquoin, in the county of Perry and State of Illinois, have invented a certain new and useful Improvement in Dental Instruments, of which the following is a full, clear, and exact description.

This invention relates to a dental instrument adapted particularly for inserting or forcing cement in the canal or other cavity of a root or tooth.

The instrument forming the subject matter of the present invention is of the type comprising a pair of relatively movable members, one provided with a hollow cement holder, and the other with a plunger or piston which is adapted to be inserted in the holder to force the cement therefrom into the root or tooth.

The invention resides particularly in certain improvements in the form or construction of the parts composing the instrument, the object of the invention being to provide an instrument of the character stated which is more efficient than those proposed heretofore which will enable the operator or dentist to effectively place the cement in the canal or cavity without liability of waste of cement, or of the cement being smeared over the fingers of the operator or about the mouth of the patient.

A further object is to provide an instrument which will enable the dentist to easily reach and insert the cement in a tooth in any part of the patient's mouth.

My invention may be briefly summarized as consisting in certain novel details of construction and combination and arrangement of parts which will be described in the specification and set forth in the appended claims.

The instrument includes two relatively movable operating members 10 and 11, which in the preferred construction, are pivotally connected together, as by a pin 12, after the manner of an ordinary pair of scissors or forceps,—the parts being crossed at the pivotal point so that when the handle or hand manipulating portions are moved together, the operating ends will also be moved together, and vice versa. At one end of the member 10 is a barrel or cement holder 13, which is fixed to the end of the member 10, and at the corresponding end of member 11 is a plunger or piston 14 which is pivotally connected to the member 11 by a pin 15, in such a manner that the piston or plunger 14 can enter freely into the holder 13, when the ends of members 10 and 11 are moved together; and as freely move out of the same when the members are moved apart.

In the preferred use of the instrument, the cement is placed in a container or gelatin tube 16, which is partly cylindrical, the cylindrical end being open and partly conical, the conical part having a rather long tapering neck with a small discharge orifice at its end, see particularly Figs. 3 to 5. To enable me to use the cement tube of the character stated, the upper end of the barrel or holder 13 is cylindrical, the upper end being open, and the lower end is given a conical taper, interiorly and exteriorly, it being particularly important that the interior be conically tapered so that the tube may fit into the same nicely, as shown in Fig. 3. At the small end of the barrel or holder is an opening of such a size that the long tapering neck of the end of the tube 16 may extend freely therethrough, as shown particularly in Figs. 3 and 4. I also propose to employ in connection with the gelatin tube 16, the cap 17 of an ordinary gelatin capsule, which cap is adapted to be inserted in the end of the gelatin tube and to coöperate with the plunger so as to constitute a seal, packing or gasket, which will prevent any part of the cement being forced back along the piston. The plunger or piston 14 is so shaped that I can effectively use the cap 17 for the purpose stated. Consequently, this piston or plunger 14 is substantially cylindrical for a portion of its length from the point of pivotal connection with the member 11, and toward its opposite end is conical, and then at its extreme end is provided with a rather sharp projection 14^a.

Just at the left of the pivotal connecting pin 12 of the members 10 and 11, as the same are viewed in Fig. 2, the said members 10 and 11 are given a bend so that the parts which extend from the pivotal connection to the piston and barrel respectively, are at an angle with respect to the handle portions. This construction enables the operator to insert the cement with ease in any tooth or root in the mouth of the patient.

In the use of the instrument, the gelatin tube partly filled with cement is placed in the holder with the large end of the tube at

the large end of the barrel or holder, and the small end of the tube projecting through the small end of the holder, as shown in Fig. 3. Then the cap 17 may be inserted in the large end of the tube, as substantially shown in Fig. 3. Then, if the piston or plunger is pressed inwardly into the tube and holder, the sharp lower end 14^a of the plunger 14 punctures the cap, and the plunger then passes inwardly through the cap in the manner shown in Fig. 4,—the cap then constituting the seal which prevents the cement shooting back along the piston. If the plunger is forced into the tube its full distance, practically all of the cement will be forced out of the smaller discharge end of the tube. When the plunger 14 is withdrawn from the holder, the cap and gelatin tube will be withdrawn with it, as they will be virtually cemented to the piston and can be easily scraped off with a knife or any suitable tool.

Having thus described my invention, what I claim is:

1. In an instrument of the character described, a pair of relatively movable operating members, a hollow barrel carried by one of said members, a plunger carried by the other of said members, the said barrel having open ends, and a removable container supported within the said barrel, the plunger being adapted to enter the said container as the operating members are relatively moved.

2. In an instrument of the character described, a pair of relatively movable operating members, a barrel open at both ends carried by one of said operating members, the barrel at its lower end being tapered, a removable container approximating the interior shape of the barrel and being supported therein by the convergence of the walls, the said plunger being adapted to enter the container upon the relative movement of the operating members.

3. In an instrument of the character described, a pair of relatively movable operating members, a hollow barrel carried by one of said members, a removable member supported in the barrel and being of less diameter than the diameter of the plunger, the said plunger being adapted to enter the removable member when the operating members are moved relatively to each other, the movement of the plunger compressing the said removable member laterally to form a packing to prevent the passage of material past the piston.

4. In an instrument of the character described, a pair of relatively movable operating members, a hollow barrel carried by one of said members, a plunger carried by the other of said members, a removable container supported within the barrel, said container being provided with a cap, the said plunger being adapted to move into the container as the operating members are relatively moved, means carried by the plunger to puncture the cap, the diameter of the plunger being greater than the diameter of the container whereby the container is compressed laterally as the plunger moves into the container, thereby preventing passage of material along the plunger.

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

WILLIAM C. DALBEY.

Witnesses:
B. M. WRIGHT,
JOSEPH DUNN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."