E. H. CRAWFORD.

INSTRUMENT FOR RECEMENTING DENTAL BRIDGES AND THE LIKE.

APPLICATION FILED FEB. 16, 1915.

1,139,017. Patented May 11, 1915.

Fig. 1.

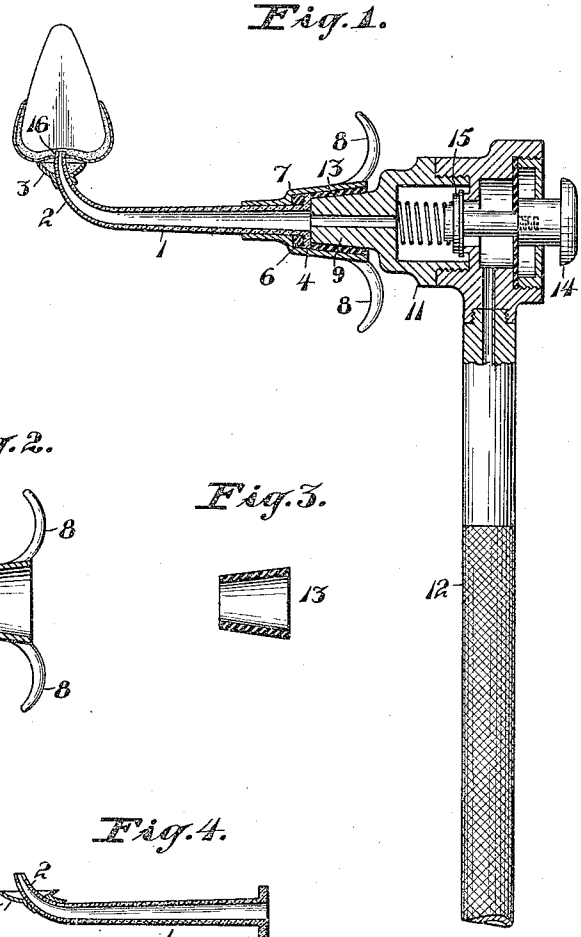


Fig. 2.

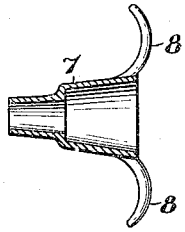


Fig. 3.

Fig. 4.

Fig. 5.



WITNESSES:

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INSTRUMENT FOR RECEMENTING DENTAL BRIDGES AND THE LIKE.

1,139,017. Specification of Letters Patent. Patented May 11, 1915.

Application filed February 16, 1915. Serial No. 8,684.

To all whom it may concern:

Be it known that I, EDWIN H. CRAWFORD, a citizen of the United States, residing at Santa Rosa, in the county of Sonoma and State of California, have invented new and useful Improvements in Instruments for Recementing Dental Bridges and the like, of which the following is a specification.

The object of the present invention is to provide an instrument whereby a dental bridge, one end of which has become loose, can be readily and effectually recemented without removing or destroying the same.

There are known to me at present two ways in which this process is attempted to be performed, but both of them are unsatisfactory. One method is to inject through a hole made in the loose crown of the bridge the liquid cement from a gelatin capsule by the pressure of the fingers. This method is not satisfactory because a great amount of pressure has to be applied to the capsule to force the cement through the hole in the loose crown, and it is practically impossible to prevent the rear portion of the capsule from leaking through back pressure. Furthermore it is impossible by the fingers alone to impart to the cement sufficient pressure to force it to the required point in the loose crown. Moreover it is difficult to get the point of the capsule to fit properly in the hole, and the point of the capsule if applied to the hole is very liable to bend or be deformed.

The second method which has been attempted is to place the liquid cement in a hand syringe and force the same through the hole in the crown by pressure applied by the hand to the syringe. One objection to this method is that the cement more or less coagulates in the barrel of the syringe, so that there is a certain amount of residue left in said barrel after each operation which residue interferes with succeeding operations, so that in a very short time the syringe is useless. A second objection is that the cost of such a syringe is almost prohibitive.

In the accompanying drawing, Figure 1 is a broken sectional view of my improved apparatus, and parts of a compressed air hose and valve used therewith showing its application to the loose end of a bridge; Fig. 2 is a detail sectional view of a holder; Fig. 3 is a similar view of a washer; Fig. 4 is a similar view of a glass tube; Fig. 5 is a similar view of a modified form of glass tube.

Referring to the drawing, 1 indicates a glass tube, tapering to one end, which is curved, as shown at 2, and has formed integral therewith a cup 3, surrounding said end, to hold wax used for preventing the escape of cement which is to be discharged into the space between a bridge and a tooth. At its wide end the tube is formed with a flange 4, and a rubber washer 6 surrounds said wide end and rests against said flange. The tube is inserted by its narrow end through a conical narrow end of a holder 7, having finger pieces 8, and in the wide end of said holder is inserted a conical nozzle 9 of a valve casing 11 of common construction for a compressed air hose 12. A conical washer 13 of rubber around said nozzle is thereby pressed tightly against the inner surface of the outer end of the holder to form a gas-tight joint.

The glass tube is first placed in position in the holder, then the proper quantity of cement is poured into the tube, and the nozzle of the compressed air hose is then inserted in the holder. The end of the tube 1 is then applied to a hole in a bridge or the like, and pressure is then applied by hand to the stem 14 of the valve 15 to open the valve and permit compressed air to flow through said nozzle. The compressed air propels the cement before it and discharges it through the narrow end of the tube 1 with sufficient force to entirely fill the space between the loose end of the bridge and the tooth, so that the cement flows past the gum margin of the crown and runs over. After the cement is thoroughly hardened, the hole 16 can be filled, as is now the usual practice, with any metal desired.

As is well known to dentists, it is very desirable to use cement as thick as possible for recementing bridges, and a further advantage of this invention is that it enables the cement to be used of a thicker consistency than would otherwise be practical, because of the great pressure which is now obtained to force the cement into its place.

The cement is of thick and viscous character, and leaves a deposit or layer in the tube at each operation, thus contracting the conduit therethrough and more or less impairing the operation of the device. By the present construction, in which the tubes 1 are made of glass, they can be discarded

after two or three operations, and a fresh tube substituted, at a very slight expense.

The instrument can be equally well adapted for filling root canals or for cement post crowns to roots.

In Fig. 5 a straight glass tube 17 is shown.

I claim:—

1. An instrument of the class described comprising a tube reduced at one end, a source of supply of compressed air, a conduit from said source having a nozzle, and a valve in said conduit between said source and said nozzle, the other end of the tube and the nozzle being provided with means for making a gas-tight joint therebetween.

2. An instrument of the class described comprising a tube reduced at one end, a source of supply of compressed air, a conduit from said source having a nozzle, and a valve in said conduit between said source and said nozzle, the other end of the tube and the nozzle being provided with means whereby they may be detachably connected to form a conduit for compressed air flowing from said nozzle into said tube.

3. An instrument of the class described comprising a tube reduced at one end, a source of supply of compressed air, a conduit from said source having a nozzle, and a valve in said conduit between said source and said nozzle, and a holder having a finger piece for conveniently holding the same, said holder being conformed to be connected to the nozzle and to the larger end of the tube to form a substantially gas-tight joint therebetween permitting compressed air to flow substantially undiminished in pressure from the nozzle to the tube.

4. An instrument of the class described comprising a tube reduced at one end, a source of supply of compressed air, a conduit from said source having a nozzle, and a valve in said conduit between said source and said nozzle, and a holder having a smaller end formed with an outwardly tapering conduit, the larger end of the tube diverging outwardly to fit within said conduit, the larger end of the holder having an inwardly tapering conduit to fit around said nozzle.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWIN H. CRAWFORD.

Witnesses:
F. M. WRIGHT,
D. B. RICHARDS.

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