

UNITED STATES PATENT OFFICE.

WILLIAM WRIGHT, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO GRANVILLE O. AVERY, OF SAME PLACE.

DENTAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 522,309, dated July 3, 1894.

Application filed April 17, 1894. Serial No. 507,873. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WRIGHT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Dental Apparatus for Blowing Air, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a dental air-blower constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section through a portion of the same. Fig. 3 is a sectional elevation of the stop-cock which is applied to the air-conducting tube. Fig. 4 is a detail showing a portion of the air-heating device. Fig. 5 is a perspective view of the hollow plug of the stop-cock and the medicament holder which fits within the same.

My invention has for its object to improve the construction of dental instruments for blowing air, and consists in the combination, with the air-conducting tube and an air-forcing device connected therewith, of a stop-cock having a hollow plug containing a removable medicament-holder, whereby the air as it passes through said plug is brought into contact with the medicament with which it becomes charged on its way to the discharge nozzle as hereinafter set forth, and my invention also consists in certain novel combinations of parts and details of construction as hereinafter set forth and specifically claimed.

In the said drawings, A represents an elastic air-forcing bulb provided as usual with an air-inlet valve *a*, and connected at its opposite end by a suitable coupling with an elastic resistance or storage-bulb B, into which the air is forced by the bulb A in a manner common to instruments of this description.

The bulb B is connected by a flexible tube *b* with the air-conducting pipe C which is provided with a handle *d* of suitable shape to be conveniently grasped by the hand, said pipe C terminating as usual in a removable curved nozzle *f*, through which the air is blown or discharged upon the tooth as desired.

After the bulb B has been inflated to the extent permitted by the netting *g* within

which it is inclosed, the air in said bulb B is prevented from escaping until the proper time by a stop-cock D applied to the air-pipe C, said stop-cock consisting of a tubular shell *h* within which is fitted a hollow plug *i*, Figs. 3 and 5, held in place by a screw *k*, Fig. 3, and provided with apertures *l*, *l*, shown in Figs. 2 and 3, which when the plug is turned to open the cock, are brought into line with apertures *m*, *m*, in the shell *h* which communicate with the ends of the air-tube C connected with said shell *h*, thus affording a passage for the air from one portion 10 of the air-tube C through the hollow plug *i* to the other portion 12 of the air-tube beyond, and thence to the nozzle *f*, from which it is discharged by the pressure in the bulb B. Within the hollow plug *i* is fitted a removable medicament-holder G consisting of a head or stopper *q* which fits the open outer end or mouth of the hollow plug *i*, and has secured to it a spirally twisted wire *r* containing a wick or piece of fibrous substance *s* which is to be saturated with any suitable medicament with which it is desired to charge the air on its way to be heated by a device to be presently described, the air in its passage through the hollow plug *i* being compelled to pass through or around the saturated wick *s* contained therein, whereby it is caused to carry with it the medicament as desired. To the head *q* is secured a bar or rod *t*, the end 15 of which where it joins the head *q* being squared and fitting within a notch *w* Fig. 5, in the outer projecting end of the hollow plug *i*, said rod *t* which extends alongside of the shell *h* as shown in Fig. 1, thus forming a convenient handle for turning the plug *i* with the finger to open or close the stop-cock as desired. When the medicament is to be renewed, it is merely necessary to withdraw the head *q* with its spiral wire and wick and dip it into the medicament and replace it within the plug when it will be ready for use, and by thus constructing a stop-cock to hold a medicament, the apparatus is simplified and rendered more compact and convenient for use, as the withdrawal of the medicament-holder can be effected without taking apart or disconnecting the air-conducting tube, which is inconvenient when the latter is heated.

I will now describe the device which I employ for heating the air passing through the conducting-tube C to the nozzle *f*. Intermediate between the two sections 12, 20, of the tube C is placed a cylindrical plug H, the opposite ends of which are connected with said sections by short tubular coupling screws *a'*, *a'*, Fig. 2, which fit the screw threads in the ends of the sections 12, 20, and also screw threaded axial apertures *b'*, *c'*, in the ends of the plug H. This plug H is provided with an external screw thread *d'*, the opposite ends of which communicate through passages *e'*, *f'*, with the axial apertures *b'*, *c'*, as shown in Fig. 2, and around the plug H is placed a tight fitting tubular shell or casing I, the ends of which are tightly closed by heads or disks *g'* fitted to turn upon the coupling screws *a'*, *a'*. The screw thread *d'* in connection with the inner wall of the tubular shell I, thus forms a spiral air-passage of great length through which the air is compelled to pass on its way to the nozzle *f*, and when the shell I is highly heated by being held over or in contact with the flame of a suitable burner or lamp, the air traveling along the spiral passage *d'* is retained for a considerable length of time in contact with said shell and plug, thereby becoming quickly heated as desired before it reaches the nozzle *f*.

The above described instrument may be used for blowing cold air as well as heated air, and will be found extremely convenient and effective for any purpose to which a dental air-blower can be applied.

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

1. In a portable dental instrument, for blowing air, the combination, with the air-conducting tube provided with a discharge nozzle and means for forcing air through the same, of the stop-cock D consisting of an outer shell, a hollow plug, and a removable

medicament holder adapted to fit within said hollow plug, all constructed to operate substantially as and for the purpose set forth.

2. In a portable dental instrument for blowing air, the combination, with the air-conducting tube C provided with a discharge nozzle, and an air-forcing device connected with said tube, of the stop-cock D composed of an outer shell *h* forming a connection between the two adjacent portions of the air-tube C, a hollow plug *i* having apertures *l*, *l*, and the removable medicament-holder G having a head *q* adapted to close the mouth of the plug *i*, and provided with a bar *t* engaging a notch in the end of the plug *i* and forming a handle for turning the same, and a spiral wire *r* for holding a wick or piece of fibrous material adapted to be saturated with the medicament, all constructed and operating substantially as described.

3. In a portable dental instrument for blowing air, the combination of the air-forcing bulb A, the resistance or storage-bulb B, the air-conducting tube C connected with the latter and provided with a handle *d* and nozzle *f*, the stop-cock D having the hollow plug *i* containing a removable medicament-holder G, and an air heating device arranged between the stop-cock and the nozzle, said device consisting of a tubular shell I and cylindrical plug H inclosed within said shell and having an external screw-thread forming between said plug and shell a spiral air passage connected at its opposite ends with the air conducting tube, all constructed and arranged to operate substantially as set forth.

Witness my hand this 16th day of April, A. D. 1894.

WILLIAM WRIGHT.

In presence of—

P. E. TESCHEMACHER,
HARRY W. AIKEN.