

Oct. 17, 1933.

E. GIRVIN

1,930,712

DENTIST'S SALIVA EJECTOR

Filed Feb. 18, 1930

Fig. 1.

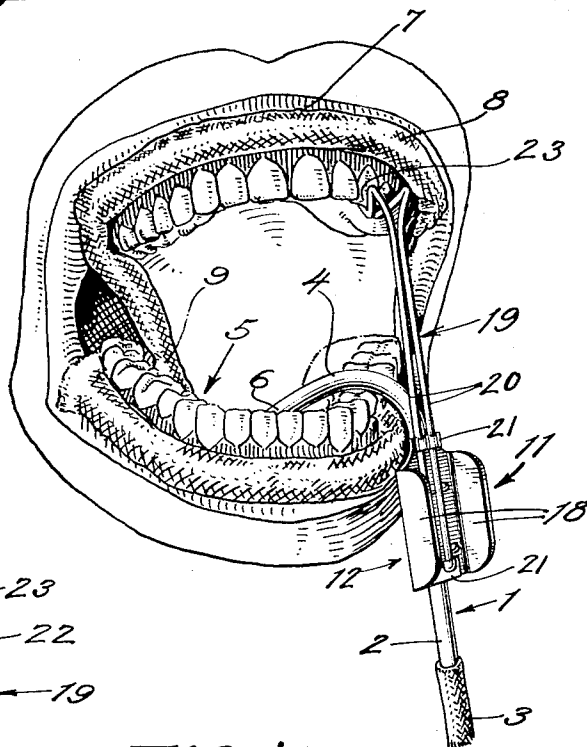


Fig. 2.

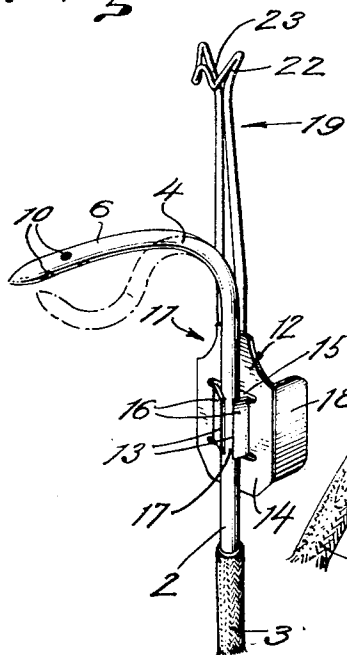


Fig. 4.

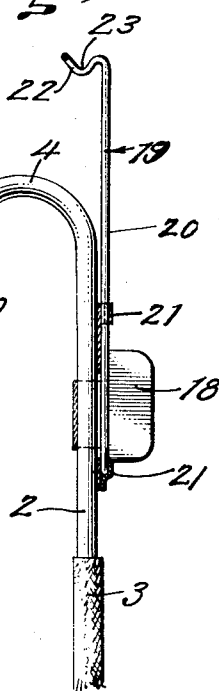


Fig. 3.

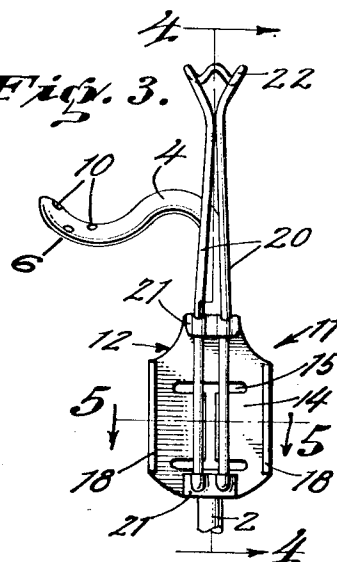
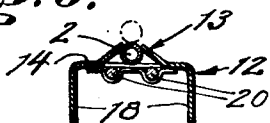


Fig. 5.



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UNITED STATES PATENT OFFICE

1,930,712

DENTIST'S SALIVA EJECTOR

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Application February 18, 1930. Serial No. 429,309

4 Claims. (Cl. 32-33)

This invention relates to a saliva ejector such as used by dentists for withdrawing saliva from the mouth of the patient while the mouth is held open during a dental operation. In per-
5 forming ordinary dental operations, dentists are much inconvenienced by the presence of saliva; its presence seriously interferes with the making of certain fillings which require absolute dryness in order to be effective, and it has
10 been the practice for dentists to use rubber dams for isolating the tooth being operated upon and also to use rolls of absorbent material placed in the patient's mouth to absorb the saliva. Neither of these methods is very
15 satisfactory and one of the difficulties is that saliva secreted on the upper jaw may fall to the lower jaw. Furthermore, the rolls of absorbent material sometimes become greatly saturated with saliva, but it is not feasible to remove
20 them while the dental operation on the tooth is proceeding.

It has also been the practice to provide an ejector tube hung in the patient's mouth with an inlet nozzle at its inner end which with-
25 draws the saliva in cooperation with an ejector stream of water alongside of the dentist's chair.

Such ejector tubes are usually provided in their inlet nozzle with a few perforations located on the side of the nozzle near its end
30 and these perforations, due to the partial vacuum existing within the nozzle, have a tendency to draw the gums or adjacent tissue against the side of the inlet nozzle so as to close up the openings and this interferes with the efficiency
35 of the ejector tube. Furthermore, such ejector tubes are usually constructed of a fixed form, that is, they are rigid. In using such an ejector tube it is frequently found that the shape of the tube is not well adapted to its position in the
40 patient's mouth.

During the performance of many dental operations it is necessary for the patient to hold his mouth widely open and this may become very tiresome to the patient.

The general object of this invention is to provide a simple means for overcoming these difficulties and to provide a dentist's ejector tube of simple construction having improved means for withdrawing the saliva from the patient's
50 mouth in the vicinity of the upper gum, as well as the lower jaw, enabling the use of absorbent rolls to be dispensed with.

A further object of the invention is to provide an ejector tube of improved construction, en-
55 abling it to be readily bent to fit the mouth

of the patient, or to suit its particular location in the mouth.

A further object of the invention is to provide simple means for bracing the upper jaw in an open position.

The invention consists in the novel parts and combinations of parts to be described hereinafter, all of which contribute to produce an efficient dentist's saliva ejector.

A preferred embodiment of the invention is described in the following specification, while the broad scope of the invention is pointed out in the appended claims.

In the drawing:

Figure 1 is a perspective illustrating an open mouth and the embodiment of my invention as applied in practical use.

Figure 2 is a perspective illustrating the preferred embodiment of my device removed from the jaw, and showing a short portion of the ejector hose connected to the ejector tube.

Figure 3 is a front elevation of the device particularly illustrating the construction of the brace and its relation to the ejector tube.

Figure 4 is a section taken about on the line 4-4 of Figure 3, and further illustrating details of the device, and illustrating the manner in which an absorbent hose is employed to cooperate with the ejector tube to withdraw the saliva from the patient's mouth.

Figure 5 is a horizontal section taken about on the line 5-5 of Figure 3 and further illustrating details of the clasp end of the brace.

Referring more particularly to the parts, and especially to Figure 1, 1 indicates an ejector tube embodying my invention.

This ejector tube is formed of a non-resilient, flexible material, such as aluminum. It has a substantially straight round shank 2 which is attached to an ejector hose 3 that connects with the water fountain at the side of the dental chair in the usual way, not illustrated, but which operates to produce a partial vacuum or suction in the tube 1. At an intermediate point on its length, the tube 1 is formed with a bend 4 that adapts it to be hung on the lower jaw 5 of the patient. (See Figure 1.) Beyond the bend 4 the ejector tube is formed with a substantially straight extension 6 that constitutes an inlet or suction nozzle which extends downwardly at the lower jaw back of the teeth.

By reason of the fact that I form this ejector tube of non-resilient, flexible material, it can be bent to any desired shape to suit the patient's mouth or any special requirements, and will

maintain any shape into which it has been bent by the dentist. Such a tube may be used to advantage for withdrawing saliva and if desired, may be used without special means such as I shall now describe for increasing the effectiveness of the tube in use.

In order to increase the effectiveness of the ejector tube, and also to adapt it to withdraw saliva from the vicinity of the upper gum 7, as well as from the lower jaw, I provide a length of absorbent hose 8. This hose is preferably formed of absorbent cotton and is a woven tube or hose, one end 9 of which is telescoped over the nozzle 6 of the tube 1.

The absorbent hose 8 is manipulated so as to set it in place in the manner indicated in Figure 1. In this way any saliva originating and collecting in the vicinity of the upper gum 7 will be absorbed by the hose and will be conducted down to the suction nozzle 6 where it will be drawn off. In addition to this, the portion of the hose in the vicinity of the nozzle 6 prevents the perforations 10 of the nozzle from being closed by coming in contact with the flesh.

In order to enable the upper jaw to be braced in an open position, I prefer to employ with the tube 1 a brace 11 that is preferably provided with simple means for attaching it to the shank 2 of the tube. This brace may be of any suitable construction, but preferably consists of a plate-form body 12 carrying a clasp 13 which frictionally engages the tube 1. For this purpose the body 12 is preferably formed of a main plate 14 with an opening 15 punched in it at which point the material of the plate 14 is bent outwardly so as to form two converging flanges 16, the sides of which rest firmly against the side of the tube.

Between the adjacent edges of the flanges a gap or socket 17 is formed opening onto the side of the clasp. The plate 14 is formed with side wings 18 that may be pressed together between the dentist's thumb and forefinger to open the socket to release the clasp 13 and permit the body 12 to be adjusted up or down on the shank of the tube, also to enable the clasp to be applied to the shank by a lateral movement against the shank. If desired, the shank of the tube may be knurled or roughed in any other suitable manner to assist this operation. By reason of the fact that the clasp 13 is frictionally-tight on the shank 2, and by reason of the fact that the clasp is devoid of a hand-operated fastening, such as a set screw, the rest can be very readily adjusted by using one hand to adjust it; that is to say, it can be readily slid up or down on the shank, and also rotated on the shank as may be desired to enable the stirrup at the upper end of the rest to seat itself firmly on a tooth of the upper jaw.

The brace also includes a stem 19 which is preferably of bifurcated form. This stem is most conveniently formed of wire and is of bifurcated form, as shown, the two legs 20 of the stem being secured by metal strips 21 on the outer face of the plate 14. The stem 19 at its upper end is bent so as to form a stirrup 22 forming a rudimentary socket 23 to fit over and

receive the teeth or a tooth of the upper jaw.

It is understood that the embodiment of the invention described herein is only one of the many embodiments this invention may take, and I do not wish to be limited in the practice of the invention, nor in the claims, to the particular embodiment set forth.

What I claim is:

1. In a dentist's saliva ejector, the combination of a tube having a round shank constructed to be attached to an ejector hose and having a bend at an intermediate point on its length adapting the tube to be hung over one's lower jaw with the inner end of the tube disposed within the mouth, a hose of absorbent material telescoped over the inner end of the tube, and a rest having a socket open on its side for detachably securing the same to said shank by a lateral movement of the socket against the shank, said rest extending upwardly from the shank, and having a stirrup at its upper end to engage the teeth or gums of the alveolar ridge, said rest being devoid of a fastening and being friction-tight on said shank to enable the same to be moved up or down and twisted on the shank in adjusting the stirrup.

2. In a dentist's saliva ejector, the combination of a tube having a shank to be attached to an ejector hose and having a bend at an intermediate point on its length to enable the same to be hung over one's lower jaw, and a brace having a clasp with a socket open on its side and having a pair of jaws for engaging the shank of the tube by a lateral movement of the clasp against the tube, said clasp having a stem extending upwardly therefrom, and with a stirrup formed at the upper end to engage the teeth of the upper jaw to hold the mouth open, said clasp being friction-tight on the shank and enabling the same to be moved up or down and twisted on the shank in adjusting the position of the stirrup.

3. As a new article of manufacture, a brace to be used with a dentist's ejector tube having a body in the form of a plate with a resilient clasp for attaching the same to the saliva tube, and a bifurcated stem formed of wire extending from the body and having a stirrup at its upper end to fit over and engage the teeth of the patient's upper jaw.

4. In a dentist's saliva ejector, the combination of a tube having a round shank constructed to be attached to an ejector hose and having a bend at an intermediate point on its length adapting the tube to be hung over the patient's lower jaw with the inner end of the tube disposed within the mouth, a hose of absorbent material telescoped over the inner end of the tube and a rest having a socket with resilient means for yieldingly clamping the rest on the round shank, said rest including a stem extending upwardly and having a stirrup at its upper end to engage the teeth or gums of the alveolar ridge, said rest operating so as to enable the same to be slid up or down or twisted on the shank in adjusting the stirrup.

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