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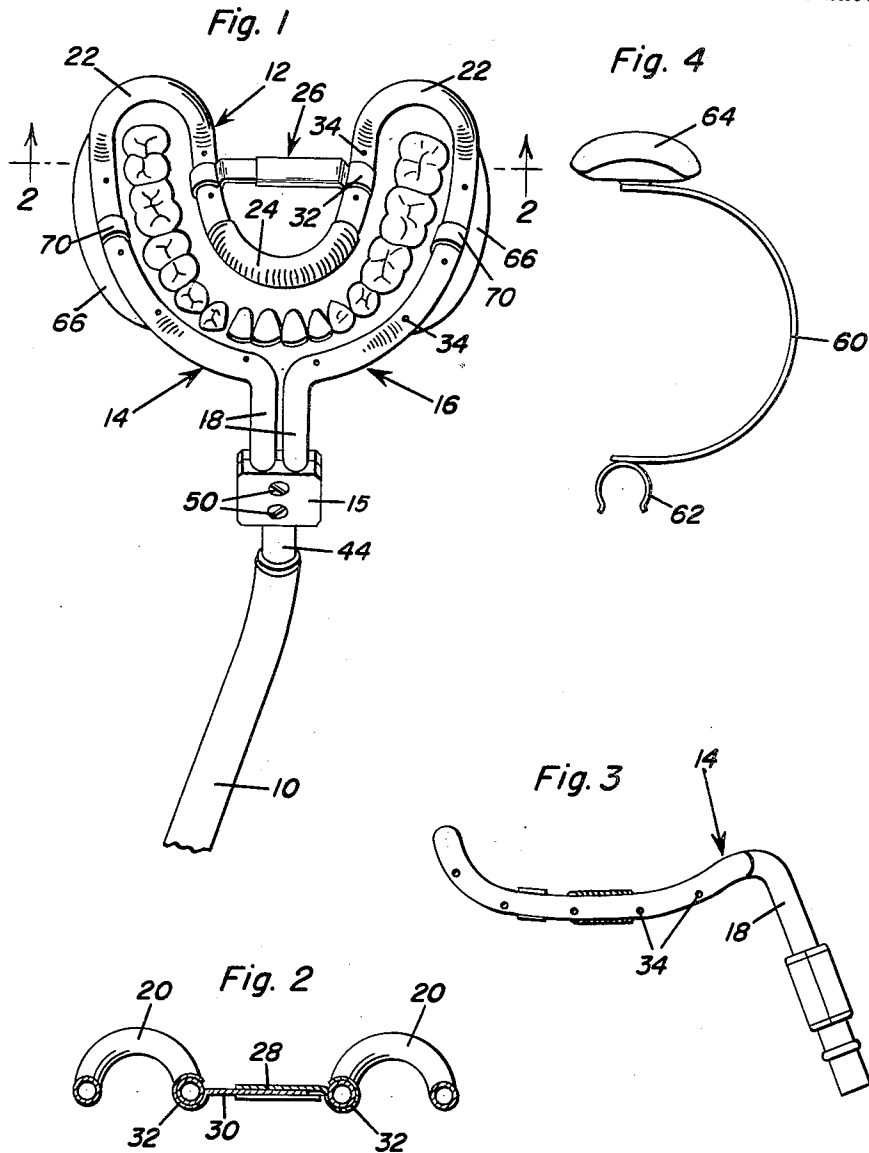
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3,049,806

MULTIPLE SALIVA EJECTOR

Filed Oct. 9, 1959

2 Sheets-Sheet 1



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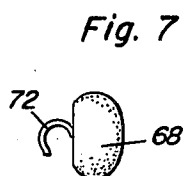
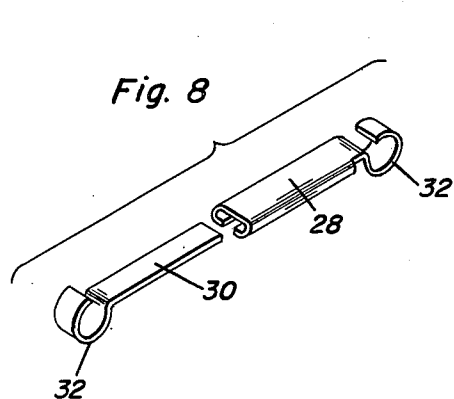
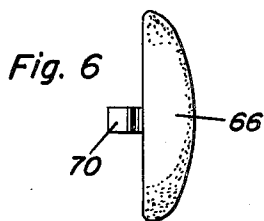
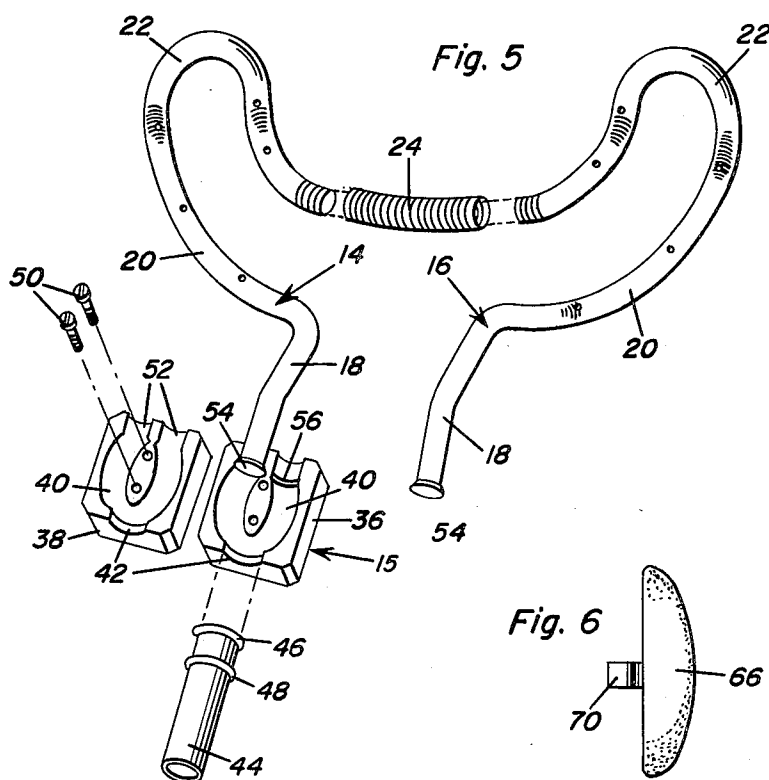
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MULTIPLE SALIVA EJECTOR

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2 Sheets-Sheet 2



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3,049,806

MULTIPLE SALIVA EJECTOR

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6 Claims. (Cl. 32—33)

This invention comprises a novel and useful multiple saliva ejector and more particularly relates to an implement specifically designed for use by dentists to effectively prevent the accumulation of saliva in the mouth to thereby maintain the teeth dry during the performing of various dental operations.

The natural tendency of the mouth to accumulate saliva is well known to prevent or to hinder effective dental work upon the teeth. As will be readily understood by those skilled in the art, it is extremely important that the teeth shall be maintained dry during certain dental operations thereon in order that the dentist may perform his work effectively and efficiently.

It is the primary purpose of this invention to provide a saliva ejector which will effectively prevent the accumulation of saliva in the mouth of a patient by ejecting the saliva as fast as it accumulates and thus maintain the teeth dry in readiness for treatment by the dentist.

A further object of the invention is to provide a saliva ejector which shall be so constructed that the same may be applied simultaneously to both sides of a set of teeth for removing saliva accumulations from either side of the set of teeth and thus insuring that the teeth will remain dry in readiness for treatment by the dentist.

A further object of the invention is to provide a saliva ejector in accordance with the preceding object which shall be so contoured that the same will comfortably fit into the mouth of a patient and in proper relationship to a set of teeth for removing saliva accumulating on both sides of the set of teeth.

A still further object of the invention is to provide a saliva ejector in accordance with the preceding objects which shall be so constructed that the same shall be capable of being readily completely disassembled in order to permit easy and complete cleansing and sterilization of its various components and an easy assembling of the same into readiness for use.

A further and subordinate object of the invention is to provide a device in accordance with the preceding objects together with various attachments which may be used therewith and applied thereto to perform additional functions such as depressing the tongue of the patient, spreading the cheek or lips and holding them out of contact with the ejector or the teeth of the patient.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully herein-after described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is an elevational view showing a preferred embodiment of a saliva ejector in accordance with this invention and showing the manner in which the same is applied in operative position about a set of teeth for preventing the accumulation of saliva upon either side of the set of teeth;

FIGURE 2 is a vertical transverse sectional view taken substantially upon the plane indicated by the section line 2—2 of FIGURE 1.

FIGURE 3 is a side elevational view of one of the tubes forming a part of the saliva ejector;

FIGURE 4 is a side elevational view of a lip supporting attachment for use with the ejector;

FIGURE 5 is an exploded perspective view of different components of the ejector;

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FIGURE 6 is an elevational view of an attachment for the ejector to be used when it is desired to hold the cheek from the side of the ejector and teeth;

FIGURE 7 is an elevational view of a further form of attachment which may be used with the device; and

FIGURE 8 is an exploded perspective view of a sliding adjustable brace for the ejector and a tongue depressor for use therewith.

Referring first to FIGURE 1 it will be observed that the numeral 10 designates a conventional suction tube by which saliva and liquids are removed from the mouths of patients and discharged into a suitable drain. Indicated generally by the numeral 12 is the saliva ejector in accordance with the invention and which is placed in communication with the suction tube 10 by means of a swivel connector 15.

From FIGURES 1 and 5 and in conjunction with FIGURES 2 and 3, it will be seen that the ejector head 12 comprises a pair of complementary tubular elements 14 and 16 of similar construction and formed of any suitable material such as a suitable plastic, stainless steel or the like. Each tubular element has one end 18 substantially straight and disposed in side-by-side relation for swivelling or turning connection in the connector 15 as set forth hereinafter. From the straight end 18, each tubular element has an outwardly curving portion 20 which extends from the front of a set of teeth and the front portion of the mouth through which the ends 18 pass along the sides and rearwardly of the set of teeth.

In the device as shown in FIGURES 1 and 5, the elements 14 and 16 each extend along the full length upon the outside face of a row of teeth from the front to the back of the mouth and at the rear ends of the row of teeth and extend along the inside face of the row of teeth forwardly to about the mid-portion thereof.

The free ends of the two U-shaped portions 22 are detachably connected and placed in communication with each other by a flexible conduit 24 of any suitable character.

It will thus be apparent that there is established a continuous communication between the two ends 18 of the ejector head and throughout the tubular elements of the ejector head. A combined transverse brace and tongue depressor, shown particularly in FIGURE 8, is detachably connected to the U-shaped tubes 22. This combined brace and depressor indicated generally by the numeral 26 consists of a pair of slidably telescoping elements including a sleeve 28 in which is slidably received the shank 30 of a second element. The opposite ends of these elements are provided with C-shaped friction clamps 32 which are adapted to embrace the other ends of the U-shaped tubes 22 as shown in FIGURE 1.

The tubular elements 14 and 16 and the U-shaped tubes are provided with suitable inlet orifices as at 34 which are disposed along both the convex and the concave walls of the row of teeth which are enclosed and embraced by the ejector head for the purpose of collecting and removing saliva accumulating in the mouth of the patient both inside and outside of the row of teeth and thus maintaining the teeth in a dry condition in readiness for treatment by the dentist.

Referring now especially to FIGURE 5 it will be seen that the connector 15 consists of two complementary sections as at 36 and 38, having complementary cavities or recesses 40 therein. The chamber or recess in the connector at one end is provided with an opening 42 in which is received a nipple or sleeve 44 having a pair of ribs as at 46 and 48 thereon. The sleeve between the ribs is received in the wall of the recess 40 of the connector 15 so that the sleeve may be turned or rotated with respect to the connector. The sleeve 44 in turn is received within the suction conduit 10 previously men-

tioned so that by the turning of the sleeve within the connector body, a swivelling action is possible between these elements. Several fastening screws as at 50 enable the connector to be opened when it is desired to sterilize, cleanse or service the interior of the same.

It will be observed that at its opposite end from the opening 42, the connector 15 is provided with a pair of openings each indicated by the numeral 52 there being complementary openings in both of the sections 36 and 38. The ends 18 of the tubular elements 14 and 16 are provided with flaring ribs or beads 54 thereon which seat in corresponding seats or shoulders 56 in the openings 52 so that when the connector sections are closed the tubular elements are likewise rotatably or swivelly mounted in the connector body. Thus, a considerably swivelling movement is possible between the ejector head and the connector and between the latter and the conduit 10 to enable the device to fit comfortably into the floor of the mouth about the row of teeth.

Referring now to FIGURE 4 it will be observed that an attachment is provided consisting of a bowed U-shaped support or element 60 having a C-shaped resilient friction lamp 62 at one end thereof by which the same may be mounted upon one of the tubular elements 14 or 16. At the other end there is provided a pad in the form of a seat 64. The arrangement is such that when the attachment is secured to the tubular element at the desired location thereon, the bowed portion 60 will engage the cheek of the patient and retain the cheek in spaced relation to the teeth in order to provide access for the dentist to treat the teeth, while the portion 64 will serve as a support for the lip of the patient to hold the lip in a raised position.

Shown in FIGURES 6 and 7 are further attachments each consisting of a properly shaped pad 66 or 68, carried by a C-shaped resilient clip as at 70 or 72. These clips may be secured to the tubular element in any desired position thereon so as to position the pads effectively to retain the cheek or lip away from the teeth.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A dental saliva ejector comprising an ejector head comprising a tubular member having its ends disposed in side-by-side relation, a connector detachably secured to said ends and retaining them in fixed position and establishing communication between a suction conduit and said tubular member, said tubular member being curved between its ends to provide a frame enclosing a set of teeth and having inlet orifices opening to both sides of a set of teeth and educting saliva accumulating on both sides of said set of teeth, an adjustable brace secured to said tubular member and rigidifying the latter and constituting a tongue depressor.

2. A dental saliva ejector comprising an ejector head comprising a tubular member having its ends disposed in side-by-side relation, a connector detachably secured to said ends and retaining them in fixed position and establishing communication between a suction conduit and said tubular member, said tubular member being curved

between its ends to provide a frame enclosing a set of teeth and having inlet orifices opening to both sides of a set of teeth and educting saliva accumulating on both sides of said set of teeth, wherein said connector comprises a body having removable sections with complementary recesses therein, said ends being swivelly received in said sections.

3. A dental saliva ejector comprising an ejector head shaped to surround a complete set of lower teeth arranged in a U-shaped pattern, said head having inlet orifices disposed in the bottom thereof and on the sides of the gums in which said teeth are supported for educting saliva collecting thereat, a suction conduit, a swivel connector securing said head to said suction conduit and establishing fluid communication therebetween, a support having a fastener attached to said ejector head, said support being bowed to engage the cheek of a patient and space it from the teeth and having a seat thereon for receiving and supporting the lip of a patient.

4. A dental saliva ejector comprising an ejector head shaped to surround a complete set of lower teeth arranged in a U-shaped pattern, said head having inlet orifices disposed in the bottom thereof and on the sides of the gums in which said teeth are supported for educting saliva collecting thereat, a suction conduit, a swivel connector securing said head to said suction conduit and establishing fluid communication therebetween, a pad for engaging a portion of the mouth of a patient and holding it away from the teeth, said pad having a resilient clip secured to said ejector head.

5. A dental device for ejecting saliva from the mouth of a patient on both sides of the gums supporting a lower set of teeth, said device comprising a connector adapted to be positioned within the front of the mouth of a patient and having connection with a suction tube disposed in a patient's mouth through the front thereof, a saliva ejector head connected to and communicating with said connector, said ejector head comprising a pair of metal tubular elements having one end of each connected to said connector and disposed in side-by-side relation, said elements being curved outwardly from each other and disposed to lie along the front and sides of said gums, a U-shaped tube portion for each element, each U-shaped tube portion lying about the rear end and a portion of both sides of said gums, one end of each U-shaped tube portion being secured to the other end of an element, a flexible tube lying behind said gums and teeth and connecting the other ends of said U-shaped tube portions, longitudinally spaced inlet orifices in the bottoms of said elements and U-shaped tube portion for receiving saliva accumulating in the mouth of a patient on both sides of said set of teeth and gums.

6. A device as defined in claim 5 wherein said ejector head has its front portion and rear portion curved upwardly from its central portion so as to provide a better fit around the base of the patient's gums.

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