

April 23, 1963

J. H. ORSING
SALIVA EJECTORS

3,086,289

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2 Sheets-Sheet 1

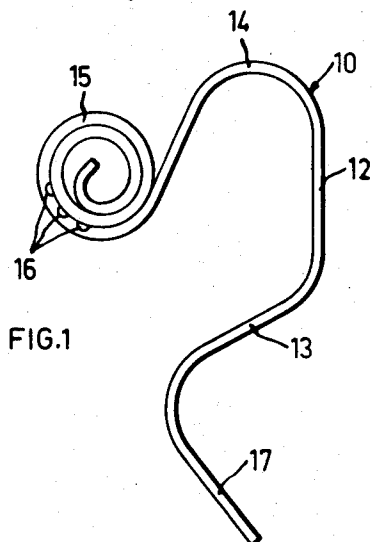


FIG. 1

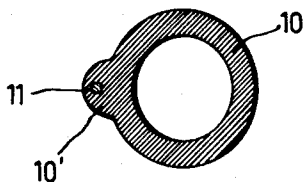


FIG. 5

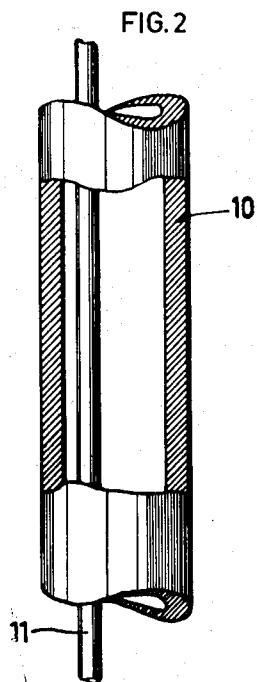


FIG. 2

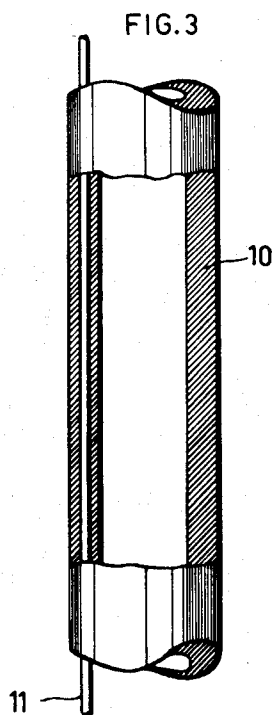


FIG. 3

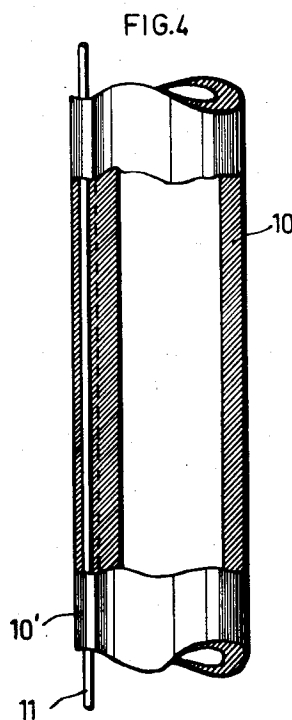


FIG. 4

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FIG. 6

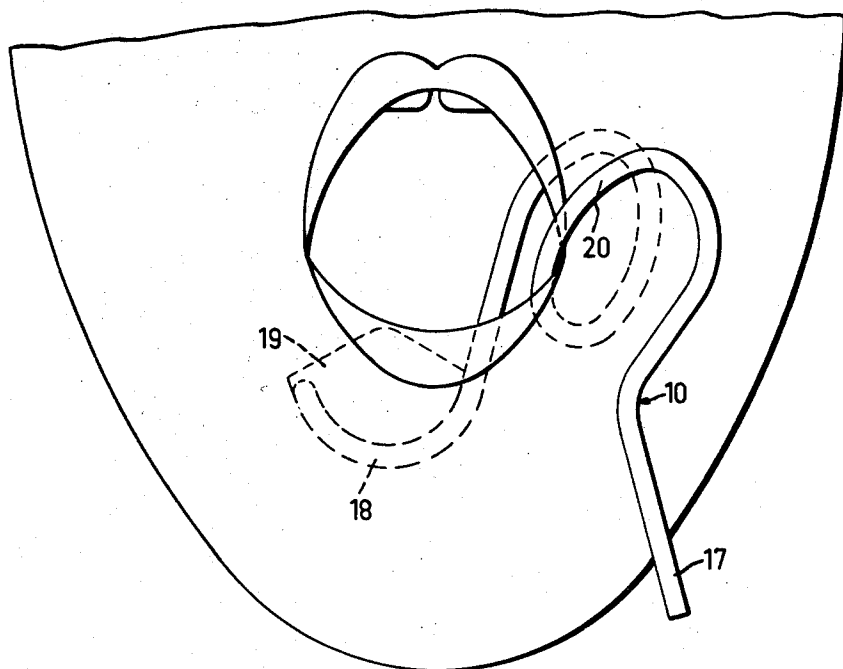
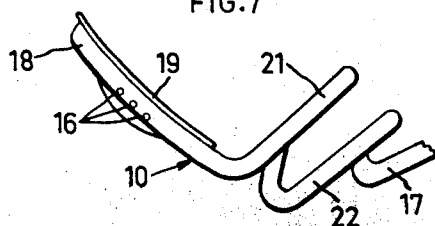


FIG. 7



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SALIVA EJECTORS

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6 Claims. (Cl. 32—33)

The present invention relates to saliva ejectors, and more particularly to saliva ejectors of a design which in point of manufacture is so cheap as to make the saliva ejector suited as a single-use article, i.e. it is more economical to throw away the saliva ejector according to the invention after use and to take a new one for the next patient than to incur the expense of a thorough sterilization in order to permit reuse of the ejector. Such a single-use saliva ejector satisfies the highest requirements of hygiene, which is not, however, the case with saliva ejectors of the more or less complicated and expensive construction that is used many times over and perhaps inadequately cleaned and sterilized after each use.

The saliva ejector according to the invention comprises a suction tube with a socket for the connection of a suction hose, and a holder for securing the suction tube in position in the patient's mouth, and the characteristic features of the invention are that the suction tube, connecting socket and holder are made in a single piece from a length of tube which at normal room temperature is both plastically and, to a limited extent, elastically flexible by hand. As a result, the saliva ejector can be shaped to fit the patient's mouth and to suit the particular dental work without any complicated auxiliary means and in use be held fixed in the patient's mouth by spring action.

Further features of the invention and the advantages thereof will become apparent from the following description, reference being made to the accompanying drawing, in which:

FIG. 1 shows a side elevational view of one embodiment of the saliva ejector;

FIG. 2 on a larger scale shows a portion of a tube forming the saliva ejector, the wall of the tube being partly broken away to make the interior of the tube visible;

FIG. 3 in the same way as FIG. 2 shows a modification of the tube;

FIG. 4 in the same way as FIG. 2 shows a further modification of the tube;

FIG. 5 shows a cross section of the tube in FIG. 4;

FIG. 6 shows a perspective view of another embodiment of the saliva ejector in position of use;

FIG. 7 shows a plan view of the saliva ejector in FIG. 6.

The saliva ejector illustrated in FIGS. 1 and 2 is made in its entirety from a tube 10 of plastic material, for instance polyvinyl chloride, which is elastically flexible by hand at normal room temperature and through which extends in longitudinal direction a metal wire 11, for instance a corrosion-resistant iron wire, which is plastically flexible by hand at normal room temperature. Thanks to this combination of an elastically flexible tube and a plastically flexible metal wire, the tube having the metal wire extending therethrough displays such properties that it is both plastically and, to a limited extent, elastically flexible by hand at normal room temperature.

The tube 10 with the wire 11 passing therethrough is designed with a U-shaped portion which includes a web 12 and limbs 13 and 14 and constitutes a holder for positioning the saliva ejector on the patient's lower jaw, the limb 13 being placed at the underside of the patient's chin, while the limb 14 is placed in his mouth. The limb 14 to be placed in the patient's mouth has its end formed with a spirally wound portion 15 which is adapted to

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serve as a tongue protection and is provided with suction holes 16 while the limb 13 at an acute angle merges into a rearwardly directed portion 17 which forms a connecting socket for the suction hose. The U-shaped portion is easily adjusted or conformed, by manual plastic deformation, to the patient's jaw so that after application it resiliently clasps the jaw, thus holding the saliva ejector fixed in position in the patient's mouth. By its weight the suction hose connected to the portion 17 exerts a torque on the saliva ejector and thus tends to swing the limb 13 farther inwardly under the jaw, which will contribute to maintaining the saliva ejector clasped to the patient's jaw during use. The limb 14 and the spirally wound portion 15 can also, by manual plastic deformation, be brought into such a position and such a shape that the saliva ejector in the best possible manner fulfils its function of removing the saliva from the lower jaw and of keeping the tongue away from the working area.

The metal wire 11 passed through the tube 10 according to FIG. 2 may also be embedded in the plastic material of the tube wall (FIG. 3) or in a bead on the tube wall (FIGS. 4 and 5) in order to be protected against corrosion. It is possible to use for the tube other materials than the polyvinyl chloride mentioned here by way of example. This plastic material, however, has proved particularly suitable for the purpose in view because a polyvinyl chloride tube which is bent at the manufacture of the saliva ejector and consequently flattened, will regain its round cross-sectional shape, when the saliva ejector is heated after manufacture to about 100° C. for sterilization.

The saliva ejector illustrated in FIGS. 6 and 7 is made from a tube 10 of the same nature as the one from which the saliva ejector according to FIGS. 1 and 2 is made. One end portion 17 of the tube 10 constitutes the connecting socket for the suction hose, and the other end portion 18 of the tube which is approximately semi-circularly curved is intended to be placed in the patient's mouth and has suction holes 16 and a tongue protection 19 in the shape of a plate secured to the curved portion. Intermediate its ends the tube 10 is coiled at 20 by about 1½ turns, and portions of said coils form two jaws 21 and 22 (FIG. 7) which are situated opposite one another in spaced-apart relationship. Said jaws 21 and 22 can be engaged each with one side of a portion of the patient's cheek adjoining the corner of his mouth. The distance between the jaws is such that said cheek portion which is soft and relatively insensitive to light pressure expands inside the tube coils forming the jaws 21 and 22 so that a safe retention of the saliva ejector is obtained in this way without discomfort to the patient. The two jaws need not be designed so as to necessitate being elastically moved apart to clasp the cheek portion when returning to initial position, as a good grip is obtained without any pronounced resilience of the jaws but it is possible, without departing from the underlying principles of the invention, to make the jaws resilient in said way so that they contact one another in inoperative condition and have to be elastically moved apart for engagement with the cheek portion.

What I claim and desire to secure by Letters Patent is:

1. A saliva ejector including the combination of means forming a continuous suction passage, said means comprising an integral tube which at normal room temperature is both plastically and, to a limited extent, elastically deformable by hand, one end of said tube being adapted to be connected to a suction hose, tongue protection means formed by a spirally wound portion of said tube at the other end thereof, and holding means for securing the saliva ejector on the patient with said one end placed outside the mouth and said other end placed inside the mouth,

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said holding means being formed by a portion of said tube between the ends thereof to positively embrace a portion of the patient's head.

2. A saliva ejector including the combination of means forming a continuous suction passage, said means comprising an integral tube which at normal room temperature is both plastically and, to a limited extent, elastically deformable by hand, one end of said tube being adapted to be connected to a suction hose, tongue protection means formed by a spirally wound portion of said tube at the other end thereof, and holding means for securing the saliva ejector on the patient with said one end placed outside the mouth and said other end placed inside the mouth, said holding means being formed by a substantially U-shaped portion of said tube between the ends thereof to positively embrace the patient's lower jaw with the limbs of said U-shaped portion disposed on the upper and lower sides, respectively, of said jaw.

3. A saliva ejector as claimed in claim 2, in which one limb of said U-shaped portion, joining said one end, at an acute angle merges into a rearwardly directed portion of said tube for connection to said suction hose.

4. A saliva ejector including the combination of means forming a continuous suction passage, said means comprising an integral tube which at normal room temperature is both plastically and, to a limited extent, elastically deformable by hand, one end of said tube being adapted to be connected to a suction hose, tongue protection means formed by a spirally wound portion of said tube at the other end thereof, and holding means for securing the saliva ejector on the patient with said one end placed outside the mouth and said other end placed inside the mouth, said holding means being formed by a coiled portion of said tube between the ends thereof to have a pair of adjoining coils of said coiled portion embracing the patient's cheek at the corner of his mouth.

5. A saliva ejector including the combination of means forming a continuous suction passage, said means comprising an integral tube which at normal room tempera-

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ture is elastically deformable by hand to a limited extent and a longitudinally extending wire enclosed by said tube and being in itself plastically deformable by hand at normal room temperature, one end of said tube being adapted to be connected to a suction hose, tongue protection means formed by a spirally wound portion of said tube at the other end thereof, and holding means for securing the saliva ejector on the patient with said one end placed outside the mouth and said other end placed inside the mouth, said holding means being formed by a substantially U-shaped portion of said tube between the ends thereof to positively embrace the patient's lower jaw with the limbs of said U-shaped portion disposed on the upper and lower sides, respectively, of said jaw.

6. A saliva ejector including the combination of means forming a continuous suction passage, said means comprising a tube which at normal room temperature is elastically deformable by hand to a limited extent and a longitudinally extending wire enclosed by said tube and being in itself plastically deformable by hand at normal room temperature, one end of said tube being adapted to be connected to a suction hose, tongue protection means formed by a spirally wound portion of said tube at the other end thereof, and holding means for securing the saliva ejector on the patient with said one end placed outside the mouth and said other end placed inside the mouth, said holding means being formed by a coiled portion of said tube between the ends thereof to have a pair of adjoining coils of said coiled portion embracing the patient's cheek at the corner of his mouth.

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