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D. S. BERGER

2,742,701

SALIVA EJECTOR

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Fig. 1.

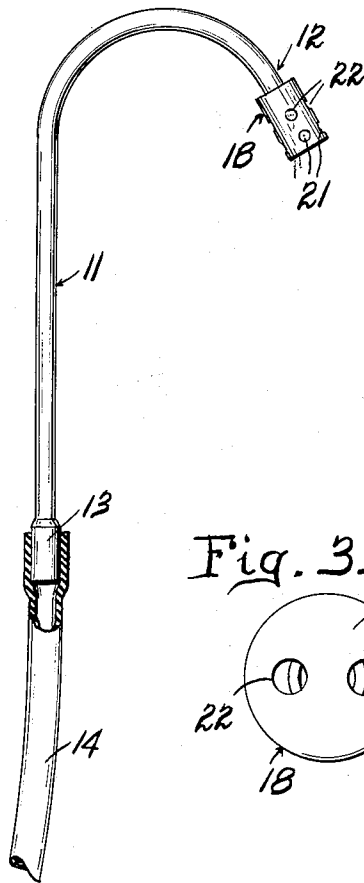


Fig. 2.

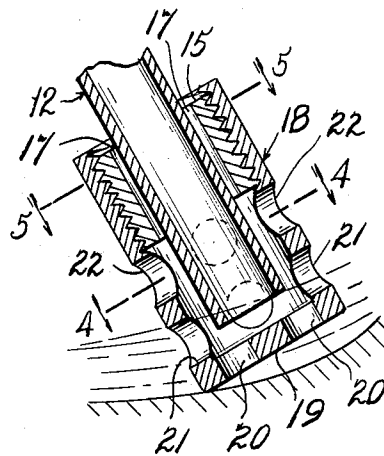


Fig. 3.

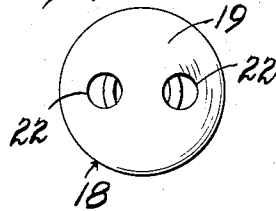


Fig. 4.

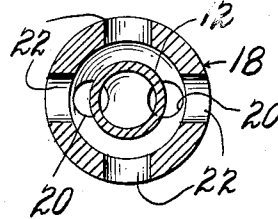
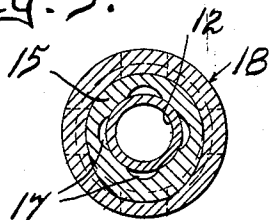


Fig. 5.



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1

2,742,701

SALIVA EJECTOR

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1 Claim. (Cl. 32—33)

The invention relates to improvements in saliva ejectors and more particularly to a novelly constructed saliva ejector embodying structural features that will insure that the ejector tube inlet is immersed in saliva or water at all times, while in use.

As is well known, a saliva ejector is placed in the mouth of a patient to withdraw saliva as well as water used for cooling a drilled area or for washing. Known types of saliva ejectors are of the kind that permits air to enter the ejector tube along with the saliva. Such a structure is not entirely efficient because the withdrawal of air fails to prevent foreign matter or tissue of the mouth from clogging the exhaust openings. It also allows for a build-up of an excessive amount of saliva or water before exhaust of further excesses is obtained.

In order to be most effective, the saliva ejector must incorporate a structural design that will insure that the ejector inlet is covered at all times with saliva or water, and that the area immediately surrounding the ejector inlet is maintained under atmospheric pressure. This will prevent the drawing off of air as in previous devices, and more important, the maintenance of uniform atmospheric pressure within the mouth prevents mouth tissue from being drawn against the inlet ports with which the ejector is provided. When this occurs the ejection of saliva or water is wholly or partially prevented. It is therefore an object of the invention to provide such a novel saliva ejector.

Another object of the invention is to provide a saliva ejector with a novelly constructed cap or suction head.

Another object of the invention is to provide a saliva ejector with novel structural features adapting said ejector to low cost manufacturing, maximum utility, extremely satisfactory use and adaptability, and easy assembly and disassembly for cleaning.

The foregoing and other objects of the invention, which will become apparent as the description proceeds, will be more fully understood from a perusal of the following description in which reference is made to the accompanying drawings, wherein:

Fig. 1 is an elevational view of the saliva ejector embodying the features of my invention.

Fig. 2 is an enlarged longitudinal central sectional view of the head portion of the ejector, illustrating diagrammatically, its relationship to a mouth.

Fig. 3 is an end elevational view of the head.

Fig. 4 is a sectional detail view taken on line 4—4 of Fig. 2.

Fig. 5 is a sectional detail view taken on line 5—5 of Fig. 2.

Referring now to the accompanying drawings, the saliva ejector includes an exhaust tube 11 bent, as indicated in Fig. 1, to provide an inlet end, as at 12, and an outlet end, as at 13. The latter is connected by means of flexible tub-

2

ing 14 to an aspirator or other suitable means for creating a suction in the tube 11.

The inlet end 12 of the tube 11 is open and it is fitted, inwardly of said end, with an externally threaded fitting 15. As is perhaps best illustrated in Figs. 2 and 5, the fitting 15 is brazed or otherwise secured firmly to the tubing and its inside diameter has a plurality of shallow circumferentially spaced grooves or channels 17 extending longitudinally of its length. These grooves 17 define passages for air as will be better understood as the description proceeds.

A cup-like cap 18 is threaded onto the fitting 15 a distance to locate its end wall 19 in close proximity to but spaced from the open end of the tube portion 12. The end wall 19 of the cap 18 is formed with a pair of openings 20 and its circumferential wall has two sets of circumferentially spaced openings 21—22. The structure is such that the open tube end is enclosed within the cap 18 and that the interior of said cap is in communication with said open tube end and also with the areas outside said cap through the openings 20, 21 and 22. The passages 17 also afford communicating passages from the outside into the cap interior.

The presence of the multiple selectively positioned openings and passages in communication with the interior of the cap 18 provides openings to admit saliva or water into the cap 18 and thus into the tube 11, and also openings in communication with atmosphere. Thus, when the saliva ejector is placed in the mouth of a patient, the saliva or water will rise to a level to submerge the open end of the tube portion 12. Because the entire inside of the cap, above the fluid level, is in direct communication with atmosphere, the atmospheric pressure on the liquid, both inside and outside of the cap, is equalized. As a consequence, there is no tendency for the suction within the tube 11 to cause discomfort or tissue damage, such as might occur were the tissue sucked up tightly against the outside face of the cup-like cap 18. Even should the end wall openings 20 become closed by the closeness of tissue or by the presence of foreign particles, the flow of fluid to the tubing will continue through openings 21 and equalizing air is assured through the presence of openings 22 and passages 17.

The instant construction permits the extraction of saliva and water very rapidly because high negative pressure can be used without fear of tissue clogging the ejector. The presence of atmospheric pressure above the saliva or water level does not detract from the efficiency of the device because the inlet to the exhaust tube 11 is submerged normally in the saliva or water, the level of which must become very low before air can be drawn into the exhaust tube.

I claim:

An ejector for saliva or the like comprising an exhaust tube including an open end portion, a fitting on said tube adjacent said end, a cup-like cap telescoped over the open end tube portion and secured to said fitting, said fitting having air passages communicating with the interior of said cap, said cap including an end wall spaced from the end of the tube, the end wall and the circumferential wall of the cap having openings to admit fluid into the cap, and the said circumferential wall having air openings therein above the normal level of liquid in said cap.

References Cited in the file of this patent

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