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DENTAL ASPIRATOR

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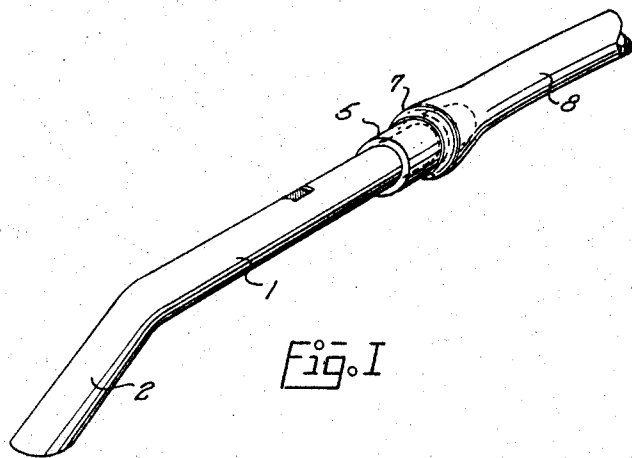


Fig. I

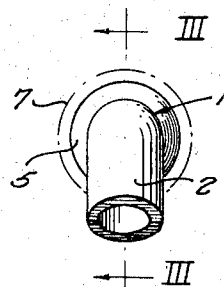


Fig. II

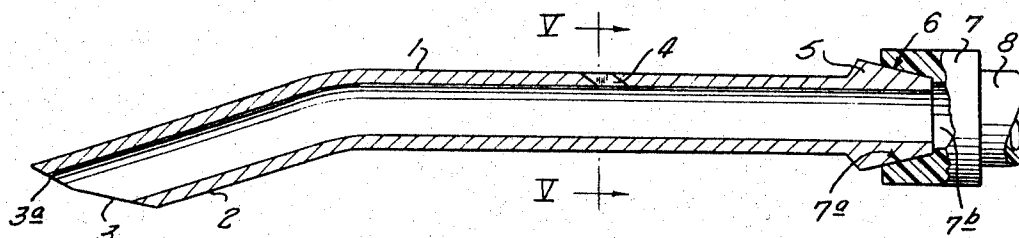


Fig. III

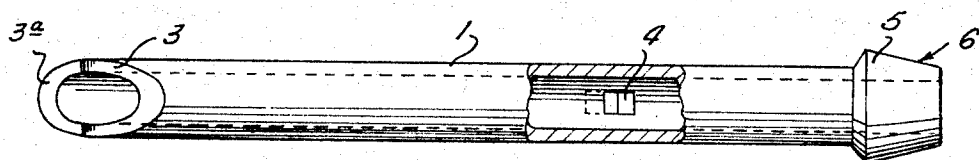


Fig. IV

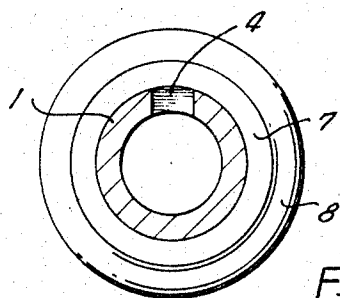


Fig. V

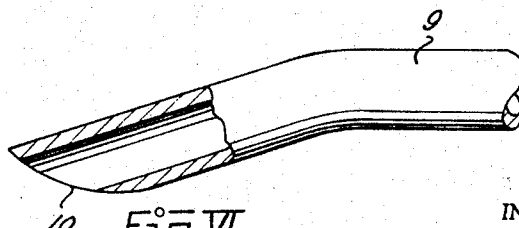


Fig. VI

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3,453,735

DENTAL ASPIRATOR

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3 Claims

ABSTRACT OF THE DISCLOSURE

A dental aspirator tip comprising a tubular body with a surface on the end of a deflected portion of the tubular body comprising two plane surfaces disposed at different angular relations to the axis of the deflected portion of the tubular body to prevent the drawing of tissue into the outer end of the tube, in combination with a passage through the wall of the tubular body for controlling the amount of suction.

This invention is concerned with the dental aspirator and is particularly concerned with a suction tube attachable to a suction line associated with the dentist's equipment employed in removing saliva and other fluids from the mouth of the patient by the dentist while he is performing dental repair or surgery. Such a device is commonly known as an aspirator and the improvement to which this application is addressed is particularly concerned with a tubular aspirator tip.

Previously employed aspirator tips customarily consisted of a metallic tubular member having a beveled surface on the outer end thereof which could be inserted into the mouth of the patient and the beveled surface moved about in the mouth cavity as suction was applied thereto to withdraw excess saliva and other fluids from the mouth which might interfere with the work of the dentist or strangle the patient.

Such tubes had certain shortcomings, to-wit, the straight beveled surface on the end of the tube, when pressed against the tissues inside the mouth, had a tendency to suck the tissues into the tube thereby damaging same and causing undue pain and suffering to the patient. Furthermore, it was difficult for the dentist to control the amount and area of suction applied to the inner side of the mouth because the opening at the outer end of the aspirator tube was the only opening into the tube and such opening contacted the inner surface of the mouth only on one plane so that when contacted against the inner surface of the mouth the full force of the suction was applied thereto to draw the tissue into the outer end of the tube.

It is, therefore, a primary object of this invention to provide a tubular aspirator tip attachable to a suction line in which the opening at the outer end thereof may be varied in its contact with the inner surface of the patient's mouth to thereby vary the suction applied thereto and prevent closure of the outer end thereof which would suck tissue into the outer end of the tube.

Another object of the invention is to provide a tubular aspirator tip attachable to a suction tube wherein the amount of suction applied through the tube may be controlled and varied by the dentist both by manipulation of the outer end thereof and by finger control to vary the diameter of an opening through the wall of the aspirator tube.

Still another object of the invention is to provide a dental aspirator tip having an outer end thereof with a surface varying in angular or curved relationship to the axis of the tube so that the amount of suction applied to the outer end of the tube may be varied by the degree of pressure and angular position of the end of the aspira-

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tor tube with reference to the inner surface of the mouth of the patient.

A still further object of the invention is to provide a tubular aspirator tip attachable to a suction line of the type indicated above, wherein a passage is provided through the wall thereof so that the degree of opening of said passage may be varied by the finger of the dentist placed thereover, thereby varying the amount of suction applied through the tube and thereby varying the degree of tissue picked up at the outer open end of the aspirator tip.

A still further object of the invention is to provide a tubular aspirator tip wherein the outer end thereof is deflected with reference to the axis of the aspirator tip so that it may be more readily manipulated.

Other and further objects of the invention will become apparent upon reading the detailed specification hereinafter following and by referring to the drawing annexed hereto.

Suitable embodiments of the invention are shown in the attached drawing wherein,

FIGURE I is a top perspective view of the preferred form of the aspirator tip attached to a suction tube;

FIGURE II is an end elevational view of the aspirator tip;

FIGURE III is a cross-sectional elevational view taken along the line III—III of FIGURE II;

FIGURE IV is a bottom plan view partially cut away of the aspirator tip;

FIGURE V is a transverse sectional view taken along the line V—V of FIGURE III; and

FIGURE VI is a fragmentary partially sectionalized elevational view of a modified form of aspirator tip incorporating the invention disclosed and claimed herein.

Numeral references are employed to indicate the various parts shown in the drawing and like numerals indicate like parts throughout the various figures of the drawing.

The numeral 1 generally indicates the aspirator tube, or tip, which may be made of metal or plastic material. Preferably it is made of transparent plastic material for purpose of lightness, and it may be made of disposable material to eliminate the necessity of sterilization.

The tube 1 is bent and deflected angularly at its outer end, as indicated at 2, for the purpose hereinafter mentioned.

The outer end surface of the tube 1 is provided with two differently angled plane surfaces 3 and 3a, said surfaces being disposed at different angles with reference to the axis of the end of the tube for the purpose hereinafter explained.

A passage 4 is provided through the upper wall of the aspirator tube 1 for the purpose hereinafter explained.

An attachment head 5 is provided on the inner end of the aspirator tip 1, said head having a beveled surface 6 thereabout.

The beveled surface 6 may be forced into the bore 7b of a connector 7, which may be made of flexible material, such as vinyl plastic or relatively hard rubber.

When the tapered surface 6 is forced into the bore 7b, the material of the connector head 7 is deflected and conforms and adheres by frictional engagement to the beveled surface 6, as indicated at 7a. The suction provided through the suction tube 8 aids in retaining the head 6 in the bore 7b while the aspirator tip is in use.

Flexible suction tube 8 communicates with a source of suction on the dentist's chair or elsewhere.

The operation of the preferred form of the aspirator tip is as follows.

It is connected to the suction tube 8 by pressing the beveled surface 6 of the head 5 into the bore 7b of the connector head 7. Suction may be applied to the hose 8

to draw suction through the bore of the aspirator tip 1 while in use.

The outer end of the aspirator tube is inserted into the mouth of the patient. Normally the surface 3 would be contacted against the inner surface of the mouth of the patient, thereby providing an opening for suction along the angular surface 3a. Thus, there is no tendency for tissue in the mouth of the patient to be drawn into the tube. The suction applied through the tube 1 may be varied by the dentist by partially placing his finger over the passage 4, and by varying the opening of the passage 3a the suction through the outer end of the tube 1 may be varied. If more suction is required the outer end of the tube may be pressed downwardly to thereby further close the opening provided by the surface 3a by pressing tissue thereagainst. Thereby the dentist has complete control over the suction applied through the tube 1 and the tissue picked up by the suction.

A modified form of the aspirator tip is shown in FIGURE VI, which is the same in construction as the form shown in FIGURES I-V, with the sole exception that the outer end surface 10 of the aspirator tip is rounded or curved. In the use of the form shown in FIGURE VI the opening through the outer end of the aspirator tip 9 may be varied by tilting the aspirator tip with reference to the inner side of the mouth, thereby causing more or less opening through the outer end thereof about the tissue which it contacts. Of course, the entire outer end of the aspirator tip 1 may be closed by pressing it downwardly against the inner side of the mouth to thereby close the passage therethrough with tissue which it contacts.

Thus, it will be seen that I have provided an improved aspirator tip wherein the contacting area of the outer end thereof may be varied by tilting same, or by pressing thereagainst, and wherein the amount of suction may be varied by the provision of a passage through the wall thereof which may be conveniently controlled by the finger of the operator.

Having described my invention, I claim:

1. An aspirator tip comprising a tubular body; an outer end on the body which is deflected laterally with reference to the remainder of the body with the outer end of the deflected portion being open, the opening therein being bounded by edges which lie in two intersecting inclined planes disposed at different angular relationships to the axis of the deflected portion of the tubular body.

2. The combination called for in claim 1 with the addition of a passage through the wall of the tubular body.

3. The combination called for in claim 1 with the addition of a head on the inner end of the tubular body having a beveled surface thereabout.

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