

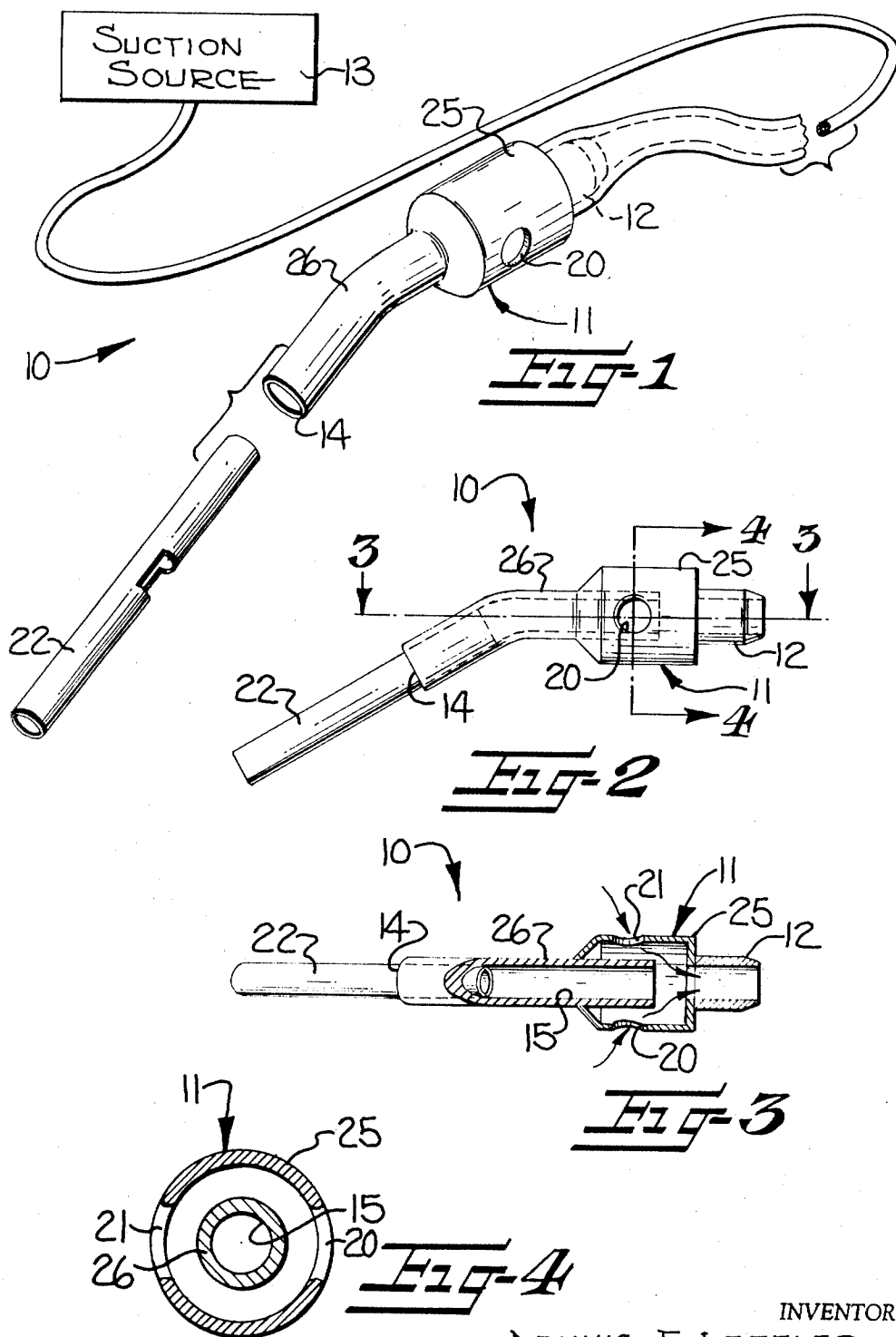
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DENTAL ASPIRATING CUSPIDOR

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1

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DENTAL ASPIRATING CUSPIDOR

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4 Claims

ABSTRACT OF THE DISCLOSURE

A dental aspirating cuspidor to be placed in a patient's mouth for ejecting saliva, water and foreign matter therefrom. The aspirating cuspidor comprises an open-ended, tubular housing having a first end adapted to be connected to a source of suction and a second end adapted for the reception of saliva, water and foreign matter and providing an internal ejecting passageway between the ends of sufficient volume to accommodate rapid flow of saliva, water and foreign matter therethrough. The housing includes venting port means between the ends for creating an aspirating suction through the second end of the housing and for avoiding excessive and discomforting suction to the patient's mouth. The dental aspirating cuspidor further includes a removable and replaceable ejecting member frictionally secured in the second end of the housing and adapted to be placed in the patient's mouth for ejecting the saliva, water and foreign matter therefrom and adapted to be removed from the housing and replaced after use by a patient.

This invention is directed to a dental aspirating cuspidor and more particularly to a dental aspirating cuspidor adapted to be placed in a patient's mouth for ejecting saliva, water and foreign matter therefrom without the need to expectorate and without regard to the position of the patient.

Heretofore, in the dental field, it has been customary to use a stationary type of flushing cuspidor mounted in close proximity to the patient's chair such that, when excessive saliva has been produced in the mouth or when the patient's mouth has been rinsed with water to flush out foreign matter or the like from the teeth after a dental operation, the patient would be required to lean over the stationary cuspidor and to expectorate the saliva, water and foreign matter from his mouth into the cuspidor. This has been a cumbersome and uncomfortable procedure for the patient in view of the necessity to lean from the dental chair over the stationary flushing cuspidor.

In more recent times, some dentists have gone to the use of reclining-type patient's chairs in which the patient is in a supine or completely reclined position for being worked on by the dentist. With the patient in this supine position, the above problems and disadvantages of a stationary flushing cuspidor are even more greatly enhanced by the necessity of the patient to raise up from the supine position to lean over the stationary flushing cuspidor and expectorate the saliva, water and foreign matter from his mouth.

In order to overcome some of these problems with the stationary cuspidor, both for a completely reclined patient and a semi-reclined patient, attempts have been made to provide portable cuspidors which could be held by the patient or by a dental assistant so as to eliminate some of the burden of the patient moving from his position in the dental chair to the adjacent stationary cuspidor for purposes of expectorating. These portable or movable cuspidors were initially of the flushing type in which water would be intermittently flushed through the cuspidor to wash the saliva, water and foreign matter expectorated by the patient through the cuspidor and

2

out a connecting hose. This type of portable cuspidor did not prove satisfactory inasmuch as problems of leakage of the flushing water and the expectorated matter were encountered and the portable cuspidor still required the patient to move his head into a position over the cuspidor before expectorating thereinto.

More recently, there have been attempts at providing a portable cuspidor which was evacuated by suction and thereby eliminating the problems of leakage of the previous flushing-type portable cuspidors. Also, in at least one instance, there has been provided a smaller, cone-shaped, portable suction-type cuspidor which was intended to be placed over the mouth of the patient purportedly allowing the patient to expectorate thereinto from a supine or completely reclined position. However, these suction-type portable cuspidors also did not prove entirely satisfactory inasmuch as leakage of the saliva, water and foreign matter which was expectorated thereinto occurred, particularly around the edges of the smaller cone-shaped cuspidor which was placed in contact with the mouth, and with the larger portable cuspidors the patient was still required to raise his head or position his head over the cuspidor for expectorating thereinto, etc.

Also, in the dental field, it has been customary to use low volume aspirators which are placed or held in a patient's mouth and used only for removing excess saliva during the performance of work by a dentist on a patient. These aspirators are of low volume capacity in that they are designed only for removing excess saliva and are not intended or could not be used for rapidly removing large amounts of saliva, water and foreign matter from the mouth of the patient, particularly after a flushing or rinsing operation by the dentist on the patient's mouth to remove foreign matter from the teeth after a cleaning, filling or other type of operation on the teeth by the dentist.

Accordingly, it is the object of this invention to provide an aspirating cuspidor for use by a dentist and adapted to be placed in a patient's mouth and having a sufficiently high volume capacity to eject saliva, water and foreign matter from the patient's mouth without the need to expectorate and without regard to the position of the patient, i.e., reclined or semireclined, and without the necessity for the patient to move from this position.

According to this invention, it has been found that the above object may be accomplished by providing a dental aspirating cuspidor including an open-ended, tubular housing adapted to be held by the patient or dental assistant and placed in the mouth of the patient and having a first end adapted to be connected to a source of suction and a second end adapted for the reception of saliva, water and foreign matter and providing an internal passageway between the ends of sufficiently high volume to accommodate rapid flow of saliva, water and foreign matter therethrough. The housing includes venting port means between the ends for creating an aspirating suction through the second end of the housing when the first end is connected to a source of suction and for avoiding excessive and discomforting suction to the patient's mouth when the aspirating cuspidor is placed therein. The aspirating cuspidor further advantageously includes a removable, replaceable, open-ended, tubular, ejecting member, one end of which is frictionally secured in telescoping relationship in the second end of the housing for allowing the suction created therein to pass through the ejecting member and the other free end of which is adapted to be placed in the patient's mouth for ejecting saliva, water and foreign matter therefrom. This ejecting member is removed from the housing and replaced after use by each patient.

Some of the objects and advantages of this invention having been stated, other objects and advantages will ap-

pear as the description proceeds when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a partially exploded, diagrammatic, perspective view of the dental aspirating cuspidor of this invention shown attached to a source of suction;

FIG. 2 is a side elevational view of the dental aspirating cuspidor of FIG. 1;

FIG. 3 is a cross-sectional view taken substantially along the line 3—3 of FIG. 2; and

FIG. 4 is a cross-sectional view taken substantially along the line 4—4 of FIG. 2.

Referring now to the drawings, the dental aspirating cuspidor is referred to broadly therein by the reference numeral 10. This aspirating cuspidor 10 comprises an open-ended, tubular housing 11 adapted to be held by the patient or dental assistant and having a first end 12 adapted to be connected by a flexible conduit to a source of suction, diagrammatically indicated at 13 in FIG. 1 and which may comprise any convenient suction source normally provided with dental equipment, and a second end 14 adapted for the reception of saliva, water and foreign matter. The housing 11 defines and provides an internal ejecting passageway 15 between the ends 12 and 14 of sufficiently high volume to accommodate rapid flow of saliva, water and foreign matter therethrough.

The housing further includes venting port means, illustrated in the drawings as a pair of ports 20 and 21, between the ends 12 and 14 for creating an aspirating suction through the second end 14, when the first end 12 is connected to the source of suction 13, and for avoiding excessive and discomforting suction to the patient's mouth when the aspirating cuspidor is placed therein.

The aspirating cuspidor 10 further includes a removable replaceable, open-ended, tubular, ejecting member 22, one end of which is frictionally secured in telescoping relationship in the second end 14 of the housing for allowing the aspirating suction created therein to pass through the ejecting member 22 and the other free end of which is adapted to be placed in the patient's mouth for ejecting saliva, water and foreign matter therefrom. The ejecting member may be constructed of any suitable disposable material such that it may be removed from the housing 11 and thrown away and replaced after use by each patient. A suitable example of an ejecting member 22 is a short drinking straw of plastic or other types of materials.

The tubular housing 11 of the aspirating cuspidor 10 more specifically comprises a first hollow portion 25 including the end 12 of a generally nipple-shaped configuration for connection to the source of suction 13. The housing 11 also includes a second hollow elongate tube portion 26 one end of which is secured to and extends within the other end of the first portion 25 in telescoping relationship and in axial alignment therewith to define the ejecting passageway 15 (as may be seen clearly in cross-section in FIG. 3 and in dotted lines in FIG. 2) and the other end 14 of which receives the replaceable ejecting member 22.

The hollow interior of the other end of the first portion 25 of the housing 11 (as may be seen in FIG. 3) is of greater cross-sectional dimensions than the second portion 26 of the housing 11 so as to provide an air space within the first portion 25 and around the second portion 26 which extends therein for creating an aspirating suction through the second portion 26 and the ejecting passageway 15.

The venting ports 20 and 21 are formed in the first portion 25 of the housing 11 and are preferably at least two in number and are equally spaced therearound. These venting ports 20 and 21 overlie the telescoping end of the second portion 26 of the housing 11 which extends within the first portion 25 of the housing 11 and communicate with the aforesaid air space around the first portion so that the aspirating suction will be created around the telescoping end of the second portion 26 and out of the direct line of the ejecting passageway 15 to prevent the

escape of saliva, water and foreign matter through the ports.

As stated above, the ejecting passageway 15 must be of sufficiently high volume to accommodate the flow of saliva, water and foreign matter therethrough and it has been found desirable that this ejecting passageway have a cross-sectional diameter of at least about one-fourth inch and preferably between one-fourth inch and one-half inch. With this volume in the ejecting passageway 15, a suction pressure of approximately 10 to 15 inches water column has been found to be suitable.

In the preferred form of this invention, the second portion 26 of the housing 11 of the aspirating cuspidor 10 is bent intermediate the ends thereof to form an angle of approximately 70° to provide ease in handling by the patient and insertion of the aspirating cuspidor into the mouth.

In use, a patient may be positioned in a supine position or a semi-reclined position and may hold the aspirating cuspidor 10 of this invention in his hand for periodic use when indicated and while his teeth are being worked on by the dentist or the dental assistant. When use is indicated, such as after a flushing or washing of the mouth or teeth by the dentist or his assistant to remove foreign matter from the teeth and to rinse out the mouth, the patient may insert the replaceable ejecting portion 22 into his mouth and seal his lips therearound whereby the aspirating suction which has been created therethrough will eject the saliva, water and foreign matter from his mouth without the need to expectorate and without the necessity of the patient moving his head from the completely reclined or semi-reclined position. When the aspirating cuspidor is inserted in the mouth, excessive and discomforting suction will not be created in the patient's mouth because of the venting ports 20 and 21 which will vent the suction created in the housing 11 by the suction source 13. Also, the above-described location of the venting ports 20 and 21 will prevent leakage of the saliva, water and foreign matter as it passes through the ejecting passageway 15 in the housing 11.

Advantageously, the aspirating cuspidor of this invention may also be used as an evacuation means for removing large particles of foreign matter from the mouth and from between the teeth which requires an increased or greater amount of suction than would normally be required for its use as an aspirating cuspidor. For this purpose, the patient or dental assistant may simply place his fingers over the venting ports 20 and 21 allowing a direct suction, instead of an aspirating suction, to be created through the ejecting member 22 which will be much stronger than the normal aspirating suction and will remove the large particles from the mouth. However, in this type of evacuating operation, care must be taken by the patient or dental assistant not to cause damage to the mouth due to the increased force of the direct suction created therein.

As may be seen, this invention has provided for the first time a portable aspirating cuspidor which may be placed in a patient's mouth for ejecting excessive saliva, water and foreign matter therefrom without the need of the patient to expectorate and without the need of the patient to move his head from a fully reclined or semi-reclined position.

In the drawings and specification, there has been set forth a preferred embodiment of this invention and, although specific terms are employed, they are used in a descriptive sense only and not for purposes of limitation.

What is claimed is:

1. A dental aspirating cuspidor adapted to be placed in a patient's mouth for ejecting saliva, water and foreign matter therefrom without the need to expectorate and without regard to the position of the patient, said aspirating cuspidor comprising:

(a) an open-ended, tubular housing adapted to be held by the patient and having a first end for connecting to a source of direct suction and a second end for the

5

reception of saliva, water and foreign matter and defining an internal, ejecting passageway, between said ends, of sufficient volume to accommodate rapid flow of saliva, water and foreign matter therethrough, said tubular housing comprising a first hollow portion having one end thereof forming said first end of said housing for connection to the source of direct suction and a second hollow elongate tube portion having one end secured to and extending within the other end of said first portion in spaced and telescoping relationship and in axial alignment therewith to form a portion of said ejecting passageway, the hollow interior of the other end of said first portion being of greater cross-sectional dimensions than said second portion so as to provide an air space within said first portion and around said second portion; and (b) normally open venting port means formed in said first portion of said housing and overlying the telescoping end of said second portion of said housing which extends within said first portion of said housing and communicating with the air space therearound so that the direct suction pulled through said first portion by the suction source connected therethrough will create an aspirating suction through the second portion of said housing to prevent excessive and discomforting direct suction to the patient's mouth when the aspirating cuspidor is placed therein.

2. A dental aspirating cuspidor, as set forth in claim 1,

6

in which said internal ejecting passageway has a cross-sectional diameter of at least about one-fourth inch to provide sufficient volume therein to accommodate rapid flow of saliva, water and foreign matter therethrough.

3. A dental aspirating cuspidor, as set forth in claim 1, in which said second portion of said housing is bent intermediate the ends thereof to form an angular tube portion for ease in handling by the patient.

4. A dental aspirating cuspidor, as set forth in claim 1, in which said cuspidor further includes a removable, replaceable, open-ended, tubular, ejecting member, one end of which is frictionally secured in telescoping relationship in the other end of said second portion of said housing for allowing the aspirating suction created therein to pass through said ejecting member and the other free end of which is adapted to be placed in the patient's mouth for ejecting saliva, water and foreign matter therefrom, said ejecting member being adapted to be removed from said housing and replaced after use by a patient.

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ROBERT PESHOCK, Primary Examiner