

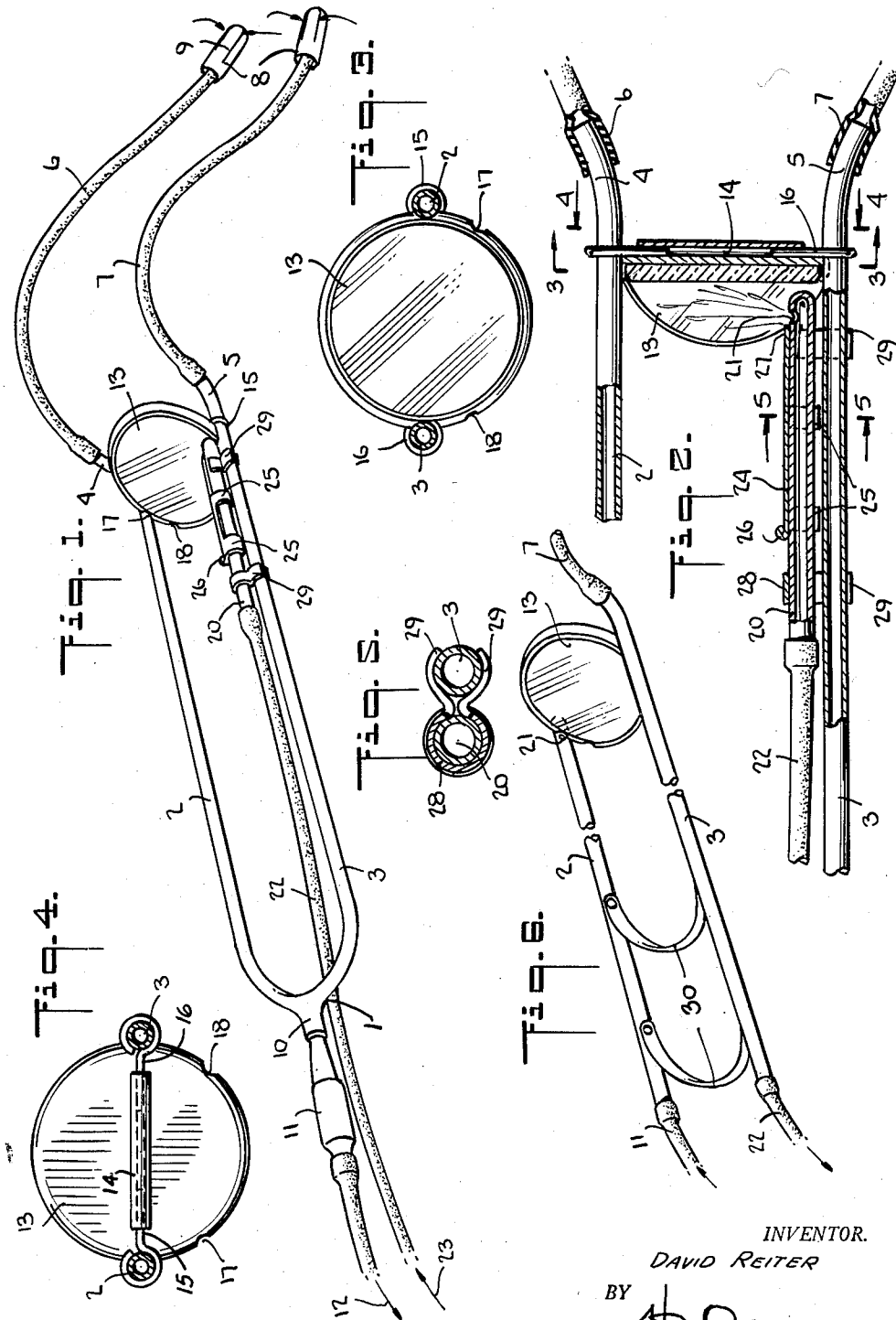
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DENTAL MIRROR STRUCTURE

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DENTAL MIRROR STRUCTURE

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1 Claim. (Cl. 32—69)

The present invention is directed to a construction of mirror, and more particularly to a type which is adapted for use by dentists in connection with the treatment of teeth.

Mirrors for this purpose have been used for a considerable length of time and generally they are constructed of a relatively small circular mirror held in a metal frame, to which a relatively long handle is fixed at a predetermined angle. Such an instrument is generally satisfactory for the purpose of permitting the dentist to see portions of the mouth of the patient which ordinarily would be invisible. However, there are certain disadvantages in the use thereof, as for example, the mirror often becomes fogged by the condensation of moisture thereon, greatly decreasing or even eliminating visibility. Also, the patient often closes the mouth to such an extent as to actually block the view of the dentist. Furthermore, it sometimes becomes awkward to use, in view of the fixed angle of the mirror relative to the handle where the dentist requires a view in a particularly difficult accessible part of the mouth.

The present invention is intended and adapted to overcome the difficulties and disadvantages inherent in prior devices of the type described, it being among the objects of the present invention to provide a structure of a dental mirror which is adapted to retract the tissues and to prevent the patient from closing the mouth and blocking out the view of the dentist. It is also among the objects of the present invention to provide a dental mirror having means for ejecting saliva and means for keeping the mirror clean and the mouth relatively dry.

It is further among the objects of the present invention to provide a structure of dental mirror which will permit the adjustment of the angle of the mirror relative to the handle in accordance with the needs and desires of the dentist in each patient.

In practicing the present invention, there is provided a U-shaped tube having a relatively narrow base and relatively long legs. At the ends of the legs are relatively thin, flexible tubes which can be positioned in the mouth at the desired points, and suction is applied to such tubes to withdraw saliva and the like through the legs and the base of the U-shaped handle. The mirror is mounted between the legs adjacent to the ends thereof in such a manner that the mirror may be tilted into a plurality of positions and be held therein by the resiliency of the legs against accidental displacement. The invention further contemplates such a mounting of the mirror that it may be readily removed and replaced. There is also provided means for maintaining the surface of the mirror clear and clean by the provision of a device for sweeping air or water, or both, across the face of the mirror.

In the accompanying drawing constituting a part hereof and in which like reference characters indicate like parts,

Fig. 1 is a perspective view of a dental mirror made in accordance with the present invention;

Fig. 2 is a top plan view thereof, some parts being

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shown in section and on an enlarged scale, and some parts being broken away for clearness;

Fig. 3 is a transverse cross-sectional view taken along line 3—3 of Fig. 2;

Fig. 4 is a transverse cross-sectional view taken along line 4—4 of Fig. 2, and

Fig. 5 is a transverse cross-sectional view taken through one of the clips of Fig. 1.

Fig. 6 is a modification of Figure 1.

The handle of the mirror consists of tubing in the form of a U having a relatively narrow base 1 and relatively long legs 2 and 3. The tube is of rigid material having a relatively high degree of resiliency and may be made of metal, suitable plastic materials and the like. The extreme ends 4 and 5 of legs 2 and 3 are bent outwardly and flexible tubes 6 and 7 are fitted over said ends, said flexible tubes being usually made of synthetic plastic material. Tips 8 are fitted onto the ends of tubes 6 and 7, having slits or other openings 9 to permit saliva to enter the tubes without obstructing the openings.

Base 1 is provided with a boss 10 on the end of which is a fitting 11 having a flexible tube 12 fitted thereon, said tube being connected to a source of vacuum in order to draw saliva from tips 8 through the several tubes and thus keep the mouth clean and reasonably dry. Circular mirror 13 has on the back thereof a tubular socket 14, the opening of which is circular. Pins 15 and 16 secured adjacent to the ends of legs 2 and 3, respectively, extend into socket 14 and constitute a pivot for the mirror. The frame of the mirror is provided with a plurality of notches 17 and 18, the positions and the sizes of which are such that leg 2 will fit into the same. The legs being of resilient material will hold the mirror in any one of the adjusted positions in the notch.

There is also provided a pipe 20 usually of rigid material having an opening 21 at the outer end thereof adjacent to the mirror so that a stream of fluid flowing therefrom will flow across the face of the mirror. The inner end of pipe 20 is provided with an extending pipe 22 connected to a source 23 of air or water, or both.

Pipe 20 has mounted thereon a slide valve 24 which is held onto the pipe by resilient clips 25. The inner end 26 of valve 24 is formed into a fingerhold, whereby the valve may be slid forward in order to close opening 21, the end 27 thereof being adapted to cover the opening either partly or completely to regulate the flow of fluid from opening 21.

The position of pipe 20 may be adjusted in accordance with the wishes of the user. To accomplish this, there is provided a pair of clasps 28 which are located near opposite ends of pipe 20 and are fixed thereto. Gripping fingers 29 extending therefrom are adapted to embrace leg 3 to hold pipe 20 firmly in position. By grasping said pipe, it may be moved against the friction of fingers 29 to any desired position relative to the mirror.

In the modification shown in Fig. 6, the U-tube consists of parallel legs 2 and 3, the base being one or more bow springs 30. A source of vacuum is attached to pipe 22 and water or air or both are attached in fitting 11. This construction is considerably simpler than that shown in Fig. 1.

Although the invention has been described setting forth several specific embodiments thereof, the invention is not to be limited thereto as various changes in the details of construction may be made within the spirit of the invention. For instance, the mirror may be mounted in a fixed position or it may be placed some distance from the ends of the legs. Also the legs need not be parallel over their entire length and the U-shaped member may be made of several parts joined together instead of being integral. Any materials of construction suitable for the purpose may be used, as for instance, the U tube may be

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of metal, resilient plastic or the like. Various other changes in the details may be made without departing from the principles herein set forth and the invention is to be broadly construed and not to be limited except by the character of the claim appended hereto.

I claim:

A mirror for dental and other use comprising a U-shaped rigid tube having a relatively narrow base and relatively long legs, a flexible tubular connection at said base, vacuum suction means connected to said flexible tube connection, a mirror pivotally supported on and between said legs adjacent to the ends thereof, a flexible tube on the end of at least one of said legs, a pipe connected to a source of fluid and attached to one of said legs adjacent to said mirror, an opening in said pipe

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adapted to direct fluid onto said mirror, a valve on said pipe adapted to vary the size of said opening to vary the flow of fluid over the mirror, a plurality of spaced notches in the edge of said mirror adapted to have a leg fitted thereinto to adjust the mirror into a plurality of positions along the length of said legs.

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