

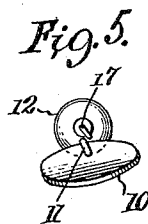
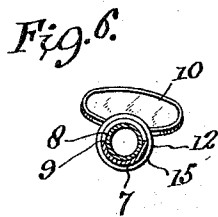
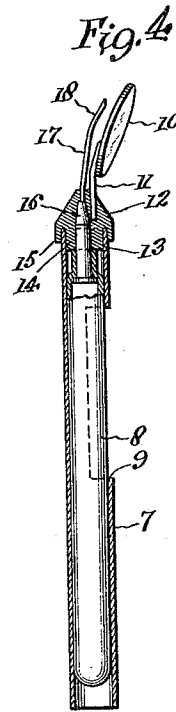
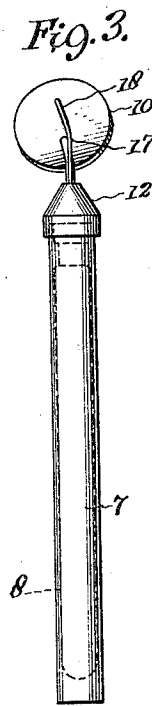
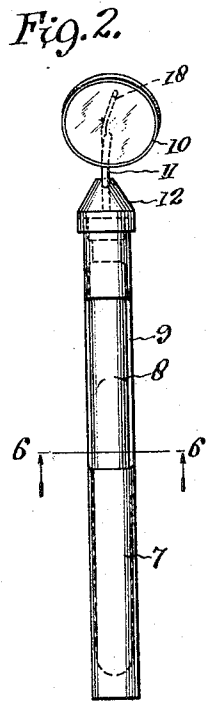
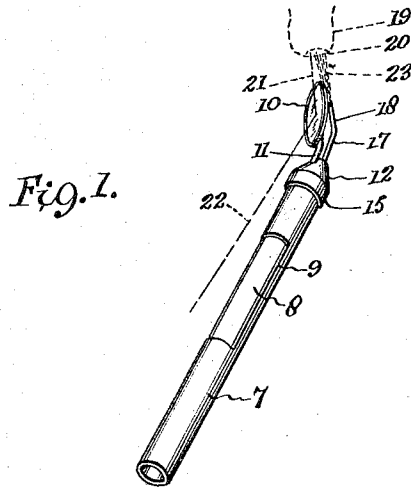
Nov. 1, 1927.

1,647,862

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COMBINED DENTAL MOUTH MIRROR AND WATER SYRINGE

Filed Jan. 22, 1927



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UNITED STATES PATENT OFFICE.

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COMBINED DENTAL MOUTH MIRROR AND WATER SYRINGE.

Application filed January 22, 1927. Serial No. 162,778.

The present invention relates to improvements in combined dental mouth mirror and water syringe, and has for an object to provide a compact, simple and effective implement for simultaneously showing the tooth cavity or target while projecting the stream of water into or against the same.

Another object of the invention is to provide in one instrument a mirror and a syringe, whereby the use of both may be had simultaneously without changing instruments and without the aid of a dental assistant as is now necessary.

A further object of the invention lies in providing an instrument for pouring warm water over the tooth being cut easily, efficiently and accurately without the aid of a dental assistant. At present this is accomplished only by the assistant and in most parts of the mouth it is impossible for said assistant to direct the stream of water accurately; likewise the syringe used, as well as the assistant's hands are in the dentist's way.

By the use of the invention much of the pain is avoided by the elimination of heat due to the water dripping on the tooth which is being cut down by stones or burs. The water also prevents the tooth dust from clogging the stones or burs, thereby making the operation faster and less painful.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a perspective view of the improved instrument.

Figure 2 is a front elevation thereof.

Figure 3 is a rear elevation of the same.

Figure 4 is a side elevation with parts broken away.

Figure 5 is a top edge view, and

Figure 6 is a cross section taken on the line 6—6 in Figure 2.

Referring more particularly to the drawings 7 designates a cylindrical or tubular handle adapted to receive therein the rubber bag or sack 8 of the syringe, which bag or sack is exposed through the segmental removed portion 9 of the handle. The fin-

gers are admitted through this cut away or removed portion for compressing the sack. 55

The mirror 10, preferably a circular disc mirror is carried upon the shank 11 affixed in the head 12 which is preferably frusto-conical as to its exterior surface, is formed with the internal bore 13, with the reduced neck 14 fitting into the end of the hollow handle 7 and with the external flange 15 spaced annularly from the neck 14 and forming therewith a channel to receive the handle edge or rim, the flange 15 lying upon the outside surface of said flange or rim. The fit may be a tight frictional one enabling the mirror 10 and syringe needle as a unit to be adjusted about the axis of the tubular handle, or the head 12 may be soldered or otherwise fixedly secured in place. The flange 15 is preferably shorter than the neck 14. The bore 13 communicates with the interior of the rubber sack 8 and is also made tapering or frusto-conical at its outer portion 16 which communicates with the shank 17 of the hollow needle. This shank may extend axially, but is preferably inclined toward the rear surface of the mirror 10. The outer terminal portion 18 of the needle extends at an angle to the needle shank 17. This terminal portion 18 lies at a convergent angle to the rear of the mirror surface, as shown in Figure 4, and it also lies at an angle, shown in Figure 3, to extend substantially diametrically across the back of the mirror. In other words the shank 17 and terminal needle end 18 lie at obtuse angles in two intersecting planes. 60 65 70 75 80 85

The plane of the mirror 10 forms an obtuse angle with the axis of the handle, as shown in Figure 4, and this disc mirror 10 as shown in Figure 5 is rotated through an angle about the axis of the handle, whereby it assumes the canted position shown in Figure 6 with respect to the cut away portion in the handle, whereby to enable the thumb or fingers to engage the rubber sack, while the mirror extends at a proper position for viewing the tooth therethrough. The tooth is indicated in dotted lines at 19 in Figure 1 and as having the cavity as indicated at 20. The angles of incidence and reflection are indicated by the broken lines 21 and 22 and the stream of water at 23 showing that, while the cavity 20 is viewed by the dentist, 90 95 100 105

the stream of water 23 is at the same time directed into the viewed location. By the canted position of the mirror, shown in Figures 5 and 6, the line of sight may be across the handle, so that by twisting the handle the handle itself may be at any time removed from the projected line of vision.

The head 12 carries as a unitary structure the mirror, needle and syringe sack so that this unit may be removed from the handle quickly and conveniently.

Note also in Figures 3 and 5 that the shank 11 and mirror 10 are offset to one side of the axial line which places the mirror surface to better advantage with respect to the handle and enables the handle to be manipulated with less interference to the line of vision.

The needle which lies back of the mirror is preferably flexible to allow a better flow of water by directing it according to the position the dentist is accustomed to holding the mirror. It also allows right and left handed workers to use it. Anterior and posterior teeth require different angles and the flexible needle takes care of this.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A combined dental mouth mirror and water syringe comprising a tubular handle having a removed section, a head detachably fitted to one end of said hollow handle, a compressible syringe sack attached to said head and lying in the hollow handle, a mirror carried by said head, and a needle also carried by said head in communication with the sack and disposed in rear of said mirror, the plane of said mirror and axis of said

needle being disposed convergently whereby during actual viewing of the target a stream may be directed thereon from said needle.

2. A combined dental mouth mirror and water syringe comprising a hollow handle having a cut away portion, a head having an internal bore, a neck to fit within said handle and a flange to fit on the exterior of said handle, a compressible sack communicating with said bore, carried by said head and fitting within the hollow handle, a needle communicating with said bore and carried by said head, said needle having a shank and a tip portion inclined to said shank, and a mirror carried by said head and twisted at an angle about the axis of said handle.

3. A combined dental mouth mirror and water syringe comprising a hollow handle having a cut out portion, a head removably attached to said handle, a compressible syringe sack carried by said head within the handle, a mirror having a shank attached to said head, the plane of said mirror forming an obtuse angle with the axis of the handle, and said mirror being twisted at an angle about the axis of the handle and also being offset slightly from the axial line of said handle, and a needle carried by said head and having a shank inclined to the axis of the handle toward the rear of said mirror, and a tip portion inclined to the shank in two intersecting planes and said tip portion lying approximately diametrically of said mirror and converging with the mirror surface.

4. A combined mirror and syringe comprising a mirror, a syringe needle, and a handle for said mirror and needle, the plane of said mirror and axis of said needle being disposed convergently whereby during actual viewing of the target a stream may be directed on the target from said needle.

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