Dec. 21, 1954 S. F. SCINTA 2,697,432

MOUTH GAG WITH ANAESTHETIC TUBE FOR SURGICAL USE

Filed March 7, 1952 2 Sheets-Sheet 1

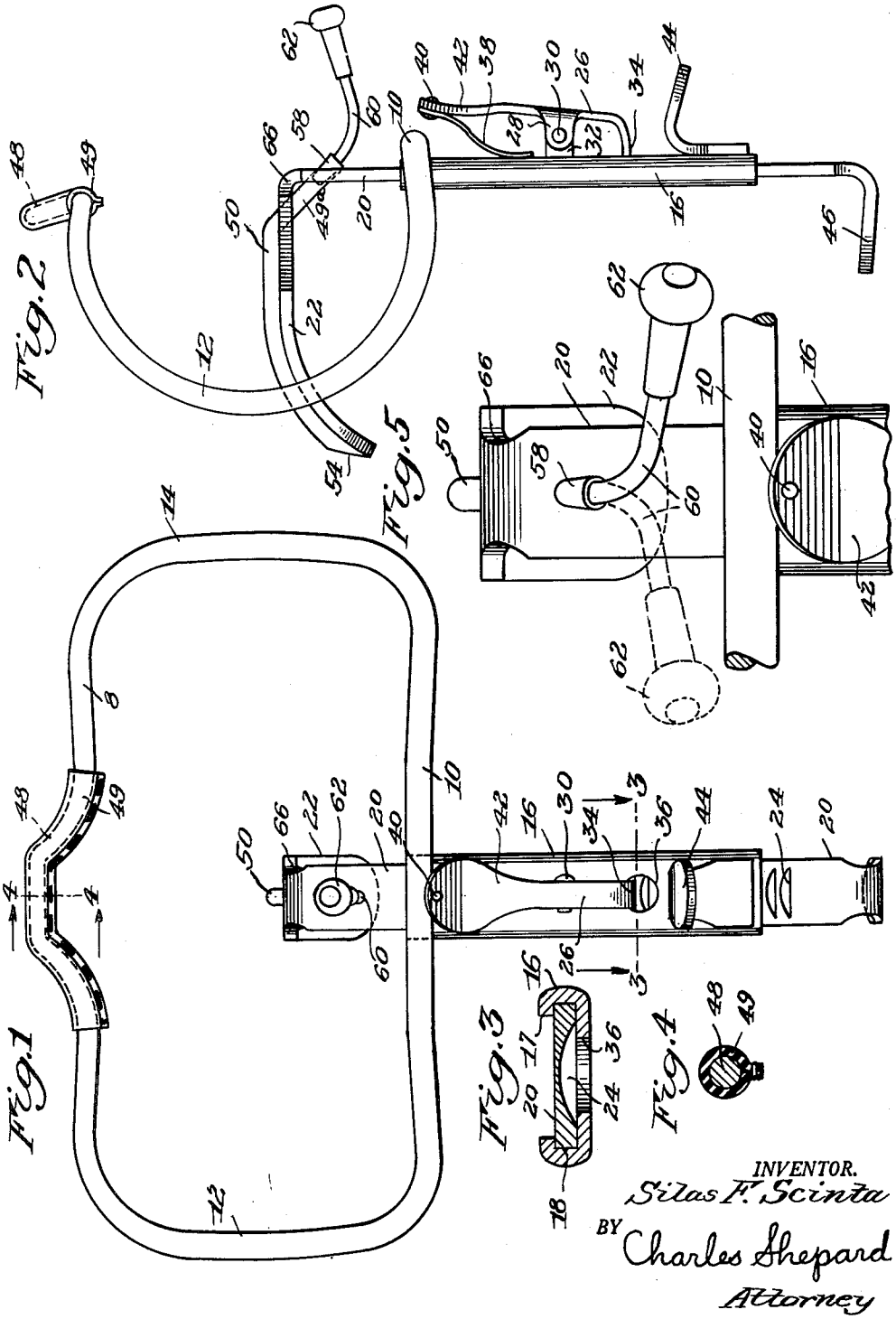


Fig. 2

Fig. 5

Fig. 1

Fig. 3

Fig. 4

INVENTOR.
Silas F. Scinta
BY Charles Shepard
Attorney

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Fig. 6

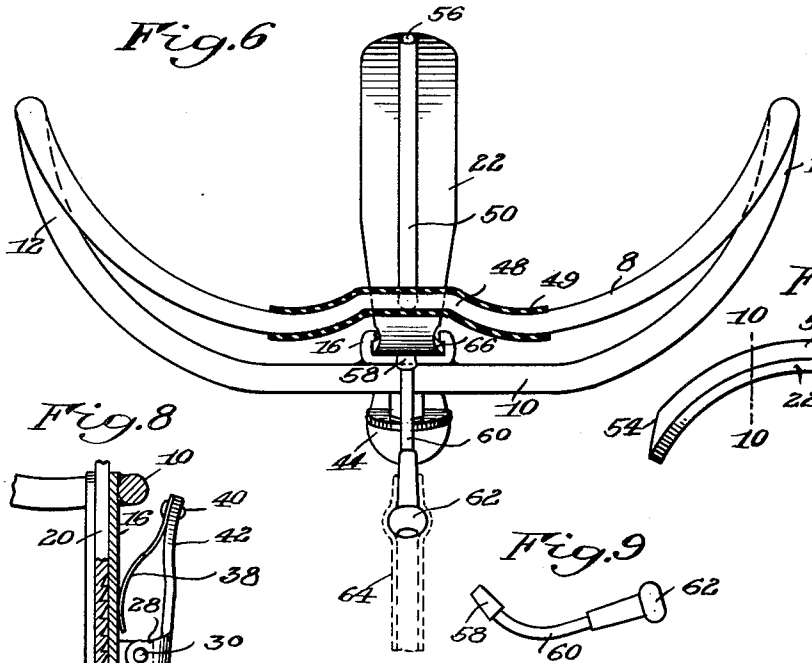


Fig. 7

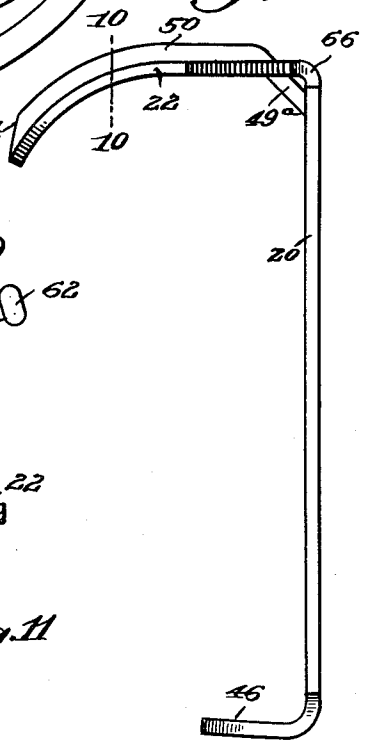


Fig. 8

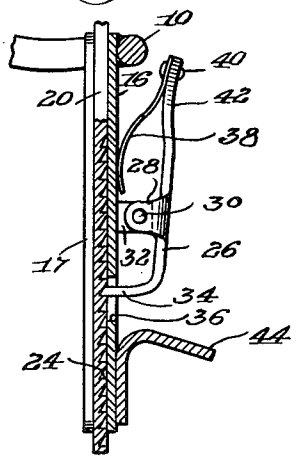


Fig. 9

Fig. 10

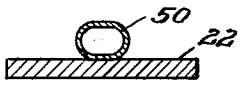
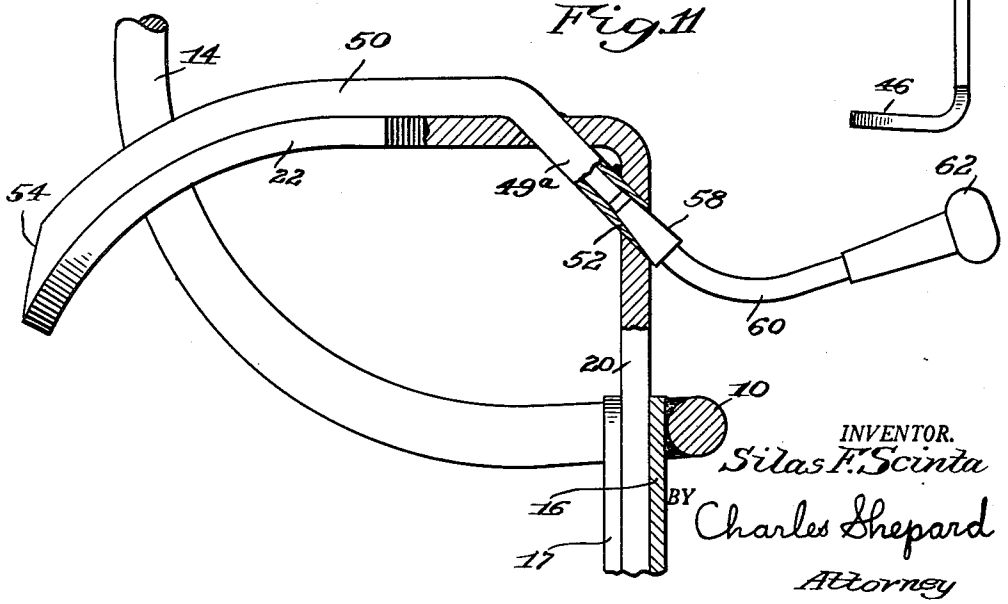


Fig. 11



INVENTOR.
Silas F. Scinta
BY
Charles Shepard
Attorney

United States Patent Office

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MOUTH GAG WITH ANAESTHETIC TUBE FOR SURGICAL USE

Silas F. Scinta, Pittsford, N. Y.

Application March 7, 1952, Serial No. 275,336

9 Claims. (Cl. 128—12)

The present invention relates to surgery and more particularly to appliances for positioning and maintaining a patient in a favorable position during a surgical operation, and the invention has for its broader object to provide a simple, efficient, and convenient so-called "gag" for maintaining a patient's jaws widely opened for free access to the oral cavity and the throat during adenoidectomy, tonsillectomy, and other throat operations, this application being a continuation in part of a prior application filed by me September 7, 1951, Serial No. 245,466.

Gags of this character heretofore used have usually made contact with the upper teeth of the patient and entailed certain hazards for the latter, particularly those that are young or elderly. In the case of children, especially those around the age of 6 to 8 years, where the second dentition is fully developed, the contact of the gag has sometimes caused the teeth to be pushed out, with resulting disfigurement, while in adult cases in which the upper and lower dentitions have been lost and nothing remains but bare, sensitive, and smooth gums, the resulting irritation is painful.

It is therefore a further object of this invention to provide a gag that will escape contact with the upper gums or teeth and will give a greater degree of present and ensuing comfort to the patient while affording the surgeon a better view of the throat and greater clearance in the area of his activities in the oral cavity.

Other objects of the invention relates to improving the tongue depressing means that also holds the lower jaw widely articulated and to improved means connected therewith for introducing a flow of anaesthetic, either generally or directly, to the region with which the operation is concerned. In this connection, the invention contemplates the provision of a combined tongue depressor and anaesthetic conducting line that will least obstruct the open mouth of the patient and give as much freedom as possible to the motion of the surgeon's hands and instruments.

Provision is further made for a quick-detachable nozzle that establishes connection with the anaesthetic conducting hose, which nozzle comes away with it but may be also quickly applied to the gag and adjusted to any convenient angular position.

These and other desirable objects may be attained in the manner disclosed as an illustrative embodiment of the invention in the following description and in the accompanying drawings forming a part hereof, in which:

Fig. 1 is a front elevation of such surgical mouth gag;

Fig. 2 is a side elevation thereof;

Fig. 3 is an enlarged section on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged section on the line 4—4 of Fig. 1;

Fig. 5 is an enlarged, fragmentary front view corresponding to Fig. 1 but illustrative of different adjustments of the anaesthetic connection;

Fig. 6 is a top plan view;

Fig. 7 is a side view of the upright stem and tongue depressing blade, detached;

Fig. 8 is a fragmentary vertical central section through the stem and its supporting post, the adjusting pawl acting between the two appearing in side elevation;

Fig. 9 is a side view of the nozzle for the anaesthetic connecting hose, detached;

Fig. 10 is an enlarged section on the line 10—10 of Fig. 7, and

Fig. 11 is a fragmentary enlargement of part of the showing of Fig. 2 but taken partially in central vertical section through the region of the joint between the anaesthetic tube nozzle and the stem.

The same reference numerals throughout the several views indicate the same parts.

It is here stated that, while recently several techniques have been practiced in the tonsil and adenoid operation including the Trendelenberg position in which the patient or subject is substantially inverted, such terms as "upper" and "lower" as used in the following description and in the claims apply when the subject is in an upright or normal sitting or standing position.

Referring more particularly to the drawings, the main element of the illustrated device consists of a buccal mask in the form of a loop including upper and lower generally horizontal portions 8 and 10, respectively, and two side portions 12 and 14 connecting therewith. In fact, in the preferred form shown, the loop is composed of a continuous bar of round metal. The lower portion 10 thereof and the greater part of the side portions 12 and 14 thereof are of a uniform maximum diameter but the upper extents of the latter as well as the upper bar 8 are gradually attenuated or tapered down to a substantially smaller diameter near the center of the upper bar or portion 8, for a purpose hereinafter explained.

Secured to the center of the lower portion 10 is a depending post 16 of a channel form having on its rear side a pair of inturned side flanges 17 to produce a guideway 18 (Fig. 3). Slidably supported for vertical movement in this guideway is the flat stem 20 as an angular downward extension of a rearwardly projecting and downwardly curved tongue depressing blade 22. The extension 20 is provided with a series of stop teeth 24 in the manner of a rack or ratchet bar. Cooperating with these teeth is a pawl or ratchet lever 26 having intermediate rearwardly extending ears 28 through which it is pivoted at 30 to similar forwardly extending ears 32 on the post 16. The nose 34 of the pawl reaches the teeth 24 through an opening 36 in post 16 and is normally urged to engagement therewith by a leaf spring 38 riveted at 40 to a finger portion 42 of the pawl lever. The lower faces of the individual teeth 24 are preferably inclined, so that the stem 20 will ratchet downwardly without releasing the finger piece 42, but the stem cannot move upwardly until the finger piece 42 is moved to raise the pawl 26 from the teeth.

The lower end of the post 16 is equipped with a forwardly and downwardly projecting finger rest 44 while the lower projecting end of the protruding stem 20 is provided with a rearwardly and upwardly projecting finger rest 46.

In positioning the gag, through the mechanical arrangements last described, the loop of the mask is applied from the front against the subject's distended jaws with the tongue blade 22 lying upon the tongue and extending toward the base thereof and depressing and confining it from above. The post 16 is frontal against the lower jaw or chin and the ratchet adjustment is manipulated appropriately according to size, child or adult. It is here that the reactionary contact with the upper jaw provided by the present invention functions. At the center of the attenuated loop portion 8 directly above the post 16 is provided an upwardly extending rest 48 that is inserted behind the incisors and the gum formation or process whether or not the incisors are present and so that it rests against the hard palate or roof of the frontal oral cavity. The two jaws are thus locked in the desired extended positions to give the surgeon and his assistants a wide view of the oral cavity and throat and a maximum of room for his manipulations while the patient or subject is confined against his natural physical reactions and movements in a most painless manner both during and after the operation, with injury to upper teeth and gums non-existent or reduced to a minimum.

In the present embodiment, the rest 48 is provided by an upward undulation or arch in the attenuated center of the upper portion 8 of the loop which is preferably covered with a rubber or similar soft contact sleeve 49, the formation as shown being best suited to the conformation of the human upper jaw structure in the region referred to. Preferably the arch is inclined rearwardly for this purpose as best shown in Figs. 2 and 6. As shown in the same figures and also in Fig. 6, the side

portions 12 and 14 of the mask loop are offset rearwardly in a semi-circular curve to approximate the contour of the cheeks of the subject in harmony with which the upper and lower portions 8 and 10 of the loop are given also a rearward sweep (Fig. 6). This carries all parts of the appliance as far removed as possible from obstructing the surgeon's view and the use of his hands in manipulating his instruments.

Affixed permanently to the top of the tongue depressor blade 22 and extending from front to rear is an anaesthetic delivery tube 50 of metal, the forward end of which dips through the depressor blade at 49*a* and thence through the stem 20 at 50 (Fig. 11) to terminate at 52 flush with the front face of said stem and thus not interfere with its sliding movement in the guide post 16 or its complete removal in a downward direction therefrom. The said portion 49*a* of the tube that bridges the angle between the post 20 and the tongue depressing blade 22 is so slight in extent that it practically conforms to the curvature of the patient's lower lip if it in fact touches it at all and hence can impart no damage or discomfort thereto. The rear part of the tube 50 follows the curving contour of the blade 22, and is rather flattened as indicated in Fig. 10, so as to be of less thickness and less obstruction to the work of the surgeon. At its extreme rear end it is cut off obliquely as at 54, to provide an exit orifice 56 from which the anaesthetic may issue into the oral cavity or throat of the patient. The said forward termination 52 is in the form of an inwardly tapered socket that is adapted to receive the similarly tapered conical nipple end 58 (see also Fig. 9) on a nozzle pipe 60 provided with a fitting 62 to receive and retain the terminal of the anaesthetic feed tube shown in dotted lines and indicated at 64 in Fig. 6. This nozzle has a frictional, jam or wedging fit in the socket sufficient to retain it for practical purposes yet permitting it to be swung at will between the various full and dotted line positions of Figs. 1 and 5 as convenience dictates.

To eliminate the possibility of traumatic contact with the lower lip of the patient, the front end of the tube 50 is not carried laterally over the side edge of the tongue blade 22, as is done with certain prior tongue depressors, but continues straight forwardly along the center line of the tongue blade, and because of the much lower and angularly depressed as well as forwardly offset possible adjustments of the nozzle fitting 62, the anaesthetic feed tube is always quite removed from the entire field of operation. The front end of the tube stops just to the rear of the plane of the front face of the stem 20 as above described, so that the anaesthetic tube does not interfere with complete removal of the tongue depressor parts 20, 22 by downward movement along the guideway 18. Thus the tongue depressor may be removed entirely from the main frame of the mouth gag and may be replaced by a different tongue depressor having a longer or shorter tongue blade 22, depending on the physical characteristics of the patient. The lateral edges of the tongue depressor, at the angle where the stem part 20 joins the blade part 22, are notched out as indicated at 66, so that these lateral edges will clear the flanges 17 of the guideway when the tongue depressor is moved downwardly for complete removal.

It may be noted that the three part construction of carrying post, detachable stem and detachable nozzle lends itself to easy and thorough cleaning and sterilization.

It is seen from the foregoing disclosure that the above mentioned objects of the invention are well fulfilled. It is to be understood that the foregoing disclosure is given by way of illustrative example only, rather than by way of limitation, and that without departing from the invention, the details may be varied within the scope of the appended claims.

What is claimed is:

1. A mouth gag appliance for surgical use, comprising a frame having an upper portion adapted to enter the mouth of a wearer and exert upward pressure therein, and a lower portion having a depending post forming a guideway for a movable tongue depresser blade, said tongue blade being provided with a longitudinally extending anaesthetic conducting passageway lying substantially along the center line of said tongue blade and delivering to the rear and terminating at the front rearwardly of the front face of the post.

2. A mouth gag appliance in accordance with claim 1, in which the said tongue blade has at its forward end a stem slidable vertically in a guideway in said post and the anaesthetic conducting passage terminates at the front face of the stem so as not to interfere with the movement of said stem in said guideway.

3. A mouth gag appliance in accordance with claim 2, in which there is further provided a detachable laterally swingingly adjustable supply tube attaching nozzle mounted on the stem and communicating with the forward terminal of the conducting passage.

4. A mouth gag appliance in accordance with claim 3, in which the detachable nozzle is elbow-shaped, the forward terminal of the conducting passage is in the form of a tapered socket and the rear end of the nozzle is shaped to frictionally engage therein with a jam fit that supports the nozzle but permits it to swing angularly upwardly, downwardly and sidewise.

5. A mouth gag tongue blade comprising a vertical guide portion and a rearwardly extending tongue engaging portion connected to said guide portion at the upper end thereof and making approximately a right angle thereto, and an anaesthetic conducting tube lying throughout its entire length substantially in a plane passing along the center line of said two portions, said tube extending along the upper surface of said tongue engaging portion from a point near the rear end thereof to a point rearwardly of and near the junction of said tongue engaging portion with said guide portion and thence extending obliquely downwardly through said tongue engaging portion and across the angle between said two portions and terminating substantially flush with the front face of said guide portion.

6. A construction as defined in claim 5 in which said anaesthetic tube at its forward end has a tapered socket for removably receiving a tapered connecting nipple for supplying anaesthetic to said tube.

7. A mouth gag for surgical use, comprising a continuous loop having a lower cross bar adapted to extend across the front of the face of the wearer in the vicinity of the wearer's chin and an upper cross bar adapted to extend across the face of the wearer in the vicinity of the upper lip and connecting portions connecting the upper bar and the lower bar to each other at opposite sides of the gag, and a tongue depressor blade adjustably connected to said lower bar and adapted to enter the mouth of the wearer and press downwardly on the tongue, said upper bar extending from both ends laterally toward the center in a position to enter the mouth close to the upper teeth rearwardly of the incisors and without making any substantial pressure-causing contact with said incisors, said upper bar after passing inwardly beyond the teeth then extending upwardly to form a rest portion at an elevation substantially above those parts of the bar which pass into the mouth and at a location not materially rearwardly from said parts which pass into the mouth, said upper bar being so shaped that said rest portion will engage and press upwardly on the hard palate of the roof of the mouth of the wearer immediately above the gums of the upper incisor teeth.

8. A mouth gag for surgical use, comprising a loop-like frame having an upper bar and a lower bar adapted to extend across the front of the face of the wearer of the gag, a tongue depressor blade adjustably connected to said lower bar and adapted to enter the mouth of the wearer and press downwardly on the tongue, and means on the upper bar substantially centrally thereof for engaging the hard palate of the roof of the mouth of the wearer immediately above the gums of the upper incisor teeth to press upwardly on said hard palate while maintaining said upper bar out of pressing contact with the upper incisor teeth of the wearer.

9. A mouth gag for surgical use, comprising a loop-like frame having an upper bar and a lower bar adapted to extend across the front of the face of the wearer of the gag, and a tongue depressor blade adjustably connected to said lower bar and adapted to enter the mouth of the wearer and press downwardly on the tongue, said upper bar being characterized by a substantially horizontally extending central rest portion to engage and press upwardly on the hard palate of the roof of the mouth of the wearer immediately above the gums of the upper incisor teeth, outer portions of the upper bar being adapted to extend laterally and horizontally into the mouth at elevations substantially below said central rest portion so as to avoid any substantial upward pressure

on the teeth, said upper bar thence curving upwardly from the inner ends of said outer portions on a gradual curve and meeting the respective ends of said central rest portion at an abrupt angle.

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