

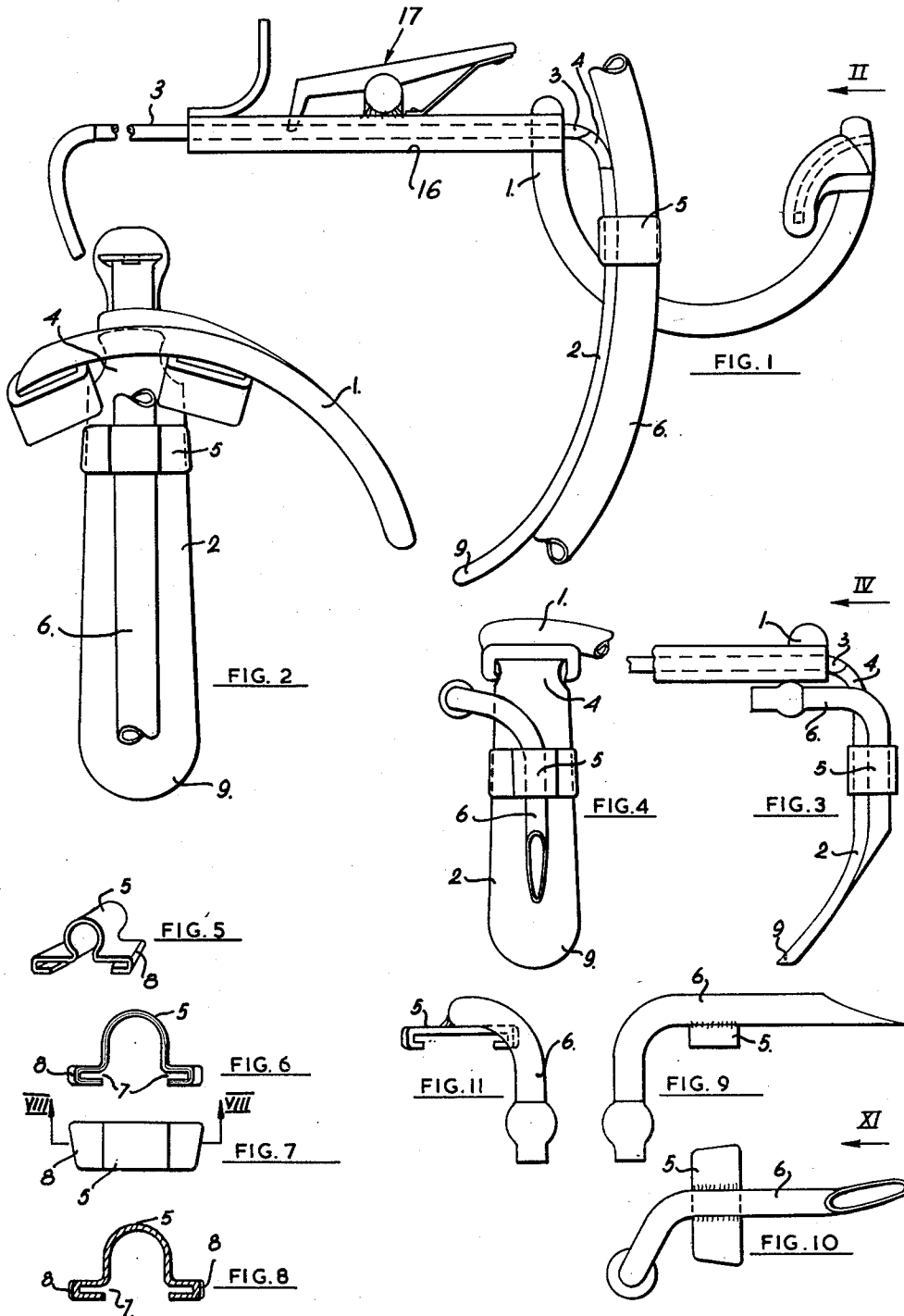
Sept. 1, 1964

R. B. DUNCAN
SURGICAL INSTRUMENTS

3,146,776

Filed May 18, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

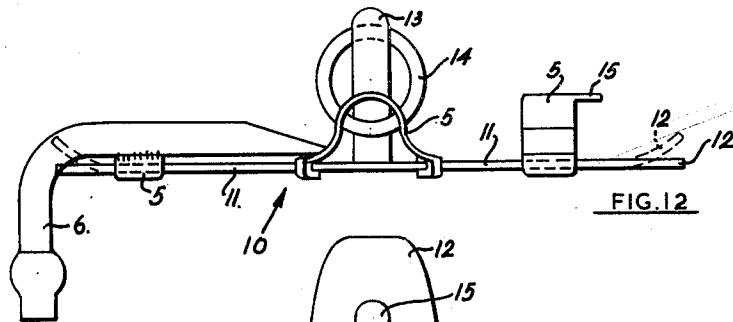


FIG. 12

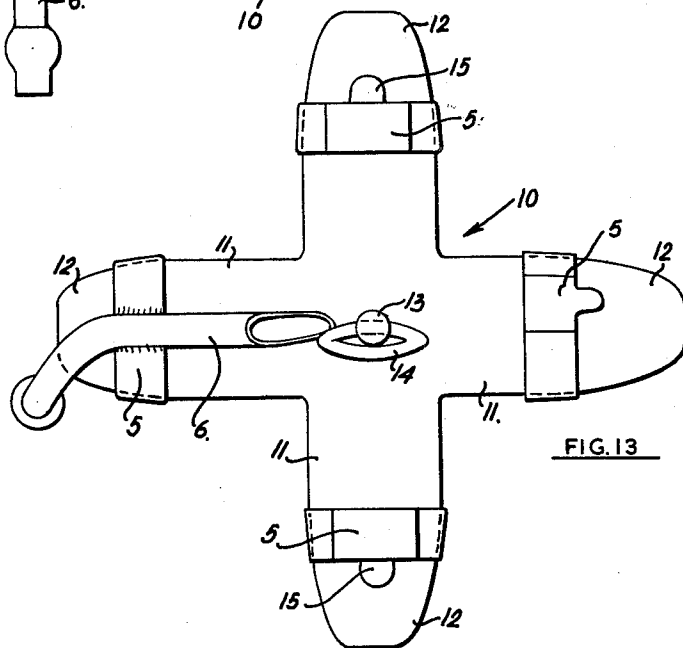


FIG. 13

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SURGICAL INSTRUMENTS

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This invention relates to surgical instruments and more particularly to instruments such as mouth gags and anaesthetic tubes used in oro-pharyngeal surgery.

An object of this invention is to provide an improved surgical instrument associated with a mouth gag for holding an anaesthetic tube or pipe to the tongue blade of the gag so that while in use in approximal fixation or attachment the tube or pipe does not injure the larynx of a patient by kinking of the tube or pipe, and wherein the anaesthetic tube or pipe can be easily fixed or readily taken off the tongue plate in an emergency, and when the mouth gag is removed at the end of the procedure leaving the anaesthetic tube in position in the mouth of the patient.

Further, an object of this invention is to provide an improved surgical instrument having a mouth gag and a tongue plate which while in use can be centrally situated, or situated to either side of the mouth of a patient, so that the tube or pipe is held away from an operating area and without interference with the surgical field, and giving an unobstructed air way to the trachea.

According to this invention the improved surgical instrument for use in conjunction with a mouth gag with its tongue plate has removable a clip for holding an anaesthetic tube on the tongue plate, more particularly near the neck of the tongue plate, ensuring that the tube is held in a desired position on the tongue plate in approximal fixation or attachment.

Further, according to this invention the improved surgical instrument comprises a mouth gag having a tongue plate, a removable clip for holding an anaesthetic tube on the tongue plate, the tube having one end running centrally along the tongue plate and the other end turned and twisted to one side of the tongue plate to ensure that the tube on which a resilient pipe can be connected, is turned and carried out of the way of the operating area situated on one side of the tongue plate, while the removable clip is held in engagement on the tongue plate in approximal fixation or attachment.

The invention will be further described with reference to the accompanying drawings in which:

FIGURE 1 is a side elevation of the mouth gag having the tongue plate supporting a resilient anaesthetic tube secured on the tongue plate by means of the removable clip;

FIGURE 2 is an end elevation viewed in the direction of the arrow II in FIGURE 1;

FIGURE 3 is a side elevation, reduced in scale, of the tongue plate supporting a rigid anaesthetic tube, the rigid anaesthetic tube being secured on the tongue plate by means of the removable clip;

FIGURE 4 is an end elevation view in the direction of the arrow IV in FIGURE 3;

FIGURE 5 is a perspective view of the removable clip;

FIGURE 6 is an end view of the removable clip;

FIGURE 7 is a plan of FIGURE 6;

FIGURE 8 is a cross sectional view of the removable clip viewed in the direction of the arrows VIII—VIII in FIGURE 7;

FIGURE 9 is a side view of a rigid anaesthetic tube showing a modification of the clip fixedly attached, such as by welding, to said tube;

FIGURE 10 is a plan of FIGURE 9;

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FIGURE 11 is an end elevation viewed in the direction of the arrow XI in FIGURE 10;

FIGURE 12 is a side elevation of a holder for the removable clips of this invention, showing a plurality of clips held by the said holder, and

FIGURE 13 is a plan of FIGURE 12.

The surgical instrument of this invention includes a mouth gag 1 having a tongue plate 2 associated therewith and held to one side of the mouth gag 1 as shown in FIGURE 2, the tongue plate 2 being supported by the mouth gag 1 while in use.

The tongue plate 2 is formed as a longitudinally curved member having a further portion 3 thereof disposed substantially at right angles to the tongue plate 2 and held by the mouth gag 1.

The tongue plate 2 is arranged to be supported within the mouth of a patient so that the tongue plate 2 rests on the patient's tongue, and the tongue plate 2 can be situated centrally over the surface of the tongue and along the longitudinal line thereof, or the tongue plate 2 can be situated to one side of said surface or the other side of said surface while the tongue plate 2 is in use. Furthermore, the tongue plate 2 can be situated oblique to the longitudinal axis of the tongue while the tongue plate 2 is in use. The tongue plate 2 is curved convexly on its upper surface and concavely on its under surface (see FIGURES 1 and 3) to sit on the tongue of a patient (not shown) and the root part or neck portion 4 of the tongue plate 2, that is the part situated near the lips of the patient and at the tip of the patient's tongue when the tongue plate 2 is in position on the patient's tongue, is reduced in size to receive removable clip 5 for holding an anaesthetic tube 6 (see FIGURES 1, 2, 3 and 4) on the tongue plate 2. Furthermore, the width of the surface of the tongue plate 2 can be decreased progressively or tapered towards the neck portion 4 of the tongue plate (see FIGURES 2 and 4) so that splayed grooves or guides 7 of formed sides 8 (see FIGURES 6 and 8) of the clip 5 bind upon the tongue plate 2 and firmly hold the clip 5 on the tongue plate 2 with the anaesthetic tube 6 engaged by the clip 5 on the upper convex surface of the tongue plate 2 when the clip 5 is received on the reduced neck portion 4 and moved forwardly away from the reduced neck portion 4 and on to the tongue plate 2.

Furthermore, due to the progressive decrease in width of the tongue plate 2 from its distal or free end 9 to its reduced neck 4, movement of the clip 5 towards the end 9 is restricted and consequently the clip cannot be moved the full length of the tongue plate 2 and thus disengage by sliding off the end 9 thereof.

Where in this invention a tongue plate 2 carries an ether or anaesthetic intratracheal tube on its convex surface and is used with the mouth gag 1, a resilient anaesthetic intratracheal tube 6 such as shown in FIGURES 1 and 2 is held to the tongue plate by a modification in size of the clip 5 so that the curve of the ether or anaesthetic intratracheal tube 6 is accommodated to the curve of the clip 5. Where it is not possible to use a resilient intratracheal tube 6 a rigid anaesthetic tube 6 can be held to the tongue plate 2 by the clip 5 (see FIGURES 3 and 4) or a modification of the clip 5 carrying a rigid anaesthetic tube 6 fixedly joined to the clip 5, as shown in FIGURES 9, 10 and 11 can be attached to the tongue plate 2 for induction and continuance of an ether anaesthetic.

The splayed grooves or guides 7 of the clip 5 permit the clip 5 to be applied to the tongue plate 2 at the position of the reduced neck 4 from where the clip 5 can be slid or moved along the tongue plate 2 while the clip 5 is embracing and holding the anaesthetic tube 6 to maintain this tube 6 on the tongue plate 2 while the surgical instrument is in use, and in so doing the tube

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6 is held to the tongue plate 2 and the tube 6 passes down the tongue and through the larynx and into the trachea for the respiration of the patient.

Furthermore, the leading and trailing edges of the clip 5 are bevelled or chamfered and the sides 8 of the clip 5 are spoon shaped (as particularly shown in FIGURES 6, 7 and 8) to ensure that while the clip 5 is being moved along the tongue plate 2 and while in position thereon, the tongue of the patient will not be traumatised.

In such aforesaid arrangement provision is made for the tongue plate 2 to be placed to either side of the mouth so that the anaesthetic tube 6 is held away from the operating area; and the removable clip 5 forms an anchorage for the holding or anchoring of the resilient anaesthetic tube 6 by the removable clip 5 (as shown in FIGURES 1 and 2) to the tongue plate to approximal fixation or attachment so that such resilient tube 6 is held anchored to avoid kinking to ensure that the larynx of the patient is not injured, and at the same time the removable clip 5 by forming an anchorage enables the portion of a resilient anaesthetic tube 6 extending outwardly from the mouth of a patient to be moved to either side relative to the tongue plate 2 and mouth gag 1 without disturbing the portion of the said tube 6 leading to the trachea.

Thus the position of the anaesthetic tube 6 on the tongue plate 2 is a proximal fixation, that is one which is within approximately two inches of the right angled bend of the tongue plate 2 to ensure such a proximal fixation of the tube 6 and to eliminate risk of angular pressure or kinking of a resilient anaesthetic tube 6 in the glottis of the patient.

Furthermore, in the case of an emergency during use, the clip 5 can be moved back to the reduced neck portion 4 and easily and quickly removed from the tongue plate 2 so that the gag 1 can be repositioned in the mouth to complete the procedures and/or the anaesthetic tube 6 can be similarly removed as may be required by the operator according to circumstances.

Thus, there is provided a surgical instrument comprising the gag 1 and its tongue plate 2 having the clip 5 which holds the anaesthetic tube to ensure a clear air way past an anaesthetic tube 6 and whereby a patient can be given a light level of anaesthesia by way of the anaesthetic tube 6 throughout an operation.

Furthermore, the correct placing and the presence of the resilient or the rigid anaesthetic tube 6 in the larynx reduces the chance of aspiration of blood while ensuring good surgical access; and the area of operation is not seriously limited by the presence of the resilient or the rigid anaesthetic tube 6 in the mouth.

By this invention occasions will arise during procedures when the resilient or the rigid anaesthetic tube 6 has to be transferred to the other side of the patient's mouth, repositioning of the tongue plate 2 and gag 1 will often be done after removal of the first tonsil of the patient, and the clip 5 will be removed, anaesthetic connection is broken, and then replaced on other side and the gag 1 is repositioned and the clip 5 is replaced together with the tube 6 on the tongue plate 2.

The clips 5 and associated parts such as the tube 6 carried by the clip 5 shown in FIGURES 9, 10 and 11 may be accommodated for cleaning and sterilizing purposes on a holder (shown in FIGURES 12 and 13 and indicated by the arrow 10) having a cross formation with the arms 11 of the cross being tapered near their distal ends 12 and such distal ends 12 may be turned upwards (such as shown in broken lines in FIGURE 12) so that the clips 5 can be passed thereon and not easily slipped therefrom. The central part of the holder 10 is provided with a standard 13 and ring 14 whereby the holder 10 can be gripped and suspended as may be desired in sterilizing and storage ready for use.

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In a modification of the invention the clip 5 can be provided with a means for holding and handling the clip 5, and such holding means may be in the form of a lip or lug 15 (see FIGURES 12 and 13) extending out from and preferably in line with the curve of the clip 5 and the lip 15 indicates which way the clip 5 is to be put on the tongue plate 2 and also the surfaces of the lip 15 may be ridged or knurled to facilitate gripping the clip 5 while being applied or disengaged when in use.

In this invention, the removable clip 5 is made from a resilient material so that the clip can be sprung outwardly or inwardly in moving and gripping the clip 5 on the tongue plate 2.

By this invention provision is thus made for the use of clips 5 to hold oral intratracheal tube 6 so that intranasal intubation, with its attendant dangers, can be eliminated.

What I do claim and desire to obtain by Letters Patent of the United States of America is:

1. In an instrument for use in oropharyngeal surgery, a mouth gag adapted to enter a patient's mouth for holding the jaws apart, a tongue depresser plate including a first member connected to said mouth gag and a second member joined to and extending from the first member at substantially right angles thereto and terminating in a free end, said second member being adapted to enter the mouth for depressing the tongue, removable clip means mounted on said second member for sliding movement between the juncture of said first and second members and the free end of said second member, and an anesthetic tube held by said clip means on said second member in a desired position in approximal fixation.

2. The instrument as claimed in claim 1, wherein said anaesthetic tube is of resilient material.

3. The instrument as claimed in claim 1 wherein said anaesthetic tube is of rigid material.

4. The instrument as claimed in claim 1, wherein said anesthetic tube is fixedly secured to said clip means.

5. In an instrument for use in oropharyngeal surgery, a mouth gag adapted to enter a patient's mouth for holding the jaws apart, a tongue depresser plate including a first member connected to said mouth gag and a second member joined to and extending from said first member at substantially right angles thereto and terminating in a free end, said second member having a neck portion adjacent the juncture of the first and second members and diverging sides between said neck portion and said free end with said neck portion being of less width than the second member intermediate the neck portion and free end, said second member being adapted to enter the mouth for depressing the tongue, clip means including a tubular sleeve and longitudinally extending guides for cooperation with the diverging sides of the second member whereby the clip means is slidably mounted on said second member, and an anesthetic tube embraced by said tubular sleeve so that said clip means holds said tube on said second member with the movement of the clip means in the direction of the free end causing the guides to bind on the diverging sides for firmly holding said clip means and tube in a desired position while movement of the clip means to the neck portion permits the removal of the clip means and tube from said second member.

6. The instrument as claimed in claim 5, in which the leading and trailing edges of said guides are bevelled and said guides are spoon-shaped so that during movement of said clip means along said second member, the tongue will not be traumatized.

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