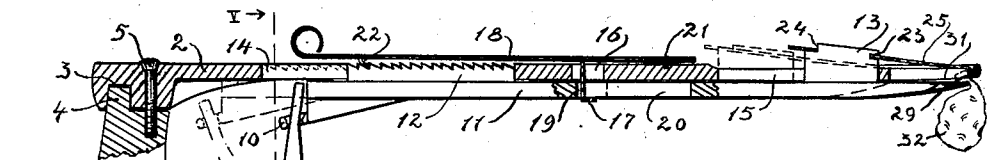
Jan. 25, 1938. J. T. MOORE 2,106,575

TONSILLOTOME

Filed Feb. 17, 1936



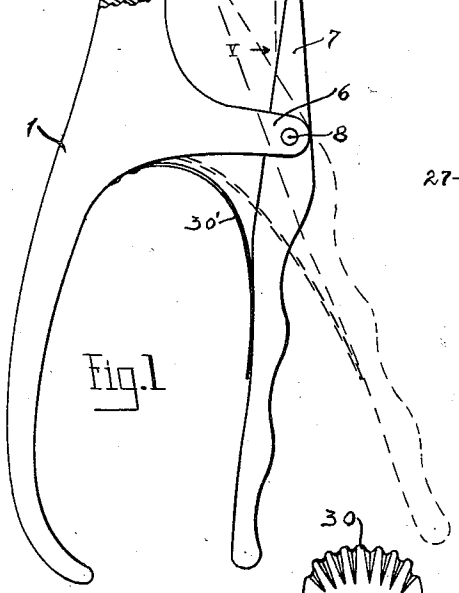


Fig.1

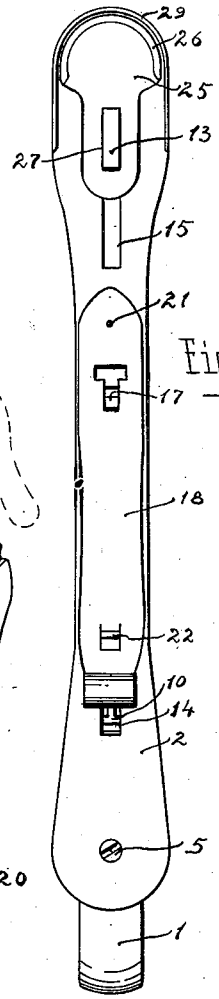


Fig.2

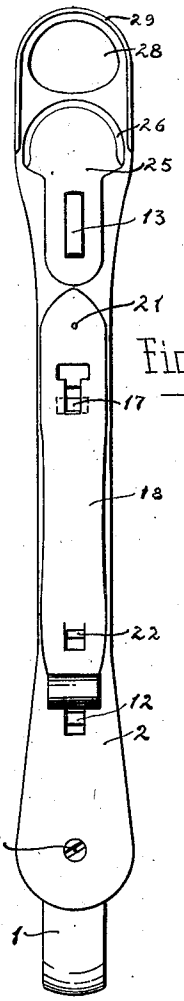


Fig.3

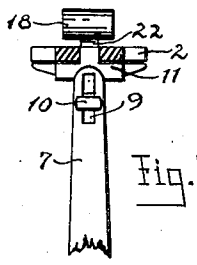


Fig.5

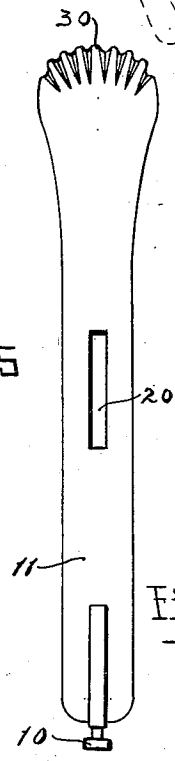


Fig.4

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TONSILLOTOME

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Application February 17, 1936, Serial No. 64,361

5 Claims. (Cl. 128—309)

This invention relates to surgical instruments of the type used for the removal of tonsils and it has for its primary objects the provision of a simple, inexpensive, and efficient instrument consisting of a small number of parts which are adapted for ready assembly for use, and which are equally readily taken apart for cleaning and sterilization. A further object of the invention is the provision of an instrument in which an inexpensive blade of the order of a safety razor blade may be used while it is sharp and then be discarded, the low cost of the blade rendering its replacement less costly than the time required for its sharpening.

Other objects of the invention will appear in connection with the description of a preferred embodiment of the invention chosen for purposes of illustration, though it will be evident that the invention does not consist in the exact details of construction shown but that many modifications may be made within the scope of what is claimed.

In the drawing, Figure 1 is a side elevation with parts in section showing the device with the cutting blade advanced to its forward limit of movement; Fig. 2 is a top plan view of the device with the blade in the same position as in Fig. 1; Fig. 3 is a top plan view of the same device with the carrier retracted to hold the blade in its inoperative position ready for use; Fig. 4 is a bottom plan view of the carrier member; and Fig. 5 is a fragmentary elevation with parts in section on the line V—V of Fig. 1, looking in the direction indicated by the arrows.

A handle member 1 has secured thereto at one end a guide member 2 which is shown as having a socket 3 near one end to receive a projection 4 of the handle, a screw 5 holding the two members securely together for ready separation.

A portion of the handle projects toward one side to serve as a fulcrum for a lever 7 pivoted at 8 between its ends upon the handle portion 6 and extending from the pivot to a point very close to the guide member 2. A slot 9 formed in the lever near its end has a length greater than its width to permit the introduction and withdrawal of the cross-bar 10 of a T-shaped end piece formed on a blade carrier 11, the cross-bar being of a length greater than the width of the slot, whereby when the end piece is introduced into the slot and turned at right angles or through any angle less than a half revolution, the ends of the cross-bar will engage the lever on each side of the slot if it is swung in a direction away from the sliding member 11, as is best shown in Fig. 5.

The blade carrier member 11 has a flat surface for engagement with the guide member 2, and from this flat surface project two lugs, of which the lug 12 has its outer or top surface formed with ratchet teeth directed rearwardly, and the lug 13 is adapted for holding a cutting blade. The ratchet lug 12 enters a slot 14 in the guide member 2 and the blade-holding lug 13 enters a slot 15 in the guide member. These slots are of any suitable width, and their longitudinal axes will be parallel to permit longitudinal sliding movement of the carrier 11, the end or ends of one or both slots acting as stops to limit the extent of sliding movement. Between the slots 14 and 15 is a slot 16 of greater length than width adapted for the passage of the cross-bar portion 17 of a spring 18 which may be formed by punching a T-shaped opening in the body of the spring, bending the stem portion 19 of the T at right angles to the body of the spring and bending the cross-bar 17 at right angles to the stem or parallel to the spring body. The stem 19 is of a length such that when the cross-bar 17 is passed through the slot 16 and through the slot 20 formed in the carrier member 11, which is opposite the slot 16 when the lugs 12 and 13 are in slots 14 and 15, the cross bar will lie outside of the lower surface of the carrier permitting the spring 18 to be swung lengthwise of the guide member 2, to bring the ends of the cross-bar 17 into engagement with the carrier on both sides of the slot. The spring 18 has a hole near one end to engage a stud 21 set in the upper surface of the guide member 2 to prevent longitudinal or swinging movement of the spring. The slot 20 is long enough to allow the carrier member 11 to slide through the entire extent of its travel without coming into contact with the stem 19. The spring 18 also has a portion struck up and bent forward to form a pawl portion 22 which is adapted to engage within the ratchet teeth on the lug 12, permitting the forward movement of the carrier member but preventing its return until the ratchet is disengaged from the pawl by lifting the adjacent end of the spring which may conveniently be formed in a roll to be grasped by the fingers of the operator.

The blade holding lug 13 has a notch 23 in its forward end at a short distance above the upper surface of the guide 2, and at the rear end has a shoulder 24 in substantially the same plane as that of the notch 23. A thin, flexible blade 25 having a cutting edge 26 on its rounded forward

end, is provided with a slot 27 of a length less than that of the lug 13 and only slightly longer than the distance from the inner end of the notch 23 to the front wall of the shoulder 24. The blade is flexible enough to permit it to bend down enough to enter the notch 23 when the slot is laid over the front end of the lug 13 and pressed downward. When the front end of the slot is opposite the notch, the blade can be slid backward into the notch, and the rear end of the slot will clear the top of the lug to drop onto the shoulder 24, which will prevent the blade from sliding forward out of the notch until the rear end of the metal strip forming the blade is lifted above the top of the shoulder. The blade will be dull on all edges except the curved front edge which will lie substantially parallel with the upper surface of the guide member, its bevel being sufficient to prevent actual engagement of the cutting edge with the metal of the guide.

In Fig. 3, the blade is shown in its inoperative position with the blade carrier retracted as indicated also in broken lines in Fig. 1. Just in advance of the cutting edge of the blade, the guide member is formed with an opening 28 of a size to admit the ordinary human tonsil, the forward curve of the opening and the front end of the guide member being made substantially concentric with the curvature of the cutting edge of the blade when in its extreme limit of forward movement. In sliding forward from the position shown in Fig. 3 to that shown in Fig. 2, the cutting edge will move parallel with the surface of the guide member 2 completely across the opening 28. The front and sides of the opening 28 are provided with a stepped rim 29 just out of contact with the cutting edge and forming a guard therefor. A spring 30, secured to the handle 1, engages the rear side of the lever 7, tending to cause it to swing toward the broken line position in Fig. 1 in which the blade carrier is retracted to the inoperative position shown in Fig. 3 with the cutting edge beyond the rear edge of the opening 28.

With the blade and carrier in the inoperative position and with the lever 7 swung forward to the broken line position of Fig. 1, the operator can insert the instrument into the mouth of a patient and press the rim 29 around the tonsil until it extends for a desired distance through the opening 28. The lever 7 may then be pulled toward the solid line position of Fig. 1, causing the blade carrier 11 to slide forward on the guide to move the blade 25 across the opening to slice off whatever portion of the tonsil projects beyond the plane of the cutting edge.

The front end of the blade carrier 11 is preferably made blunt with an undulating or notched edge as indicated at 30 in Fig. 4, and this blunt edge does not travel into contact with the rim 29 at the front edge of the opening 28, leaving a little space for a portion of the severed tissues to be squeezed between the carrier and the rim 29 beneath the cutting edge of the blade. The lower surface of the guide 2 opposite the opening 28 is also preferably formed with a slight curve to leave a space at 31 permitting the wavy edge of the carrier to grasp fibers of the part cutoff by the blade to hold it from dropping into the throat of the patient.

As the carrier moves forward, the pawl 22 rides up the inclined surfaces of the ratchet teeth on the lug 12, dropping down as each tooth passes, to prevent the spring 30 from retracting the blade carrier, thus automatically holding the carrier in the position to which it has been moved, so that it will not release the severed tonsil portion diagrammatically indicated at 32. The operator can release the pawl at will by lifting on the rolled end of the spring 18 to pull the pawl out of engagement with the ratchet tooth it is holding, whereupon the spring 30 will swing the lever 7 to retract the carrier 11 to its rearward limit of movement.

It will be seen that the carrier is held slidably on the guide by two resilient elements, the spring 18 and the blade 25, each of which can readily be released and removed. The blade 25 has a relatively narrow rear portion in which the slot 27 is cut, and this can easily be lifted off the shoulder to permit the blade to be slid forward out of the notch 23. The blade may be kept for cleaning, sharpening, and sterilizing, if desired, but its low cost obviates the necessity for such care, and it may be discarded like a used safety razor blade. Extra blades would be furnished already carefully sharpened, sterilized, and protected in individual holders ready for immediate use.

After removing the blade 25, the spring 18 may be disengaged from the stud 21 and the pawl 22 may also be lifted off the ratchet lug to free the spring for movement crosswise of the guide to bring the cross-bar 17 in alinement with the slots 16 and 20 through which the cross-bar may readily be removed. The carrier 11 is thus released from the guide and upon rotation through a quarter turn, the cross-bar 10 can be withdrawn from the slot 9 to free it from the lever 7. If desired, the screws 5 and 8 may be removed to separate the guide from the handle and the lever from the handle. Even the spring 30 may be removed by unscrewing the two screws that hold it on the handle. Thus every part is made accessible for thorough cleaning and sterilization and the reassembly is an easy and rapid task.

It will be evident to those skilled in the art that many changes in size, form, proportions, location of parts, and other details of construction may be made without losing the advantages of the invention or departing from the principles as claimed.

I claim:

1. A surgical instrument comprising a guide member having an opening formed therein and a slot extending therethrough, a blade-carrying member slidable upon said guide member and having a lug extending through said slot, and a thin flexible blade slidably engaging the guide and engaging the lug under tension to hold the carrier member in sliding contact with the guide member, the sliding movement of the carrier being sufficient to carry the cutting edge of the blade across the opening in the guide.

2. A surgical instrument comprising a guide member, a blade-carrying member adapted for sliding engagement with said guide member and having a T-shaped projection at one end, an operating lever bearing against said end of said carrier and having a slot near its end for the stem portion of the T-shaped projection, the cross-bar of the T-shaped projection bearing against the rear side of the lever, the dimensions of the slot and the cross-bar being such that upon release of the carrier from the guide member permitting movement of the carrier to bring the cross bar into alinement with the slot, the carrier can be disconnected from the lever.

3. A surgical instrument comprising a guide member having two slots extending therethrough, a carrier member having two lugs, one of said

lugs having a ratchet thereon and being adapted for sliding engagement with one of said slots, the other lug being adapted for holding a knife blade and for sliding engagement with the other of said slots, a pawl carried by the guide member for engagement with the ratchet on said lug to restrain sliding movement of the carrier member in one direction, and a knife blade carried by said blade-holding lug.

4. A surgical instrument comprising a guide member having two slots formed therein, a carrier member having two lugs, one having a ratchet formed thereon and slidably engaging one of said slots, the other of said lugs extending through the other of said slots and beyond the opposite surface of said guide member, a blade formed with a cutting edge and secured upon the said lug on the surface of the guide member remote from the carrier member, and a securing member having a pawl portion adapted for engagement with the ratchet on said lug and having another portion engaging the carrier member to hold the lugs within the slots.

5. A device as in claim 4, in which the blade is flexible and engages the lug and the carrier member under tension to draw the carrier member toward the guide member.

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