

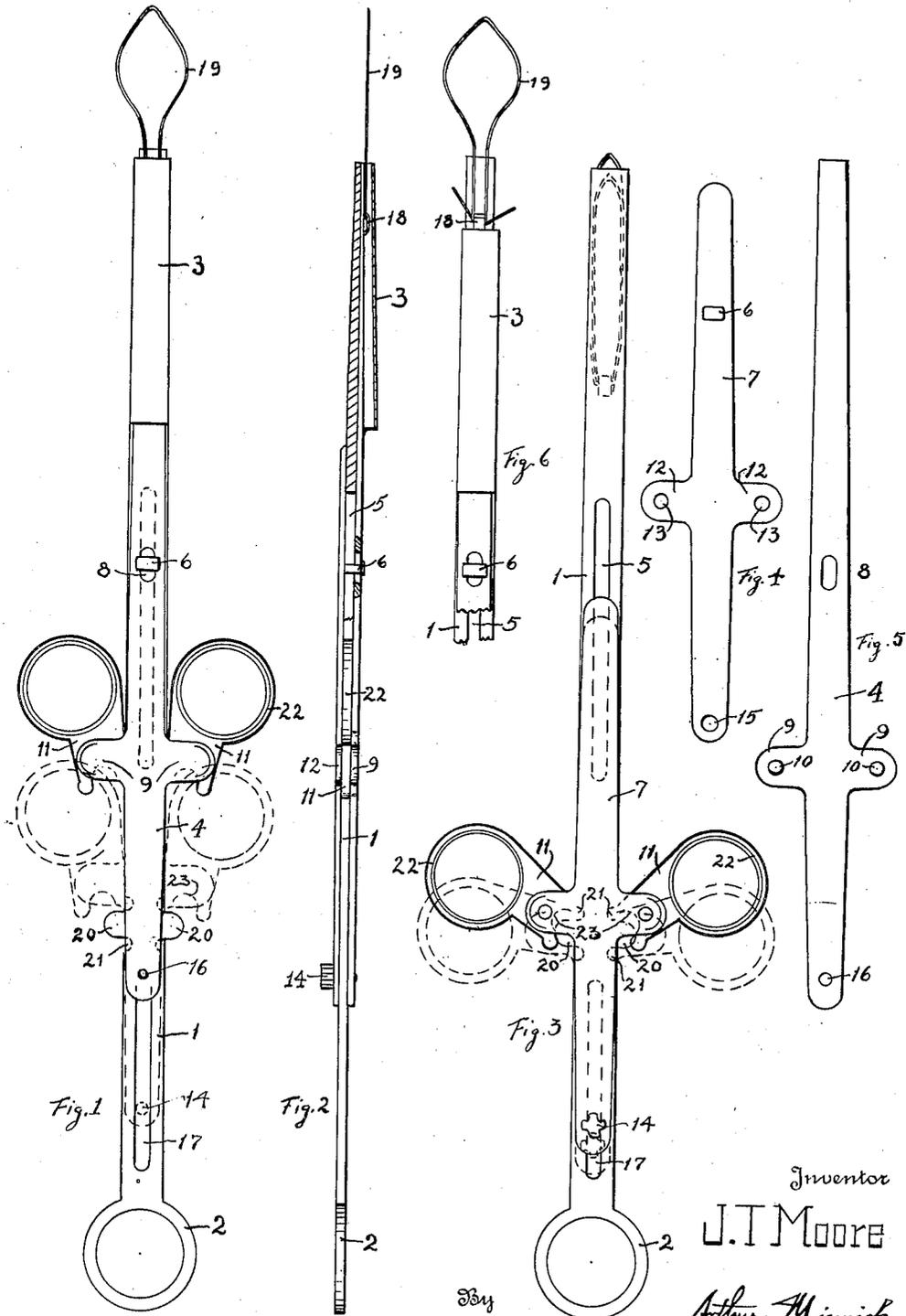
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TONSILLOTOME

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TONSILLOTOME

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5 Claims. (Cl. 128—320)

This invention relates to surgical instruments of the snare type for removal of tonsils.

The primary object of the invention is to provide an improved and simplified form of the construction shown in my application Serial No. 152,923 and to adapt it for use with a loop of wire instead of a snare of sheet metal.

A further object of the invention is to provide an improved pivotal mounting for the levers which are brought into operation at the time of greatest resistance to the crushing action of the snare.

A still further object is to provide a means for attachment of the wire forming the loop which will prevent its detachment by any forces which may be applied while using the instrument, but which will readily be made accessible to the operator without taking the instrument apart. Other objects will appear in connection with the description of a preferred embodiment of the invention illustrated in the accompanying drawing, in which Figure 1 is a top plan view of the device showing the snare bar and snare loop in extended position in full lines and partly retracted in broken lines; Fig. 2 is a side view of the device as seen from the left in the full line position of Fig. 1, with parts in section; Fig. 3 is a bottom plan view showing, in full lines, the levers swung outwardly on their pivots as the wire loop is drawn into its guideway in the counterpressure bar to the point of greatest resistance and showing in broken lines, another position of the levers in which the loop has been drawn down fully into its guideway; Fig. 4 is a top plan view of the clip used to hold the snare bar upon the counterpressure bar for sliding movement; Fig. 5 is a bottom plan view of the snare bar; and Fig. 6 is a fragmentary view of the outer ends of the snare bar and counterpressure bar with the snare bar extended outward from the guideway to remove or replace the wire used to form the snare.

A counterpressure bar 1 has at one end a thumb loop 2 and at the other end, a guideway 3 for the end of a snare bar 4. Near its middle, the bar 1 has a slot 5 to permit longitudinal movement therein of a T-shaped lug 6 on a clip 7. The snare bar 4 has a short slot 8 near its middle through which the head of the lug 6 can be passed when the bar 4 is at right angles to the clip 7.

Placing the outer end of the snare bar within the guideway 3 with the slot opposite the slot 5, the head of the lug 6 is passed through the slot 5 and through the slot 8 and the clip is then rotated a quarter turn to bring it into alinement with the

bar 1. The snare bar 4 has oppositely extending arms 9, each provided with a pivot 10 to receive a lever 11, and the clip 7 has corresponding arms 12 each having a perforation 13 for one of the pivots 10. When the clip lies lengthwise of the bar 1, the perforations 13 will register with the pivots 10 and can be sprung upon their ends, the clip being flexible and elastic. A screw 14 passing through a perforation 15 near the end of the clip 7 engages a threaded perforation 16 in the snare bar 4.

The sliding movement of the snare bar is limited by engagement of the screw 14 with the ends of a slot 17 in the bar 1. The slot 5 is longer than the slot 17. In the full line position of the snare bar in Fig. 1, the screw 14 is at the forward end of the slot 17 but the lug 6 is not at the front end of the slot 5, and the snare bar projects only a short distance beyond the end of the guideway 3. If the screw 14 is taken out of the slot 17, without disconnecting the clip from the pivots 10, the lug 6 can move forward in the slot 5 until the end of the snare bar projects out from the guideway to the position shown in Fig. 6. There is no disconnection of the clip from the snare bar during this operation and the parts remain held securely together.

A loop 18 is struck up from the bar 4 at a point just beyond the outer end of the guideway 3 in Fig. 6 to permit the passage of the ends of a wire 19, the size of the loop formed by the wire being readily adjusted before the withdrawal of the snare into its guideway. When the ends of the wire are bent close to the loop 18, the free end portions will be left shorter than the distance to the outer end of the guideway in the position shown in Fig. 1 so that they will not project out of the guideway to interfere with the loop. No pull exerted upon the wire loop will be sufficient to cause the ends of the wire to be drawn out of the loop 18 when in use, but in the extended position shown in Fig. 6, the ends of the wire can bend down to make removal and replacement very easy.

In the full line position in Fig. 1, the wire loop 19 is open ready to be placed around a tonsil dissected loose in the ordinary way from the anterior pillar. The loop is then drawn into the guideway by sliding the snare bar 4 along the counterpressure bar 1 until the inner ends of the levers 11 engage lugs 20 formed on the sides of the bar 1. During this sliding movement, the inner ends of the levers bear against the sides of the bar 1 and cannot swing outward on the pivots 10, 55

but on each side of the bar adjacent to the lugs 20 are recesses 21 which permit inward movement toward the bar 1 of the lower ends of the levers and outward movement of the finger loops 22 formed in the levers as shown in full lines in Fig. 3. A notch 23 in the lower end of each lever is of sufficient depth and size to permit the levers to swing outward around the lugs 20 as indicated in broken lines in Fig. 3.

It will be seen that with the levers in the full line position, the loop 19 is of a size to constrict the fibers of the tonsil to compress and crush them. At the point of greatest resistance, the leverage becomes greatest, enabling the operator to sever the crushed fibers completely as the loop is drawn fully into the guideway.

The pivots 10 are secured firmly at one end in the arms 9 of the snare bar and at their other end are held within the perforations 13 in the arms of the clip 7. Outward movement of the pivots away from each other is thus resisted at both ends of each pivot, making a strong construction while permitting easy and rapid assembly and taking apart. Only one screw is used, and this screw 14 is easily put in place and removed by the fingers, no tools being needed. The assembly has a counterpressure bar, a snare bar, a clip, two small levers, a wire loop and a thumb screw, seven parts in all. It can readily be cleaned and sterilized. It is light, inexpensive to make, and highly efficient.

Many changes in form, size, proportion of parts, and details of construction may be made by those skilled in the art without departure from the invention as claimed.

I claim:

1. A surgical instrument comprising a counterpressure bar, a snare bar slidably mounted thereon, a clip engaging the snare bar to hold it upon the counterpressure bar, levers pivotally connected with the snare bar and engageable with the counterpressure bar to cause relative longitudinal movement of the two bars, and pivots for the levers supported by the snare bar and by the clip.
2. A surgical instrument comprising a counterpressure bar, a snare bar, a clip engaging the snare bar to hold it upon the counterpressure bar, the clip and the snare bar each being formed with

lateral arms for pivots extending from one to the other and supported at their ends thereby, and levers mounted on the pivots and engaging the counterpressure bar to cause relative longitudinal movement of the two bars.

3. A surgical instrument comprising a counterpressure bar provided with a guideway for a snare and snare bar, a snare bar slidably mounted upon the counterpressure bar and having one end within the guideway, means for normally limiting the sliding movement of the snare bar within the guideway but releasable to permit further movement of the snare bar out of the guideway to a point at which the snare may be attached thereto.

4. A surgical instrument comprising a counterpressure bar provided with a guideway and two slots of unequal length, a snare bar slidably mounted upon said counterpressure bar and having a snare secured thereto, an element detachably secured to the snare bar and slidable within the shorter of said slots for engagement with the ends thereof, the slot being of sufficient length to permit withdrawal of the snare into the guideway at the inner limit of its sliding movement and to permit partial projection of the snare from the guideway at the outer limit of its sliding movement, and an element connected with the snare bar and slidable within the longer of said slots, the said longer slot permitting complete projection of the snare from the guideway at the outer limit of its sliding movement.

5. A surgical instrument comprising a counterpressure bar having a guideway for a snare bar, a snare bar slidably mounted upon the counterpressure bar and having one end normally within the guideway during its entire sliding movement, the portion within the guideway having a loop formed thereon through which the ends of a wire may be passed when the loop is out of the guideway, and releasable detent means to prevent accidental projection of the securing loop out of the guideway, the arrangement being such that when the snare bar is drawn into the guideway, the ends of the wire are bent around the loop and held within the guideway in bent position during the operative sliding movement of the snare bar.

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