

No. 650,496.

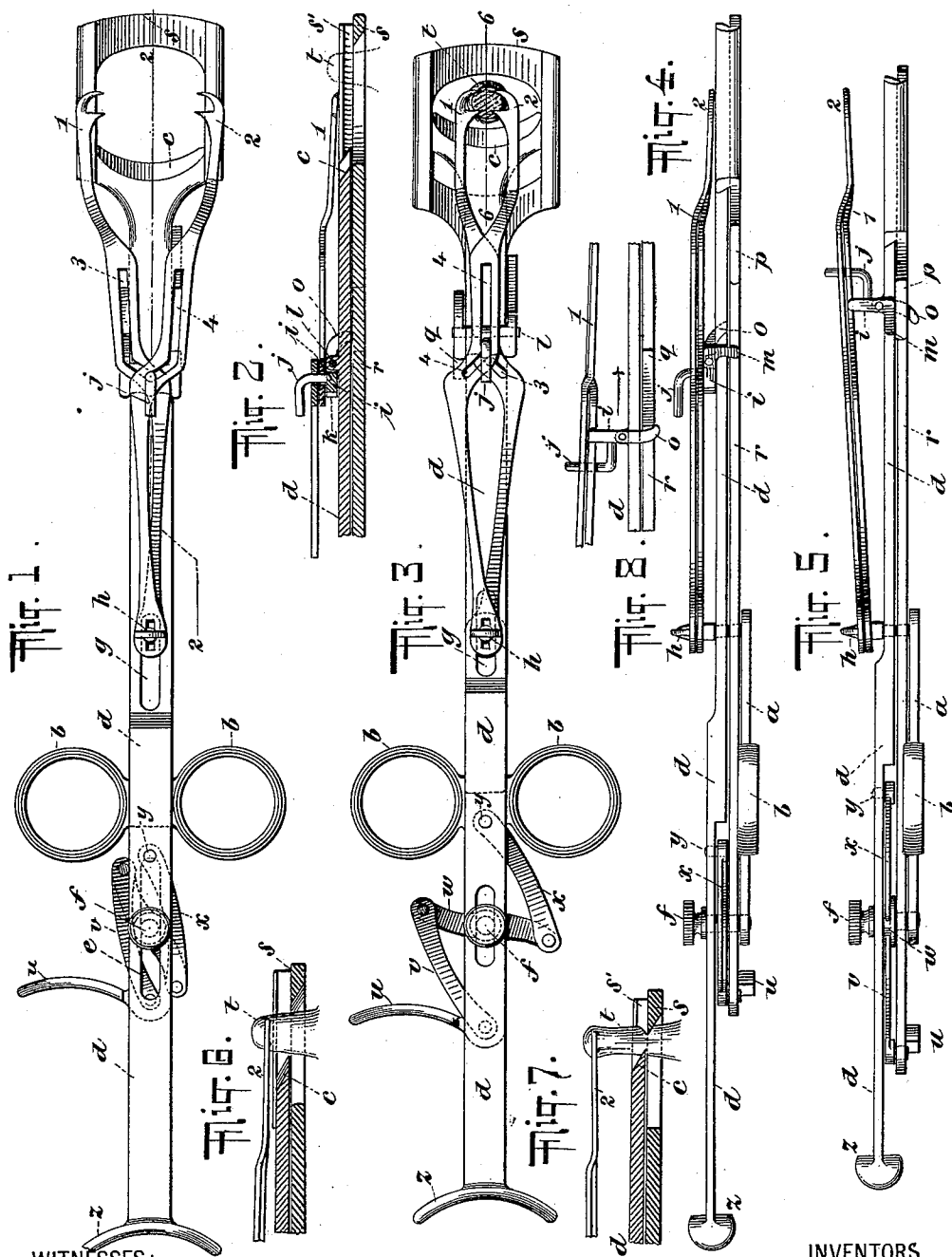
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F. A. STOHLMANN & L. G. PFARRE.

TONSILLOTOME.

(Application filed May 18, 1899.)

(No Model.)



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TONSILLOTOME.

SPECIFICATION forming part of Letters Patent No. 650,496, dated May 29, 1900.

Application filed May 18, 1899. Serial No. 717,249. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK A. STOHLMANN and LOUIS G. PFARRE, residents of the city of New York, borough of Brooklyn, county
5 of Kings, and State of New York, have invented certain new and useful Improvements in Tonsillotomes, of which the following is a specification.

Our invention relates in general to surgical
10 instruments for excising organs or growths located in the hollow parts of the body which are not readily accessible to the ordinary surgeon's knife or scalpel.

In the accompanying drawings we have
15 shown our invention as embodied in a tonsillotome, although it is not limited thereto.

The essential features of our invention will be pointed out in the claims.

In the drawings, Figure 1 is a plan view of
20 the instrument, showing the parts in their normal position. Fig. 2 is a longitudinal section of the front or forward portion of the instrument, the said section being taken on the line 2 2 of Fig. 1. Fig. 3 is a plan view
25 of the instrument, showing the parts partly collapsed and in the positions which they assume at about the instant that the tonsil (represented at *t*) is seized by the jaws. Fig. 4 is a side view of Fig. 1. Fig. 5 is a side view
30 of the structure, showing the tonsil lifting or stretching jaws or lifting device raised, and when the parts are in this position the tonsil is distended ready to be cut. Fig. 6 is a section of the forward part of the instrument on
35 the line 6 6 of Fig. 2. Fig. 7 is a vertical transverse section of the forward part of the instrument with the parts in the position shown in Fig. 5 or with the blades a little nearer each other to show the beginning of the cutting operation. Fig. 8 is a fragmentary side
40 view of the device for restoring the tonsil-lifting device to its initial position, the direction of view being opposite to that of Fig. 2.

The device shown in the drawings comprises
45 means for seizing or piercing a tonsil or other part and lifting the same by a substantial straight upward pull, thereby distending the part, and thus facilitating the work of the cutting-blades. Means are provided whereby
50 the cutting-blades execute their entire cutting movements toward each other longitudi-

nally of the instrument and whereby the cutting is completed beneath the tonsil-lifting device, so that the strain upon the tonsil will be substantially at right angles to the line of
55 movement of the blades and the blades will come together along the line where the strain occurs, so that while the tonsil is put under strain the pull exerted will be a straight pull substantially at right angles to the cut of the
60 knives.

We do not claim to have been the first to produce in a surgical instrument of this character a tonsil-lifting device having a straight
65 pull, but in instruments heretofore devised, so far as we are aware, the cutting-blades do not effect the severing of the tonsil at the point beneath the lifting device, but the severing occurs at a slight distance from the said
70 lifting device, whereby the tonsil during the cutting operation is subjected to a lateral or diagonal strain. In our device, however, the tonsil is given a substantially-straight lift and the jaws approaching from opposite di-
75 rections under the tonsil meet at a point substantially in the line of strain on the tonsil exerted by the lifting device, which mode of operation is very effective to efficiently carry out the surgical operation in the best manner.

The operating parts of the structure shown
80 in the drawings will be described and then their interactions will be set forth *seriatim*.

In the drawings, *a* represents the stationary body portion of the device. This stationary body portion is shown as a bar provided
85 with finger rings or pieces *b*, secured rigidly thereto. The upper cutting-blade *c* is carried upon an operating bar or slide *d*, which is slotted at *e* for the passage of a pivot-screw *f*, carried by the stationary bar *a* and also
90 slotted at *g* for the passage of another pivot-screw *h*, likewise carried by the stationary bar *a*. The operating-bar *d*, likewise carries pivoted thereto a block *i*, having a guide-finger *j* and a cam-face *k*. The block *i* is piv-
95 oted at *l* on the slide *d* and is provided with a pair of levers *m o*, which coöperate, respectively, with abutments *p q* on opposite sides of a slide *r*, which carries the lower blade *s*. It will be observed that the upper blade *c*
100 slides in the grooves *s'* at the sides of the lower blade *s*. The bar *r* is provided with

the rigid operating-handle *u* at its rear end and is pivoted to a link *v* of a lazy-tongs, the middle lever or link *w* being pivoted on the pivot-screw *f* and pivoted to a third link *x*, which is pivoted by the pivot *y* to the slide or bar *d*, which operates the upper blade.

It will of course be understood that the lower slide *r* is appropriately slotted for the passage of the pivot-screw *f*. The means just described, are with the exception of the swinging plate or block *i*, whose function will be explained later, the parts which operate to effect the reciprocal movement of the knives. The operation of these parts will now be described. If the middle and index fingers be placed in the finger-rings *b* and the rear end or operating handle or piece *z* of the sliding bar *d* pressed against by the root of the thumb or what is otherwise known as the "fork" of the hand, the slide *d* will execute a forward movement, carrying the upper blade *c* forward. The slide *d* as it moves forward will, by means of the pivot *y*, pull upon the link *x*, thereby swinging the centrally-pivoted link *w*, which, as before mentioned, is pivoted in the stationary bar *a*, and thereby forcing the link *v* to the rear, which link *v*, being pivoted to the bar *r*, connected to the blade *s*, will cause the said blade to move toward the oncoming upper blade *c*, so that pressure upon the crutch *z* will effect a reciprocal movement of the blades by which the cutting is effected. The blades may be restored to their initial positions by removing the thumb from the crutch *z* and placing it upon the collapsing handle *u* and pressing forward, whereupon the lazy-tongs will be collapsed and the blades will be separated, the two blades moving away from each other. It will be seen that both handles *u* and *z* execute their movements in substantially the lines in which the slides and blades move, thereby exercising a direct stress upon the lazy-tongs.

The device for producing the pull or lift on the tonsil will now be described. This device in the present instance is shown as consisting of a pair of resilient tongs 1 2, pivoted to the screw or pivot *h*, carried by the stationary bar *a*. It will be understood that the bars *d* and *r* are both slotted for the passage of this pivot, the slot of the upper bar being shown at *g* in Fig. 1 and the slot in the lower bar *r* lying immediately beneath the slot *g* in the upper bar. These tong members 1 2 are provided with angular slots 3 4, through which the angular pin *j*, carried by the swinging block *i*, passes. The tongs 1 2 are adapted to be raised by the cam-face *k* when the said cam first is brought against the said tongs by the upward swing of the block *i*. The operation of the lifting or stretching device is as follows: As the slide *r* moves to the rear and the slide *d* moves forward the arm *m*, carried by the pivoted block *i* on the slide *d*, and the abutment *p*, carried by the lower slide *r*, come in contact, and as the slide *d* continues to move forward and the slide *r* to be retracted the

block *i* will be thereby swung on its pivot *l* and will raise the tongs 1 2, which have at this time been closed by the forward movement of the pin *j* in the angular slots 3 4 of the said tongs. The successive positions of the block, tongs, and pin may be seen by an inspection of Figs. 1, 3, 4, 5, and 7. After the tonsil has been severed the knives are restored to their initial position in the manner above pointed out, and as the slide *d* is retracted and the slide *r* moves forward the abutment *q*, carried by the lower slide *r*, and the lever *o*, carried by the swinging block *k*, will come in contact, and thereby as the parts continue to move restore the block *i* to its initial position (shown in Figs. 2 and 5) and opening the jaws 1 2 of the tongs by the movement of the pin *j* in the angular slots 3 4 of the said jaws or tongs.

It will be understood that the entire operation of the device is as follows: As the blades move toward each other the jaws or tongs 1 2 grip the tonsil between them. A lifting motion is then imparted to the jaws or tongs, whereby a straight pull is brought on the tonsil, the blades continuing to move toward each other and finally effecting the severance or excision of the tonsil at a point lying beneath the jaws 1 2 and substantially along the line of pull exerted by the said jaws. These actions can be followed out successively by observing Figs. 1, 2, 3, 6, and 7.

Having described our invention, what we desire to secure by Letters Patent is—

1. In a surgical instrument of the character described, the combination with a plurality of cutting-blades of a tonsil lifting and engaging means with means for actuating the same comprising a swinging block or plate and cam means operated upon by the knife-moving parts for effecting a raising and lowering of the tonsil lifting and engaging means.

2. In a surgical instrument of the character described, the combination with cutting-blades of pivoted slotted tongs adapted to grasp or engage the tonsil, the slots of the said tongs intersecting each other and a pin entering the said slots and adapted to effect the movement of said tongs.

3. In a surgical instrument of the character described, the combination of cutting-blades one of which is movable, a plurality of pivoted slotted tongs adapted to grasp or engage a tonsil and a pin carried by a part moving in harmony with the movable blade and entering the slots of the slotted tongs to operate the same.

4. In a surgical instrument of the character described, the combination of movable cutting-blades, a pair of pivoted slotted tongs adapted to grasp or engage a tonsil, slots in the tongs intersecting each other and a swinging pin *j* of a bent or curved character for actuating the said tongs.

5. In a tonsillotome, the combination of a body, a plurality of movable slides operating

suitable blades and a lazy-tongs connected to the slides and the body and effecting relative movement of the blades and an operating-handle for the lazy-tongs adapted to be moved in the direction of movement of one of the slides.

6. In a tonsillotome, the combination of a plurality of slides moving in opposite directions in a right line, moving blades operated thereby and a lazy-tongs arrangement for effecting the movement of the slides simultaneously having a handle executing its movement in, or substantially in, the line of movement of the slides.

7. In a tonsillotome a combination of a plurality of blades with means for moving the said blades toward each other in a single plane and in a straight line; a pair of tongs adapted to seize a tonsil and means carried by one of the moving blades for closing the said tongs toward each other.

8. In a tonsillotome the combination of a plurality of blades one at least of which is movable; a lazy-tongs arrangement for effecting a cut of said blades and so connected with the said blades as to cause the blades to effect their cut as lazy-tongs is being extended, an independent means acting in the direction of movement of a blade for closing the said lazy-tongs to restore the parts to their initial positions.

9. In a tonsillotome a combination of cutting-blades and tongs for seizing a tonsil with a pin-and-slot arrangement for operating the said tongs the pin whereof is carried upon a swinging block carried by one of the blade-operating means.

10. In a tonsillotome, the combination of a plurality of cutting-blades, one at least of which is movable and a lazy-tongs for operating the said movable blade and a handle for operating the lazy-tongs, the said handle being adapted to be moved in a direction opposite to the direction of movement of the movable blade.

11. In a tonsillotome, the combination of a body, a lazy-tongs comprising a link pivotally secured to the body and a plurality of links each pivotally secured to the first-men-

tioned link, a plurality of slides operating cutting-blades which slide, pivotally secured to one of the last-mentioned links and an operating-handle adapted to be moved in the direction of movement of one of the said slides.

12. In a tonsillotome, the combination of a body, a plurality of freely-movable slides carrying cutting-blades, a lazy-tongs adapted to actuate at least one of the slides, an operating-handle for the lazy-tongs adapted for movement in the general line of movement of the movable blade, a plurality of tonsil-engaging jaws pivotally carried by the body and means for actuating the said jaws by the movement of one of the slides.

13. In a tonsillotome, the combination of a plurality of movable blades, a lazy-tongs for effecting the movement of the said movable blades, an operating-handle for the lazy-tongs adapted to extend the said lazy-tongs and arranged to be moved in the direction of movement of one of the said blades and a collapsing-handle collapsing the said lazy-tongs, movable in the same direction as the movement of the operating-handle.

14. In a tonsillotome, the combination of a plurality of cutting-blades, one at least of which is movable, a lazy-tongs for moving the said movable blade, an operating-handle for the said lazy-tongs arranged to be moved in the general line of movement of the movable blade and a restoring-handle for the lazy-tongs having its operating movement in the same direction as the movement of the operating-handle.

15. In a tonsillotome, the combination of a body *a*, a plurality of blade-operating slides *d r*, a link or lever *w* pivotally secured to the body intermediate of its ends and links *v x* pivotally connected to the lever *w* and the slides *r d* respectively, and means for extending and collapsing the lazy-tongs constituted by the lever *w* and the links *v* and *x*, substantially as set forth.

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Witnesses:

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