

No. 712,989.

Patented Nov. 4, 1902.

W. E. WASHBURN.
ELECTRIC CAUTERY.

(Application filed Sept. 8, 1902.)

(No Model.)

Fig. 1.

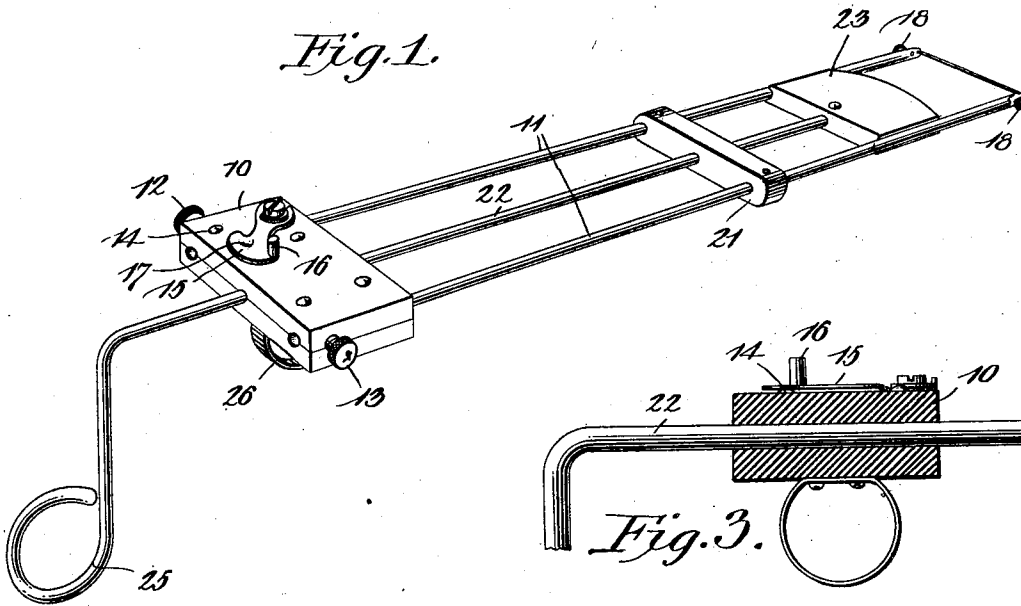


Fig. 3.

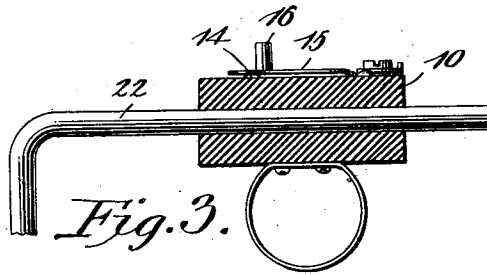


Fig. 4.

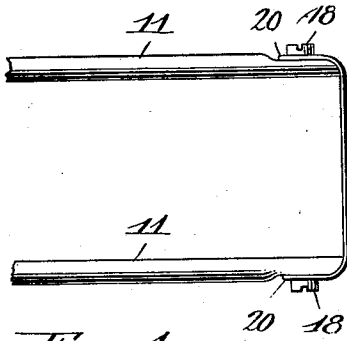


Fig. 2.

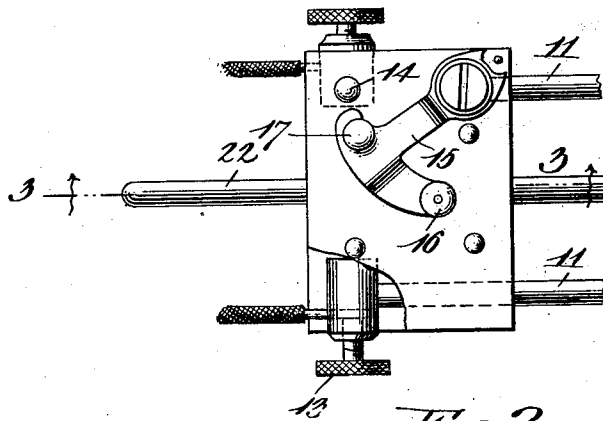
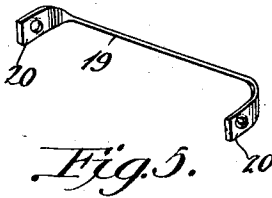


Fig. 5.



Witnesses
E. H. Stewart
John C. Parker

W. E. Washburn, Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM E. WASHBURN, OF CEDAR RAPIDS, IOWA.

ELECTRIC CAUTERY.

SPECIFICATION forming part of Letters Patent No. 712,989, dated November 4, 1902.

Application filed September 8, 1902. Serial No. 122,591. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. WASHBURN, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Electric Cautery, of which the following is a specification.

The invention relates to certain improvements in electric cauteries, and more especially to that class of devices employed in tonsilotomy, and has for its principal object to provide an effective instrument of simple construction which may be employed as a tonsilotome or, with suitable modifications in shape and size, for excising tumors and other growths.

A further object of the invention is to construct an instrument which may be operated by one hand, the movable portions of the instrument and the switch controlling electric current being so arranged that the surgeon may operate the device by the thumb and second finger, while the forefinger controls the current.

A still further object of the invention is to provide an instrument in which the cutting-knife may be evenly heated throughout its length, and thus prevent burning out or fusing at the ends of the knife or its connections.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of an electric cautery constructed in accordance with my invention. Fig. 2 is a plan view of a portion of the same. Fig. 3 is a longitudinal sectional elevation of the head-block of the instrument on the line 3 3 of Fig. 2. Fig. 4 is plan view illustrating the knife and its supporting-rods. Fig. 5 is a detail perspective view of the knife detached.

Similar numerals of reference are employed

to indicate corresponding parts throughout the several figures of the drawings.

In the drawings, 10 designates a head-block formed of vulcanized fiber or of similar non-conducting material and serving as a support for a pair of parallel rods 11, formed of conducting material. At opposite sides of the head-block are binding-posts 12 and 13, having openings for the reception of current-conducting wires leading from any source of electrical energy, the binding-post 13 being connected directly to one of the rods 11, while the second binding-post 12 is connected to a switch-point 14. Mounted on the upper side of the block is a switch 15, having a suitable operating knob or handle 16 electrically connected to one of the conducting-rods 11. This switch may be moved by the forefinger of the operator into contact with the switch-point 14 to close the circuit through the instrument, and for purposes of convenience the switch is preferably provided with an indentation 17 in order that it may be properly held in engagement with the switch-point 14.

The outer ends of the rods are slightly flattened or recessed and provided with threaded openings for the reception of screws 18, which serve to hold the ends of the knife in place. The knife is formed of a small piece of platinum wire secured to or formed integral with perforated end plates 20, which are secured in place by the screws 18, the construction being such as to permit of the ready removal of a broken or injured knife when necessary. The two conducting-rods 11 are connected together by a cross-bar 21, formed of non-conducting material and serving to strengthen and brace the rods and reduce the strain on the knife.

Both the head-block and the block 21 are provided with openings to receive and guide a longitudinally-movable bar 22, having at its outer end a knife or cutter-block 23, formed of non-conducting material and provided at its opposite edges with grooves for the reception of the side bars 11, the block being thus held in place as it is moved toward and from the knife. The outer end of the bar 22 is bent downwardly and at its extreme end turned to form a ring or loop 25 for the reception of the thumb of the op-

erator, and a second ring or loop 26 is secured to the under side of the head-block for the reception of the second finger of the operator.

In using the device the thumb is placed in the ring 25 and the second finger of the same hand in the ring 26, leaving the forefinger free to actuate the switch. The knife-block is drawn back from the knife and the instrument placed in position, with the tonsil between the knife and block, the knife being drawn down firmly on the tonsil and compressing or flattening the same, so that the tonsil is practically in contact with the full length of the knife. The switch is then closed, the current heating the knife and the knife-block being gradually pressed toward the knife until the tonsil is severed.

By placing the tonsil in contact with the whole length of the knife the latter is equally moistened throughout its length and all parts of the knife will be heated to an equal extent, preventing burning out or injury to the knife from unequal heating at different points in its length.

The instrument is of simple construction, may be easily adjusted and operated, while the wound is immediately cauterized and quickly heals.

Having thus described my invention, what I claim is—

1. An electric cautery comprising a knife adapted to be heated by an electrical current, current-conducting rods supporting said knife, and a movable knife-block guided by the rods.

2. An electric cautery comprising a pair of current-conducting rods, a block of non-conducting material supporting the same, a knife connecting the outer ends of the rods and

adapted to be heated by an electrical current, and a movable knife-block guided by said rods.

3. An electric cautery comprising a knife-support, a knife detachably secured thereto, and a knife-block movable toward and from said knife.

4. An electric cautery comprising a pair of conducting-rods, a block of insulating material secured to said rods, a switch carried by the block, a knife secured to the outer ends of the rods, a knife-block guided on said rods, and an operating-rod secured to said knife-block.

5. The combination in an electric cautery, of the head-block, binding-posts carried thereby, a pair of metallic rods carried by the block, one of said rods being secured to one of the binding-posts, a switch carried by the block and serving to connect the opposite rod to the second binding-post, a detachable knife connecting the outer ends of the rods, a knife-block of insulated material guided on said rods, an auxiliary block connecting the rod, a knife-block-guiding rod adapted to openings in the head-block and the auxiliary block, and finger-engaging rings carried by the end of said rod and by the head-block.

6. An electric-cautery knife comprising a section of wire of a metal of high resistance, and perforated plates secured at the opposite ends of said wire.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. WASHBURN.

Witnesses:

LOUIS WOKONN,
J. M. DINWIDDIE.