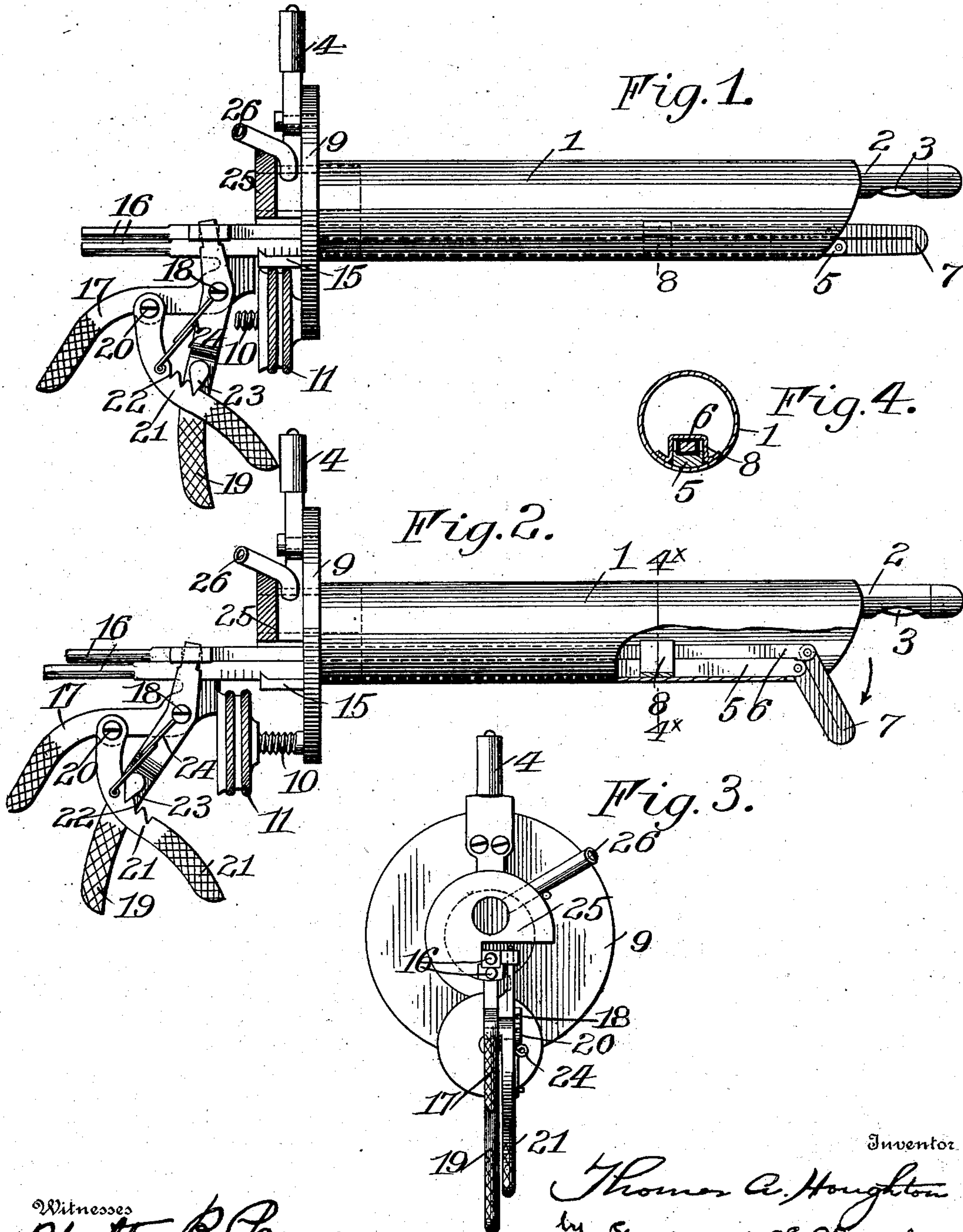


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T. A. HOUGHTON.
SURGICAL INSTRUMENT.
APPLICATION FILED APR. 17, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS A. HOUGHTON, OF ROCHESTER, NEW YORK, ASSIGNOR TO
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SURGICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 749,689, dated January 12, 1904.

Application filed April 17, 1903. Serial No. 153,017. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. HOUGHTON, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Surgical Instruments; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to surgical instruments, and particularly to that class known as "cauteries;" and it has for its object to provide a device that shall be simple and compact, adapting it particularly for internal operations not plainly visible to the operator, and to this end my invention has for its further object to provide means for setting the cutting instrument or knife-blade and operating it accurately after it has been arranged in operative position.

To these and other ends my invention consists in certain improvements and combinations of parts, all as will be fully described, and the novel features pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a side elevation of an instrument constructed in accordance with my invention. Fig. 2 is a similar view illustrating the operation of the device. Fig. 3 is a rear elevation, and Fig. 4 is a cross-sectional view on the line 4^x 4^x of Fig. 2.

Similar reference-numerals in the several figures indicate similar parts.

The surgical instrument which I have invented and will describe further in detail is one adapted particularly for performing operations within cavities or inclosed portions of the human body, and it is designed for use in such operations as prostatectomy, or the incising of a portion of the prostate gland.

The instrument consists of a body portion or sheath 1, preferably circular in cross-section and which is adapted to contain in addition to the knife-blade and operating parts a sight-tube 2, adapted to receive a properly-constructed periscope containing a lens system,

whereby the parts to be operated upon may be carefully inspected. Arranged at the inner end of the tube is a small incandescent lamp 3, by means of which the internal cavity may be illuminated, the wires for the lamp being insulated and concealed within the body or sheath and connected to a terminal head 4, adapted to receive the conductors leading from a suitable generator or battery, as will be understood. Arranged at one side of the body is a bar or member 5, having its upper surface provided with a slight recess or channel in which is guided an insulated and relatively movable bar or member 6, and pivotally attached at the inner ends of said bars or members is a cutting instrument in the form of a knife-blade or cautery-electrode 7. The latter in its normal position extends in alignment with the bars, and its points of pivotal connection with the latter are formed at unequal distances from the end of the blade, as shown in Figs. 1 and 2. The journal-point with the bar 5 being arranged in advance of its point of connection with the bar 6, it will be seen that when the latter is moved relatively to the former the blade will be operated at an angle to the body or sheath 1 and projected at one side thereof.

8 indicates a guide arranged in the body and extending over the bars to hold them adjustable therein.

The rear end of the body is provided with an annular face plate or flange 9, and arranged thereon is a threaded stud or projection 10, provided with a nut 11, adapted to engage a projection or abutment, whereby the members may be moved relatively longitudinally in the sheath, and to enable an operator to judge the distance through which the knife-blade is moved by the nut a scale is arranged upon the bar 5, and cooperating therewith is an index-finger 15.

The blade 7 may be an ordinary knife-blade having finely-sharpened edges, or, as is preferable in instruments of this kind, the knife may be formed of platinum and constitute a cautery-electrode, as before mentioned. For this reason the bars 5 and 6 are insulated from

each other and are adapted to form electric conductors or portions of an electric circuit, and at their outer ends I have shown them provided with reduced portions 16, whereby
5 suitable sockets on conductors or wires leading from a current-generator may be easily secured thereto.

In order to move the member 6 relatively to the member 5, I provide the latter with a
10 suitable handle 17, and journaled thereon at 18 is an arm or lever 19, connected to the member 6. Also journaled on the handle at the point 20 is a latch member 21, provided with a series of notches 22, adapted to coop-
15 erate with a projection 23 on the arm 19. The projection is beveled upon its rear side, as shown, so that when the arm is moved rearwardly toward the handle 17 the projection will engage successively in the several notches
20 to lock the blade 7 at any desired angle.

When, however, it is desired to return the latter to its normal position, the latch member may be released by moving it downwardly against the tension of its operating-spring 24.

25 When performing a surgical operation with an instrument of this character it is frequently desirable to inflate the cavity in which it is employed, and for this reason I have shown the rear end of the body or sheath closed by
30 a plug 25. At one side of the latter is an aperture or notch through which the bars 5 and 6 operate closely, which also serves, in conjunction with the guide 8, to hold the bar in alignment. 26 indicates a tube by means of
35 which suitable pneumatic devices may be attached to supply air through the body of the instrument.

An instrument constructed in accordance with my invention is simple, and by its use
40 many difficult operations may be successfully performed.

I do not claim herein the cautery-electrode, as this independent feature of the invention is reserved to form the subject-matter of a
45 subsequent application.

I claim as my invention—

1. The combination with a sheath, a member located therein, and movable longitudinally thereof and a cutting instrument mounted
50 thereon, of a second member movable relatively to the first and attached to the instrument and means for operating it.

2. The combination with a sheath, a member arranged therein and a cutting instrument
55 pivoted thereto, of a second member movable relatively to the first member and attached to the cutting instrument, means for operating

said member and means for adjusting both members longitudinally in the sheath.

3. The combination with two relatively movable bars and a cutting instrument movably
60 attached thereto, of a removable sheath inclosing said bars and a device for adjusting the sheath and cutting instrument relatively.

4. The combination with a member, a relatively movable member and a cutting instrument
65 attached to each, of a handle attached to one member, an arm attached to the other member and a locking device between the handle and lever.

5. The combination with a member, a relatively movable member and a cutting instrument
70 pivotally attached to the members, of a handle mounted on one of the members, a pivoted lever attached to the other member and a locking device between the handle and lever.

6. The combination with a member, a relatively movable member and a cutting instrument
75 pivotally attached to the members, of a handle mounted on one of them, a lever attached to the other member and pivotally attached to the handle and a latch operating to automatically lock said cutting instrument in
80 adjusted position.

7. The combination with a member, a second member movable relatively thereto and a
85 cutting instrument pivotally connected to both members, of a handle attached to one of them, a lever attached to the other member and pivotally connected to the handle and provided
90 with a projection and a spring-operated latch mounted on the handle and cooperating with the projection to hold the member in adjusted position.

8. The combination with a member, a second member movable relatively thereto and a
95 cutting instrument pivotally connected to both members, of a handle mounted on one of the latter, a lever attached to the other member and a latch device for holding them in ad-
100 justed position, a sheath inclosing the members and means for moving the latter longitudinally therein.

9. The combination with a bar provided with a channel and a cutting instrument pivotally
105 attached to the bar and member, of a hollow sheath inclosing said parts, a guide therein and a removable plug closing the outer end of the sheath and provided with a notch.

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Witnesses:

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