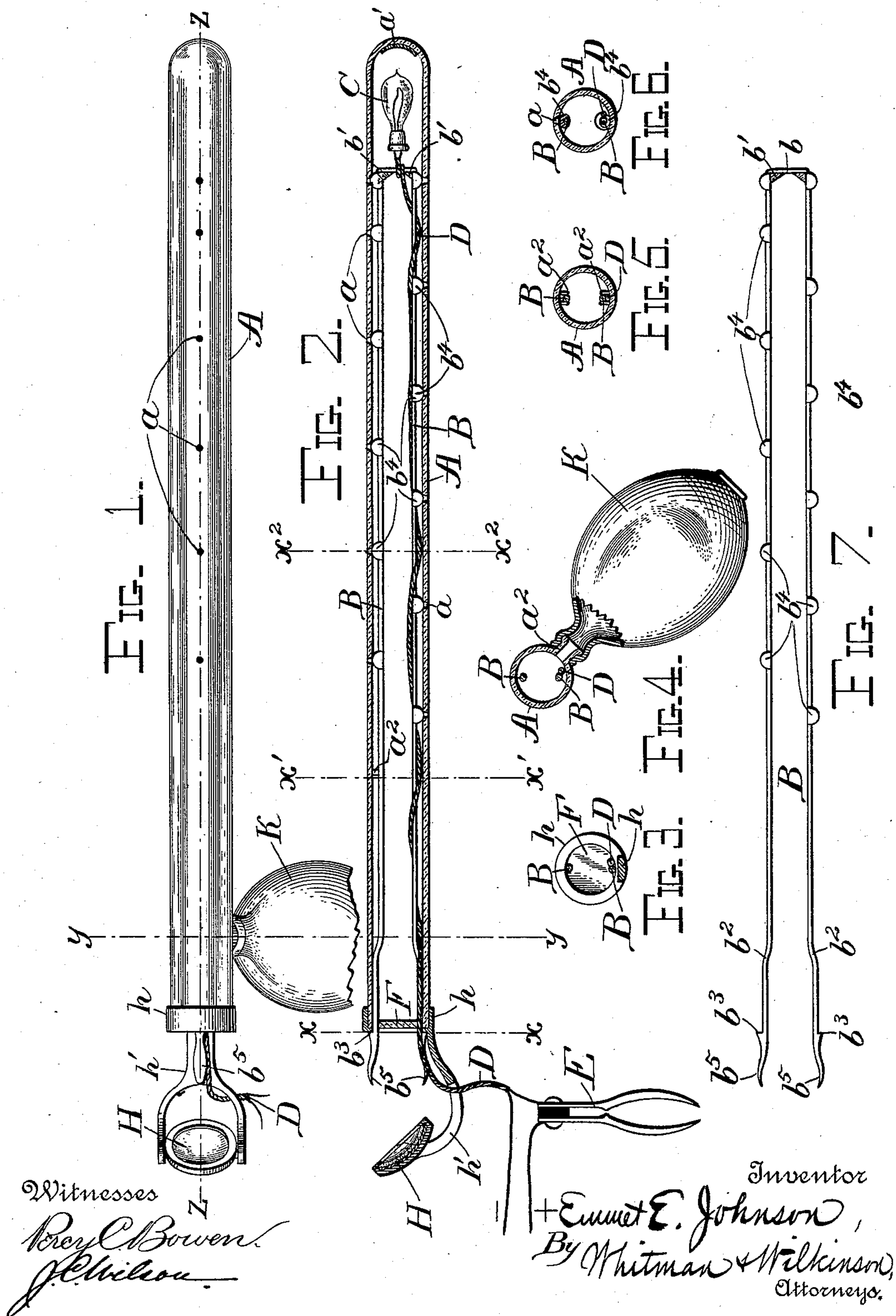


E. E. JOHNSON.
SURGICAL INSTRUMENT.

Patented Jan. 15, 1895.



UNITED STATES PATENT OFFICE.

EMMET E. JOHNSON, OF DENISON, TEXAS.

SURGICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 532,666, dated January 15, 1895.

Application filed September 28, 1894. Serial No. 524,398. (No model.)

To all whom it may concern:

Be it known that I, EMMET E. JOHNSON, a citizen of the United States, residing at Denison, in the county of Grayson and State of Texas, 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 invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to instruments for examining and treating the urethra and like internal canals and passages, and it consists of certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 is a plan view of the instrument complete, and ready for use. Fig. 2 represents a central longitudinal section through the device shown in Fig. 1, along the line zz of said figure. Fig. 3 represents a section along the line xx of Fig. 2 and looking to the right. Fig. 4 represents a section along the line yy of Figs. 1 and 2. Fig. 5 represents a section along the line $x'x'$ of Fig. 2 and looking to the right. Fig. 6 represents a section along the line x^2x^2 of Fig. 2, and Fig. 7 represents a side elevation of the frame for holding the lamp.

A represents a tube of clear glass perforated as at a with minute perforations, and provided with guides a^2 for the frame B.

Sometimes the base of the tube A is provided with a reflecting lining a' to throw the light from a lamp C forward into the tube A and to illuminate the parts surrounding the said tube, but where it is desired to see beyond the end of the tube this lining may be omitted. For this reason it is preferable to have two sets of tubes, one with and one without the reflector at the end thereof.

The frame B is preferably resilient wire silvered on the exterior so as to reflect light, and is formed of two members joined together at b and carrying prisms b' for the reflection of light. These members carry lugs b^4 , and are bent outward as at b^2 terminating in flattened ends b^5 provided with shoulders or

stops b^3 . These lugs are so arranged that, when the frame B is in position in the tube A, a slight forward motion of either the frame or the tube will cause the lugs b to cover or to uncover the holes a , and thus prevent the influx of mucous matter or other liquids from the parts being inspected, or permit the spraying through the said holes of the fluid forced from the bulbs K. To this frame B, two insulated leading in wires D are secured which are connected to the miniature incandescent lamp C. This cord D extends the entire length of the frame B, and one of the wires is provided with a circuit making and breaking device E.

The frame B is guided by two or more lugs a^2 on the interior of the tube A, so that the plane of travel of the lugs b^4 will coincide with the plane of the openings a , and the lugs are so arranged, that they will cover the holes a when the shoulder b^3 abuts against the inner end of the tube, while a slight motion of withdrawal of the frame will uncover said holes.

A cap h slips on the end of the tube A and carries the holder h' of the mirror H. This mirror should preferably be concave so as to give an enlarged view of the sides of the urethral canal adjacent to the sides of the tube A. An eyepiece F may also be inserted over the end of the inner tube B so that the anterior portion of the urethra may be examined if desired. In order to permit the limited longitudinal motion of the frame B required to uncover the holes a , this eyepiece should be perforated to admit the free passage of the members of said frame, as shown in Fig. 3.

K represents a bulb of ordinary construction which may be attached to the nipple a^2 in the tube A, and by means of which a healing agent may be injected into the tube A, and through the holes a to the part to be treated.

The instrument may be readily taken apart and cleaned by simply taking off the cap h carrying the mirror, withdrawing the frame B far enough to spring the arms b^5 apart and take out the eyepiece F, then pressing the said arms b^5 together and disengaging the members of the frame from the guides a^2 , then turning the frame through a small angle to enable the lugs to miss the guides a^2 and

then withdrawing the frame. In putting the parts together again reverse the operation.

It will be obvious that a plurality of bulbs of different sizes may be used; also that either the tube A or the frame B may be replaced by others of similar construction.

The herein described instrument, which I preferably call an urethro-medico illuminating endoscope, will enable the operator not only to inspect the various portions of the urethra, but also to treat the same with medicated fluids.

It will be obvious that the instrument may be made of larger size for use in inspecting the rectum or other like canals or passages.

It will be obvious that many modifications of the herein described apparatus could be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a surgical instrument of the character described, the combination with a transparent tube permanently closed at its inner end, and adapted to be temporarily closed at its outer end when in use, the said tube being provided with guides therein, and holes along opposite sides thereof; of a frame consisting of two essentially parallel members adapted to enter said tube and move between said guides; lugs provided on each of said members and adapted to cover or uncover the holes in said tube; means for injecting fluid into said tube and through said holes; an electric lamp within the inner end of said tube; prisms interposed between said lamp and the outer end of said tube; a reflector at the base of the inner end of said tube; terminal wires leading through the outer end of said tube; and a mirror adjustably mounted at the outer end of said tube, substantially as and for the purposes described.

2. In a surgical instrument of the character described, the combination with a transparent tube permanently closed at its inner end and adapted to be temporarily closed at its outer end when in use, the said tube being provided with guides therein, and holes along opposite sides thereof; of a frame consisting of two essentially parallel members adapted to enter said tube and move between said guides; lugs provided on each of said members and adapted to cover or uncover the holes in said tube; a bulb for injecting fluid into said tube and through said holes; an elec-

tric lamp within the inner end of said tube; prisms interposed between said lamp and the outer end of said tube; terminal wires leading through the outer end of said tube; and a mirror adjustably mounted at the outer end of said tube, substantially as and for the purposes described.

3. In a surgical instrument of the character described, the combination with a transparent tube A permanently closed at its inner end, and adapted to be temporarily closed at its outer end when in use, the said tube being provided with guides therein, and holes *a* along opposite sides thereof; of a frame B consisting of two essentially parallel members adapted to enter said tube and move between said guides; lugs *b*⁴ provided on each of said members and adapted to cover or uncover the holes *a* in said tube; a bulb for injecting fluids into said tube, and through said holes; an electric lamp C within the inner end of said tube; prisms *b'* interposed between said lamp and the outer end of said tube; terminal wires leading through the outer end of said tube; a mirror H adjustably mounted at the outer end of said tube; and a lens mounted between said mirror and said lamp, substantially as and for the purposes described.

4. In a surgical instrument of the character described, the combination with a tube A provided with guides therein, and holes *a*, of a frame B consisting of two essentially parallel members, adapted to enter said tube and move between said guides, and lugs *b*⁴ provided on each of said members and adapted to cover or uncover said holes *a* as may be desired, substantially as described.

5. In a surgical instrument of the character described, the combination with a tube A provided with guides therein, and holes *a*, of a frame B consisting of two essentially parallel members, adapted to enter said tube and move between said guides, and lugs *b*⁴ provided on each of said members and adapted to cover or uncover said holes *a* as may be desired, and a bulb K attached to said tube A and adapted to inject fluids into said tube and through said holes *a*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EMMET E. JOHNSON.

Witnesses:

WM. MULLER,
J. F. JORDAN.