M. B. HERMAN.

SURGICAL INSTRUMENT.

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1,226,513.

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Fig. 1.

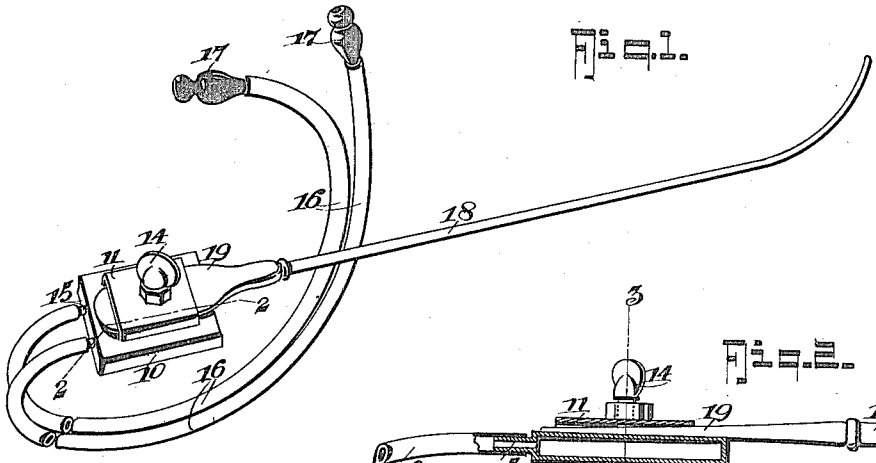


Fig. 2.

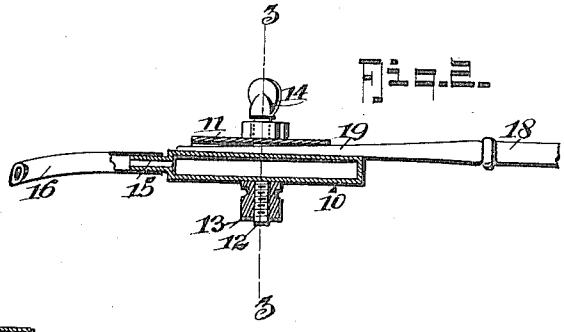


Fig. 3.

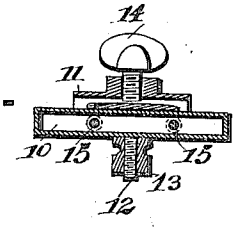


Fig. 4.

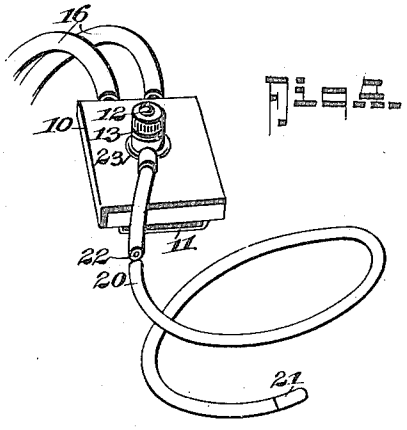
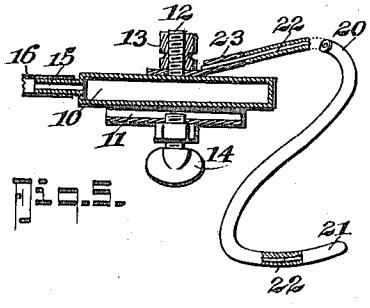


Fig. 5.



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SURGICAL INSTRUMENT.

1,226,513. Specification of Letters Patent. Patented May 15, 1917.

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To all whom it may concern:

Be it known that I, MAXENCE B. HERMAN, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented a certain new and useful Improvement in Surgical Instruments, of which the following is a specification.

My present invention relates generally to surgical instruments, and more particularly to an instrument for diagnosing certain internal troubles, my object being to provide a simple, practical, and effective instrument for detecting stones in the bladder, ureters, and pelves of the kidneys.

In carrying out these objects, I preferably provide a sound box, together with means in connection therewith and adapted for introduction into the bladder, ureters and pelves of the kidneys whereby, upon contact with a stone, the sound of such contact will be communicated to the sound box.

The means preferred for this purpose are shown in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of the complete instrument illustrating a sound in connection therewith for introduction into the bladder.

Fig. 2 is a vertical section longitudinally of the sound box and adjacent parts, taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a cross section through the sound box, taken substantially on line 3—3 of Fig. 2.

Fig. 4 is a perspective view, the ear tubes being broken away, illustrating a ureteral bougie in connection with the sound box.

Fig. 5 is a section taken longitudinally through the sound box and adjacent parts, as shown in Fig. 4.

Referring now to these figures, the sound box 10, as seen in the several figures, is, for convenience, substantially rectangular in shape and somewhat flat, one wall being provided with a rigid bracket 11 and the opposite wall having a threaded stud 12, upon the latter of which works a clamping nut 13. Through the bracket 11 operates a set screw 14, and with a set screw at one side and a clamping nut at its opposite side, the sound box is thus adapted for the clamping support of implements introducible within the body regions of stones and the like, as hereinafter described.

At one end the sound box 10 is provided with attaching tubes 15, extending a short distance therefrom and communicating with the interior thereof, these tubes providing for the attachment of flexible ear tubes 16 having ear pieces 17 at their outer ends.

Thus equipped, the sound box is utilized in connection with implements of a metallic nature, or a nature capable of producing sound upon contact with a stone, and of a particular form dependent upon whether stones are suspected in the bladder or in the ureters and pelves of the kidneys.

If it is a stone in the kidney one suspects, or is looking for, a stone searcher in the form of a sound, as seen at 18 in Figs. 1 and 2, is connected at its handle ends to the sound box, its handle 19 being extended beneath the bracket 11 and engaged by the set screw 14, for this purpose, the sound so connected being then introduced into the bladder through the urethra, and when so disposed, ear pieces 17 of the flexible tube 16, are applied to the ears. If the sound strikes a stone in the bladder, a characteristic "click" is transmitted through the sound 18 to the sound-box 10, and amplified and transmitted to the ears through the ear tube 16, the diagnosis being thus confirmed.

If it is a stone in the ureter or pelvis of the kidney one suspects, the ureteral bougie, as seen at 20 in Figs. 4 and 5, is utilized, this implement being either silk woven or rubber, with a metal tip 21 and an embedded wire 22 running from the tip at one end to a clip 23 at the opposite end, which latter is secured to the sound box by means of the clamping nut 13, in the position best shown in Fig. 5. The instrument 20 is introduced through the agency of a cystoscope, and upon contact of its tip 21 with a stone in the ureter or pelvis of the kidney, the resulting "click" is transmitted to the ear through the sound box in the same manner as previously described in connection with the sound 18.

It will thus be seen that I provide an implement which, though simple and comparatively inexpensive in its nature, is capable of ready, quick, and effective use for the purposes intended.

I claim:—

An instrument of the character described comprising a rectangular sound box consisting of a pair of spaced flat walls op-

posing one another, and side walls connecting the edges of said flat opposed walls and forming therewith an enlarged shallow sound chamber, one of said side walls being provided with a pair of attaching tubes extending therefrom and communicating with the said sound chamber, ear tubes connected with said attaching tubes, implements introducible into the body regions of stones, each of a nature to produce sound upon contact with a stone, and clamping means carried by the said opposed walls of the sound box and disposed centrally of their outer faces, to firmly secure the said implements at one end to the sound box.

MAXENCE B. HERMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."