A. G. STRUBELL.

SURGICAL CLAMPS.

No. 183,602. Patented Oct. 24, 1876.

Fig. 1.

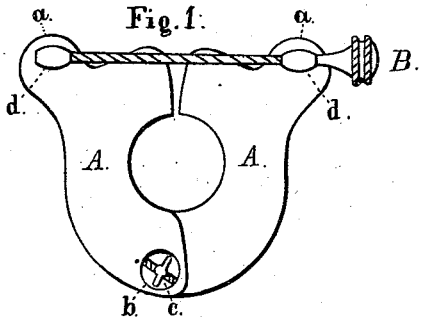
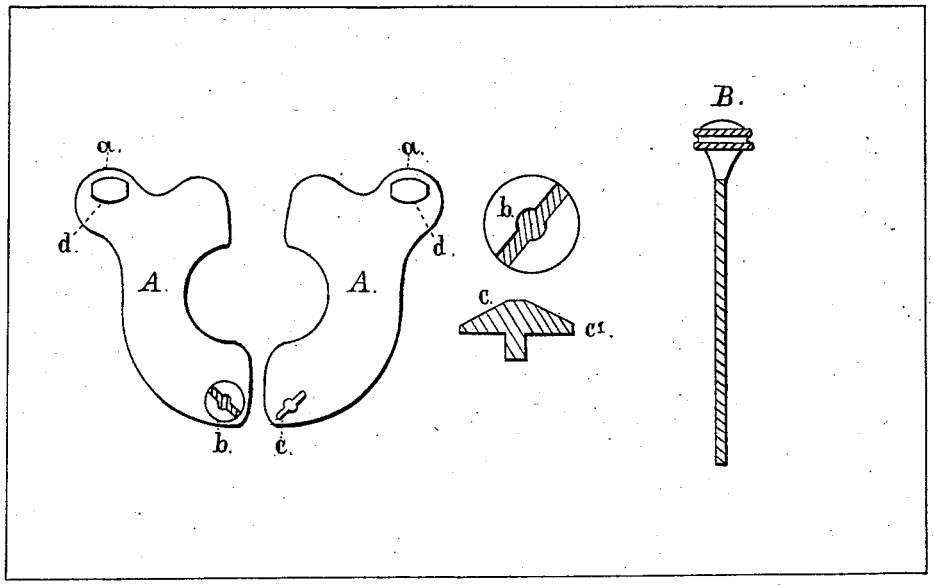


Fig. 2.



WITNESSES:

Benjamin Storms

Alex. Abraham

INVENTOR:

Alexander Gustav Strubell

by Lewis Abraham

Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER GUSTAV STRUBELL, OF DRESDEN, SAXONY.

IMPROVEMENT IN SURGICAL CLAMPS.

Specification forming part of Letters Patent No. **183,602**, dated October 24, 1876; application filed September 12, 1876.

To all whom it may concern:

Be it known that I, ALEXANDER GUSTAV STRUBELL, of the city of Dresden and Kingdom of Saxony, Europe, have invented a new and useful Improvement in Surgical Instruments, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

My invention relates to that class of clamps used in the performance of the surgical operation known as ovariotomy, or the removal of the ovarium from the human body.

In the accompanying drawing, Figure 1 shows the instrument so adjusted as to leave a circular opening between the pivoted flat jaws A A. B is a threaded pin. Appropriate letters designate the other several parts. Fig. 2 shows the several parts disconnected.

The clamp consists of two flat jaws or semicircular plates, A, each having on its upper corner a projection, *a*, on the face of which projection is fastened the eyes *d d*, through one of which the threaded pin B passes, and within the other it is fastened by means of a male and female screw. Through one of the eyes *d*, acting as a staple-guide, the threaded pin B passes and plays loosely; but the interior face of the other eye *d* being threaded, the pin B is united with it as soon as it enters and is turned. By thus turning the pin B the jaws A can be entirely closed or opened to any angle. The lower parts of the two jaws are connected together with a pivot-pin, *c*, of peculiar construction, as shown enlarged in detail in Fig. 2, as follows: One section of the jaw-plate A has on its upper face, and near its lower outer edge, an upright fixed rigid pin, C, it being supplied at its top with a transverse handle, acting as a double hook. The other section of the jaw-plate A has upon its upper face, and in corresponding position, a small countersunk disk, *b*, extending nearly through the whole thickness of the jaw-plate. This countersunk disk is pierced with a straight slot of sufficient size to admit the pin-handle *c'*. This straight slot is, at its center, widened into a circular opening of sufficient circumference to admit the pin C, and to allow it to play easily. The object of thus connecting the two jaw-plates is to allow the operator to place the instrument on the patient in sections, if desirable, and then to adjust it by passing the handle-pin *c* through the slot on the countersunk disk *b*, as described, by which means the two jaw-plates are pivoted together as soon as the arms of the handle *c'* pass slightly beyond the slot through which they are introduced.

It is obvious that this peculiar manner of construction greatly facilitates the removal of the instrument in sections, if desirable, when the operator takes it from the patient. When the two upper edges of the jaw-plates A are brought together, as in Fig. 1, a circular open space is described by the inner periphery of the two pieces. By further screwing the pin B this opening can be reduced gradually to nothing.

It will be observed that the two jaw-plates A A move from their pivoted point in a plane describing the arc of a circle. In order to readily insert the pin B through the eyes *d d* without reference to the special radial position of the jaw-plates, these eyes *d d* are loosely connected onto the extensions *a a* with a pin and under washer, enabling each to turn on its axis. When the surgeon has so far progressed with the operation as to make the application of my clamp serviceable it is first distended or separated into two parts, as the case may require, then gently placed in position, the armed pivot-pin *c* properly adjusted within the countersunk disk *b*, and the upper part of the two jaw-plates are brought toward each other. The screw-pin B is passed through the staple-eye *d*, and pushed forward until its point is brought within the opposite threaded eye *d*. The head of the pin is then turned until its point bites the female screw within the eye. The inner edges of the two jaw-plates are thus, by continuous screwing together, brought sufficiently close to compress the parts they encompass as tightly as the operator desires; for, as before described, the aperture formed by the inner periphery of the jaw-plates can be reduced gradually to nothing. Thus it can be seen a more or less rigid grasp can be secured of whatever is inclosed within the space left between the two jaw-plates, and that the grasp can be relaxed

or increased at will, according to the condition of the patient or the state of the parts operated on, without removal of the instrument.

I am aware that surgical clamps having circular openings are keyed together, and are operated with a set-screw, and that these several features are not new with me; but

What I claim as my invention is—

An adjustable ovarium-clamp, consisting of the hinged semicircular jaw-plates A A, having extensions *a a*, the threaded pin B, in combination with the eyes *d d*, the pivot-pin *c*, and the countersunk disk *b*, substantially as described and shown, and for the purpose intended.

ALEXANDER GUSTAV STRUBELL, M. D.

Witnesses:

PAUL KASTEN,

FREDRIC SCHUMAN-LECLERCQ.