

No. 749,811.

PATENTED JAN. 19, 1904.

A. C. BERNAYS.  
SURGICAL RETAINER.  
APPLICATION FILED APR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

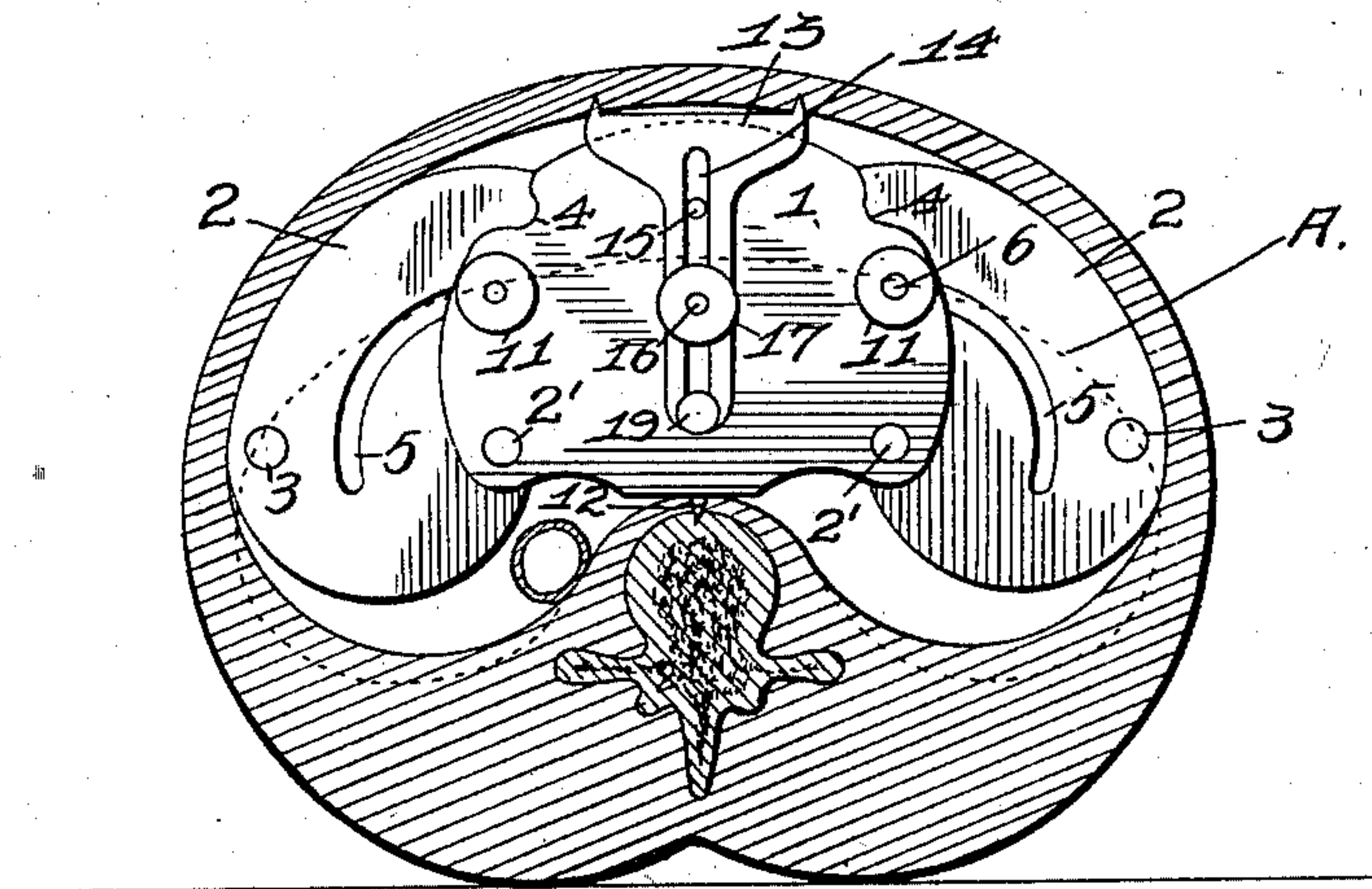
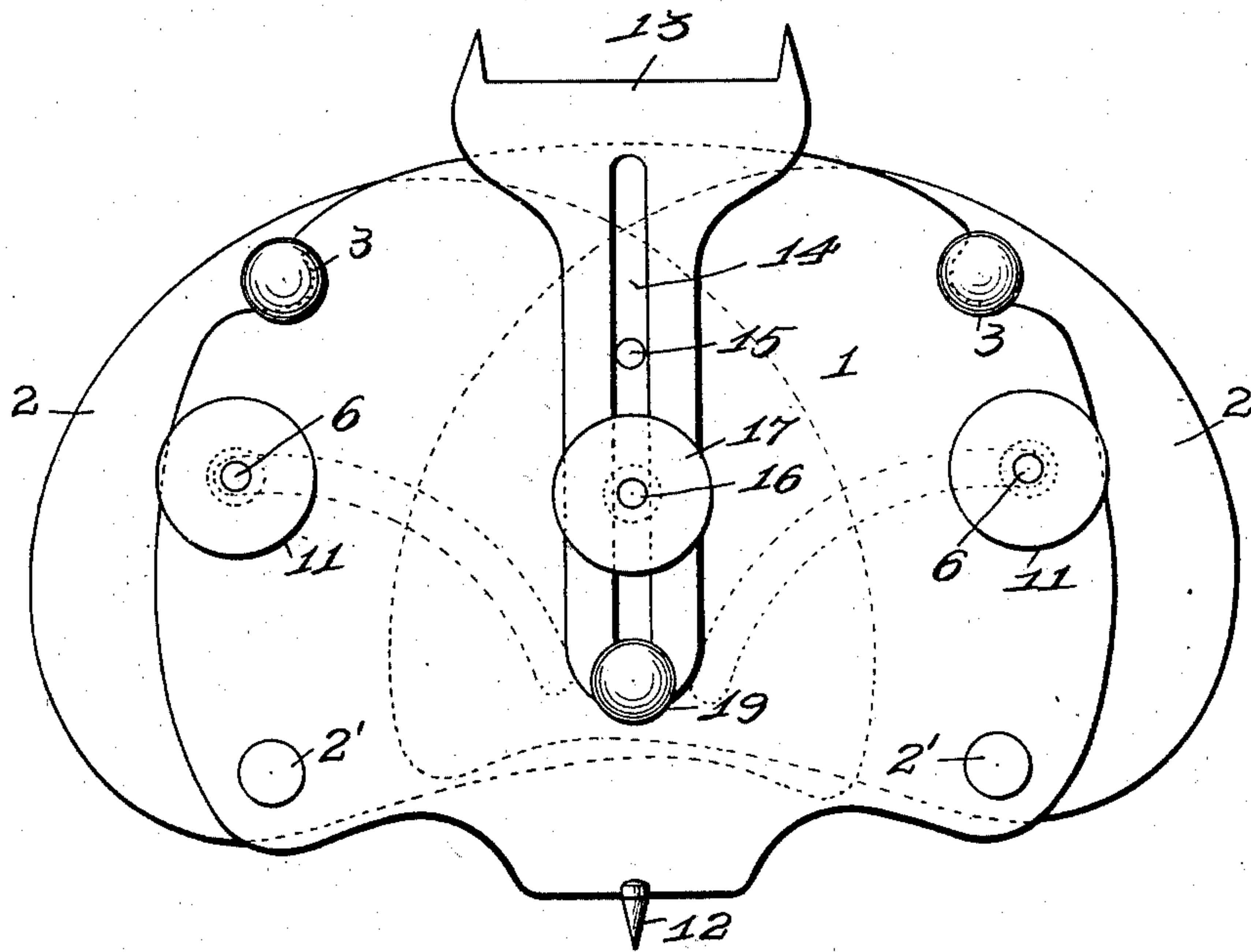


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3

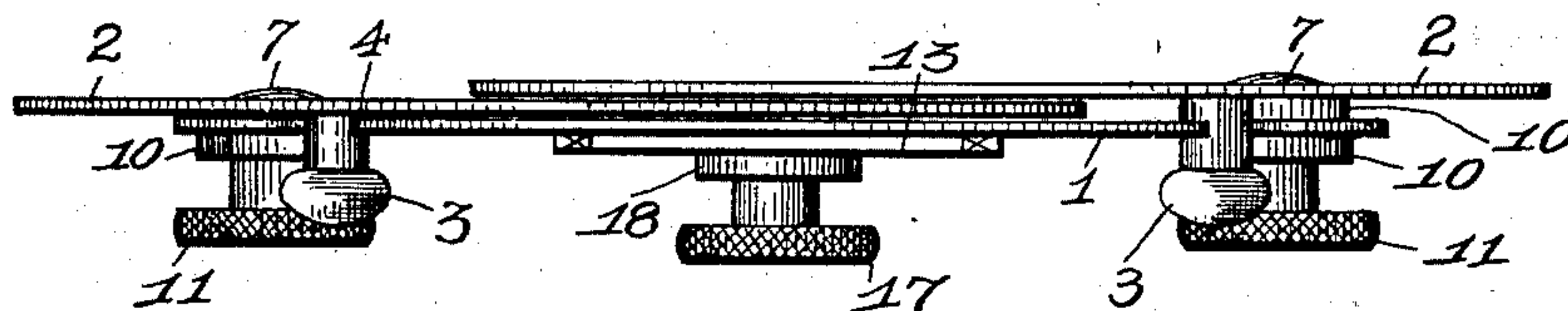


Fig. 4

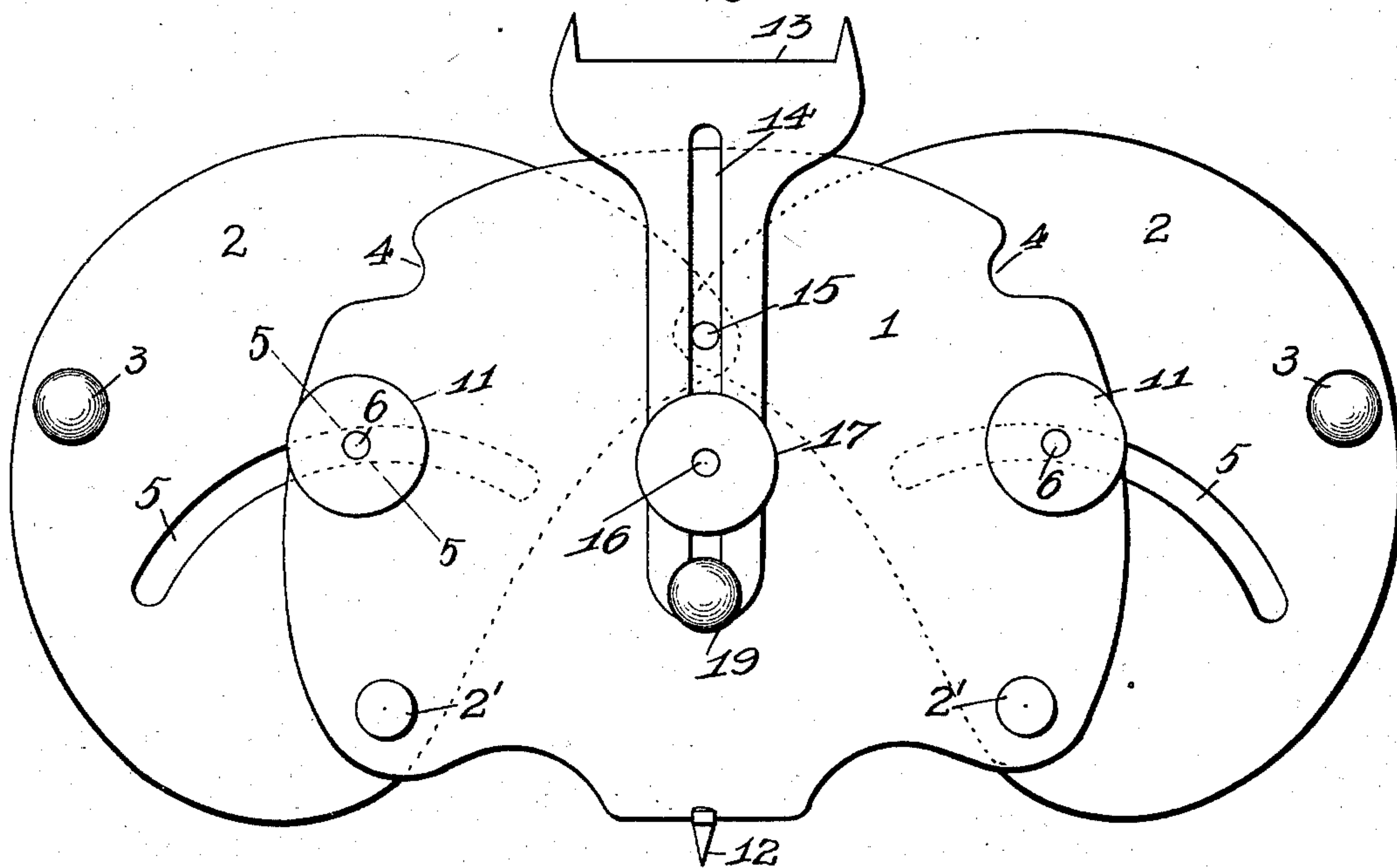
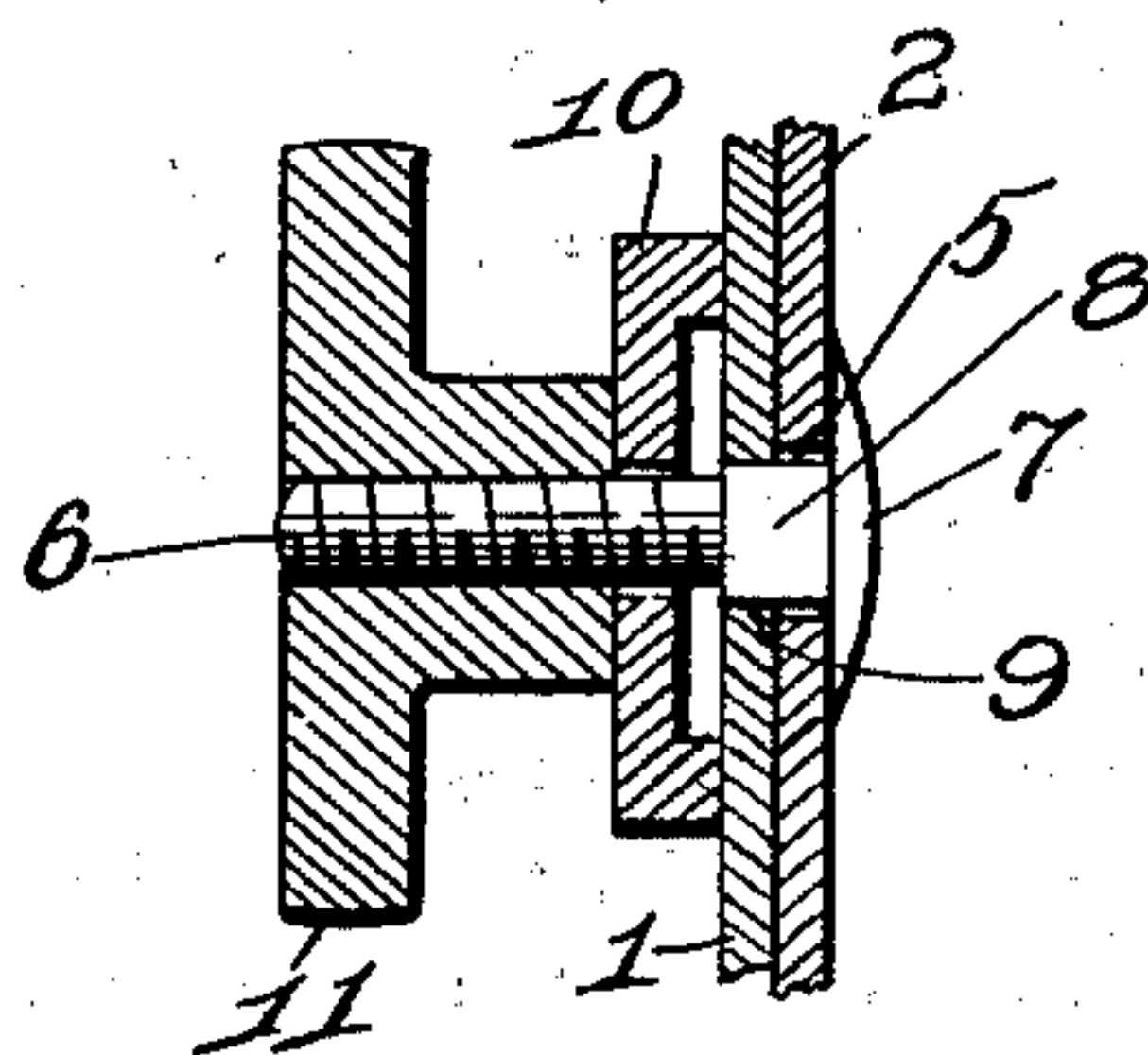


Fig. 5



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# UNITED STATES PATENT OFFICE.

AUGUSTUS C. BERNAYS, OF ST. LOUIS, MISSOURI.

## SURGICAL RETAINER.

SPECIFICATION forming part of Letters Patent No. 749,811, dated January 19, 1904.

Application filed April 21, 1903. Serial No. 153,714. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS C. BERNAYS, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful improvements in surgical retainers and expanders for the abdominal cavity, to be used in performing operations within the abdominal cavity, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved surgical gut-retainer and abdominal expander for use in performing operations within the abdominal cavity; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of my invention is to provide an improved instrument which may be conveniently used to retain the intestines in one part of the cavity while operating in another and as an expander of the abdominal cavity during the performance of surgical work within the abdominal cavity.

Figure 1 is a sectional elevation through a human body transversely of the abdominal cavity at the level of the promontory of the last lumbar vertebra and having my improved instrument located therein. Fig. 2 is a front elevation of the instrument. Fig. 3 is a top plan view of the same. Fig. 4 is a front elevation with the wings extended. Fig. 5 is a section on the line 5 5 of Fig. 4.

Heretofore considerable difficulty and inconvenience have been experienced in pushing aside and retaining the intestines within the abdominal cavity during operations therein, and it has been difficult to control the position of the intestines. In order to overcome the above difficulty, I have provided a sort of a "dam" or retainer, which consists in the present instance of a main central section 1, preferably made of sheet metal and nickel-plated, and the opposite extensible wings 2, superposed upon and pivoted at 2' to the said central section and provided with the accessories hereinafter described. The wings 2 are preferably pivotally attached to the opposite

ends of the central section near the lower edge of the latter and near the lower edges of themselves, as shown, in order that when the said wings are moved upon their pivots the same may be extended or retracted. 3 3 indicate handles applied to the said wings near the outer edges of the latter for convenience in operating the same. Said handles 3 3 also act as stops to limit the inward movement of the wings by contacting with the edges of the recesses 4, which latter are oppositely located in the central section 1. The outward movement of the wings is preferably limited by means of a curved slot 5 and screw 6. Said curved slot is of sufficient length to permit the wing to be fully retracted or extended, and said screw 6 is provided with a head 7 at one end (see Fig. 5) and is preferably made with a squared or angular portion 8, which passes through the said slot 5 and through an aperture 9 in the central section 1. A washer 10 is mounted upon said screw and bears upon the central section 1, while a thumb-nut 11 is threaded upon said screw and engages said washer to force the same into contact with said central section.

Projecting centrally from the lower edge of the central section 1 is a sharpened prong or tooth 12. The outer face of the central section is preferably provided with an adjustable retainer 13, which consists of a metal plate having a number of prongs or teeth at its upper end and whose body is provided with a vertical slot 14, extending downwardly to a point near the lower end of said retainer. Said retainer is mounted to slide vertically upon the said central section and is held in position thereon by means of two vertically-aligned pins or bolts 15 and 16. The pin 15 is fixed in the said central section and projects into the slot 14 of said retainer. The bolt 16 is identical with the screw or bolt 6 previously described, except that it is fixed at one end in the said central section. Said bolt is provided with the thumb-nut 17 and washer 18.

19 indicates a handle upon the lower end of the retainer 13 and projecting from the front face thereof.

The operation is as follows: The normal position of the wings 2 is that in which they



are shown in Fig. 2. In making use of the instrument the operator will first see that the wings are retracted and also the retainer 13, which may be readily accomplished by loosening the thumb-nuts 11 and 17. The instrument will then be ready to be placed in the abdominal cavity, which may be readily done owing to the small size of the instrument when in its retracted condition. The lower prong 12 should be firmly projected into the promontory of the last lumbar vertebra, as shown in Fig. 1, and then the retainer 13 should be forced upwardly until its prongs are projected into the abdominal wall, as shown in Fig. 1, and then the retainer should be fixed by tightening the thumb-nut 17, which will securely hold the instrument in position. However, prior to the above-described operation the intestines should have been forced upward toward the diaphragm and removed as much as possible from the lower part of the abdominal cavity, and then retained in such position by placing the instrument in the manner just described. This will leave a comparatively large and clear space in the abdominal cavity, in which the operation may be much more readily performed than if the intestines were permitted to remain in the cavity or imperfectly excluded, as in the practice heretofore known. The insertion of the instrument beneath the abdominal wall will elevate the said wall from its normal position, as indicated by the dotted line A in Fig. 1 to that in which it is shown in full lines in said figure. The lateral walls will be still further distended by projecting the wings 2 to the position in which they are shown in Fig. 1. The projection of the wings 2 is accomplished by grasping the handles 3 and forcing said wings outwardly, which will cause them to move upon their pivots 2' to the desired position, after which they may be fixed by tightening the thumb-nuts 11.

The instrument may be detached from the patient's body by loosening the thumb-nut 17, which will permit the retainer to be retracted. By then loosening the thumb-nuts 11 the wings 2 may be retracted and forced inwardly until the handles 3 contact with the surface of the recesses 4.

I do not limit myself to the exact details of construction herein shown and described, as it is obvious that the construction of the instrument may be varied both in form and function within the limits of the skill possessed by

persons acquainted with the art to which this invention appertains.

I claim—

1. A surgical retainer and expander for the abdominal cavity in performing laparotomy, which consists in a flat expansible device in the form of a plane plate having a superposed wing hinged thereto and the whole adapted to be inserted in the abdominal cavity to dam the intestines and prevent their invasion of the said cavity, substantially as described.

2. A surgical retainer and expander for the abdominal cavity in performing laparotomy, which consists in a flat expansible device in the form of a metallic plate having hinged wings superposed thereon, one at each end and adapted to be inserted in the abdominal cavity to dam the intestines and prevent their invasion of the said cavity, substantially as described.

3. A surgical retainer and expander for the abdominal cavity in performing laparotomy, which consists in a flat expansible device in the form of a metallic plate provided with two hinged wings superposed thereon, one at each end and at the lower edge thereof and adapted to be inserted in the abdominal cavity to dam the intestines and prevent their invasion of the said cavity, substantially as described.

4. A surgical retainer and expander for the abdominal cavity in performing laparotomy, which consists in an expansible device provided with hinged wings and adapted to be inserted in the abdominal cavity to dam the intestines and prevent their invasion of the said cavity; and thumb-nuts for holding said wings in various adjustments, substantially as described.

5. A surgical retainer and expander for the abdominal cavity in performing laparotomy, which consists in an expansible device provided with hinged wings and adapted to be inserted in the abdominal cavity to dam the intestines and prevent their invasion of the said cavity; thumb-nuts for holding said wings in various adjustments, and retaining-prongs at the edges of said device, substantially as described.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

AUGUSTUS C. BERNAYS.

Witnesses:

ALFRED A. EICKS,  
JOHN C. HIGDON.