

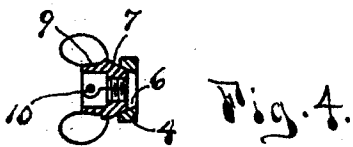
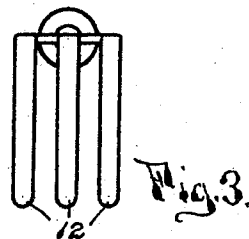
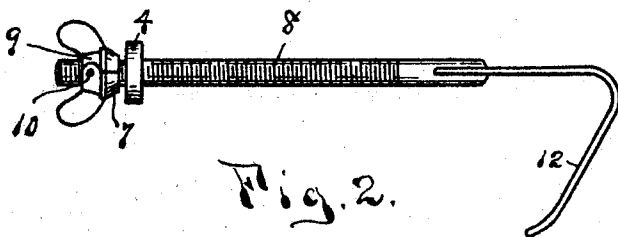
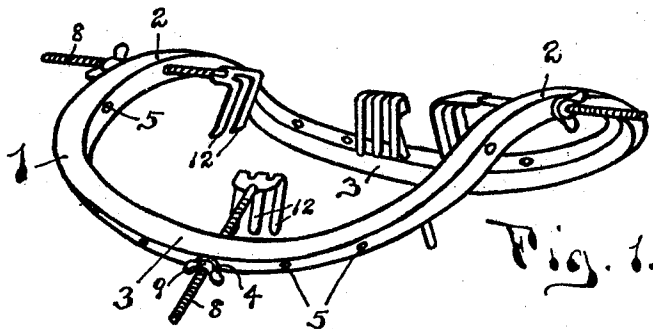
H. B. McCrory AND W. PEARSON.

ABDOMINAL RETRACTOR.

APPLICATION FILED JAN. 10, 1921.

1,400,616.

Patented Dec. 20, 1921.



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ABDOMINAL RETRACTOR.

1,400,616.

Specification of Letters Patent.

Patented Dec. 20, 1921.

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To all whom it may concern:

Be it known that we, HARVEY B. McCrory and WESLEY PEARSON, citizens of the United States, and residing at Saginaw, county of Saginaw, and State of Michigan, have invented a new and Improved Abdominal Retractor, of which the following is a specification.

This invention relates to means for holding open abdominal incisions so that further surgical operations may be performed with minimum loss of time and with maximum safety, and its object is to provide an instrument of this character which shall consist of few parts and which may be adjusted in the shortest possible time.

Another object of this invention is to provide an abdominal retractor which may be sterilized in whole or in part and which may be carried from place to place in sterilized condition.

Another object of this invention is to provide an abdominal retractor which may be adjusted to all possible conditions within the scope of the instrument by the operator without the necessity of a trained assistant.

Another object of this invention is to provide an instrument of this character which will retain its position after being adjusted, which will give no undue pressure to the patient and thereby reduce breathing capacity and which may be entirely inclosed in sterilized towels.

We have shown one embodiment of this invention in the accompanying drawing, in which Figure 1 is a perspective view of an abdominal retractor in operative condition. Fig. 2 is a side elevation and Fig. 3 an end elevation of a retracting hook. Fig. 4 is a section of a wing nut and its collar.

Similar reference characters refer to like parts throughout the several views.

The frame 1 shown in the drawing is shown to be an endless bar somewhat elliptical in general outline, although this shape may be varied as desired to fit the body of the patient around the incision. It is preferably formed with convex portions 2 and concave portions 3 and may be of aluminum or of one of its compounds so as to be light in weight, not easily tarnished and capable of being perfectly cleaned and sterilized. This frame is formed with a series of holes 5, directed toward a common point, or they may be so placed that two retracting hooks or fingers may always be positioned aligned

with each other. These holes are preferably of such size that the hooks may be swung laterally, or these holes may be elongated to permit considerable lateral movement of the hooks.

These retracting hooks are each formed with a threaded stem 8 on which is slidable a collar 4 having a conical socket 6 to receive the conical end 7 of the wing nut 9. The nut is preferably made of two parts connected by the pivots 10. The bearing end only of the nut is threaded which permits the nut to be opened and slid along the stem 8 to about where it is to engage the stem. When the tapering end 7 of the nut is fitted into the tapering socket 6 of the collar 4, it acts like a solid nut.

The retracting hooks are formed with any desired form of fingers 12 to enter the incision, the fingers being preferably inclined outwardly in order to prevent slipping, so that they make an angle of about seventy degrees with the stems.

In practice this instrument is carefully fitted to the patient's abdomen about the place to be cut with the proper number of hooks ready for adjustment. After the incision is made the fingers of a pair of hooks are inserted in the ends of the incision and the wing nuts tightened, which properly anchors the instrument. The wound may now be dilated at any desired point by the use of additional retracting hooks.

The convex ends of the frame which fit the contour of the patient's body prevent any undue pressure which might impair the breathing capacity of the patient. The concave sides of the frame afford the greatest operative range for the surgeon's instruments and offer the least obstruction to his vision. The fact that the frame fits the patient's body obviates the possibility of rocking or tilting which might disengage the retracting hooks from the wound.

The frame may be draped with sterilized towels so as to leave no metallic surface exposed to contact with the surgeon's instruments. After the wound has been retracted, sterilized towels may be packed underneath the frame to elevate any portion thereof, which often gives increased retraction. The inclination of the fingers prevents them from lifting out of the incision.

After being sterilized the instrument may be placed in a sterilized bag and packed in the usual surgeon's bag. It enables the sur-

geon to dispense with an assistant and conserves his time to such an extent that the element of danger to the patient because of long operations is largely obviated.

5 The details of construction and the proportions of the parts may all be changed by those skilled in the art without departing from the spirit of our invention as set forth in the following claims.

10 We claim:—

1. The combination of a generally elliptical frame provided with a series of holes, and a series of retracting hooks slidably mounted in said holes and comprising
15 threaded stems and nuts thereon and retracting fingers at the inner ends of the stems.

2. The combination of a generally elliptical frame provided with a series of holes, and a series of retracting hooks slidably
20 mounted in said holes and comprising threaded stems and nuts thereon and retracting fingers at the inner ends of the stems, said fingers being at less than right angles to said stems.

25 3. The combination of a generally elliptical frame provided with a series of holes, and a series of retracting hooks slidably mounted in said holes and comprising threaded stems and nuts thereon and retract-
30 ing fingers at the inner ends of the stems,

the frame having convex middle portions and concave ends.

4. The combination of a generally elliptical frame provided with a series of holes, and a series of retracting hooks slidably
35 mounted in said holes and comprising threaded stems and nuts thereon and retracting fingers at the inner ends of the stems, said nuts being of two parts pivoted together and freely slidable along the stems when the
40 parts are swung apart, collars being provided to hold the parts of the nuts together.

5. The combination of a frame formed of an endless bar having a series of holes, and a series of retracting hooks slidably mounted
45 in said holes and having retracting fingers at their inner ends, and nuts on the outer ends of the stems to draw said fingers toward the frame.

6. The combination of a generally elliptical frame provided with alined holes in
50 each end and with a series of holes in each side, a series of retracting hooks slidably mounted in said holes and comprising
55 threaded stems, nuts on the outer ends thereof, and fingers on the inner ends of the stems, the frame being low at the middle and high at the ends.

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