(No Model.)

2 Sheets—Sheet 1.

# E. J. HARDING.

## DEPURATOR.

No. 577,297. Patented Feb. 16, 1897.

Fig. 2.

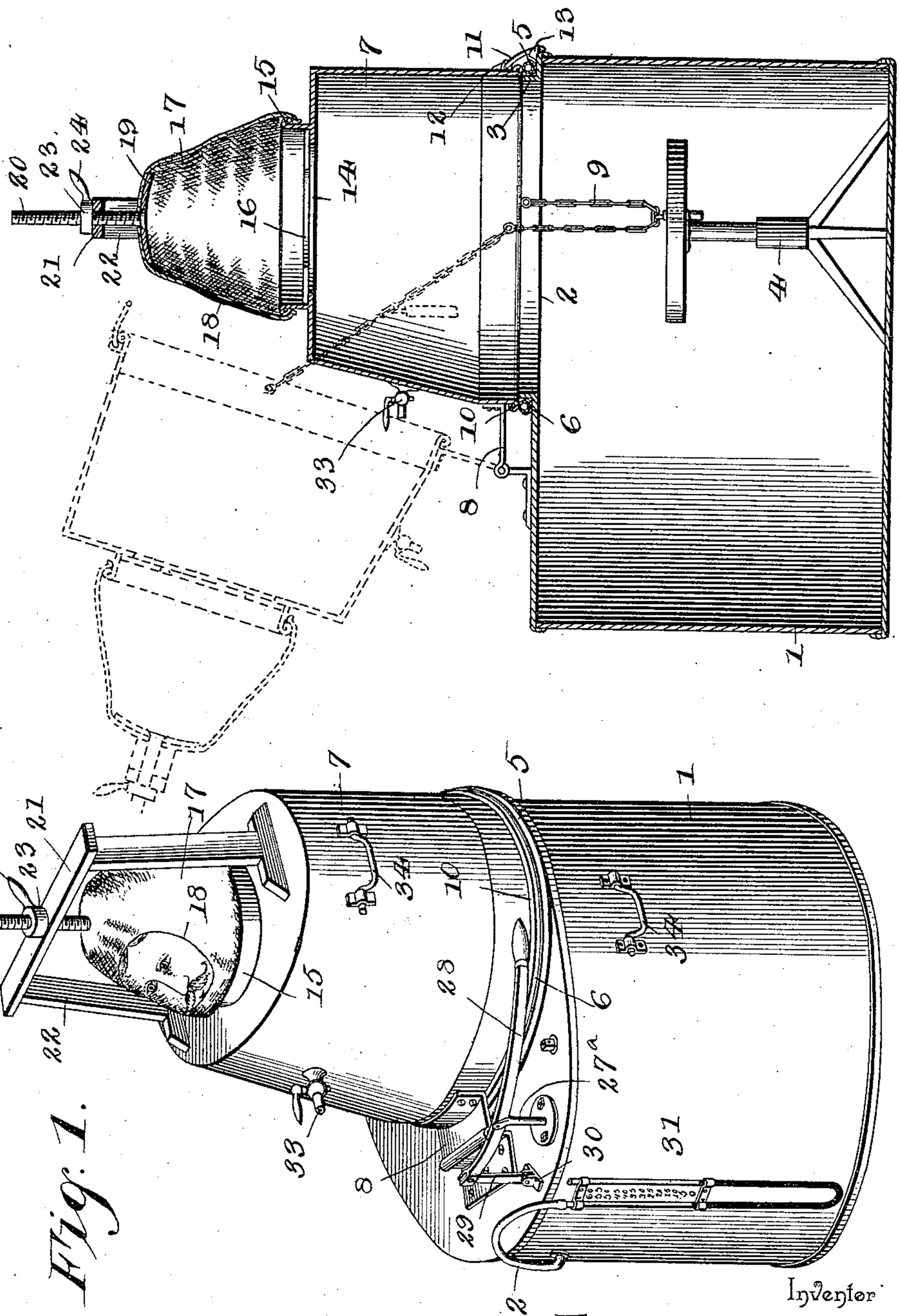


Fig. 1.




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(No Model.)

2 Sheets—Sheet 2.

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## DEPURATOR.

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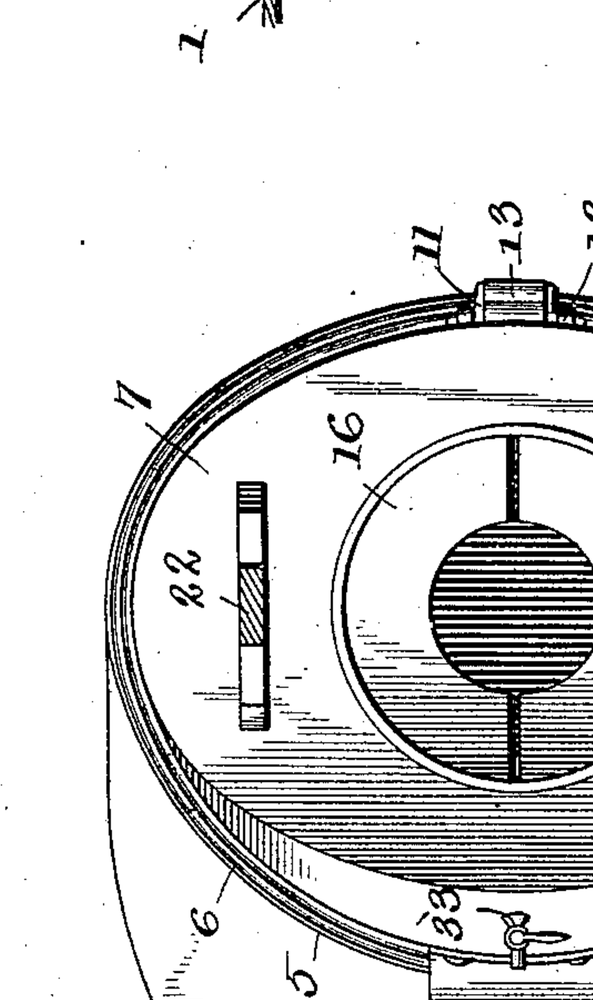

Fig. 6.

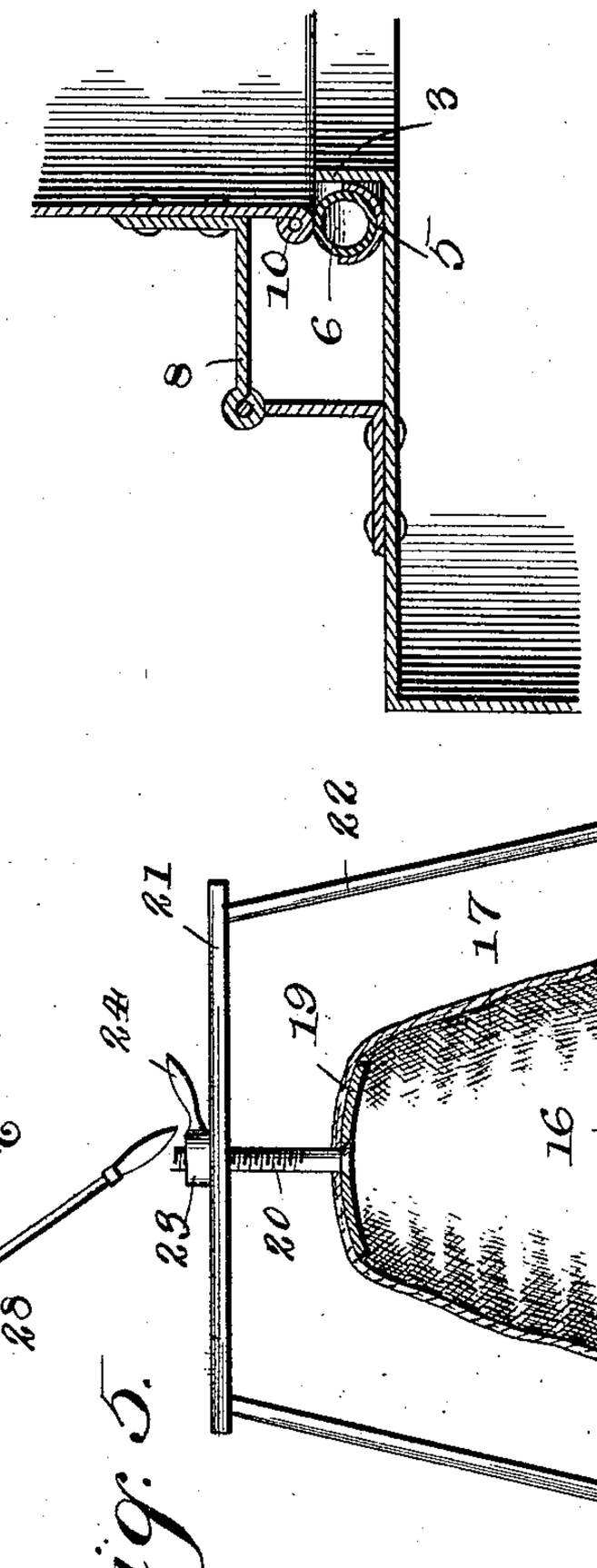

Fig. 4.



Fig. 3.



Fig. 5.

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# UNITED STATES PATENT OFFICE.

ELIZA J. HARDING, OF DENVER, COLORADO.

## DEPURATOR.

SPECIFICATION forming part of Letters Patent No. 577,297, dated February 16, 1897.

Application filed November 21, 1895. Serial No. 569,645. (No model.)

*To all whom it may concern:*

Be it known that I, ELIZA J. HARDING, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Depurator, of which the following is a specification.

This invention relates to depurators; and it has for its object to effect certain improvements in apparatus of this class that are designed for producing vacuums for the treatment of diseases in the human body.

To this end the main and primary object of the present invention is to provide a depurating apparatus adapted to receive the entire body of a person for the purpose of subjecting the body to the remedial effects of a vacuum, and in the accomplishment of this result the invention contemplates an apparatus easily handled and at the same time which shall provide for the regular exhaustion of air, so that the treatment will be accompanied by the least possible discomfort and absence of any injurious effects to the patient.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a depurator constructed in accordance with this invention. Fig. 2 is a central vertical longitudinal sectional view thereof. Fig. 3 is a plan view with the flexible hood and the adjustable support therefor removed. Fig. 4 is an enlarged detail sectional view showing more clearly the air-tight gasket-joint between the vacuum-box and the cover-section therefor. Fig. 5 is an enlarged detail sectional view of the flexible hood and the supporting device therefor. Fig. 6 is a detail sectional view on the line 6 6 of Fig. 3, illustrating the arrangement of the pump inside of the vacuum-box.

Referring to the accompanying drawings, the numeral 1 designates a substantially elliptical vacuum-box, forming the main body of the depurating apparatus and being positively air-tight, so that a partial vacuum can be readily produced therein. The said elliptical vacuum-box 1 is provided in the top thereof, at one side of its center, with the manhole 2, surrounded by an upwardly-projecting manhole-flange 3, and it is of course understood that the manhole 2 is sufficiently large to admit the body of a person who, when being treated, sits on a supporting-stool 4, standing on the bottom of the box 1 and arranged directly below the manhole 2, in the top thereof. The manhole-flange 3 is encircled at its outer side by a curved seat-plate 5, in which is fitted a tubular pneumatic gasket 6, which is adapted to provide an air-tight connection between the vacuum-box 1 and the cover-section 7 therefor.

The cover-section 7 for the vacuum-box 1 projects a sufficient distance above the top of the box to provide for inclosing the body of the patient below the neck, and said cover-section is hinged at one side by means of a strap-hinge 8 to the top of the box 1, and the joint of said hinge 8 is disposed at a point beyond one side of the manhole 2, so that when the cover-section 7 is thrown open the same will be carried to a position entirely away from the hole 2, so as not to interfere with a person getting in or out of the vacuum-box, as clearly illustrated in dotted lines in Fig. 2 of the drawings, and when the cover-section 7 is thus thrown open the same is prevented from falling forward by means of a stop-chain 9, attached at one end to the flange 3 and at its other end to the lower edge of the cover-section 7. The cover-section 7 is provided at its lower edge with an outturned joint-bead 10, adapted to rest directly on top of the tubular gasket 6 to form an air-tight joint therewith, and when the cover-section is closed onto the tubular gasket the same is locked in its closed position by means of a lock-bail 11, pivotally attached at 12 to the unhinged side of the cover-section 7 and adapted to detachably engage over the catch projection 13, projected outward from a top corner of the box 1.

The hinged cover-section 7 is provided in the top thereof with a neck-opening 14, through which the head of a patient is passed in either closing or opening the cover-section, and the said neck-opening is surrounded by an upwardly-extending hood-flange 15, within which is removably seated a pair of registering semicircular neck-plates 16, which are fitted in position so as to fit reasonably close

about the neck of a patient when properly adjusted in position within the apparatus, so that the effects of the vacuum produced within the apparatus will be felt more severely by the body below the neck, as will be readily understood.

The hood-flange 15, surrounding and rising above the neck-opening 14, has tightly fitted thereto the lower edge of the flexible hood or cap 17, which is provided in one side with a face-opening 18, which surrounds the patient's face, so that breathing is not interfered with. The flexible hood or cap 17 is made of rubber cloth or any other suitable impervious material and has fitted in the top thereof a metallic supporting-plate 19, to which is attached the lower end of a supporting screw-rod 20, extended above the hood 17 and loosely passed through the perforation in the upper cross-bar 21 of a skeleton bracket-frame 22, secured on top of and rising above the cover-section 7. Above the bar 21 the screw-rod 20 has mounted thereon an adjusting-nut 23, preferably provided with a handle 24 for manipulating the same, so as to provide means for adjusting the top of the hood 17 to the desired elevation. By reason of the adjustable support for the top of the hood just described it will be understood that the top of the hood will be supported free from the top of the head of the patient, so that when a vacuum or partial vacuum is produced within the vacuum-box the hood 17 will not be drawn so tightly down over the head of the patient by the pressure of air on the outside thereof as to cause an uncomfortable and undesirable pressure on the head.

To provide for the exhaustion of the air within the apparatus a single-cylinder air-pump 25 is employed. The cylinder of the pump 25 is arranged entirely within the vacuum-box 1, and is suitably supported from the under side of the top of said box. The pump 25 is constructed in an ordinary manner, but the discharge or exhaust pipe 26 thereof is angled, so as to extend through the top of the box 1, as at 27, to provide for the convenient discharge of the air, and the piston or plunger rod $27^a$ of the pump reciprocates through the top of the box 1, and is suitably attached to an intermediate point of the pump handle or lever 28, pivoted at one end to the upper end of a link 29, the lower end of which link is pivotally supported, as at 30, on top of the box 1. The degree of exhaustion within the vacuum-box and the cover-section 7 is indicated by means of an air-pressure gage 21, mounted on one side of the box 1 and having a pipe connection 32 with the interior of said box, and the vacuum or partial vacuum within the apparatus may be relieved at any time by opening the relief-cock 33, fitted to the front side of the cover-section 7.

Suitable handles 34 at opposite sides of the box 1 and the cover-section therefor provide means for handling the apparatus.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described depurating apparatus will be readily apparent to those skilled in the art, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a depurator, a vacuum-box having a top manhole, a hinged cover-section working over said manhole and provided in its top with a neck-opening surrounded by an upwardly-extending hood-flange, a pair of registering semicircular neck-plates removably fitted within said hood-flange, a flexible hood attached at its lower edge to said flange, and an adjustable rigid support for the top of said hood, substantially as set forth.

2. In a depurator, a vacuum-box having a top manhole, a cover-section arranged over said manhole and provided in its top with a neck-opening, a flexible hood secured at its lower edge to the cover-section over said neck-opening, a skeleton bracket-frame arranged on top of the cover-section, a screw-rod loosely working through the top of said frame and carrying at its lower end a supporting-plate fitted in the top of the hood, and an adjusting-nut mounted on said rod above said frame, substantially as set forth.

3. In a depurator, a vacuum-box having a cover-section provided in its top with a neck-opening, a flexible head-confining hood secured at its lower edge to the cover-section over said neck-opening, and a rigid support for the top portion of the flexible hood to prevent the latter from being drawn too tightly over the head of the patient by the vacuum within the box, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ELIZA J. HARDING.

Witnesses:
R. B. BLYTHE,
THEO. G. SMITH.