

KARL ANTON (ALLAN) EMANUEL FRIES.

NARCOTIZING MASK.

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1,021,865.

Patented Apr. 2, 1912.

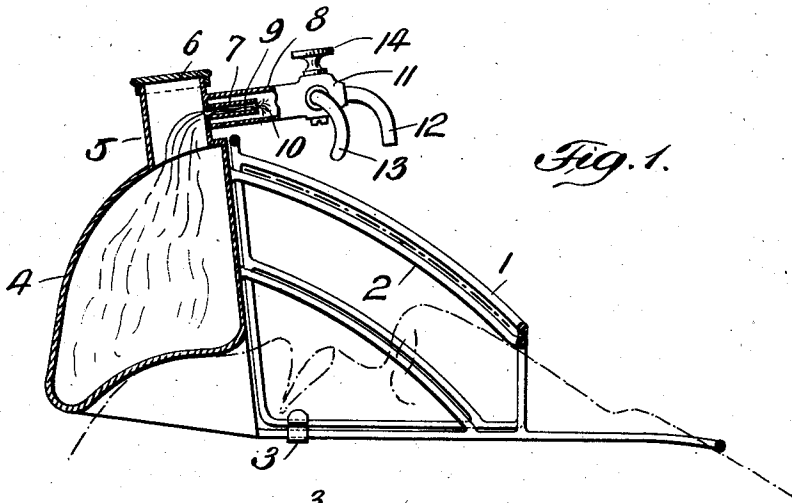


Fig. 1.

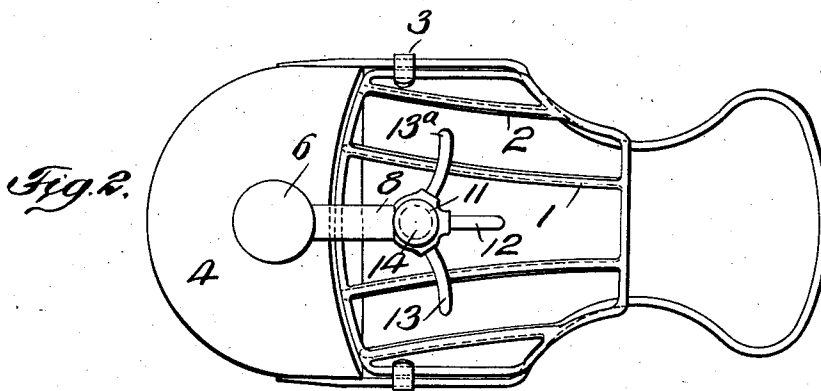


Fig. 2.

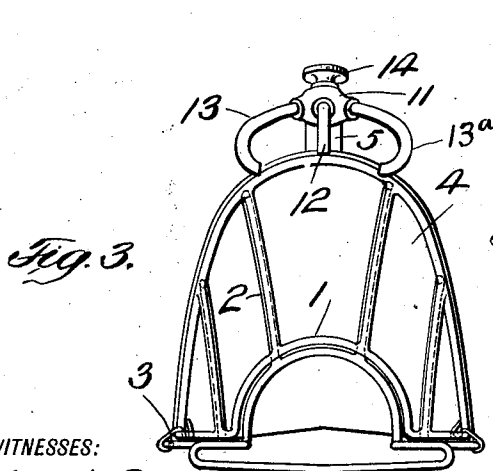


Fig. 3.

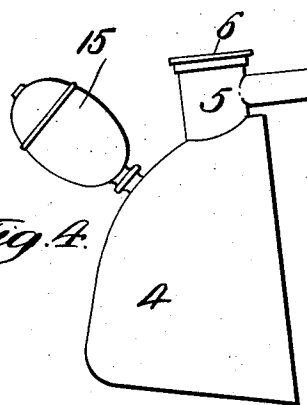


Fig. 4.

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KARL ANTON (ALLAN) EMANUEL FRIES, OF STOCKHOLM, SWEDEN.

NARCOTIZING-MASK.

1,021,865.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed December 26, 1911. Serial No. 667,708.

To all whom it may concern:

Be it known that I, KARL ANTON (ALLAN) EMANUEL FRIES, a subject of the King of Sweden, and resident of 16 Schéelegatan, Stockholm, in the Kingdom of Sweden, have invented certain new and useful Improvements in Narcotizing-Masks, of which the following is a specification, reference being made to the accompanying drawing.

In narcotizing persons about to undergo surgical operations, the narcotic is poured by the surgeon's assistant on a piece of fabric placed in a narcotizing mask, the assistant holding the drop bottle in which the narcotic is contained in one hand.

The present invention comprises a narcotizing mask which is characterized, chiefly, by this that the holder for the fabric or the like saturated with the narcotic is combined with a receiver serving to take up the narcotic, said receiver being connected to a device for controlling the escape of the narcotic from the receiver to the fabric. The escape of the narcotic from the receiver may suitably be effected by pressure prevailing in the receiver. Such a narcotizing mask possesses several essential advantages some of which are mentioned in the following specification.

In the accompanying drawing, a narcotizing mask embodying the present invention is illustrated, said mask being especially adapted for the use of ether or other liquid having a low boiling point as a narcotic.

Figure 1 shows a longitudinal section of the mask; Fig. 2 is a top plan view; Fig. 3 an end elevation thereof; and Fig. 4 a detail view of a modification.

The holder for the piece of gauze (or other fabric) saturated with the ether or other narcotic consists, as usual, of two grate-like parts 1 and 2 between which the gauze is placed, to which end the part 1 is movable relatively to part 2. In Fig. 1 a piece of fabric is shown (by dashed and dotted lines) placed between the grates 1 and 2 which are kept together by clips 3. The grate 2 is firmly connected to a suitable metallic ether receiver 4. This receiver, which in the embodiment illustrated is adapted to rest on the patient's chin, may be formed as shown in the drawing. At the top the receiver 4 is provided with a short pipe 5 having at its upper end a screw cap 6 upon the removal of which the receiver can be filled or emptied. Attached to the

short pipe 5 are two short pipes 7 and 8, one of which is shorter and has a smaller diameter than the other, which latter incloses the former. Placed within the shorter and narrower pipe 7 is a wick 9, which passes down into the receiver 4 and the upper end of which is situated in the chamber 10 surrounded by the longer and thicker pipe 8, which chamber does not communicate with the interior of the receiver otherwise than through the wick 9. The part of the latter descending into the receiver should be very loose (also the part of the wick within the pipe 7 should not be too firm), and the end of the wick situated in the chamber 10 should be split.

The free end of the pipe 8 carries a cock 11 communicating with the chamber 10, said cock having three nozzles, viz. one nozzle 12 located in the vertical central plane of the mask and two nozzles 13 and 13^a extending laterally. The cock 11, which should be very carefully made so as to allow an accurate control of the ether passing through the same, is arranged in such a manner that the ether passes to but one of the three nozzles at a time, the middle nozzle 12 being used when the patient lies on his back, while either of the two lateral nozzles 13 is used when the patient is lying on either side. The ether drops or flows from the nozzles onto the fabric retained by the members 1 and 2. The part of the cock which is actuated when the cock is adjusted should preferably consist, as shown, of a round disk 14 having a milled edge. The disk may be provided, if desired, with a graduation cooperating with a fixed index.

When the narcotizing mask is placed on the face of the patient, so that the receiver 4 rests on his chin, the ether takes up heat from the patient's body (as well as from his products of respiration), and as a consequence the ether will be vaporized and a rather strong pressure acting on the surface of the ether will arise in the receiver and press the ether through the fine passages in the wick 9 into the chamber 10. The escape of ether from the chamber 10 to the fabric fastened in the mask can be controlled as desired by means of the cock 11.

As shown in the drawing the receiver 4 is shaped to be placed over a patient's chin, but it is obvious that by a slight variation in the shape of the receiver it may be placed on the patient's forehead or other part of

the body as desired. The total heat, or a part thereof, necessary for volatilizing the contents of the receiver may be obtained from sources other than the patient being treated. If a narcotic less volatile than ether be employed, the arrangement of Fig. 4 may be found useful, wherein a compressor bulb 15 is provided for producing pressure over the body of narcotic in the receiver and forcing the narcotic up through the wick, or other means employed, for conveying the narcotic to the nozzles.

Among the advantages resulting from the use of narcotizing masks constructed according to this invention the following may be mentioned. The mask works entirely automatically, since an amount of heat sufficient for maintaining the pressure required to deliver the maximum amount of narcotic to the fabric is obtained from the patient. If the receiver for the narcotic is combined with a compressor, the latter need but seldom be operated. The assistant at the operation always has at least one hand free for the necessary attendance to the patient and sometimes—especially if the mask is attached to the patient—he has both hands free. The supply of narcotic to the fabric and, thus, the amount of narcotic administered can be accurately regulated by the assistant and controlled by the surgeon who may, therefore, either entirely dispense with the services of an assistant, or need not rely on a trained assistant. The narcotic being heated, the patient inhales heated narcotic vapor.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a part of the patient's body, of a frame adapted to rest over the patient's face and support a suitable absorbent material designed to be saturated with the anesthetic, and means for supplying anesthetic from the receiver to desired parts of the material supported by said frame.

2. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a part of the patient's body, of one member of a frame carried by said receiver, an independent frame member complementary to said first named member, means for securing said members together to hold an absorbent material designed to be saturated with the anesthetic between said members, said frame members and fabric being adapted to rest over the patient's face, and means for directing a supply of anesthetic from the receiver to any desired part of the material supported by the frame members.

3. In a device of the character specified,

the combination with an anesthetic receiver adapted to rest in contact with a part of the patient's body whereby the heat of the body will vaporize a portion of the anesthetic in said receiver and exert pressure on the remainder of said anesthetic, of a frame adapted to rest over the patient's face and support a suitable absorbent material designed to be saturated with the anesthetic, a plurality of nozzles directed over different parts of said material and means for conveying anesthetic from said receiver through any of said nozzles.

4. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a part of the patient's body, of a frame carried by said receiver and adapted to support a suitable absorbent material over the patient's face, a tube projecting from said receiver, a plurality of nozzles adapted to communicate with said tube and having their outlet ends directed over different points of said material, and means for conducting anesthetic from said receiver to said nozzle.

5. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a patient's body, of a frame carried by said receiver and adapted to support a suitable absorbent material over the patient's face, a tube projecting from said receiver and a cock at one end of said tube, nozzles projecting from said cock and having their outlet ends directed over different parts of said material, means for conducting anesthetic from said receiver to said cock, and means for directing the flow of anesthetic through any or all of said nozzles.

6. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a patient's body, of a frame carried by said receiver and adapted to support a suitable absorbent material over the patient's face, a tube attached to said receiver said tube terminating in a cock, nozzles projecting from said cock and having their outlet ends directed over different parts of said material, a wick for conducting anesthetic from the receiver to said cock, and means for directing the flow of anesthetic through any or all of said nozzles.

7. In a device of the character specified, the combination with an anesthetic receiver adapted to rest in contact with a patient's body, of a frame carried by said receiver and adapted to support a suitable absorbent material over the patient's face, means for supplying anesthetic to desired parts of said material, and means for producing pressure over the anesthetic in the receiver to force said anesthetic out of the receiver and through said first named means.

8. In a device of the character specified,

the combination with an anesthetic receiver,
of a frame carried by said receiver and
adapted to support a suitable absorbent ma-
terial over the patient's face, a tube project-
5 ing from said receiver and a cock at the end
of said tube, a second tube projecting from
said receiver, said second tube being shorter
and of less diameter than said first named
tube and being inclosed by the latter, there
10 being a chamber between one end of said
smaller tube and the inner side of said cock,
a wick extending through said smaller tube
and into the receiver for conducting anes-

thetic from the latter into said chamber, a
plurality of nozzles carried by said cock and 15
through which anesthetic is adapted to flow
onto said absorbent material, and means for
directing the flow of anesthetic through any
or all of said nozzles.

In witness whereof I have hereunto set 20
my hand in presence of two witnesses.

KARL ANTON (ALLAN) EMANUEL FRIES.

Witnesses:

WELTER PRINN,
H. B. OHLSSON.

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