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J. A. NORDIN

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APPARATUS FOR PRODUCING ARTIFICIAL BREATHING OR RESPIRATION

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FIG. 1.

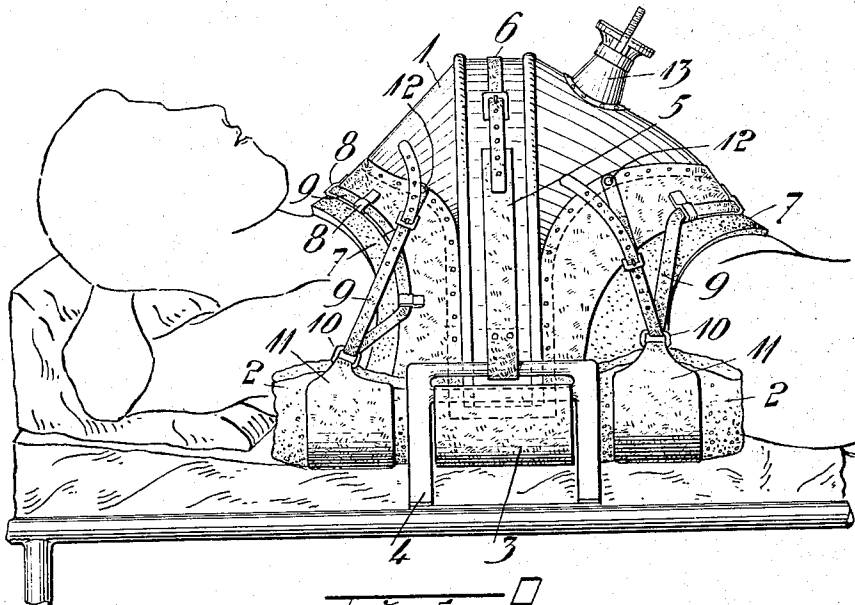
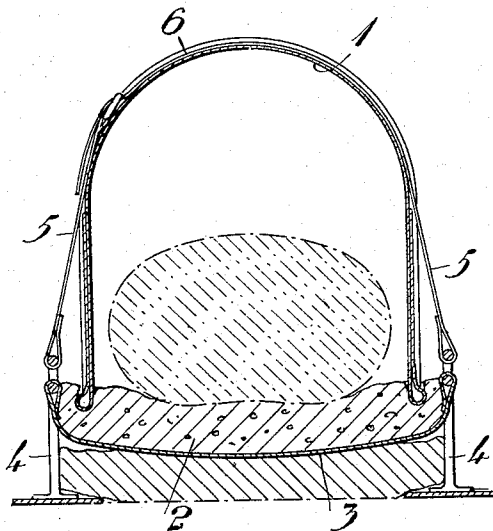


FIG. 2.



J. A. Nordin
INVENTOR

By: *Glascorp Downing & Deebolt*
Attys.

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APPARATUS FOR PRODUCING ARTIFICIAL
BREATHING OR RESPIRATIONJosef August Nordin, Stockholm, Sweden, assign-
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Sweden, a corporation of SwedenApplication November 12, 1935, Serial No. 49,406
In Sweden November 21, 1934

6 Claims. (Cl. 128—30)

The present invention relates to such apparatus for producing artificial breathing or respiration, which consists of a shield-like hood or casing intended to be placed over the breast and belly of a patient, so that an intermediate space is formed between the body and the hood, in which space the air pressure can be reduced or raised.

Such breathing hoods should preferably be easy to apply and to remove, but they should nevertheless render possible a tight fit between the hood and the body. A tight fit is of particular importance, since air penetrating or flowing out through openings between the hood and the body is liable to cause an injurious cooling action on the patient being attended. Moreover, considering that the respiratory movements of the body should not be checked as regards certain portions of the body and that, accordingly, too firm a bearing pressure and too straight a fit will generally be undesirable, it is obvious that the provision of a reliable and simple tightening device is of very great importance.

According to the present invention this is accomplished owing to the fact that in combination with the hood proper a flexible, soft pad is employed, on which the relatively rigid shanks of the hood bear on both sides of the patient, round whom the hood and the pad are clasped together by means of one or several belts, straps or the like, so that the shanks of the hood sink down into the pad and the rims of the latter will conveniently be bent up towards the shanks of the hood, and that to the end portions of the hood are fastened relatively thick, flexible tightening strips or the like adapted to fit tightly against the body of the patient, f. i. by means of belts or straps, the pad being, moreover, arranged for joining on to said tightening strips.

An embodiment of the invention is illustrated on the accompanying drawing, in which

Figure 1 is a side view of the breathing apparatus in question applied to the patient to be attended, and

Figure 2 is a transverse section through the apparatus.

The hood 1, made of a suitable material, is relatively rigid and may have approximately the shape shown by the drawing, and it should be so dimensioned that there exists a relatively large space between the hood, on the one hand, and the breast and belly of the patient as well as the lateral portions of the thorax, on the other hand (see Figure 2). The shanks of the hood bear on a flexible, soft pad 2 under which is arranged a relatively wide belt 3, the ends of which are secured to sup-

porting or carrying members 4, which, by means of the belt 3 support the pad 2. To the carrying members 4 are secured belt portions 5 which can be strapped together by means of a belt 6 provided over the hood, the rims of the pad being, in this way, bent upwardly against the shanks of the hood, while at the same time the edges of the shank are depressed to some extent into the soft pad, with the result that a completely reliable tight fit is accomplished between the pad and the shanks of the hood.

For the purpose of effecting a tight fit between the end portions of the hood and the body of the patient, relatively thick, flexible tightening strips 7 suitably consisting of rubber are fastened to said end portions. Secured to the strips 7 are loops 8, or the like, which form guides for belts 9 or the like extending approximately parallel to the outer edges of the strips at a distance therefrom. These belts are passed through rings 10 secured to relatively wide belts 11 provided under the pad 2. The ends of the belts 9 are fastened to projections 12 on the hood and are adapted to depress the strips into close engagement with the body. As a result, also the corners of the pad will evidently be turned upwardly in the manner shown in the drawing. The cooperation of the belts 9 with the relatively thick, flexible tightening strips is particularly advantageous, as said strips are brought to adapt themselves tightly to the shape of the body without the latter being exposed to any essential jamming action or unsuitable pressure.

If desired, the tightening strips may extend substantially round the body of the patient.

The hood 1 is provided with a pipe socket 13 to which may be coupled a flexible tube leading to a device (not shown) producing fluctuations of pressure in the hood.

The application and the removal of the hood will evidently cause no difficulties whatever, but can be effected by some simple manipulations which may need no detailed explanation. Within certain limits one and the same hood may be employed for patients of different size, which, of course, involves an essential advantage.

The supporting or carrying members 4 are substantially intended to be used in case the pad and the patient are placed on a yielding support, for instance, on a litter or a bed. If the support is more steady the carrying members may be omitted, in which case the belt 3 and the belt portions 5 are made in one piece. It is not absolutely necessary to have the belts 9 guided on the strips 7 in the manner shown in the drawing.

The principal matter is that they bring about the tightening between the strips and the body of the patient and the bending upwardly of the rims of the pad.

5 I claim:

1. An apparatus for producing artificial breathing or respiration, comprising a shield-like hood adapted to be placed over the breast and belly of a patient, so that between the hood and 10 the body is formed an intermediate space in which the pressure of the air may be alternately reduced and raised, a flexible, soft pad underlying the patient on which rigid shanks of the hood bear on both sides of the patient, means 15 for clasp together the hood and the pad around the patient, so that the shanks of the hood sink down into the pad and the rims of the latter are bent upwardly, and means for effecting a tight fit between end portions of the hood and 20 the body of the patient.

2. An apparatus for producing artificial breathing or respiration, comprising a shield-like hood adapted to be placed over the breast and belly of a patient, so that between the hood and 25 the body is formed an intermediate space in which the pressure of the air may be alternately reduced and raised, a flexible, soft pad underlying the patient on which shanks of the hood bear on both sides of the patient, belts for clasp- 30 ing together the hood and the pad around the patient, so that the shanks of the hood sink down into the pad and the rims of the latter are bent upwardly, and relatively thick, flexible tightening strips, fastened to the end portions 35 of the hood, said strips being capable to fit tightly against the body of the patient, said pad being adapted to join on to said strips.

3. An apparatus for producing artificial breathing or respiration, comprising a shield-like 40 hood adapted to be placed over the breast and belly of a patient, so that between the hood and the body is formed an intermediate space in which the pressure of the air may be alternately reduced and raised, a flexible, soft pad under- 45 lying the patient on which shanks of the hood bear on both sides of the patient, belts for clasp- ing together the hood and the pad around the patient, so that the shanks of the hood sink down into the pad and the rims of the latter are bent 50 upwardly, relatively thick, flexible tightening strips, fastened to the end portions of the hood and belts or the like, adapted for applying the strips against the body of the patient.

4. An apparatus for producing artificial 55 breathing or respiration, comprising a shield like

hood adapted to be placed over the breast and belly of a patient, so that between the hood and the body is formed an intermediate space in which the pressure of the air may be alternately 5 reduced and raised, a flexible, soft pad underlying the patient on which shanks of the hood bear on both sides of the patient, belts for clasp- ing together the hood and the pad around the patient, so that the shanks of the hood sink down 10 into the pad and the rims of the latter are bent upwardly, relatively thick, flexible tightening strips, fastened to the end portions of the hood, belts or the like which are guided on the strips approximately parallel to the outer edge of the 15 strips at a distance therefrom and corners on the pad arranged for joining on to the tightening strips.

5. An apparatus for producing artificial breathing or respiration, comprising a shield-like hood adapted to be placed over the breast and 20 belly of a patient, so that between the hood and the body is formed an intermediate space in which the pressure of the air may be alternately reduced and raised, a flexible, soft pad under- lying the patient on which shanks of the hood 25 bear on both sides of the patient, belts for clasp- ing together the hood and the pad around the patient, so that the shanks of the hood sink down into the pad and the rims of the latter are bent 30 upwardly, relatively thick, flexible tightening strips, fastened to the end portions of the hood, belts or the like which are guided on the strips approximately parallel to the outer edge of the strips at a distance therefrom and corners on the 35 pad arranged for joining on to the tightening strips by means of belts or the like, the corners of the pad being arranged for joining on to the tightening strips by means of the belts also 40 effecting the tightening between the strips and the body.

6. An apparatus for producing artificial breathing or respiration, comprising a shield-like hood adapted to be placed over the breast and belly of a patient, so that between the hood and 45 the body is formed an intermediate space in which the pressure of the air may be alternately reduced and raised, a flexible, soft pad underlying the patient on which shanks of the hood bear on both sides of the patient, belts for clasp- ing together the hood and the pad around the 50 patient, so that the shanks of the hood sink down into the pad and the rims of the latter are bent upwardly, and supports or carrying members combined with the said belts.

JOSEF AUGUST NORDIN. 55