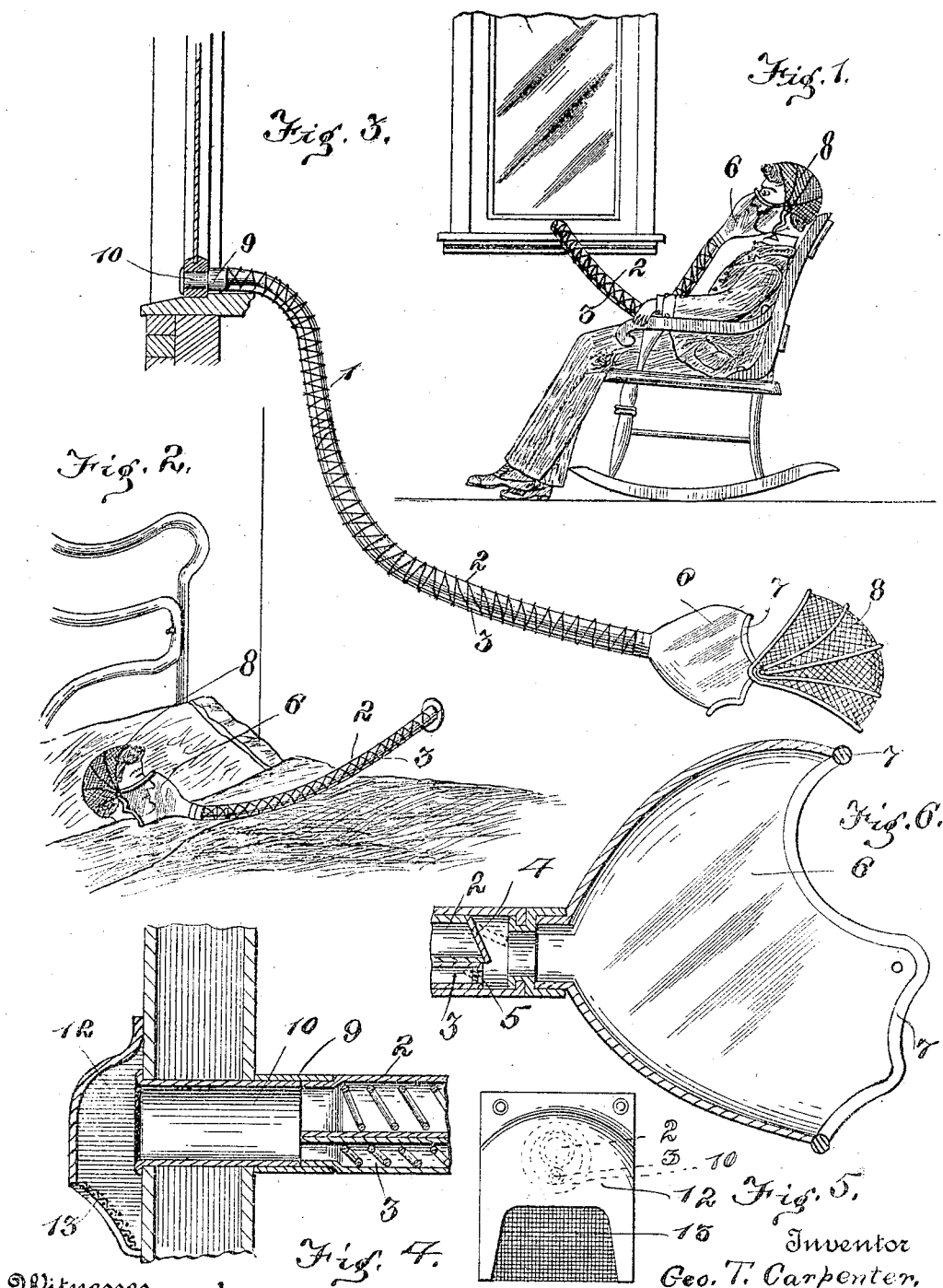


G. T. CARPENTER.
RESPIRATOR.

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GEORGE T. CARPENTER, OF CHICAGO, ILLINOIS.

RESPIRATOR.

No. 807,597.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE T. CARPENTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Respirators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in respirators.

The object of the invention is to provide a device of this character whereby fresh outside air may be conducted and supplied to a patient without the necessity of exposure, thus permitting the patient or person using the device to remain within doors and at the same time breathe the outside air.

The device is intended to be used in connection with the so-called "out-door treatment" for certain diseases and by the use of which a patient may receive the benefit of such a treatment without the danger of exposure which is occasioned by the ordinary manner of taking such treatment.

A further object is to provide an apparatus of this character by which air may be freely supplied to the patients to enable them to breathe in a natural manner and without extra effort, the device being applicable to use either in sitting or inclining posture.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view showing the manner of using the device when the patient is in a sitting posture. Fig. 2 is a similar view showing the manner of using the device when in bed or in an inclined position. Fig. 3 is an enlarged side view of the device connected to an air-inlet tube in the side of the window. Fig. 4 is an enlarged sectional view of the inlet end of the air-tubes, showing the connection of the same with the inlet-tube in the wall. Fig. 5 is an outside view of the protecting-hood for the inlet-tube. Fig. 6 is an enlarged sectional view through the discharge end of the tubes and the face-mask.

Referring more particularly to the drawings, 1 denotes the respirator, which consists of two flexible tubes 2 and 3, which are of suitable length and size and are formed of

light air-tight material, which is preferably rubber or similar light material and are each provided with a wire coil to prevent the same from collapsing. The tubes 2 and 3 are adapted to be held together in any suitable manner, but are preferably held by means of a covering of netting or other suitable material.

The tube 2 is of larger diameter than the tube 3 and is used as the inlet or as the inhalation tube, while the smaller tube 3 is the exhalation or discharge tube. The inner end of the tube 2 is provided with an inlet-valve 4, while the inner end of the discharge-tube 3 is provided with an exhaust or outlet valve 5.

To the inner ends of the tubes is swiveled or otherwise loosely connected a face-mask 6, which is shaped and constructed to fit over the face of the user and is provided around its edge with a yielding substance or cushion 7, by which the same will have a close engagement with the face to exclude all air except that which passes in and out through the tubes 2 and 3. The mask 6 may be supported in any suitable manner, but is here shown as being held in place by means of a hood or cap 8, formed of open material, such as netting or the like.

The opposite ends of the tubes 2 and 3 are secured within a collar or band 9, which is adapted to form a slip-joint connection with the inner end of an inlet-tube 10, which is adapted to be inserted through the outside wall of a room or apartment or through the lower bar of a window, or, if desired, may be arranged within a board or strip which is adapted to be placed in a window beneath the lower sash. The outer end of the inlet-tube 10 opens to the outside atmosphere, and over said end is arranged a protecting cap or hood 12, the lower portion of which is covered by a screen 13, by which insects and other undesirable objects are excluded.

The tubes 2 and 3 may be of any suitable length and are of such construction that when the face-mask is properly adjusted will permit the user to assume any position desired. The swiveled connection between the ends of the tube and the face-mask permits free movement of one with respect to the other. The arrangement of the inlet and discharge valves is such that the free breathing of the patient is not interfered with.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the inven-

tion will be readily understood without requiring a more extended explanation.

Various 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 my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a respirator, the combination with a flexible valved inhalation and a flexible valved exhalation tube, said tubes being held together by a netting, of a face-mask connected to the free end of said tubes, and a collar or band whereby the opposite end of said tubes are connected to an inlet-tube which opens to the outside atmosphere, substantially as described.

2. In a respirator, the combination with a flexible valved inhalation and a flexible valved exhalation tube, said tubes being held together by a flexible binding, of a face-mask connected to the free end of said tubes, an inlet-tube connected to the opposite end of said tubes,

and arranged to communicate with the outside atmosphere, a slip-joint connection between the ends of said flexible tubes and said inlet-tube, and means whereby said tubes are connected to the outside atmosphere, substantially as described.

3. In a respirator, the combination with a flexible valved inhalation and a flexible valved exhalation tube, of a face-mask connected to one end of said tubes, a net-cap adapted to hold said mask in place on the face of the user, a swiveled connection between the inner ends of said flexible tubes and said mask, an inlet-tube arranged to communicate with the outside air and means whereby said flexible tubes are removably connected with said inlet-tube, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE T. CARPENTER.

Witnesses:

SAMUEL E. KNECHT,
SAMUEL M. FEGTLY.