

(No Model.)

2 Sheets—Sheet 1.

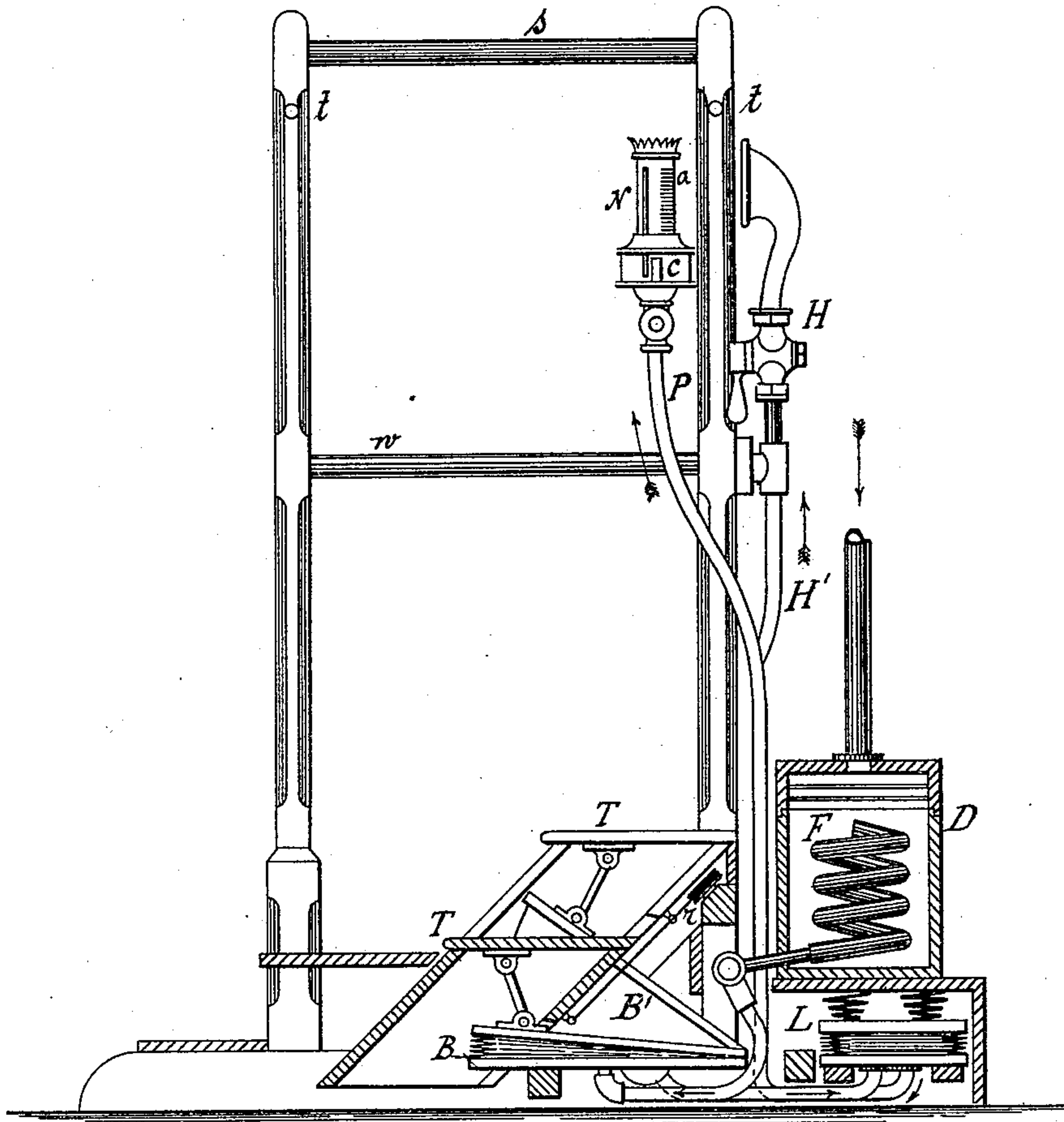
C. ULBRICH.

INHALER.

No. 352,668.

Patented Nov. 16, 1886.

FIG. 1.



Witnesses.
Anthony Steffen
Fritz Heinrich.

Inventor.
Carl Ulbrich
By Edwin A. Bridges
his Attorney

(No Model.)

2 Sheets—Sheet 2.

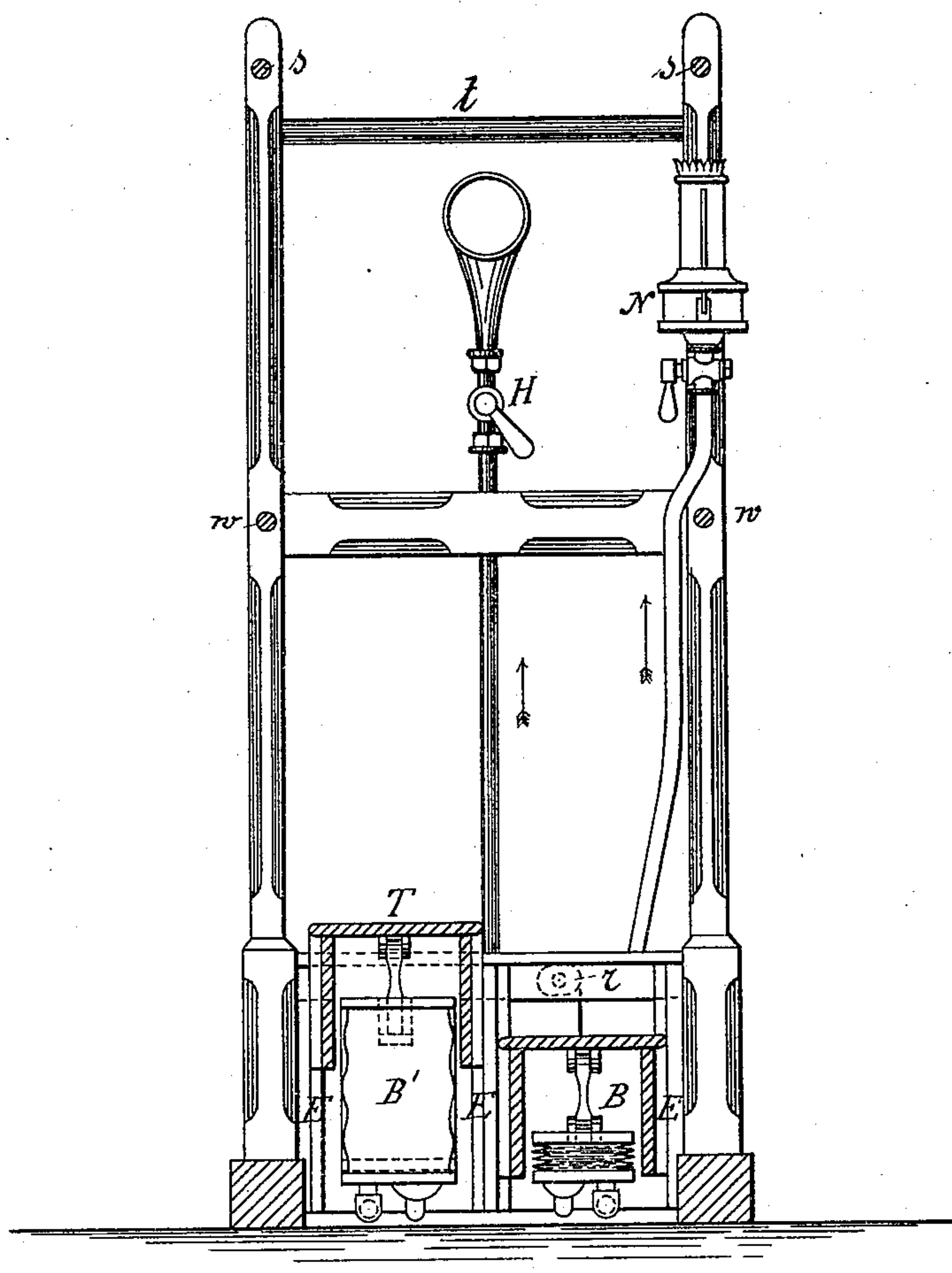
C. ULBRICH.

INHALER.

No. 352,668.

Patented Nov. 16, 1886.

FIG. 2.



Witnesses.
Anthony Steffen
Fritz Heinrich.

Inventor.
Carl Ulbrich.
By Edwin M. Brydges
his Attorney.

UNITED STATES PATENT OFFICE.

CARL ULBRICH, OF NIEDERLÖSSNITZ, SAXONY, GERMANY.

INHALER.

SPECIFICATION forming part of Letters Patent No. 352,668, dated November 16, 1886.

Application filed May 3, 1886. Serial No. 200,969. (No model.)

To all whom it may concern:

Be it known that I, CARL ULBRICH, of the town of Niederlössnitz, in the Kingdom of Saxony and German Empire, have invented
5 a certain new and useful Apparatus for Promoting the Healthy Action of the Lungs and Heart, of which I declare the following to be a full and clear specification.

Figure 1 is a side view, and Fig. 2 a front
10 view, of my improved apparatus with the device D L removed.

T T are two steps, which are connected with each other by means of a rope or its equivalent, which runs over two rollers, *r r'*,
15 so that the one step is raised in like proportion to the depression of the other, which said steps glide readily up and down on the inclined surface E.

Beneath each step is an extendible pair of
20 bellows, B B', in order to render the depression of the said step more difficult, and thus set the entire body of the patient in like action as ensues in ascending a hill or mountain. When the bellows B B' rise with the steps,
25 they suck in fresh air through a hose, which is in communication with the open air through a window or in other suitable manner. The air thus sucked in passes first into the cover of a receptacle or reservoir, D, and deposits
30 any impurities it may contain in the wool, wadding, or fine paper layers contained in the same, and can also, if desired, be freed from moisture by means of the chlorate of lime contained in the said lid or cover, when it is requisite that the patient should inhale dry air.
35 If it is, however, desired to inhale extract of forest-trees and oxygen, the wool, wadding, or other material is saturated with the same, so that the air, in passing through the said wool, wadding, or other material, is mixed with the
40 same. When the air has passed this layer or layers of wool, wadding, or other filtering material, the same is drawn or sucked through the coiled pipe or tube F by means of the bellows, which said coiled pipe or tube is surrounded or packed in ice or cold water when
45 cold air is to be inhaled, or with warm water when warm air is to be inhaled. The air now passes into the bellows B B', and is forced out
50 of the same by each depression of a step into the air-reservoir L, which is extended by the

said air, and the spiral or helical springs located above the same compressed, and in this manner the advantage attained that an equable refreshing current of air is delivered through
55 the cock or valve H and tube or pipe H' to the operator for inhalation. This compressed air can be inhaled through a hose and mouth or nose piece. As a partial vacuum is created in the receptacle or reservoir D by the air being
60 sucked out by the action of the bellows B B' when operating the steps, the patient can exhale into thin air by means of a mouth-piece and hose leading into the said receptacle or reservoir. If it is desired to imitate the ascension
65 of a more or less steep hill, the apparatus can be readily adjusted to suit the same by means of the cock or valve H. The further the cock or valve H is closed the more difficult will be the operation of the steps, and the more the
70 said cock or valve is opened the more readily will the compressed air escape and the less power will be required to operate the apparatus. The muscular force exerted in operating the apparatus is indicated by a small device,
75 N, the lower part of which contains water or other fluid. The lower half of the receptacle N is hermetically separated from the upper part, which is provided with suitable graduations. A small glass tube, which
80 reaches almost to the cover of the indicator, passes through the horizontal partition in the said apparatus, and reaches nearly to the bottom of the lower part of the apparatus. The compressed air produced by the movement of
85 the steps enters the receptacle through the small pipe or tube *c* above the surface of the water. The compressed air forces the water or other liquid in the lower part of the receptacle through the glass tube *a* into the upper
90 part of the said receptacle or device N in proportion corresponding to the muscular power exerted by the patient, or according to the steepness of the ascent. Each graduation rise of water in the upper part of the indicator
95 corresponds with one of the indications or marks according to the system of Professor Dr. Oertel in his method of hill or mountain cures. The air enters the indicator N through the tube P. The rods *s t w* serve as gymnastic
100 rack or bars, and as support or resistance when assisting the treading by the power of the arms,

and also for relieving the tips of the lungs, widening the chest, strengthening the muscles of the chest, &c.

5 If the bellows B B', the tubes, and the apparatus N are dispensed with, a simpler and cheaper apparatus is produced as substitute for ascending mountains, in which case the steps are provided with suitable brake mechanism for producing the requisite resistance.

10 Having now described and ascertained the nature of my said invention, what I claim, and desire to have protected by Letters Patent, is—

1. The combination of the steps T T' with

the bellows B B', substantially as described 15 and shown.

2. The combination of the steps T T' and bellows B B' with the receptacle D, substantially as described, and shown in the accompanying drawings. 20

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CARL ULBRICH.

Witnesses:

OTTO WOLFF,
PAUL DRUCKMÜLLER.