

(No Model.)

H. SIMONS.
RESPIRATOR.

No. 531,011.

Patented Dec. 18, 1894.

Fig.1.

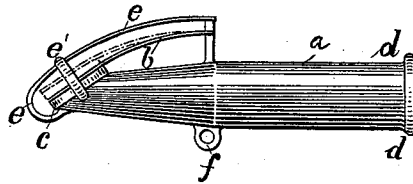


Fig.2.

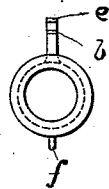
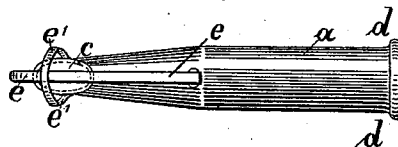


Fig.3.



Witnesses:
Frederic Müller
Hugo Hamann

Inventor:
Heinrich Simons
per M. Schmetz
Attorney.

UNITED STATES PATENT OFFICE.

HEINRICH SIMONS, OF AIX-LA-CHAPELLE, GERMANY.

RESPIRATOR.

SPECIFICATION forming part of Letters Patent No. 531,011, dated December 18, 1894.

Application filed November 7, 1893. Serial No. 490,326. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH SIMONS, a citizen of the German Empire, residing at Aix-la-Chapelle, Germany, have invented certain new and useful Improvements in Breath-Regulators, of which the following is a specification.

The object of the instrument which in the accompanying drawings is represented about twice its actual size is to serve as a means for regulating the operation of breathing and thereby purifying the blood and strengthening the lungs.

It consists of a short tube *a* tapering somewhat toward its front end, where it is closed by a valve *c* disposed at the extremity of a spring *b* and of a protector *e e'* adapted to preserve both valve and spring from damage, the other end of the device being adapted to serve as a mouth-piece.

In the accompanying drawings Figure 1 is a front elevation of the entire instrument; Fig. 2, a back end view of the same and Fig. 3 a plan of it.

The breath-regulator is used in the following manner: The end *d* of the instrument is placed in the mouth and holding it tightly with compressed lips, the used up or impure air contained in the lungs and loaded with carbonic acid gas, is blown out through the instrument with such force that the valve *c* is raised and assumes the position indicated in Fig. 1 by dotted lines. In this way the lungs are emptied from the vitiated air to an extent that cannot be attained in the ordinary movement of even the strongest expiration, since, in consequence of the resistance offered by the valve *c* the air must be blown out with more force than ordinarily and consequently be expelled from the lungs with full strength. As soon as expiratory action ceases, the valve *c* closes and the air of inspiration must enter by way of the nostrils so that it may reach the lungs warmed and free from dust. The preceding full and abundant expiration will have increased the capacity of the lungs for

taking up a supply of air larger than that conveyed to them in ordinary unassisted breathing. Hence a deep inspiration ensues, by which an abundant supply of oxygen is conveyed to the lungs and the result is a purification of the venous blood from carbonic acid and its conversion into oxygenated arterial blood, whereby a most natural and rational blood purification is established in the body.

The strengthening of the lungs above referred to results in consequence of the resistance offered by the valve *c* which is closed by the pressure of the spring, to the air expelled from the lungs, since through the repeated exercises or gymnastics to which the lungs are submitted by overcoming this additional resistance, they become gradually strengthened.

The protector composed of two cross-bridges *e e'* arranged above the valve *c* and spring *b* serves to protect the spring and valve from damage, inasmuch as the protector in order to be used at anytime, is intended to be worn by a cord or ribbon fastened round the neck and passed through the eyelet *f*.

Having thus fully described my invention, what I do claim, and desire to secure by Letters Patent, is—

In an instrument for regulating the breathing the combination of a short tube such as *a* tapering somewhat toward its front end, the other end being adapted to be received between the lips, the valve *c* closing its front tapered end, such valve being disposed at the extremity of a spring *b* fixed to the tube *a* and the protector composed of two cross-bridges *e e'* substantially as set forth and for the purpose stated.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HEINRICH SIMONS.

Witnesses:

JEAN HECKMANN,
TH. WITTNICK.