

(No Model.)

2 Sheets—Sheet 1.

R. DE LOGEROT.  
VENTILATOR.

No. 334,571.

Patented Jan. 19, 1886.

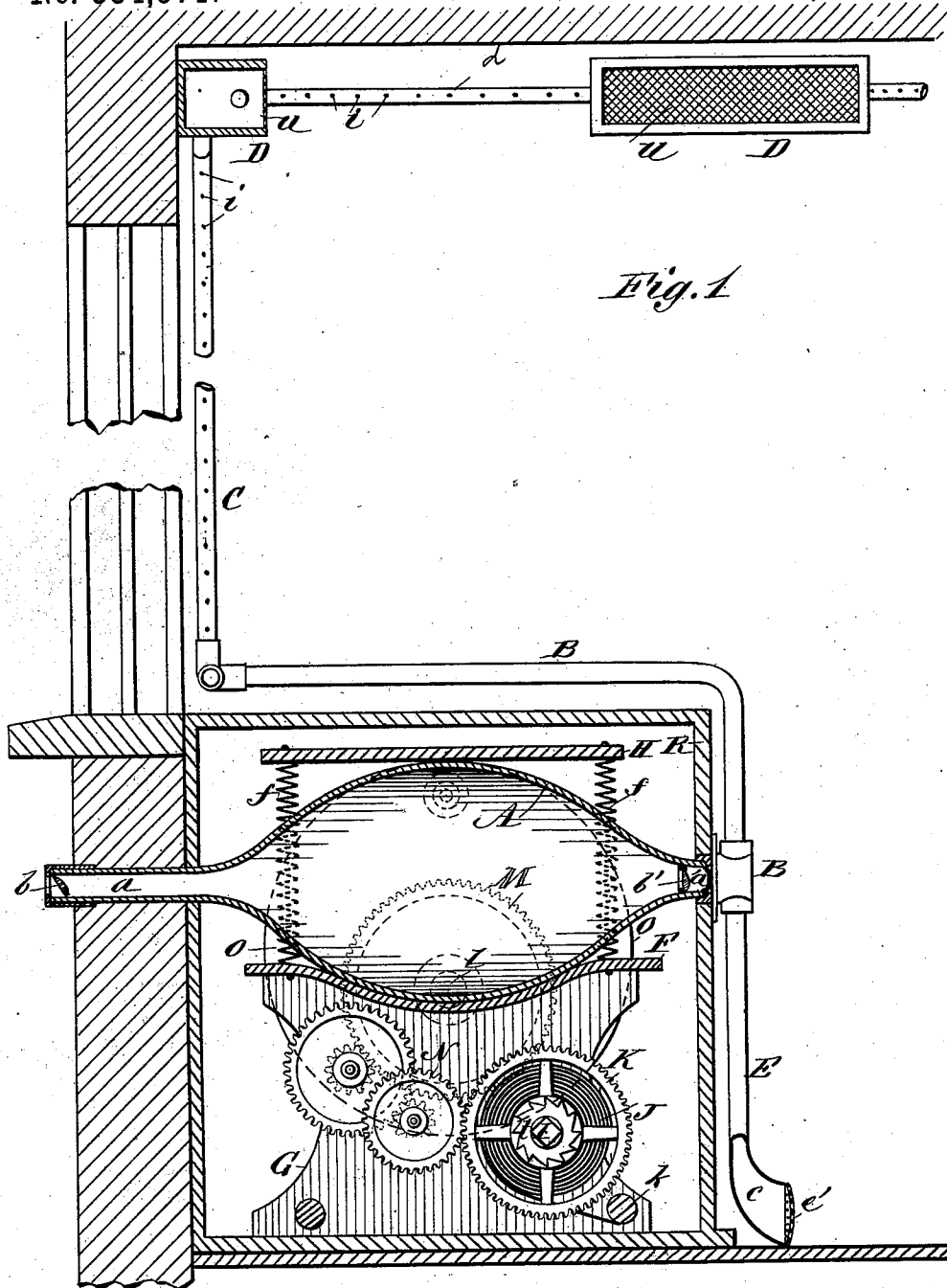


*Fig. 1*

WITNESSES:

*C. Neveu*  
*C. Sedgwick*

INVENTOR:

*R. de Logerot*  
BY *Munn & Co*  
ATTORNEYS.

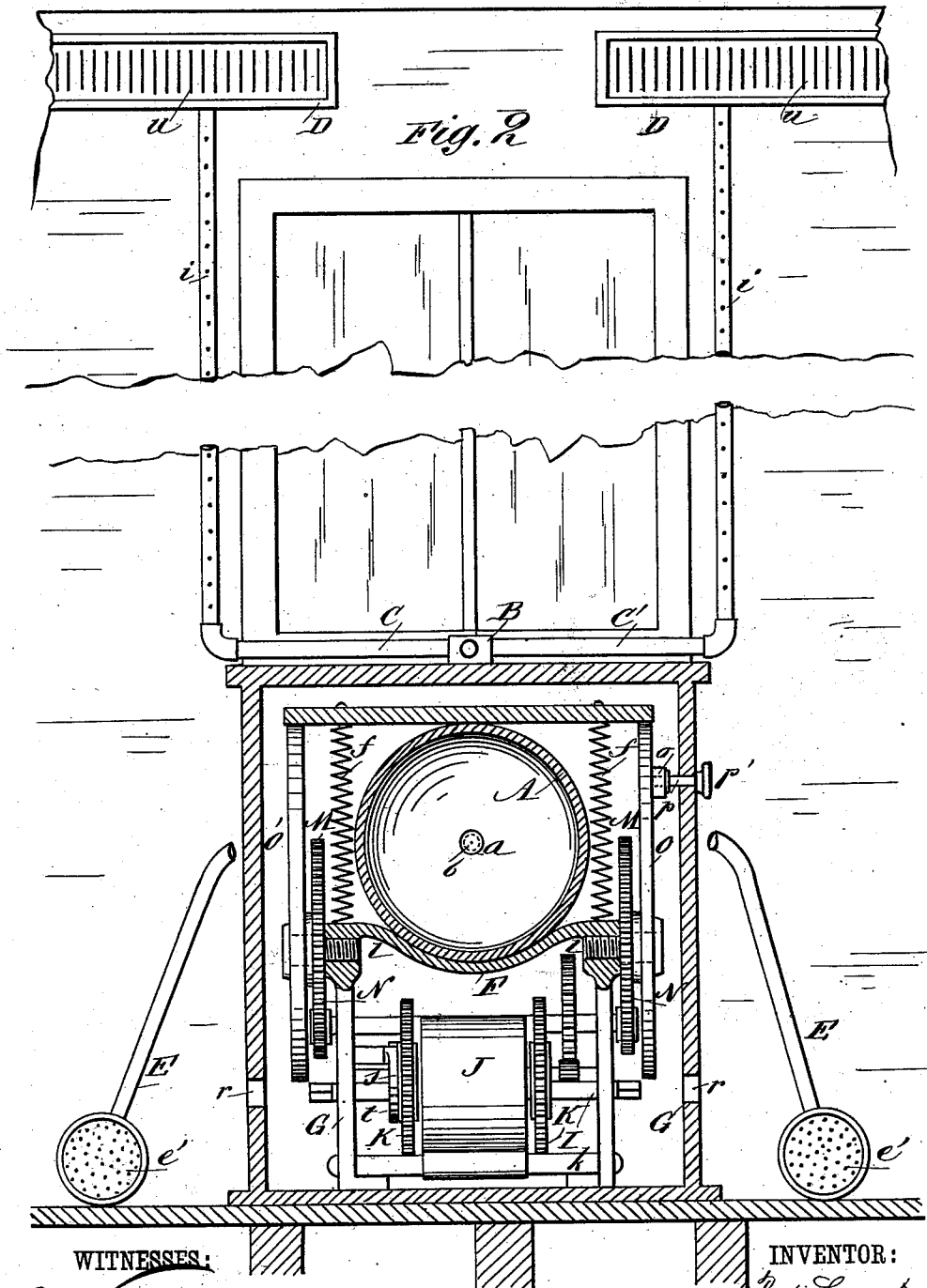
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*C. Naveux*  
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# UNITED STATES PATENT OFFICE.

RICHARD DE LOGEROT, OF NEW YORK, N. Y.

## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 334,571, dated January 19, 1886.

Application filed November 5, 1885. Serial No. 181,926. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD DE LOGEROT, a subject of the King of Italy, at present residing in the city, county, and State of New York, have invented a certain new and useful Ventilator, of which the following is a specification.

My invention is applicable alike to public and private buildings, public conveyances, mines, and, in fact, to any use to which a ventilator has ever been applied, the object of the invention being to provide a ventilator whereby a constant current of fresh air may be supplied to dwelling-apartments or public halls without causing any perceptible breeze or draft, the objection to the ordinary form of ventilator being that when in use about as much draft is created as would be caused by opening one of the windows of the apartment.

To the end named my invention consists of an elastic bulb or sack provided with valves and tubes, one of which tubes leads outward through the exterior wall of the building or apartment, while the other tube connects with perforated distributing-pipes located at any convenient position within the apartment, said bulb or sack being operated by a clock-work mechanism which acts alternately to compress and permit of the expansion of the bulb or sack.

Reference is to be had to the accompanying drawings forming part of this specification, in which similar letters indicate corresponding parts in both of the figures.

Figure 1 is a longitudinal vertical section of the bulb or sack and its inclosing-case, the other parts of the apparatus being shown in elevation. Fig. 2 is a cross-sectional view of the bulb or sack, the operating mechanism in this case being also shown in elevation.

My improved form of ventilator consists, essentially, of an oval bulb, A, which is formed of rubber, or any other impervious elastic material, the bulb being preferably eight inches in diameter and eleven in length, when the device is to be applied for use in ordinary apartments. This bulb A is formed with two extending necks or tubes, *a a'*, the tube *a* extending through the outer side wall of the building, and being provided with a valve, *b*, which opens inward and allows the air from

the exterior to pass freely into the bulb, while the tube *a'* reaches forward within the apartment and is connected to a main distributing-pipe, B, the tube *a'* being provided with a valve, *b'*, which opens toward the distributing-pipe, thereby allowing the free passage of air to said pipe, but preventing all passage of air to the bulb.

From the main pipe B there are branch pipes, as C and C', which lead upward toward the ceiling of the apartment, and extend along the side walls just beneath such ceiling, the upwardly-extending branches C being provided with perforations, as *i i*, and the horizontal sections *d* being also provided with perforations *i*, and, in addition thereto, with box-like structures D, the faces of which are covered with wire-cloth or gratings *u* of any kind. There may be as many of these box-like structures as may be deemed necessary to properly distribute the fresh air within the apartment, and in some cases the boxes D may be entirely omitted and the air distributed through the perforations *i*.

As shown in the drawings, there are two of the branch pipes, which have been lettered C and C'; but it would often happen that a single branch pipe would be sufficient to distribute the air. A second branch distributing-pipe, or pair of such pipes, is connected to the main pipe B, and leads downward therefrom toward the floor of the apartment, terminating at such distance from the said floor as may be deemed advisable for the purpose of perfect ventilation. These pipes are shown at E, and terminate in decided enlargements *e*, which are covered by a perforated cap, *e'*, this being the preferred construction; but the pipes could be formed without the enlargements, and with simple perforations in the body of the tube. The bulb or sack A rests upon the concave surface of a plate, F, carried by a stand, G, and above the bulb there is a second plate, H, which is held in place by four springs, *f f*, one of such springs being secured near each corner of the plate H, and all of the springs leading directly downward to the plate F, to which they are also secured. With a bulb of the proportions hereinbefore named, the springs, when not under tension, would support the plate H at about

four inches above the plate F, so that the bulb A would be normally contracted.

In order that the plate H may be raised against the tension of the springs *f* and the bulb A allowed to expand to its full extent, I provide such a mechanism as I have illustrated in the drawings, and which I will now proceed to specifically describe. A driving-shaft, I, which carries a spring, J, is mounted in bearings formed on the stand G, one end of the spring J being secured to said shaft, while the other end of said spring is fixed to a cross-bar, *k*, or other convenient stationary device. The shaft I carries two large gear-wheels, K K, which, through a train of accelerating-gearing, such as I have shown in the drawings at N N, impart a rapid rotary motion to two large gears, M M, which are studded to the frame or stand G at the points 11. Two eccentrics, O O', are made integral with the gears M M, respectively, so that as said gears are rotated a like motion will be imparted to the eccentrics. These eccentrics bear upon the under side of the plate H, and as they are revolved by the action of the spring J they will act to impart a vertical reciprocating motion to the said plate H, which will be raised to a height of eight inches above the plate F when the eccentrics are on the full upstroke, and restored, by the action of the springs, *f*, to its normal position when the eccentrics are on the full downstroke. Such being the action of the parts, it will be readily understood that when the plate H is raised by the action of the eccentrics O O' the elasticity of the bulb or sack A will cause it to expand, the air to fill the bulb being drawn in through the tube *a* from the exterior of the building, and that, as the bulb is compressed by the action of the springs *f* when the eccentric is turned so as to allow for the depression of the plate H, the fresh air contained within the bulb will be forced outward through the tube *a'* into the pipe B, and from that point forced into the branch pipes, eventually finding its way into the apartment through the perforations *i* or the gratings *u*. In this way the vitiated atmosphere of a chamber or apartment may be replaced by the live air from the outside, and the change effected without inconvenience or risk to the occupants of the apartment. As the incoming air will be so effectually divided into branch currents, the effect of a single current would not be felt, but the aggregate of these small currents will thoroughly renew the atmosphere.

Although I prefer to provide a spring that will run the operating mechanism for about twenty-four hours, it will of course be understood than any strength of spring could be employed, and although I have described my invention as more particularly applicable to apartments above the ground, it will be understood that by extending the tube *a* the device could be located at any depth beneath the ground, as in the case of mines, submarine works, tunnels, &c.

When located in the apartment of an ordinary dwelling or public building, I prefer to inclose the apparatus in a casing, such as that shown at R, and to locate the whole device beneath the window; but of course it will be understood that the apparatus could be located at any other convenient position within or outside of the apartment to be ventilated.

Within the casing R, I form apertures *r* *r*, through which a key or crank-shank may be inserted to engage with the square end of the shaft I, in order that the spring J may be wound up. When the spring is so wound up, it is held in place by a pawl or ratchet, as shown at *st*.

In order that the actuating mechanism may be stopped at will, I provide one of the eccentrics, O, with a lug, *o*, so placed as to engage with a pin, *p*, that projects inward through one of the walls of the casing R, said pin being provided with a manipulating-knob, *p'*, by which it may be drawn outward to start the machine, or pushed inward against the face of the eccentric, and in the path of the lug *o*, when it is desired to stop the actuating mechanism.

With this apparatus an apartment may be continually supplied with pure fresh air without opening either a door or a window, and the air so supplied will be introduced rapidly, but so evenly as not to cause a draft. Consequently the apparatus will not only be beneficial, but will be a decided necessity in hospitals, dormitories, and in all other places where a constant supply of fresh air is required, but where a draft would be fatal to the occupants of the apartment.

Although I have illustrated and described the springs *f* as wire bent to a spiral form, it will of course be understood that the springs could be made of india-rubber, or of any elastic material desired.

It will also be understood that my apparatus can transmit not only air but gas also. It can therefore be used to disinfect, make wholesome, transmit, &c.

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

1. In a ventilating apparatus, the combination, with a bulb, A, mounted between plates F and H, and formed with tubes *a* *a'*, provided with valves *b* *b'*, of springs *f*, connecting the plates F and H, eccentrics O, arranged to bear against the under side of the plate H, and an actuating mechanism, substantially as described.

2. In a ventilating apparatus, the combination, with a bulb or sack, A, mounted between plates F and H, and formed with tubes *a* *a'*, that are provided with valves *b* *b'*, of springs *f*, connecting the plates F and H, a shaft, I, eccentrics O, and actuating mechanism, and tubes B and C, the tubes C being provided with perforations *i*, substantially as described.

3. In a ventilating apparatus, the combination, with a bulb, A, mounted between plates

F and H, and formed with tubes *a a'*, that are provided with valves *b b'*, of springs *f*, uniting the plates F and H, gears M, and eccentrics O, said eccentrics being arranged to bear  
5 upon the under side of the plate H, a mechanism for imparting a rotary motion to the gears M, to which the eccentrics O are fixed, and tubes B, C, and E, the tubes C and E being formed with perforations, substantially as  
10 described.

4. In a ventilating apparatus, the combination, with a bulb, A, formed with tubes *a a'*, that are provided with valves *b b'*, of a stand,

G, carrying a concave plate, F, upon which the bulb A is mounted, a plate, H, arranged 15 above the bulb, and spring *f*, connecting the plates, eccentrics O, made integral with the gears M, spring J, gears K, accelerating-gearing N, arranged between the gears K and M, and tubes B, C, and E, the tubes C and E being provided or formed with apertures, sub- 20 stantially as described.

RICHARD DE LOGEROT.

Witnesses:

EDWARD KENT, Jr.  
C. SEDGWICK.