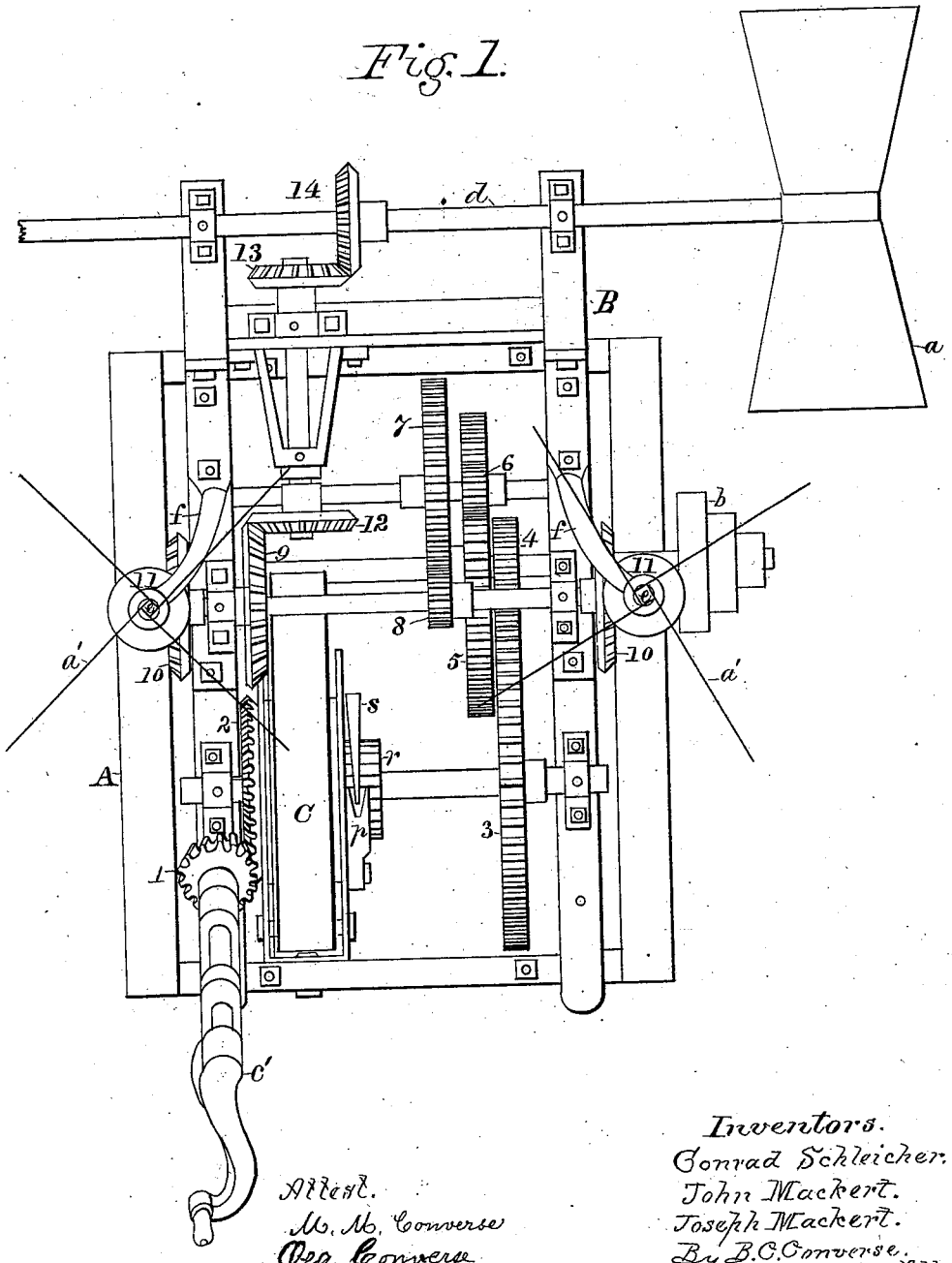
2 Sheets—Sheet 1.

C. SCHLEICHER, J. & J. MACKERT.

Machine for Producing Ventilation.

No. 208,855. Patented Oct. 8, 1878.

Fig. 1.



Inventors.
Conrad Schleicher.
John Mackert.
Joseph Mackert.
By B.C. Converse. Atty.

Attest.
M. M. Converse
Wm Converse

2 Sheets—Sheet 2.

C. SCHLEICHER, J. & J. MACKERT.

Machine for Producing Ventilation.

No. 208,855. **Patented Oct. 8, 1878.**

Fig. 2.

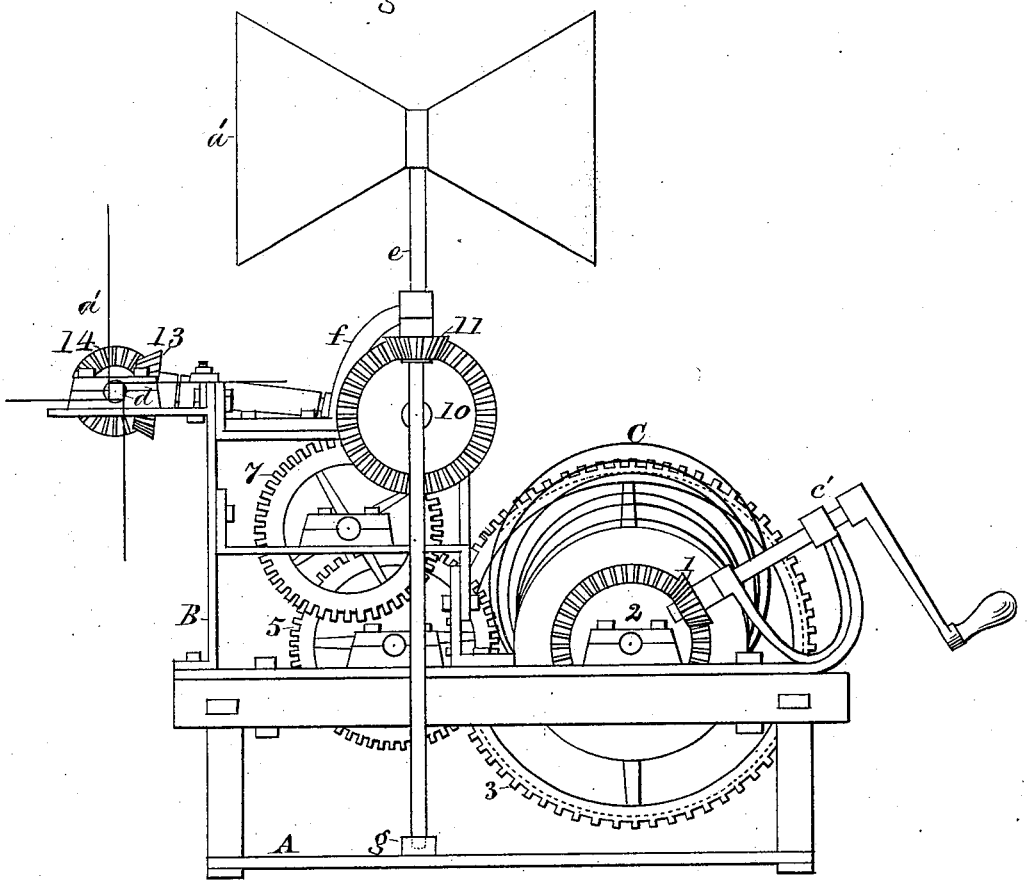
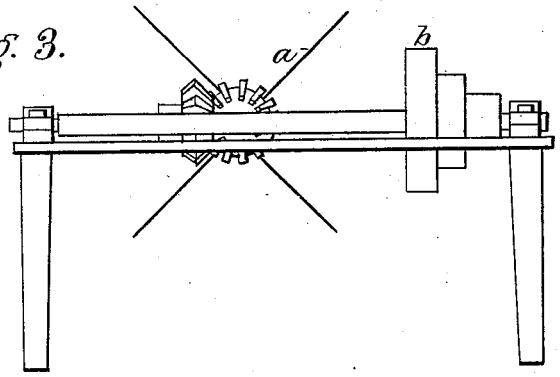


Fig. 3.



Attest.

M. M. Converse.
Ora Converse

Inventors.
Conrad Schleicher.
John Mackert.
Joseph Mackert.
By B. C. Converse. atty.

UNITED STATES PATENT OFFICE.

CONRAD SCHLEICHER, JOHN MACKERT, AND JOSEPH MACKERT, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN MACHINES FOR PRODUCING VENTILATION.

Specification forming part of Letters Patent No. **208,855**, dated October 8, 1878; application filed July 19, 1878.

To all whom it may concern:

Be it known that we, CONRAD SCHLEICHER, JOHN MACKERT, and JOSEPH MACKERT, all of the city of Springfield, in the county of Clarke and State of Ohio, have jointly invented certain Improvements in Machines for Producing a Circulation of Air or Ventilation, of which the following is a specification:

The invention relates to a convenient portable machine carrying a number of fans, operated by spring-power through a system of gearing and belts, whereby currents of air are generated and kept in circulation in one or more compartments of a building, car, or other structure, including vessels, refrigerator-houses, &c.

The object of our invention is to set in motion currents of air in places where an imperfect ventilation exists, and particularly where an entire want of ventilation causes moldiness and putrefaction of articles of food from foul air and gases, as in the dead-air chambers of refrigerator-houses, in cellars, &c., as well as in close compartments of any kind where it is inexpedient to introduce air of a higher temperature by means of pipes or other system of ventilation.

To effect this we have constructed a portable machine carrying a number of fans of any approved form of construction, supplying its own power, so as to make it convenient for any of the purposes designed.

Figure 1 is a top view of our machine, in which A is the base frame on which it stands. B is an upper frame, in which is mounted a large spring, C, which is attached to the rear bar of the frame, and its inner end coiled around a drum on its shaft.

A bevel-wheel, 2, is fastened to the outside (left) end of the drum, into which a pinion, 1, gears on a winding-shaft, *c'*, by which the machine is wound up, the usual retaining ratchet and pawl *r p* (seen on the opposite end of the drum) holding the spring C when wound.

The power is transmitted through the train of gears 3 4 5 6 7 8 9 10 11 12 13 14 to the fans *a* and *a'*. The latter pair of fans are mounted on the tops of the two perpendicular shafts *e e*. (See also Fig. 2, which shows the machine in elevation.) These shafts are driven from the beveled gears 10 11. Their upper ends are supported by brackets *f* on either side of the machine, bent outward from the frame B, while their lower ends rest in an upright box, *g*, on the base-rail A. These shafts may be extended to any desired height, so as to carry a fan at their extreme upper ends in another compartment, if necessary. They can at the same time carry one below on the same shaft, if required.

d is a horizontal shaft at the front end of the machine, which carries the fans *a*, one on each end. This shaft can also be extended to any length into a separate compartment, the whole being driven by the same power and gearing.

The compact form of our machine makes it useful, especially for refrigerator-houses, where, as is well known, the effects of foul air existing in the dead-air parts are injurious to the food placed therein, which can be kept sweet and wholesome by the circulation produced by it, and of uniform temperature—a desideratum entirely unprovided for in refrigerator-houses of the present construction.

It can also be used in the steerage of a vessel, where the confined and unagitated air breeds disease, and in hospitals, for the purpose of keeping a constant circulation throughout.

The machine may have its frame and gearing inclosed in a case, which can be made tight, so as to prevent the admission of moisture.

In positions where it is not easily accessible its winding-staff can be made to project through the wall or side of the compartment in which it is placed.

When used in hospitals, refectories, or other places where flies are troublesome, brushes or other mountings can be attached to it in addition to the fans, to aid in keeping away these insects, as well as for the purposes mentioned.

A sectional machine mounted upon a separate stand can be set in a separate apartment, either on the same floor or above the machine shown in Figs. 1 and 2, and driven from it by a belt from pulley *b*. (See Fig. 1.) Fig. 3 shows one of these sectional machines with a single fan mounted thereon. Additional fans can be placed on it, if necessary.

We are aware that fans have been used for

the purpose of driving currents of air through tubes; but we do not claim these.

We are also aware that trains of gearing driven by a volute spring for various purposes are old and well-known, and we disclaim them; but

We claim as our improvement in machines for producing a circulation of air for the purpose specified—

1. The frame A B, with the series of horizontal and perpendicular shafts *d e e*, having fans *a* and *a'*, in combination with the train of gears 3 4 5 6 7 8 9 10 11 12 13 14, the spring C, and its winding-gear 1 and 2, as and for the purpose hereinbefore set forth.

2. In combination with a machine for producing ventilation having a series of gears, shafts, fans, &c., substantially as specified, cone-pulley *b*, attached thereto, as described, for the adaptation of the same, by a belt-connection, to a sectional machine, D, as hereinbefore set forth.

3. A sectional machine, D, having an independent fan and driving-gear, with a cone-pulley, *b*, mounted upon its shaft, to adapt it to a belt-connection with the primary machine transmitting the power, as hereinbefore described, for the purpose set forth.

CONRAD SCHLEICHER.
JOHN MACKERT.
JOSEPH MACKERT.

Attest:
B. C. CONVERSE,
M. M. CONVERSE.