

(No Model.)

J. FERNIE.
VENTILATING APPARATUS.

No. 280,594.

Patented July 3, 1883.

FIG. 1.

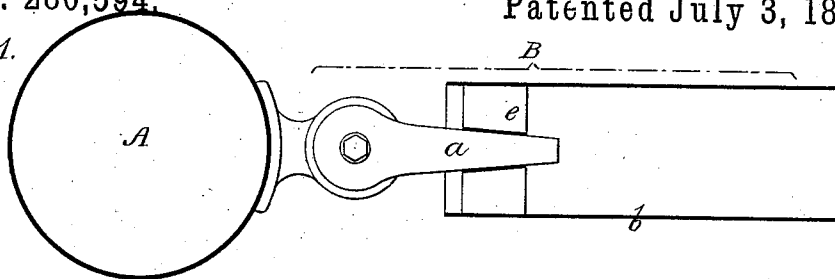


FIG. 2.

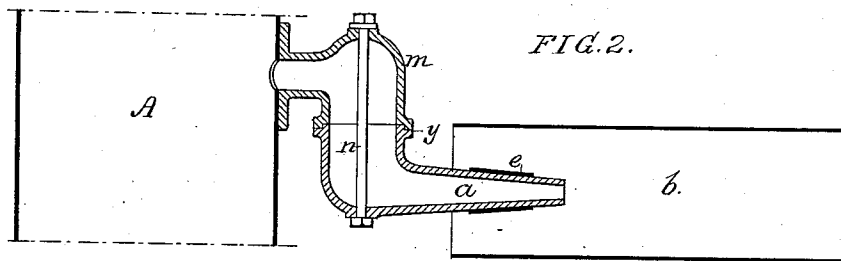


FIG. 3.

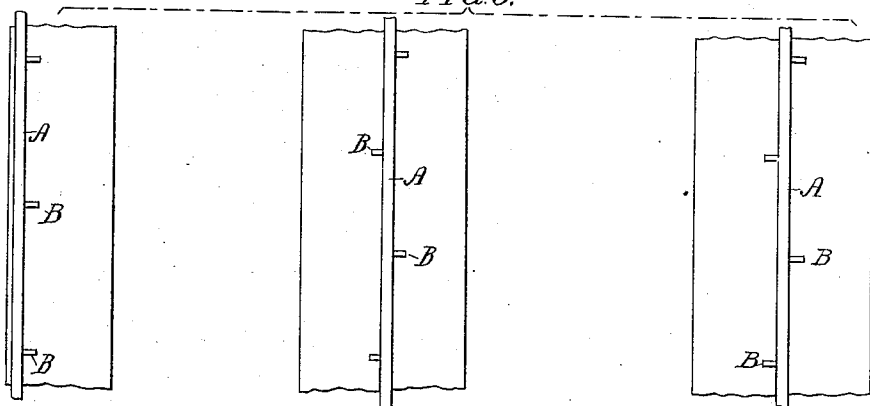
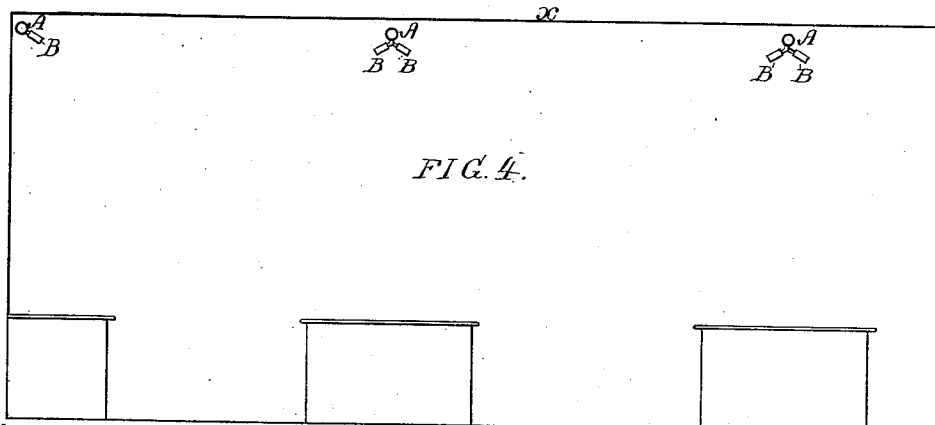


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN FERNIE, OF PHILADELPHIA, PENNSYLVANIA.

VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 280,594, dated July 3, 1883.

Application filed February 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN FERNIE, a subject of the Queen of Great Britain and Ireland, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Ventilating Apparatus, of which the following is a specification.

My invention relates to the ventilation of rooms in stores and factories; and it consists, mainly, of the combination of a pipe or pipes for conveying fresh air under pressure, and an injector or injectors through the nozzles of which the fresh air is forced, thereby causing such an agitation and such an admixture of fresh with the foul air that the latter is rendered innocuous, the currents of air at the same time contributing to the comfort of those engaged in the rooms.

In the accompanying drawings, Figures 1 and 2 represent the injector by which I prefer to carry my invention into effect; Fig. 3, a plan view of part of a store, showing the position of air-pipes and injectors; and Fig. 4, a vertical section of Fig. 3.

Referring to Figs. 1 and 2, A is a pipe, one or more of which may be at or near the ceiling of the apartment to be ventilated, the number and disposal of the pipes depending upon the character of the room and the arrangement of the benches, desks, or counters at which the occupants are engaged. The pipes must be in communication with a fan or other air-compressor driven by any available motor, so that a continuous supply of fresh air may be forced through the pipes.

The injector B consists of a short tube, *b*, and a nozzle, *a*, projecting into the said tube, and connected thereto by a cross-piece, *c*, the nozzle communicating with the pipe A.

Figs. 3 and 4 represent the counters of a store; or they may be the benches in a factory-room; or they may indicate the situation of machines at which operatives are engaged, the line *x*, Fig. 4, representing the ceiling, beneath which are three pipes, all communicating with a fan or other air-compressor, one pipe being in the present instance arranged above each

counter. On each pipe injectors are arranged at intervals at about the angle shown. The forcible jet of air under pressure escaping from the nozzle of each injector causes air which is more or less foul air to rush through the tub *b*, and there is consequently such a general agitation of air and such an admixture of fresh air with the foul that the latter is rendered innocuous. At the same time currents of air are directed in such a course as to relieve the occupants of the room from the discomforts due to a close atmosphere. During the winter months heated air may be discharged from the nozzles in place of cold air.

While the injectors may be fixed permanently to the air-pipes, I prefer to make them adjustable, so that the direction of the currents of air may be changed as circumstances may suggest. For this purpose the bent portion of each nozzle *a* is so fitted at *y* to a branch, *m*, secured to the pipe A, Fig. 2, that the nozzle can be turned on the said branch, the nozzle and branch being secured together by a central bolt, *n*. The nozzle can thus be adjusted to any inclination desired, and, if required, a duplex joint or universal joint may be used, so as to permit the nozzle to be adjusted in all directions.

I claim as my invention—

1. The combination, in a basement or other apartment, of a pipe or pipes, A, for conveying air under pressure, with an injector or injectors, each of which consists of a nozzle, *a*, and a tube, *b*, which is open at both ends and into which the nozzle projects, all substantially as set forth.

2. The combination of the pipe A with a nozzle, *a*, adjustably connected to the pipe, and with the tube *b*, attached to the nozzle, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN FERNIE.

Witnesses:

HARRY L. ASHENFELTER,
HARRY SMITH.