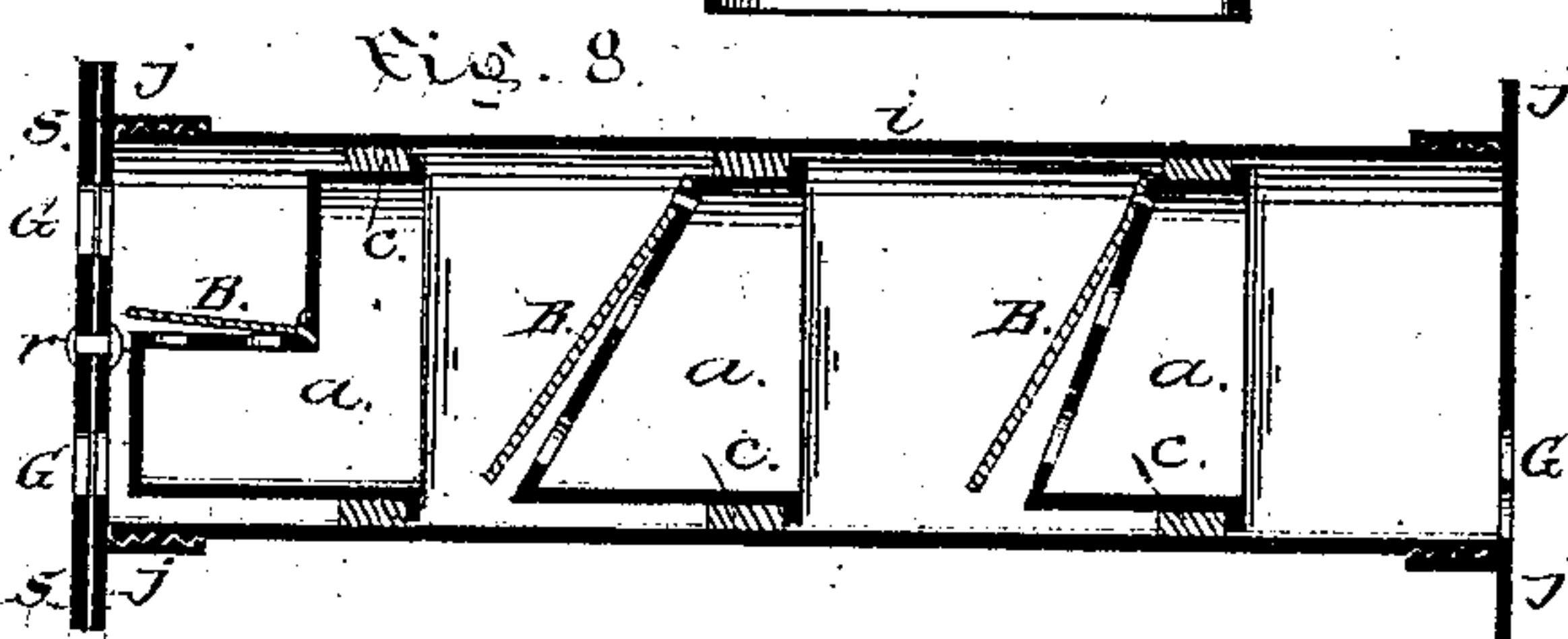
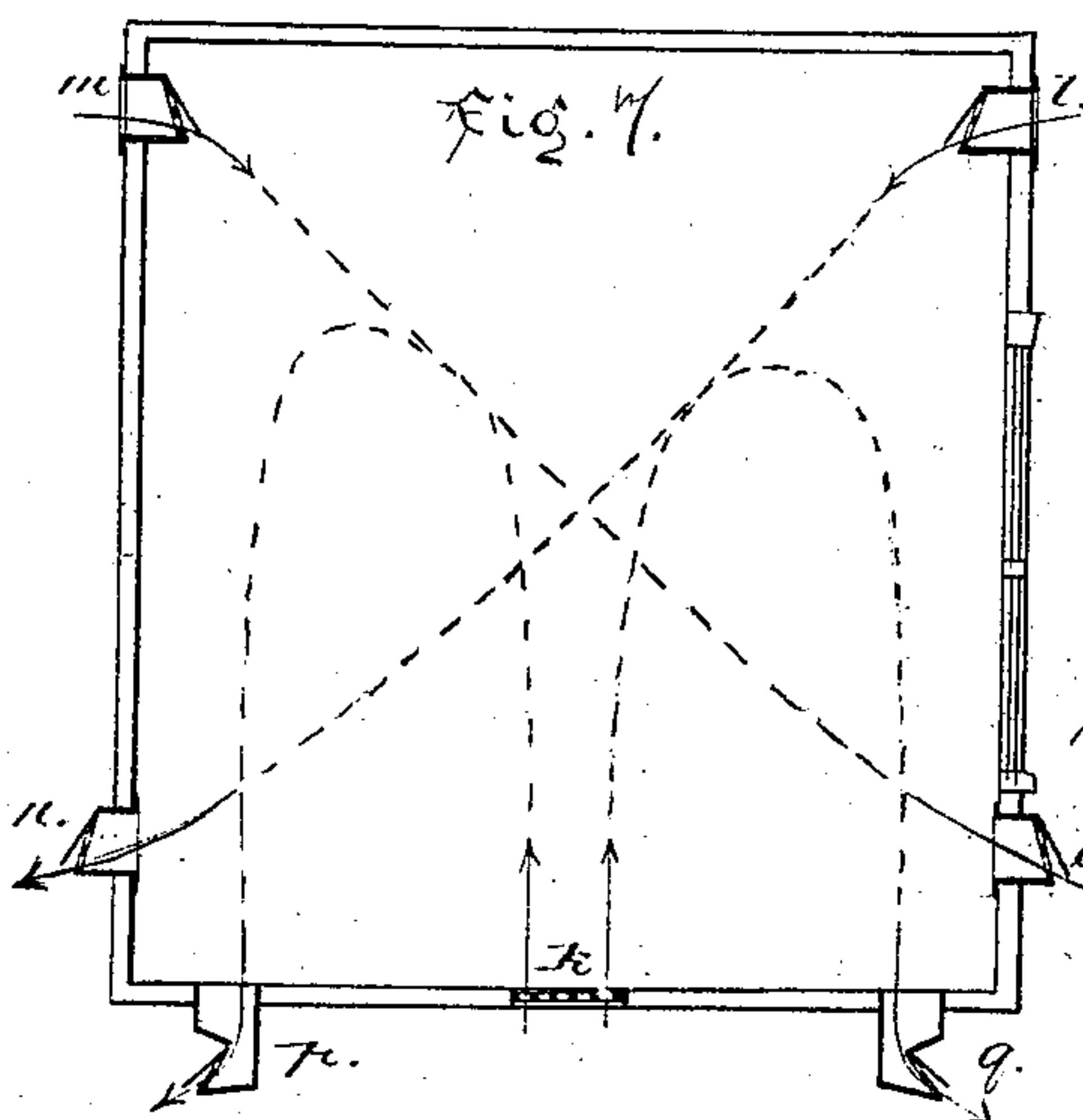
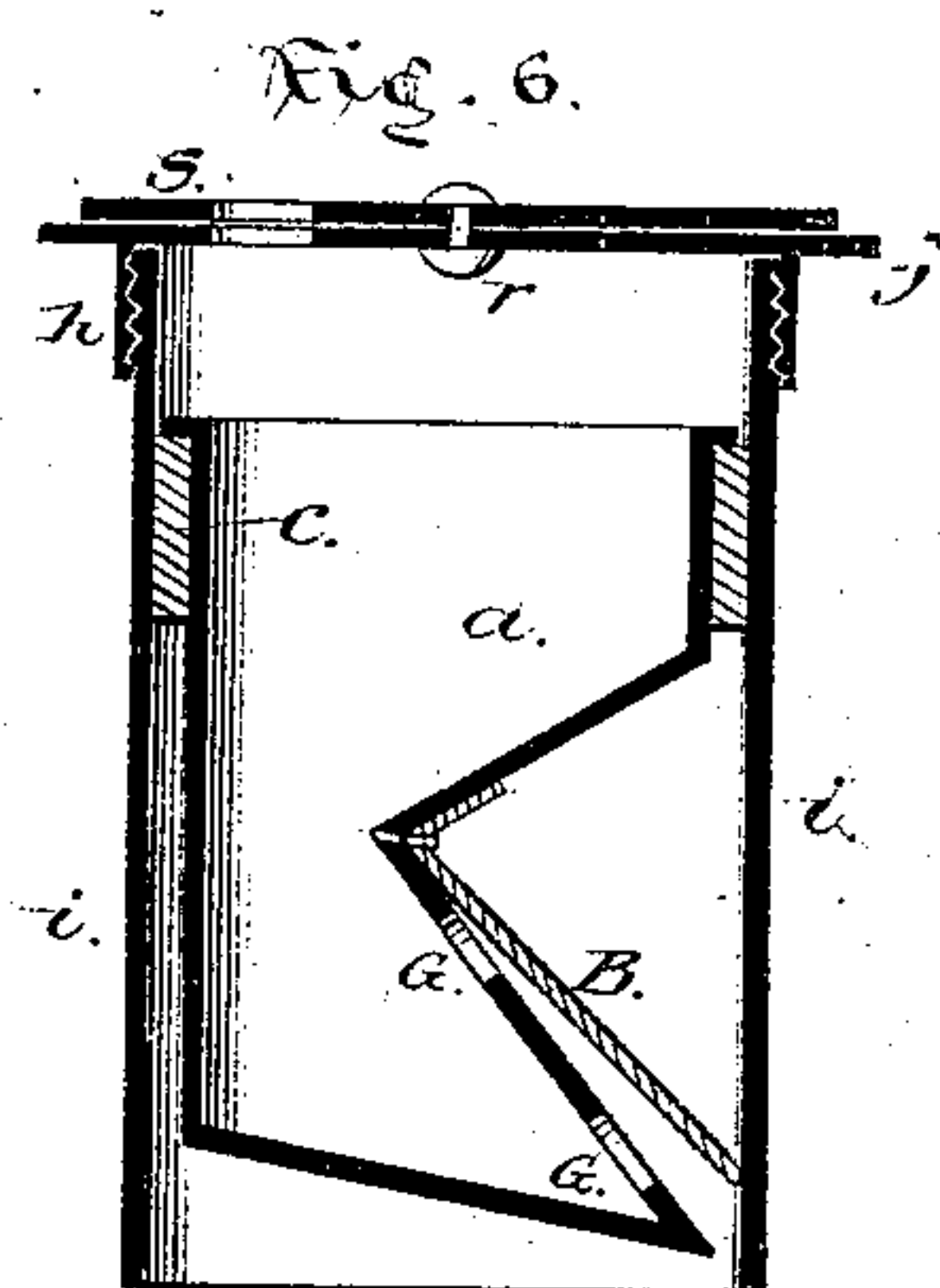
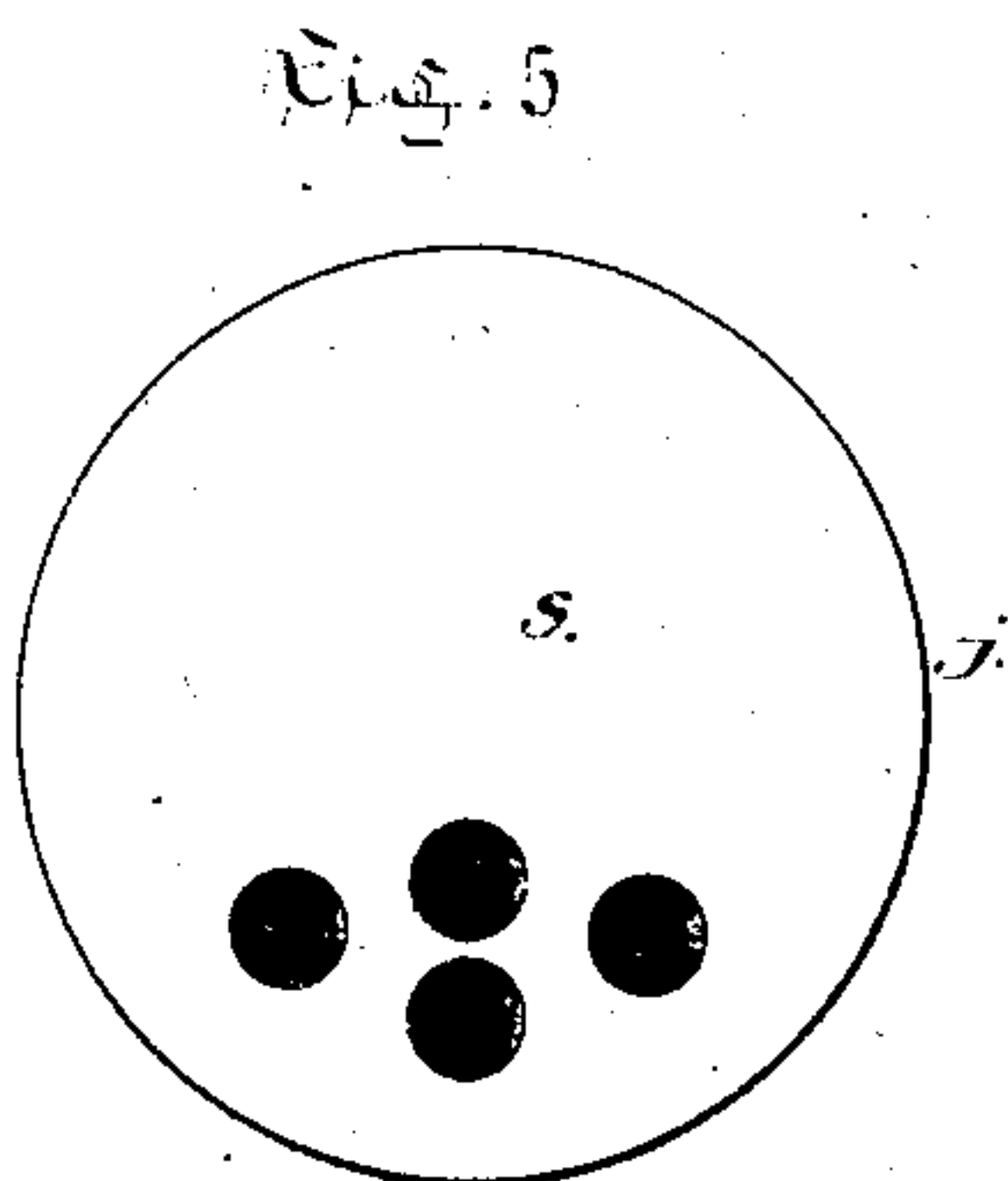
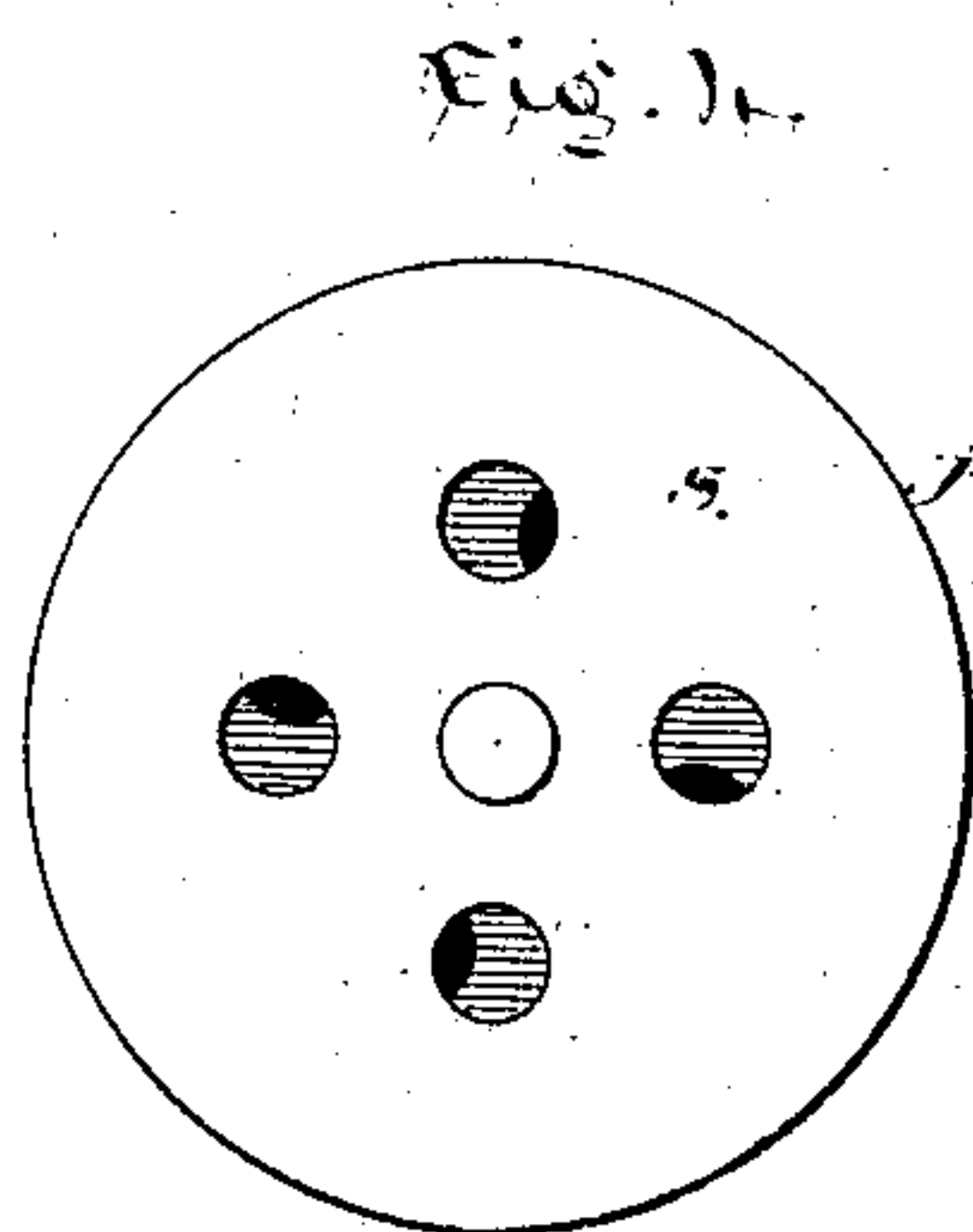
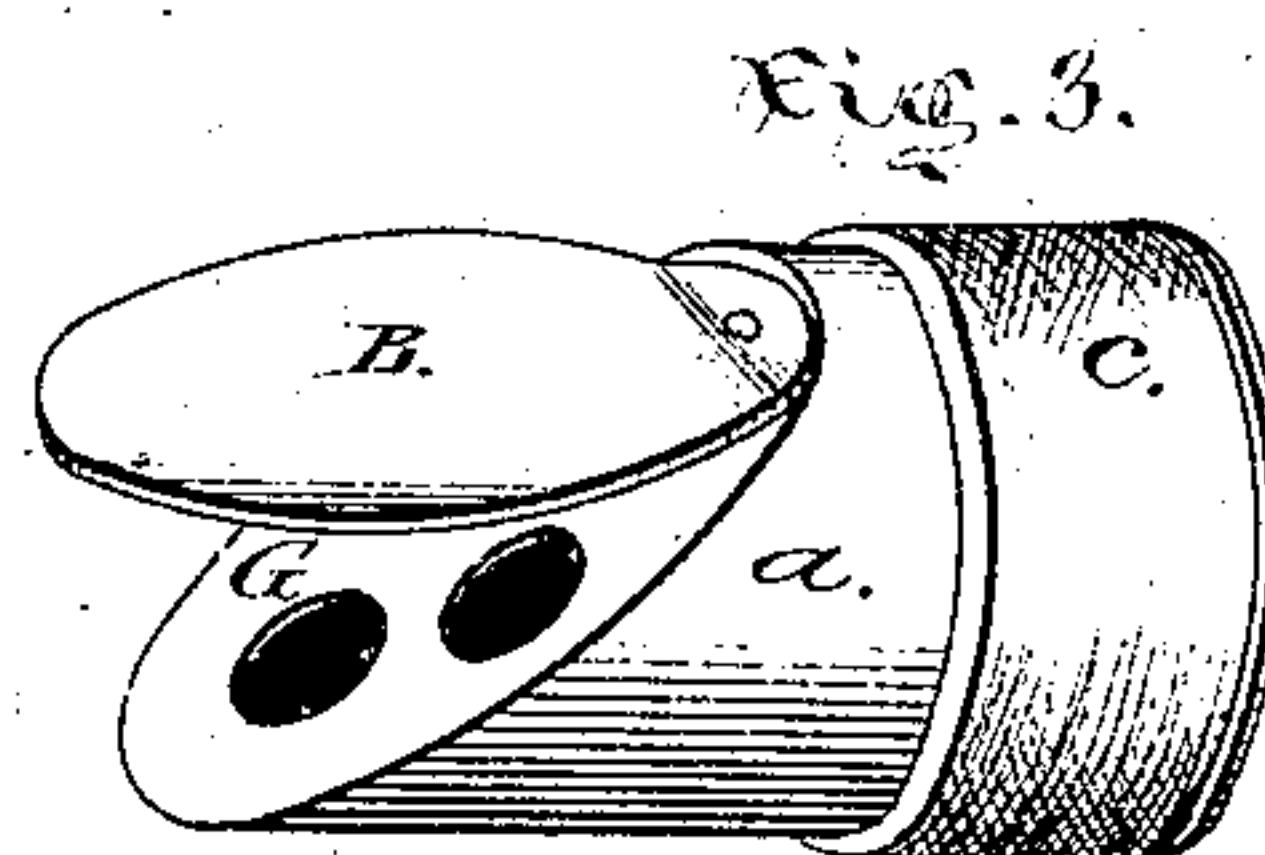
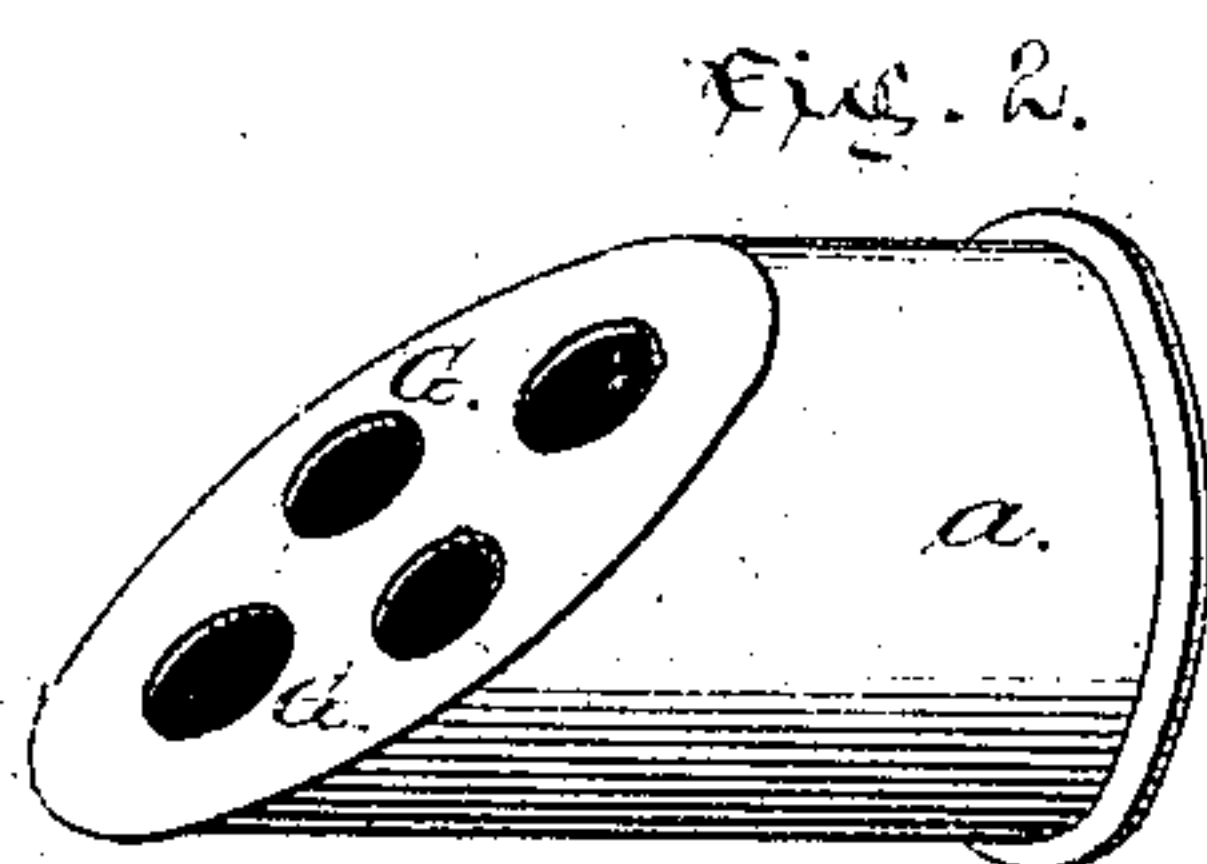
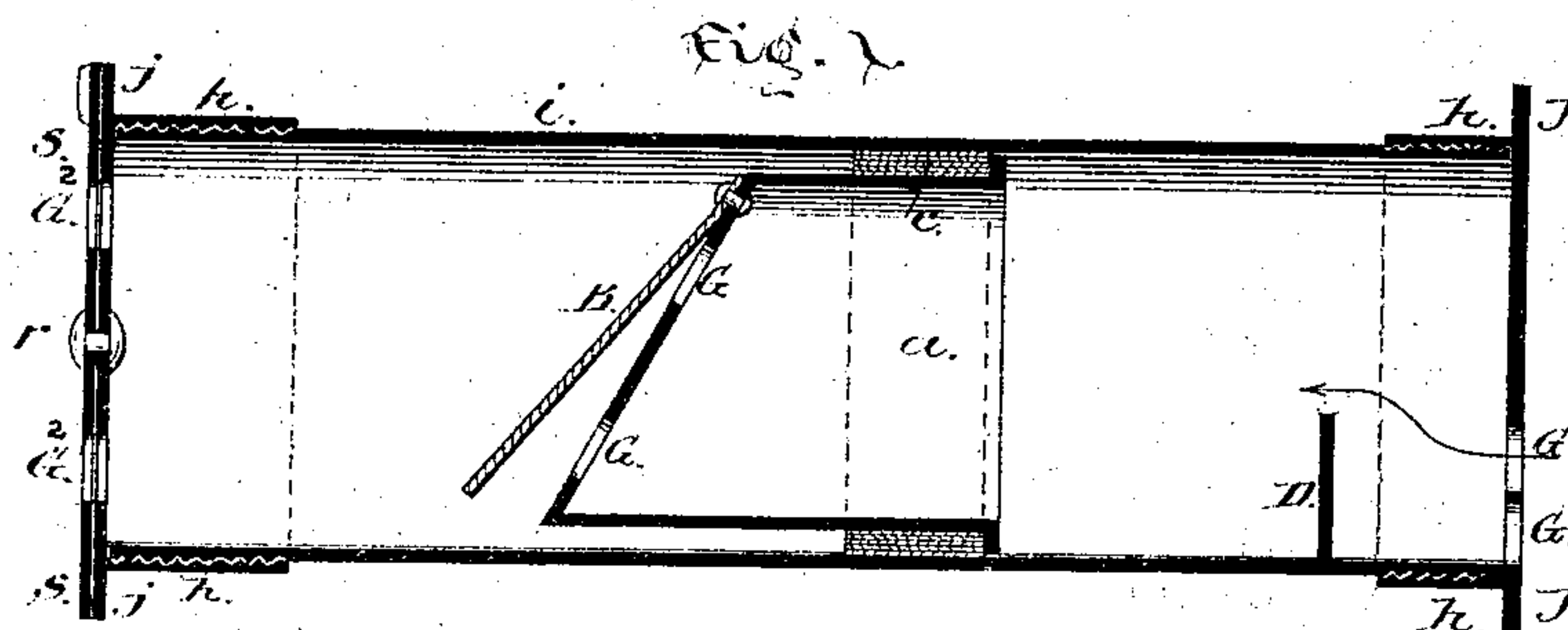


W. LANE.
VALVE VENTILATOR.

No. 181,272.

Patented Aug. 22, 1876.



Attest:

Richard W. Cass,
Fred. C. Lewis, Inventor:
William Lane.

UNITED STATES PATENT OFFICE.

WILLIAM LANE, OF NEWFANE, NEW YORK.

IMPROVEMENT IN VALVE-VENTILATORS.

Specification forming part of Letters Patent No. 181,272, dated August 22, 1876; application filed January 20, 1876.

To all whom it may concern:

Be it known that I, WILLIAM LANE, of the town of Newfane, in the county of Niagara and State of New York, have invented a new and useful Valve-Ventilator; and do hereby declare that the following is a full and exact description of its principles and the mechanism by which it is applied, reference being had to the accompanying drawings and the letters of reference marked thereon, in which—

Figure 1 represents a bisection of a horizontal ventilator; Fig. 2, valve-tube; Fig. 3, valve-tube with valve and packing; Fig. 6, perpendicular or floor ventilator; Fig. 5, end view of inside cap; Fig. 4, end of outside cap; Fig. 7, section of a room; Fig. 8, ventilator with variety of valves.

In Fig. 1, *i i* is flue-tube, long enough to span whatever it may penetrate, be it wall, partition, door, window-sash, &c., with partition *D* crossing its lower half near its outer end, having screw-thread at *h h h h* for screwing on caps. *a* is valve-tube, with beveled end closed, except perforations *G G*, for passage of air, as indicated by arrow. *c c* is packing between flue and valve tubes, retaining the latter in position and preventing passage of atmosphere. *B* is valve, raised by force of air-current from right to left, and closes perforations *G G* immediately the current of air sets in from left to right. *h h* is threaded tube of cap, for screwing on *i i*. *j j* is flange of cap, to rest against the sides of whatever the ventilator penetrates. *G¹ G¹*, on outer cap, are perforations on the lower half, as shown, to prevent water entering beyond partition *D*. *r* is pivot holding register-plate *S S*, which revolves and opens and closes *G² G²* at pleasure, as shown in Fig. 4, partly open. Fig. 2 is valve-tube, showing beveled end closed and perforated at *G G*; Fig. 3, the same as 4, with valve and packing added. These valve-tubes can be removed from or reversed in flue-tube at pleasure by unscrewing cap, Fig. 1. Fig. 6 is register end of Fig. 1, modified

to suit it to the floor-register. Its valve-tube *a* has a perforated plane at right angles to first bevel, so that valve *B* lies superior to it, and closes more readily to upward current of atmosphere. Fig. 7 shows section of a room, with valve-ventilators in position at *m* and *l* for ingress, and *n* and *o* for egress, of air. *p* and *q* are employed, when impracticable to penetrate the wall at *n* and *o*. When hot air from furnace-register enters at *k*, it at once ascends, seeking escape at *m* and *l*; checked, however, by valves, it descends, carrying before it the cooler and heavier atmosphere, which it drives out at the valves of egress *n* and *o*. When no heated air is entering at *k*, the wind coming from the right will enter at *l* and escape at *n*, or entering from *M* will escape at *o*, as indicated by arrow. In all these changes the warmer air is retained, while the cooler is expelled. These advantages come from the fact that warmer air is lighter than the cooler, and occupies the upper part of the room. Another fact is, that carbonic acid, the chief and constant poisonous impurity of occupied apartments, is one-half heavier than atmosphere, and occupies, mainly, the lower strata of air in a room. Hence, a cubic foot of air driven out at the floor of an inhabited room removes more of this poisonous gas than the same quantity escaping at the ceiling. Fig. 8 is a bisection of ventilator with valves of different inclination, to suit the strength of currents we have to encounter. It also shows plan of multiplying their number in one flue to keep out frost.

I claim as my invention—

A ventilator so constructed with a valve as to permit the passage of air only one way, with said valve on a movable tube, which can be removed or reversed at pleasure, and for purposes herein set forth.

WILLIAM LANE.

Witnesses:

RICHARD W. CASS,
FRED. C. LEWIS.