

(No Model.)

F. R. HENRY.

COMBINED HEATER AND VENTILATOR.

No. 316,620.

Patented Apr. 28, 1885.

Fig. 2.

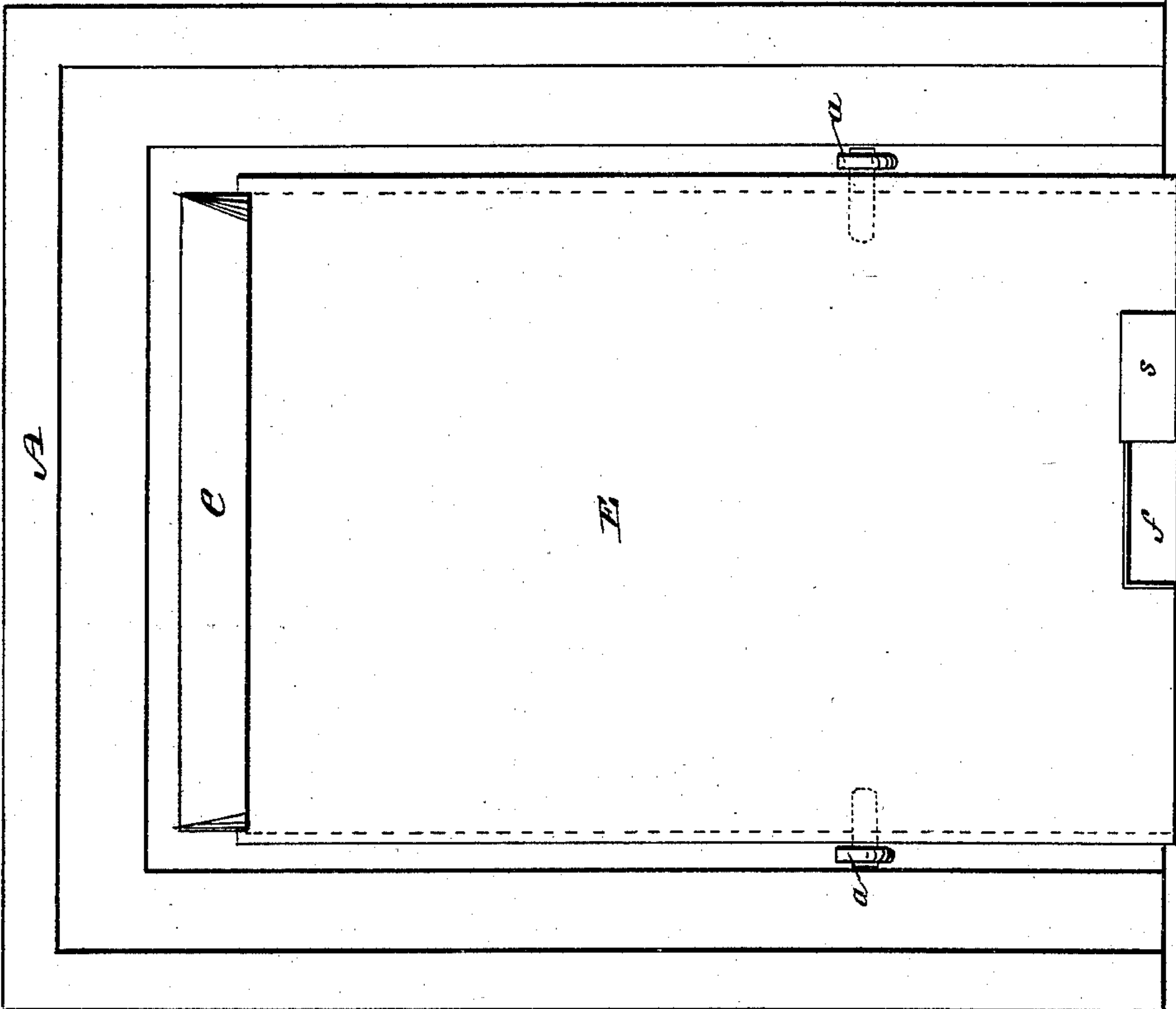
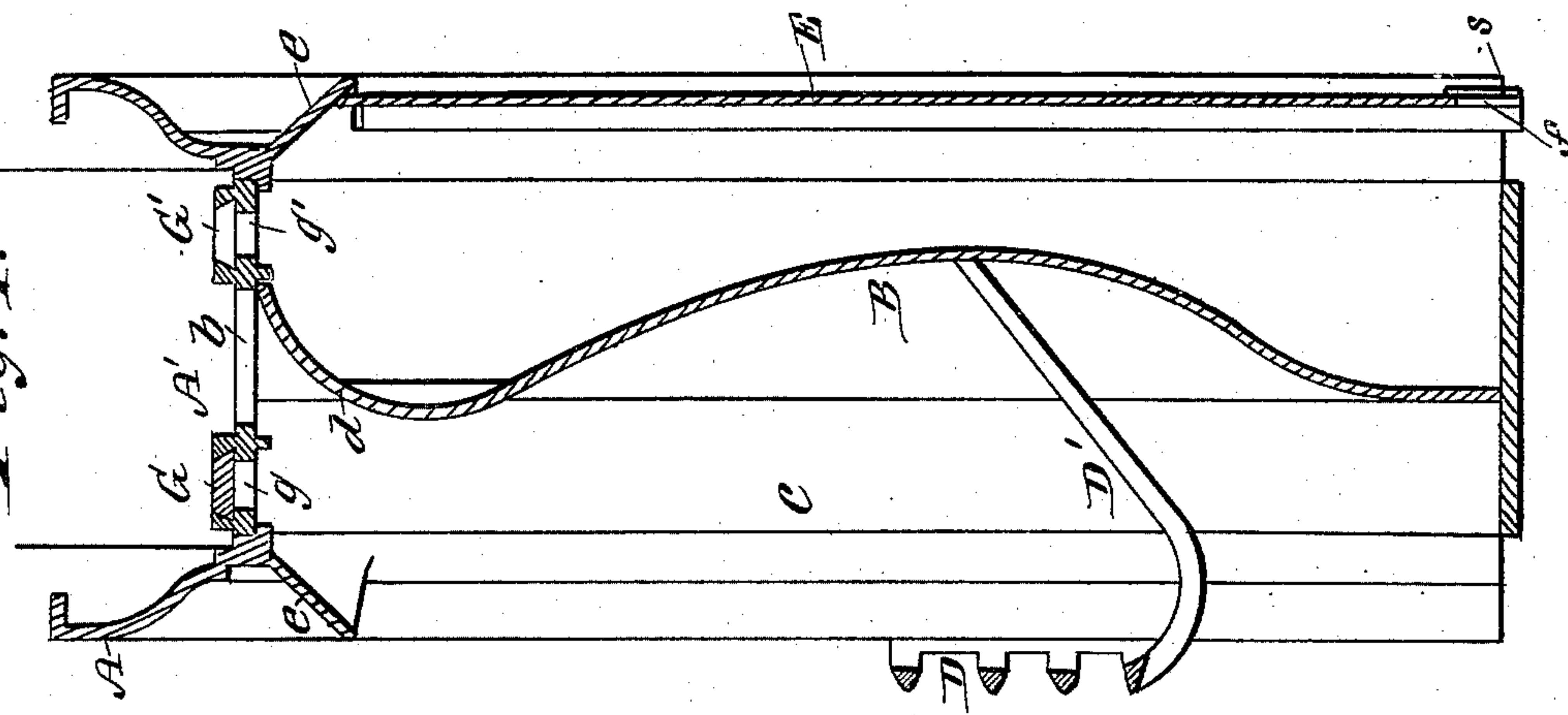


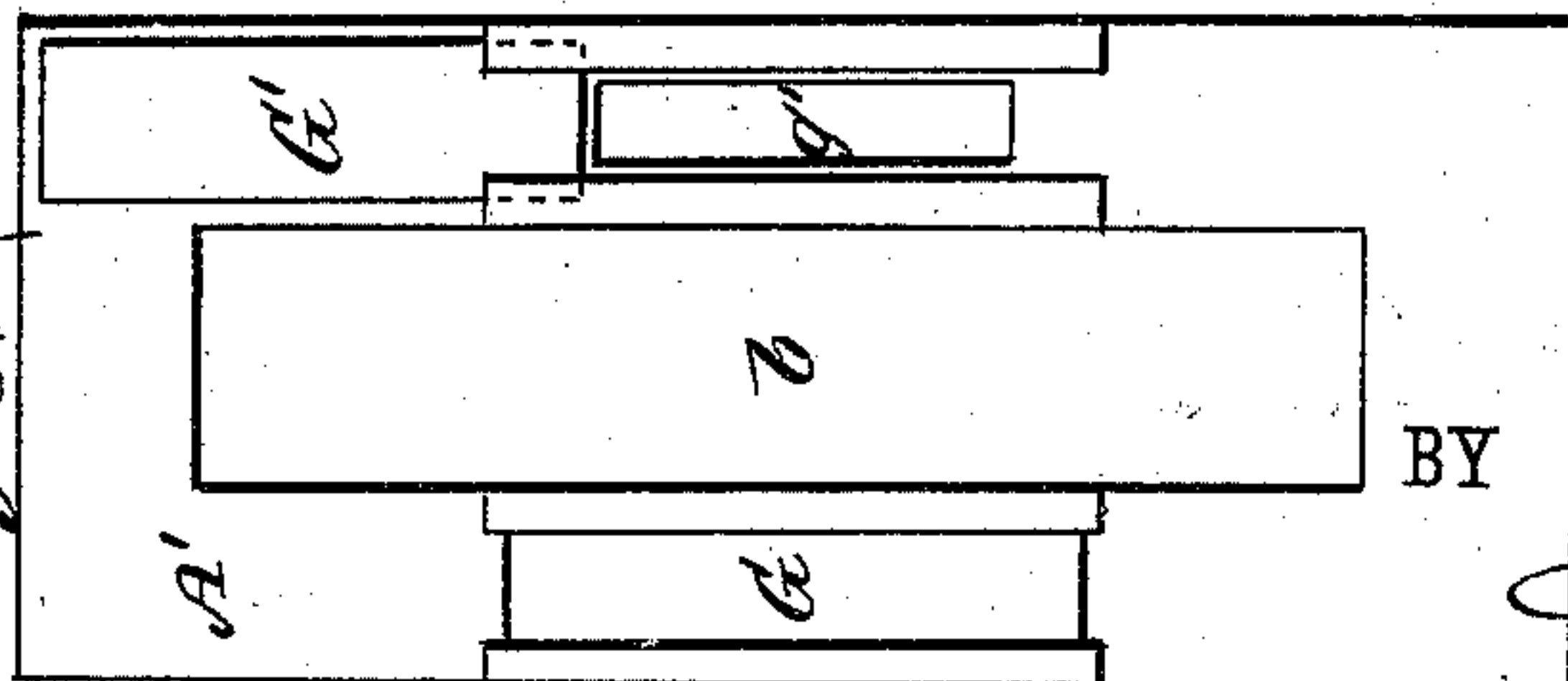
Fig. 1.



WITNESSES:

*Theo. G. Boston*  
*E. Sedgwick*

Fig. 3.



INVENTOR:

*F. R. Henry*  
*Munn & Co*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

FRANK R. HENRY, OF MURFREESBOROUGH, TENNESSEE, ASSIGNOR OF  
ONE-FIFTH TO JAMES S. BAIRD, OF SAME PLACE.

## COMBINED HEATER AND VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 316,620, dated April 28, 1885.

Application filed July 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK R. HENRY, of Murfreesborough, in the county of Rutherford and State of Tennessee, have invented a new and Improved Combined Heater and Ventilator, of which the following is a full, clear, and exact description.

This invention relates to fire-place heaters for heating two adjoining rooms on the same floor with one fire, and is more particularly designed as an improvement upon the heater of this description for which Letters Patent No. 287,230 were granted to James H. Burnham, October 23, 1883. In such patented heater a fire-place or frame was inclosed in a chimney in a partition-wall between two adjoining rooms on the same floor, the opening in the fire-place extending through it into the adjoining room, and a reversible concave metallic fire-back having a bent or inclined extension at its upper end to conduct the products of combustion into the chimney was removably inserted into said frame, and whereby said fire-back, provided with a grate, was adapted to project into the adjoining room and close the draft-opening in the fire-place of said room, and was capable of being reversed to heat one room directly from the fire in the grate, and the other room by radiation from the exposed fire-back. My invention, however, combines with such or other two-room heaters devices, substantially as hereinafter described, whereby, while both rooms may be heated, as hereinbefore specified, the heat may be shut off from either room, if desired, also either one of said rooms simply be ventilated as circumstances or necessities may require.

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

Figure 1 represents a vertical transverse section of a combined double heater and ventilator embodying my invention; Fig. 2, a face view of the same with a plate or register in place on the side next to the fire-back, for excluding the heat from the one room and for ventilating the same; and Fig. 3, a plan view of a top plate with valves, slides, or doors used in converting the double heater into a ventilator.

While my combined heater and ventilator may be of any desired shape, it will here be described as of rectangular form, and, so far as the heater is concerned, of like construction as the Burnham double heater hereinbefore referred to. Thus, in the accompanying drawings, A is the cast-iron fire place or frame to be inclosed in a chimney built in the partition-wall between two adjoining rooms on the same floor, and *b* the outlet therefrom for the products of combustion to the flue or chimney. The central opening in the said fire place or frame, extending through it between the two rooms, is indicated by the letter *c*.

B is the reversible metal fire-back, removably fitted within the frame A, and having its body of concavo-convex form, so as to project through the opening *c* in the fire-place partly into the adjoining room, and constructed with an upper inclined or bent extension, *d*, for the passage of the products of combustion through the outlet *b* to the chimney from the concave exposure of the body of said back, on which side the grate D D' is arranged, and to close the outlet *b* to the room which the convex body of the fire-back faces. This fire-back B is readily detached, and can be reversed or inserted in the opening in the fire-place from either room, so that a fire can be made in either room and at the same time both rooms be heated by one fire, the one room by direct heat of the fire and the other room by radiation from the convex side of the body of the fire-back.

To reverse the grate and back, the grate is first removed, and then, the back and the plate E having been previously removed, the back and grate are placed in the opposite side of the fire-place and the plate E in the side from which the grate has been removed.

E is a plate or board capable of insertion in the through fire-place from either room at a suitable distance from the convex side of the body of the fire-back, and so as to close the fire-place in said room. It may be slipped to its place beneath a hood, *e*, on either side of the frame A, and is made with one or more openings, *f*, in its lower end, for ingress of air from the room in which said board or plate is exposed, which opening or openings *f* may be provided with a register, valve, slide, or



lid, *s*, to open and close and regulate the area of said opening or openings.

*a* are hooks on the opposite sides of the frame, for receiving bars or lugs, which are to be formed on the plate *E*, which hooks and lugs form an additional means for securing said plate in position. The hooks also serve as a means for securing the grate.

Covering the top of the frame *A* is a plate, *A'*, through which is the smoke-outlet *b*. In front and rear, or on opposite sides of this outlet, are two other openings, *g g'*, controlled by slides, lids, or doors *G G'*, and establishing communication, when open, with the flue or chimney. If desired, these openings *g g'* and their doors may be arranged in the upper part of the side of the frame *A*, instead of in its top. Said lids or doors form valves, and serve, in connection with the register or ventilating plate or board *E*, to ventilate the room from which the heat of the fire is excluded by the board. They are applicable to either room, it only being necessary to close the one valve *G* or *G'* on the side of the fire-back on which the grate is and to open the other one of said valves, when air, entering by the opening *f*, will pass up in rear of the fire-back *B* and out through the opening *g* or *g'* to the flue or chimney, thus ventilating the room on that side; or, again, both valves *G G'* may be closed, and the board or plate *E* be retained in place to exclude heat only from the one room, or the board be removed and the full benefits of the heater be obtained for both rooms, and the reversible fire-back adjusted to have the fire in either room. Thus these additions of the removable register board or plate *E* and the valves *G G'*, controlling the openings *g g'*, will be found to greatly increase the utility of the reversible fire-back *B*, and to make of the whole structure a combined double heater and ventilator, which is at once free from all complicated mechanism, cheap, durable, and effective, and which, by suitably decorating the

register board or plate *E*, may be ornamental as well.

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

1. The combination, with a fire-place having an opening extending centrally through it to connect two rooms on the same floor, and with a reversible fire-back fitted therein, constructed to connect from its grate or fire side with the smoke-flue or chimney, of valves in said fire-place covering upper openings connecting with the smoke-flue or chimney on opposite sides of said fire-back, substantially as specified.

2. The combination, with a fire-place having an opening extending centrally through it to connect two rooms on the same floor, and with a reversible fire-back therein, constructed to connect from its grate or fire side with the smoke-flue or chimney, of a detachable fire-place board or plate having an air-inlet near its lower end, and valves in said fire-place covering upper openings connecting with the smoke-flue or chimney on opposite sides of said fire-back, essentially as and for the purposes herein set forth.

3. The combination, with the double or through fire place or frame *A*, having an intermediate upper smoke-outlet, *b*, to the flue or chimney, and with the reversible concavo-convex fire-back *B*, having an upper sloping or bent extension, *d*, of the valves *G G'*, controlling openings arranged in the upper portion of the fire-place for alternate connection, as required, from opposite sides of the fire-back with the smoke-flue or chimney, and the detachable fire place or board *E*, having a register lower opening and slide or door, substantially as shown and described.

FRANK R. HENRY.

Witnesses:

H. H. WILLIAMS,  
THOS. H. WOOD.