

No. 618,841.

Patented Feb. 7, 1899.

B. J. CONLAN,
HEATING AND VENTILATING PIPE.

(Application filed Nov. 15, 1897.)

(No Model.)

Fig. 1.

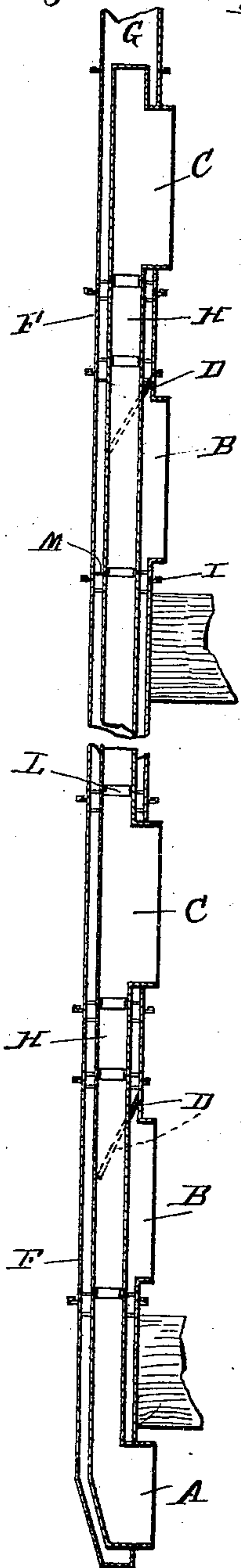


Fig. 2.

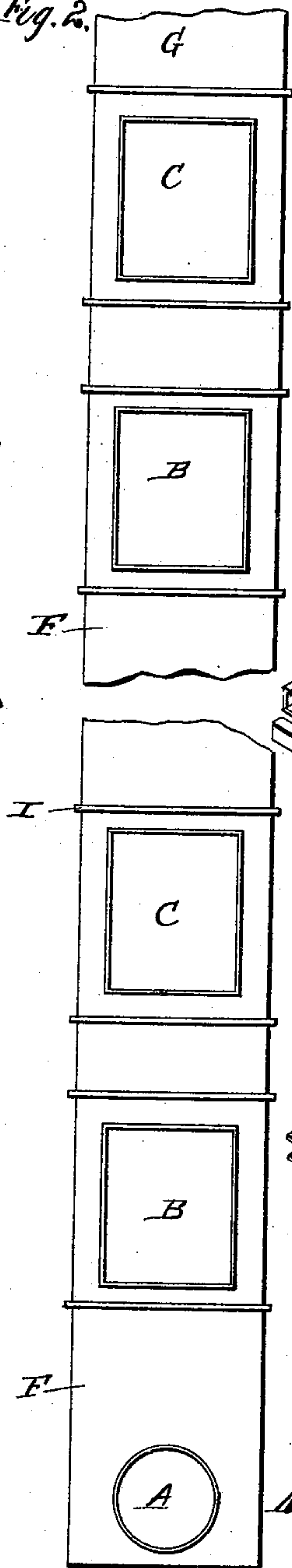


Fig. 3.

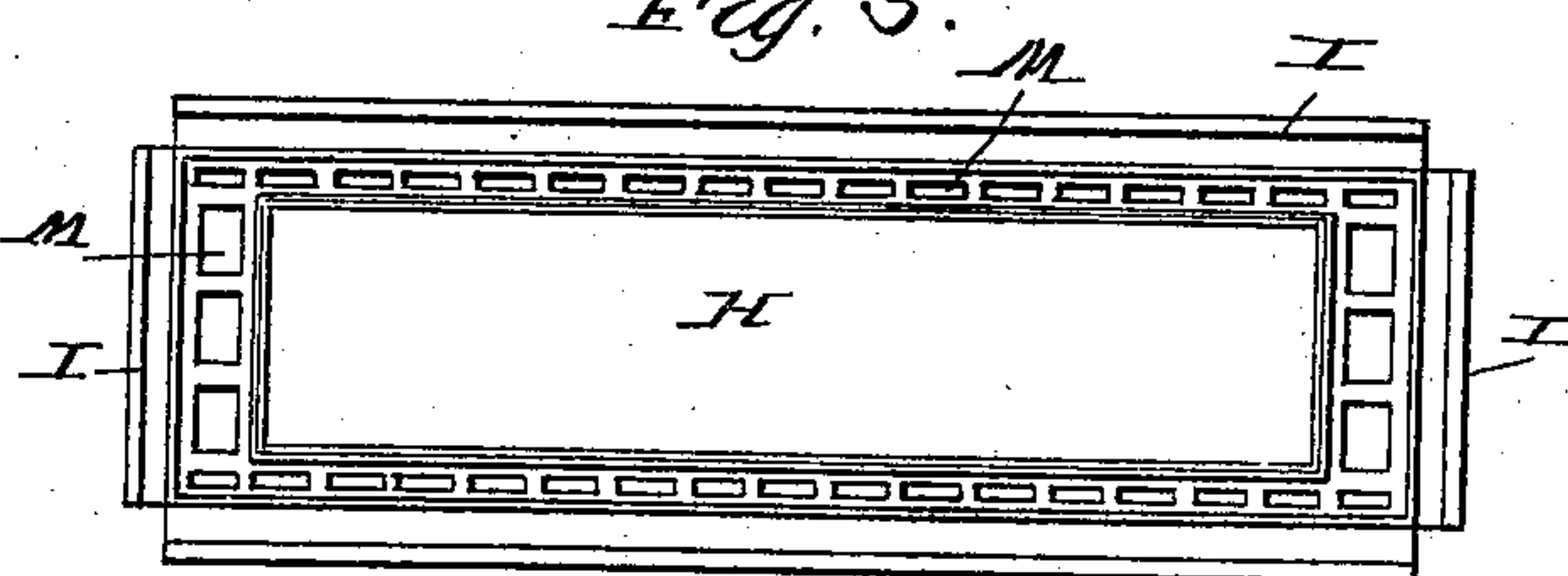


Fig. 4.

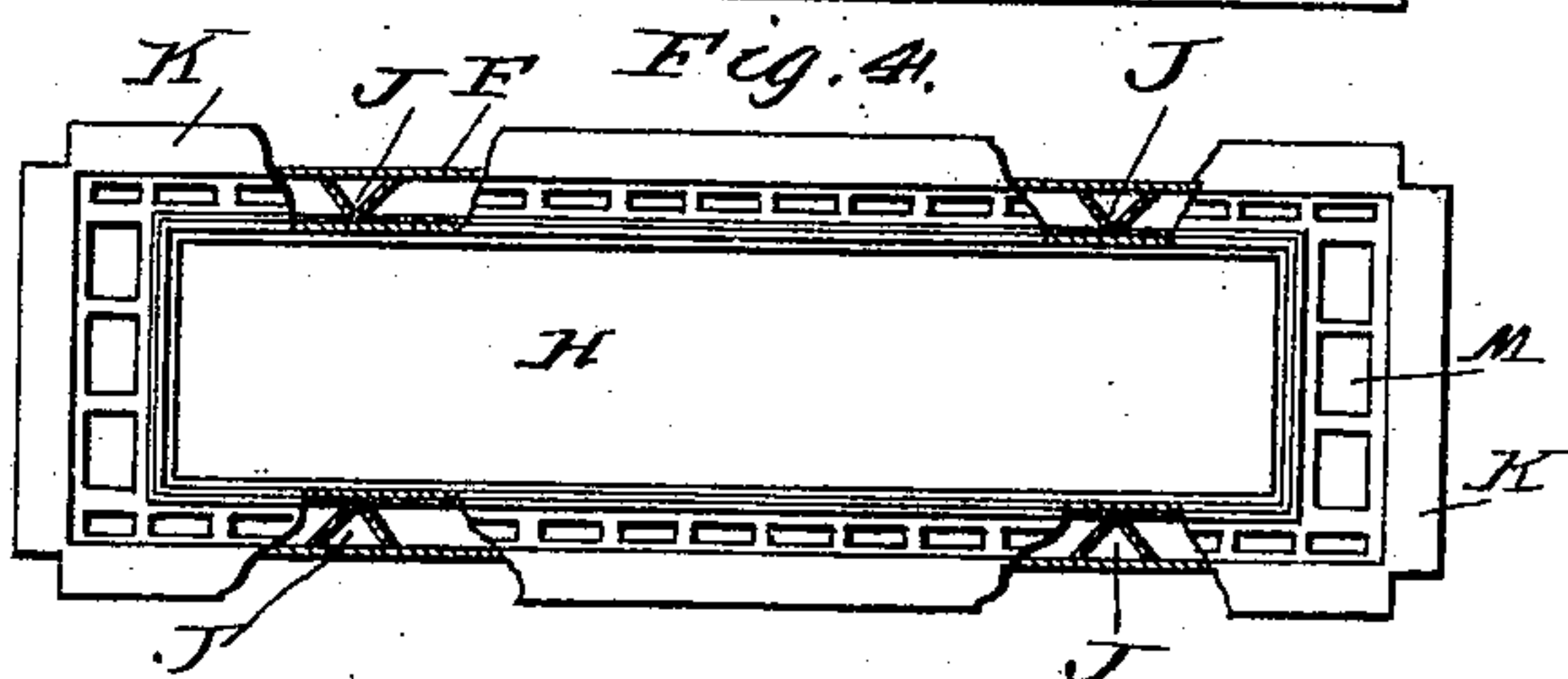


Fig. 5.

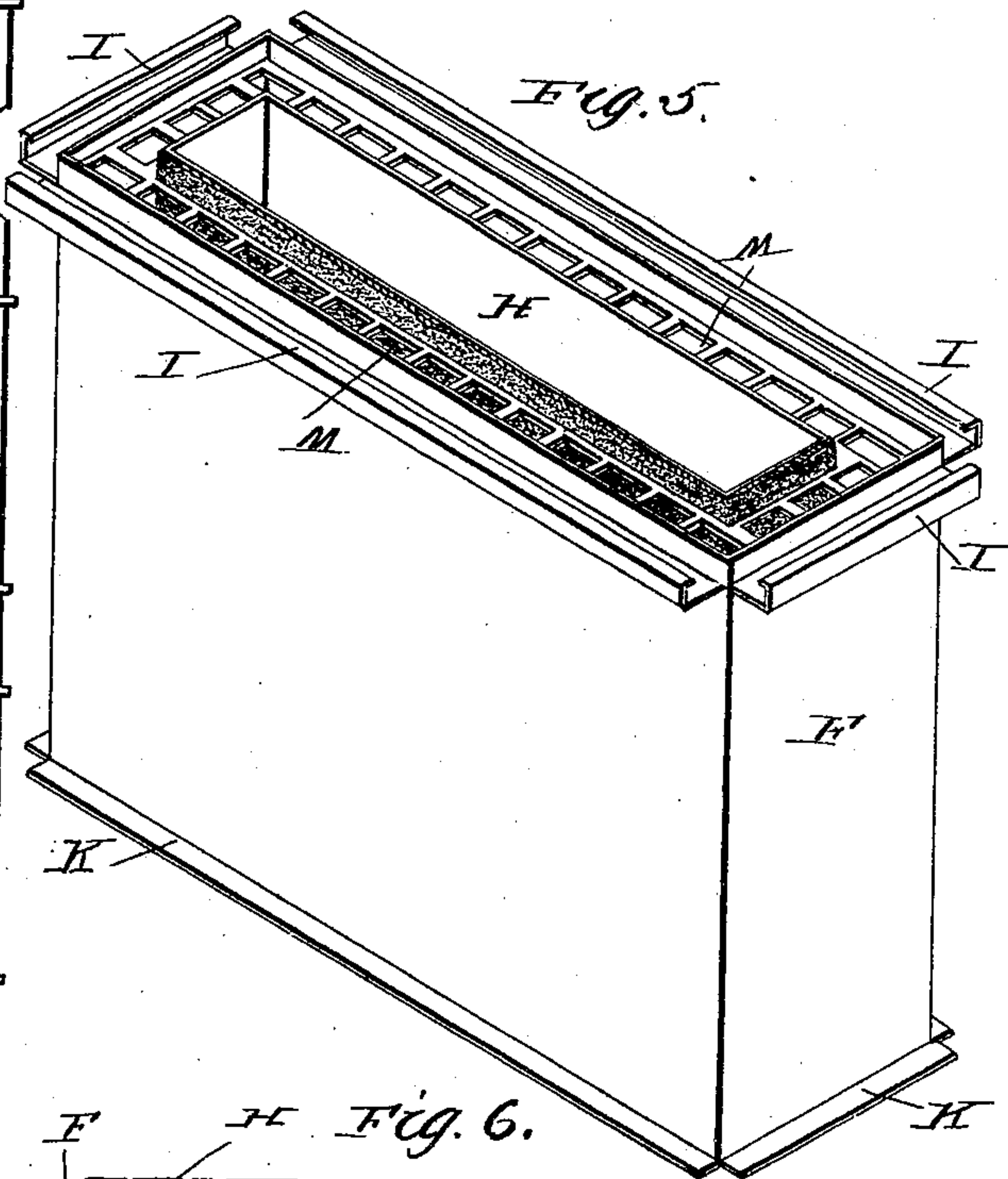
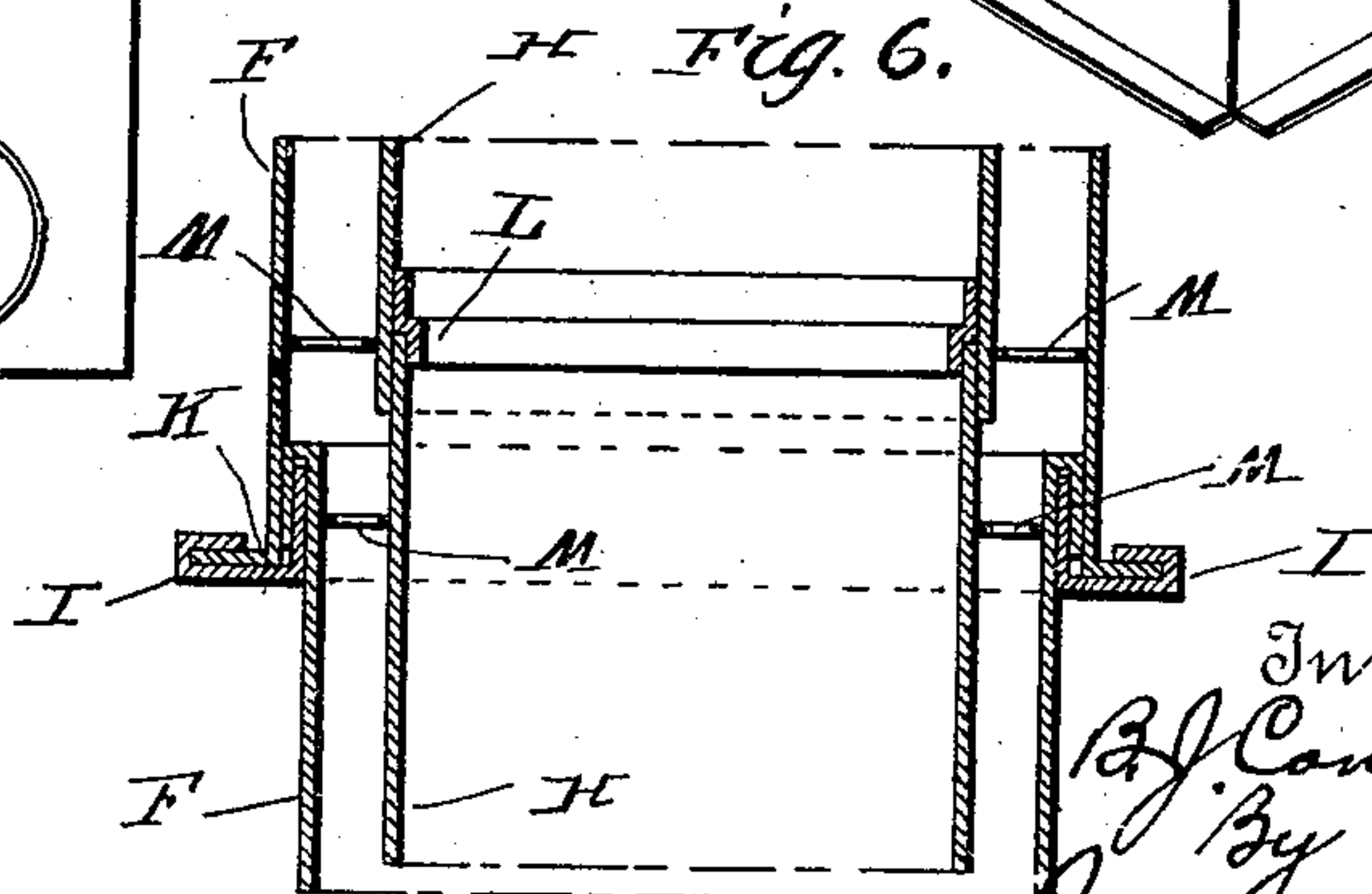


Fig. 6.



Witnesses
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HEATING AND VENTILATING PIPE.

SPECIFICATION forming part of Letters Patent No. 618,841, dated February 7, 1899.

Application filed November 15, 1897. Serial No. 658,633. (No model.)

To all whom it may concern:

Be it known that I, BERNARD J. CONLAN, a citizen of the United States, residing at Pittsburgh, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Heating and Ventilating Pipes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a new and improved heating and ventilating pipe; and it has for its object to provide such a pipe of compact form wherein the heating medium, which is preferably hot air, will create an upward current of air in the ventilating-flue to carry the foul air from the rooms to which said ventilating-flue is connected.

15 The invention consists in the novel combination and arrangement of parts hereinafter described, and particularly pointed out in the claims appended.

20 In the drawings, Figure 1 is a vertical transverse sectional view of the pipe. Fig. 2 is a front elevation thereof. Fig. 3 is a top view of one complete section of the pipe. Fig. 4 is a bottom view of one section of the pipe. Fig. 5 is a perspective view of a pipe-section detached. Fig. 6 is a detail vertical sectional view of the ends of adjoining pipe-sections.

30 Referring to the various parts by letters, H designates the inner hot-air pipe, which is covered with asbestos or other suitable non-conducting covering, and F the outer pipe, which surrounds the inner pipe and is sufficiently large to form a slight space between the pipes. These pipes are formed in sections, and the lower end of each section of the inner pipe is provided with a clip L, which fits over the upper edge of the adjoining section of the inner pipe, and the lower end of each section of the outer pipe is formed with an outwardly-extending flange K, which is locked into a flange I, formed on the upper edge of the adjacent section of the outer pipe. Braces or spacing-strips J are placed in the space between the pipes to hold them in position, said braces being V-shaped in cross-section and extending longitudinally of the pipes. The braces are so arranged that the point of the V bears against the heating-pipe, its base bearing against the ventilating-flue.

The object of this is that practically the entire outer surface of the heating-flue will be exposed to the air in the ventilating-pipe and that therefore its entire surface will be utilized in heating said air. To further aid in maintaining the inner and outer pipes in their relative positions, a perforated transverse plate M is secured in the ventilating-space at each end of the pipe-sections. These plates aid materially in holding the inner and outer pipes at the proper distance from each other and permit the free passage of the air through the ventilating-space.

65 The heating-flue at suitable points within the rooms to be heated is formed with short open-ended extensions C, which open into rooms at a suitable distance above the floors, one of said openings being in each room, and the lower end of the flue is provided with an opening A, through which hot air is delivered from the furnace or other source of supply. The upper end of this flue is closed.

70 The ventilating-flue is closed at the bottom and open at the top and is formed with short open-ended extensions B, which open into the rooms to be ventilated, near the floor thereof, one of said openings being in each room. It is preferred that the ventilating-openings be located below the hot-air outlets in order that a thorough ventilation of the rooms may be secured.

85 It will be observed that as the ventilating-space is quite narrow the air therein will be quickly heated and caused to rise. As the ventilating-flue is closed at the bottom and open at the top, the air will be drawn from the rooms into the flue through the openings B and will flow out at the top of the flue. The top of this flue is carried a suitable distance above the heating-flue to insure the thorough ventilation of the building.

95 In the ventilating-space above each opening B is placed a deflector D. These deflectors extend inwardly and downwardly a suitable distance to prevent air which may blow down the flue from entering the rooms through the openings, the deflectors serving to direct the air away from and below said openings.

100 It will thus be seen that a heating and ventilating pipe is provided which will occupy substantially the same space as the ordinary

heating-flue and that the heating and ventilating will be carried on at the same time, the draft through the ventilating-flue being strong or weak, according to the amount of heat in the heating-flue, thus automatically regulating the ventilation of the rooms and securing the greatest ventilation when it is needed. This ventilating-flue also serves the purpose of a safety-flue—that is, it prevents the overheating of the inner flue, the current of air therethrough serving to cool the outer surface of said inner flue sufficiently to prevent any danger therefrom. The lateral flanges I and K extend outwardly far enough to engage the laths of the building and to thereby hold the pipe in its placed position. The openings B and C may be provided with suitable registers, if desired.

It will be observed that the pipe is made up of sections, each section comprising a portion of the inner and outer flues permanently secured together. Some of these sections are so formed that the lateral extension of the heat-flue projects through its side, and others are formed with the lateral extension of the ventilating-flue. By this construction it is simply necessary to superimpose the sections and then interlock their flanges, it being only requisite that care be taken to arrange in their proper places the sections having openings B and C. It will also be noted that only one flue-space will have to be formed in the walls.

It will be observed that an essential feature lies in the deflectors D, one of which is located over each inlet and extends downward and inward partly across the ventilating-space and partly obstructing the inlet-opening. The peculiar function of the deflectors is that they prevent downblasts of cold air from entering the rooms through the ventilating-opening, this being especially advantageous in wind-storms and unusually cold weather when the current of hot air up through the inner pipe is not sufficient to keep the air in the ventilating-pipe moving continuously.

Another feature lies in the special manner of making the flue in sections, each section consisting of an inner shell and an outer shell, the outer shell being provided with interlocking flanges and the inner shell being properly spaced by bracing-strips and having one of its ends extending beyond the outer shell, whereby the ends of the inner sections will overlap, one end of each inner section being provided with a strip adapted to engage and overlap the edge of the adjacent section. The advantage of thus constructing the flue is obvious. The clenching or otherwise interlocking of the flanges on the outer section binds the sections together

and makes a strong solid flue. The overlapping of the inner shells and engaging one of the overlapped edges by a strip on the inner wall of the adjacent section insures the inner sections being kept in alinement, with close joints that will permit of slight sagging or settling of the inner shells independently of or with the outer shells without permitting the leakage of the hot air into the ventilating-flue.

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

1. In a combined heating and ventilating apparatus, a flue consisting of a series of transverse sections superposed and attached together at their adjacent ends, each section consisting of an outer shell and an inner shell having both ends open, the outer shell having its lower end provided with an outward-extending flange and its upper end also with an outward-extending flange, the flanges of the adjacent sections being adapted to interlock to tie the sections together, spacing and bracing strips connecting the inner and outer shells, forming the ventilating-space, one end of the inner shell extending beyond the end of the outer shell, whereby when the sections are tied together the adjacent ends of the inner shell will overlap, one fitting within the other, and a rabbeted strip secured to one of the inner sections and overlapping the overlapped edge of the adjacent section, substantially as set forth.

2. In a combined heating and ventilating apparatus, the combination of an inner tube open at its lower end and provided with exits leading into the rooms to be heated, an outer ventilating-flue closed at its lower end and surrounding the heat-flue and open at its upper end and provided with ventilating-inlets communicating with said rooms, and a deflector D over each of said ventilating-inlets, said deflectors being entirely within the ventilating-flue and extending downward and inward from a point above said openings, their upper edges being secured to the ventilating-flue directly over the ventilating-openings and their lower edges extending a suitable distance down over said openings whereby a back draft through the ventilating-openings is prevented by directing any downward-moving air in the ventilating-flue away from and below said opening, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD J. CONLAN.

Witnesses:

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