(No Model.) 2 Sheets—Sheet 1.

F. H. STROTMAN.

HEATING DRUM.

No. 540,280. Patented June 4, 1895.

Fig. 1.

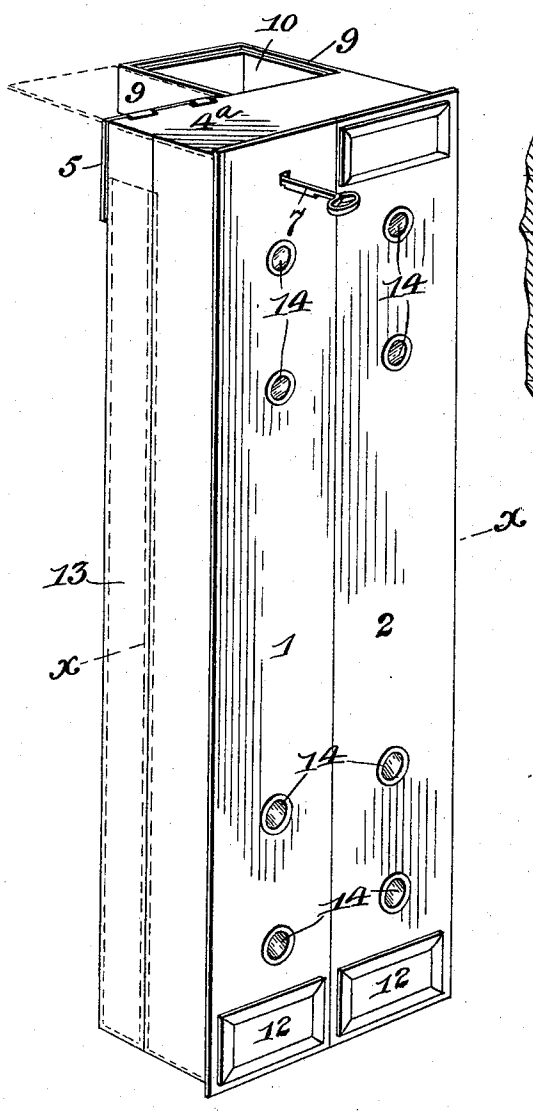


Fig. 3.

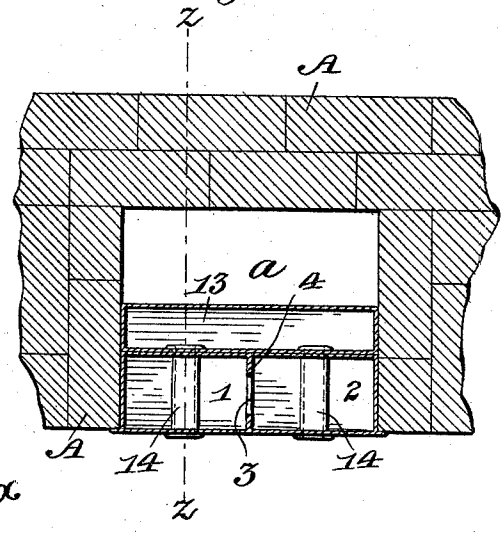
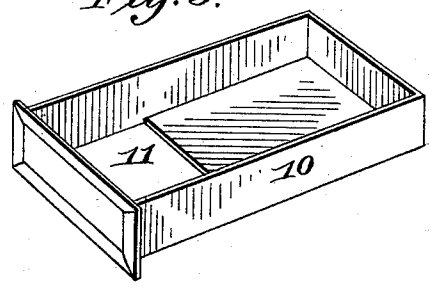


Fig. 5.



Witnesses
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W Harry Muzzy.

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Attorney

(No Model.) 2 Sheets—Sheet 2.

F. H. STROTMAN.

HEATING DRUM.

No. 540,280. Patented June 4, 1895.

Fig. 2.

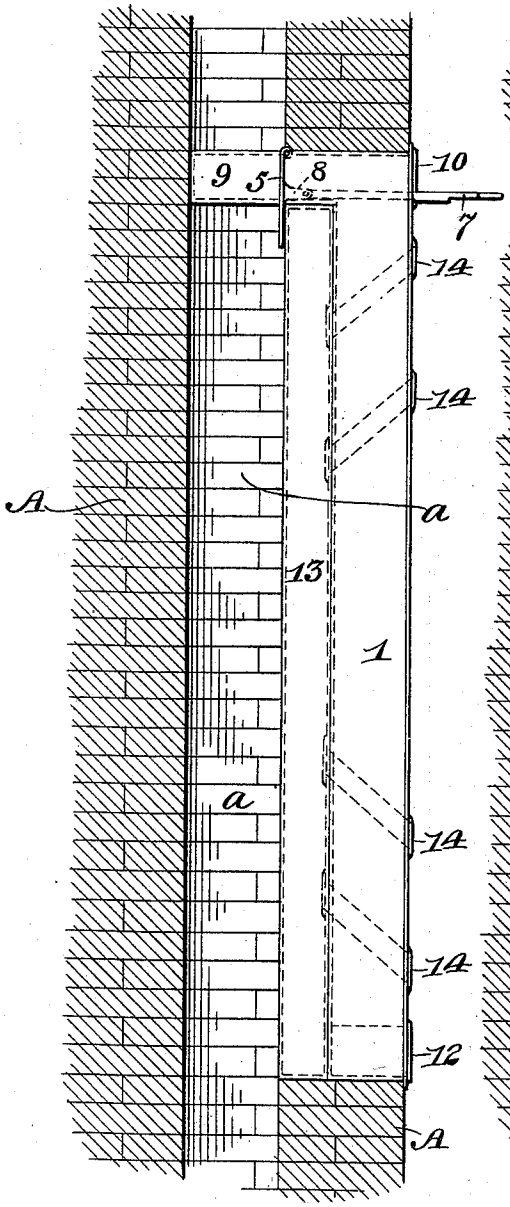
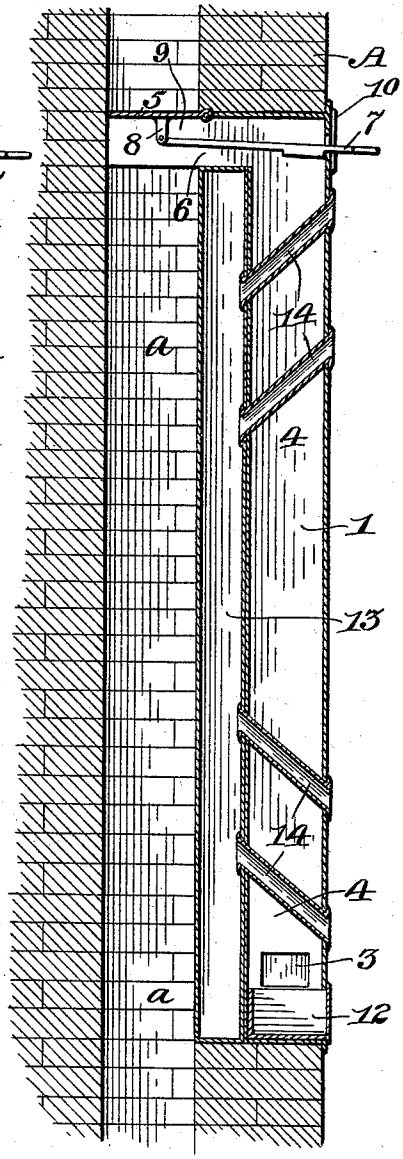


Fig. 4.



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UNITED STATES PATENT OFFICE.

FERDINAND H. STROTMAN, OF DELPHOS, OHIO.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 540,280, dated June 4, 1895.

Application filed September 20, 1894. Serial No. 523,610. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND H. STROTMAN, a citizen of the United States, residing at Delphos, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Heating-Drums; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in heating drums to be inserted in the path of the products of combustion on their way from a furnace or stove, the device being so constructed as to permit its ready application to an ordinary chimney, for the purpose of heating the rooms located above a stove or furnace, and for this purpose it consists of the arrangements, construction and combination of the various parts of which it is composed as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar marks of reference, Figure 1 is a perspective view of a drum constructed in accordance with my invention. Fig. 2 is a side view thereof as applied to a chimney. Fig. 3 is a section on line *x x* of Fig. 2. Fig. 4 is a section on line *z z*, Fig. 3. Fig. 5 is a perspective view of the drawer 10.

Chimney A has a flue *a* of the usual construction and these parts therefore form no part of my present invention, they being shown and described merely for the purpose of explaining the mode of applying the heater.

The heater consists of a series of flues for the products of combustion, and of a hot air box located behind them and communicating with the room, while the products of combustion are caused to enter the flue of the heater by a deflector partially closing the flue of the chimney or stack, the said deflector being in the form of a valve, whereby, when desired the flues of the heater may be closed against the products of combustion, and the flue of the stack opened to admit the passage thereof, that part of the flue of the stack which is not closed by the deflector being permanently closed by the pipe through which the products of combustion escape from the heater. The heater I by preference make of sheet metal which may be ornamented if desired.

The two flues 1 and 2 are vertical, they being side by side and being connected at their bottom by an aperture 3 in the base of the partition wall 4 between them. The flue 1 which forms a down-take flue has a top 4^a forming a continuation thereof to the rear; and to the rear end of the said top is pivoted a deflecting damper 5, which is thus caused to project into the flue of the stack when it is raised, while when it is lowered it covers the entrance 6 to the said flue 1, it being shown in its raised position in Fig. 4 and in its lowered position in Fig. 1. The damper is moved by means of the rod 7, which passes through an aperture in the front of the flue 1 and has its rear end attached to a stud 8 upon the lower face of the damper, the forward end of the said rod being provided with a handle by which it may be moved in and out. The upper end of the up-take flue 2 is continued rearwardly by a rectangular conduit or pipe 9, which extends a sufficient distance to abut against the rear wall of the flue *a*, the said conduit or pipe being at its rear end upon its upper face, and together with the damper 5 when the latter is raised, entirely closing the direct connection between the upper and lower part of the chimney flue, thus forcing the products of combustion to pass into the down-take flue 1 to its entrance 6 into the up-take 2, through the opening 3 formed in the bottom of the partition wall, and out through the open top of the rear portion of the conduit into the stack. It will also be seen that when the damper is down, it will close the entrance 6 to heater and open the direct connection between the upper and lower portions of the chimney flue. A drawer 10 is contained within the conduit 9 and projects through the front of the up-take 2, the forward portion of the bottom of the drawer being cut away at 11 to permit the passage of the products of combustion from the flue 2. This drawer serves to receive the deposits of soot and dirt from the smoke, and to permit their ready removal, while a corresponding drawer 12 is inserted in the base of each of

the flues 1 and 2 and serves as a means of removing the dirt deposited therein.

An air chamber 13 is located behind the flues 1 and 2, its width being equal to their combined width, the said chamber communicating with the air of the room by means of tubes 14, which extend from the said chamber through each of the flues 1 and 2 and through the front thereof at their top and bottom, the said tubes at the bottom being inclined upwardly and rearwardly (toward the air chamber) while the tubes at the top are inclined upwardly and forwardly, thereby causing the air from the room as it enters the lower tube and is heated to pass into the air chamber and out of the forwardly inclined tube at the top, the air being thus heated while in the tubes 14 and in the chamber 13, and being kept in constant circulation, the said chamber 13 having its top at a sufficient distance below the top 4^a to form the entrance 6 to the down-take 1.

I by preference make the several parts of such a size that the front of the flues 1 and 2 will be flush with the surface of the plaster upon the chimney, and thus with the wall of the room, while the rear wall of the air chamber 13 will be flush with the forward face of the flue *a*.

It will be noticed that not only is the air passing through the tubes 14 heated, but that the room is heated by radiation from the forward faces of the flues 1 and 2.

Having thus described my invention, what I claim is—

1. In a heating drum to be inserted in the wall of a chimney, the combination with return flues, one of the said flues having its end extended into and rearwardly toward the chimney flue and opening upwardly therein and a deflecting damper pivoted to the corresponding end of the opposite flue and adapted to open the entrance thereto and to close the chimney or stack flue, or to open the chimney or stack flue and to close the entrance to the last named flue of the heater, the said end of the first named flue being adjacent to the damper and partially closing the chimney flue at the level at which it is closed by the damper substantially as described.

2. The combination in a heating drum adapted to be inserted in the wall of a stack, of vertical return flues the upper end of one of the said flues being provided with a deflecting damper adapted to project into the flue of the stack or to close the entrance to the said flue of the heater, a conduit or pipe attached to the upper end of the other return flue and having an open top at its rear end, the said conduit or pipe projecting into the flue of the stack, at substantially the same level as the damper and serving with the said damper to temporarily close it, and a hot air compartment located immediately behind the vertical return flues, substantially as described.

3. The combination in a heating drum adapted to be inserted in the wall of a stack, of vertical return flues, the upper end of one of the said flues being provided with a deflecting damper adapted to project into the flue of the stack, or to close the entrance to the said flue of the heater, a conduit or pipe attached to the upper end of the other return flue and having an open top at its rear end, the said conduit or pipe projecting into the flue of the stack at substantially the same level as the damper and serving with the said damper to temporarily close it, a hot air chamber located immediately in the rear of the said return flues, and tubes passing through the said return flues at their top and bottom and into the said hot air chamber, substantially as described.

4. The combination in a heating drum adapted to be inserted in the wall of a stack, of vertical return flues, the upper end of one of the said flues being provided with a deflecting damper adapted to project into the flue of the stack, or to close the entrance to the said flue of the heater, a conduit or pipe attached to the upper end of the other return flue and having an open top at its rear end, the said conduit or pipe projecting into the flue of the stack at substantially the same level as the damper and serving with the said damper to temporarily close it, a hot air chamber located immediately in the rear of the said return flues, tubes passing through the said return flues at their top and bottom and into the said hot air chamber, the upper of the said tubes being inclined upwardly and forwardly, and the lower of the said tubes being inclined upwardly and rearwardly, and a drawer contained in the said conduit, having its upper portion open, and having the forward portion of its bottom removed, substantially as described.

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

FERDINAND H. STROTMAN.

Witnesses:
ORRANG G. GUSO,
B. J. BROTHERTON.