L. B. STUART.

Heating Stove.

No. 163,951. Patented June 1, 1875.

Fig. 1.

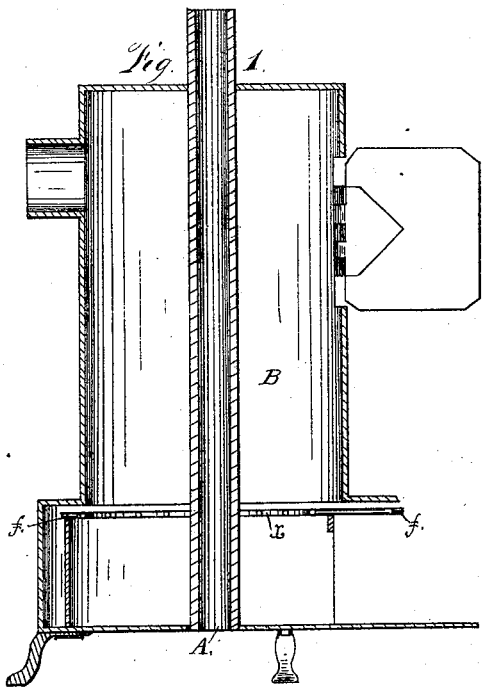


Fig. 2.

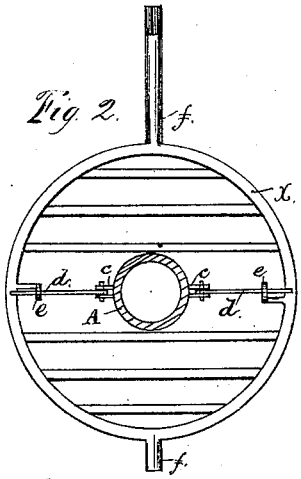
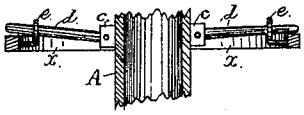


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

LEVI B. STUART, OF SEYMOUR, ASSIGNOR OF ONE-HALF HIS RIGHT TO FREDERIC DURAND, OF DERBY, CONNECTICUT.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **163,951**, dated June 1, 1875; application filed March 17, 1875.

To all whom it may concern:

Be it known that I, LEVI B. STUART, of the town of Seymour, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Stoves; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My improvement relates to that class of heating-stoves designed for heating apartments other than that in which the stove is located, or for giving to the room where the stove is placed a volume of heated air, the heat of which is derived from the hottest part of the burning fuel; and it consists in combining, with an air-tube, which extends about centrally entirely through the grate fire-pot, and stove, a swinging grate arranged to be swung on such tube, as hereinafter set forth.

In the drawings, Figure 1 shows a vertical central section of a stove of simple form, to which my improvement is applied. Fig. 2 is a plan of the grate, showing its relation to the tube; and Fig. 3, a cross-section of Fig. 2.

A is the heater-tube for conveying heated air from the stove B to any desired chamber or part of the premises. It is made of cast-iron or any suitable material, as above stated, and strong enough to withstand any degree of heat to which it may ever be subjected in a coal-stove. This tube, it will be seen, instead of being located outside the fire-pot, where it could receive but comparatively little heat, or of commencing at a point above the fire-pot, where also it could receive but a fraction of the heat, passes vertically about centrally through the fire pot, and therefore precisely where the combustion and heat are the most intense. This tube, being properly proportioned in size to the diameter of the fire-pot, need not interfere with the proper action of the stove; but, besides being out of the way, and adding nothing to the bulk or external appendages of the stove, it gives to its incoming supply of atmospheric air the most direct application of heat which it is possible to furnish, so that even while the fire is being first made up, and when most heaters or furnaces do not furnish any hot air to a distant apartment, this tube A becomes at once heated, and, in fact, may heat a room or apartment on another floor, even before the room in which the stove is placed becomes heated; and when the fire is growing low, or is nearly gone out, the tube will supply heat to the distant apartment up to the last. The customary dampers may, of course, be used to cut off the supply of atmospheric air to the tube, or the supply of heated air from the tube. By my construction, it will be observed, also, that there is no possibility of the dust or ashes from the stove insinuating itself into the heating-tube A, as it has no direct or indirect communication with any part of the stove where dust might be flying. The air-inlet mouth of the tube may be at the side of the stove at any point below the grate, and of course may be supplied with pure air from out of doors, if desired.

My improvement is applicable to heating-stoves of almost any description, and also to many varieties of cooking-stoves.

In order to allow of the needed rocking or shaking of the grate *x*, I attach ears *c c* to the tube A, on which are hung or pivoted the middle bars or ribs *d d*, serving to occupy the place and do the duty of grate-bars. The outer ends of these bars *d d* are free, and they pass through and are supported in eyes *e e*, projecting inward from or made upon the exterior rim or band of the grate. This provision permits the tilting of the grate upon its bearings *f f* without any impediment from the tube A, and to any required extent.

I do not claim in a stove a tube heated by the fuel, and terminating in a chamber within the stove; nor do I claim a central tube having concentrically arranged around it several other tubes, the heated fuel coming in contact only with the outer one of this concentric series.

I do not claim, broadly, an air-tube heated by the fuel of the stove; but

I claim—

In combination with a tube, extending centrally entirely through the stove and grate, the ears *c c* on the tube, and the swinging bars *d d* on the grate, pivoted to the ears, all substantially as and for the purpose described.

LEVI B. STUART.

Witnesses:

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