

H. Stanley,
Heating Store,
No 3.876. *Patented Jan. 4, 1845.*

Fig: 1.

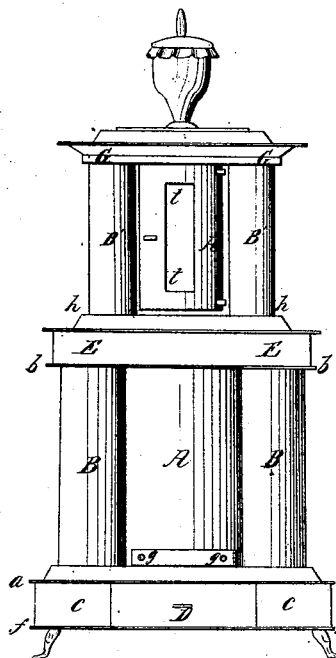


Fig: 2.

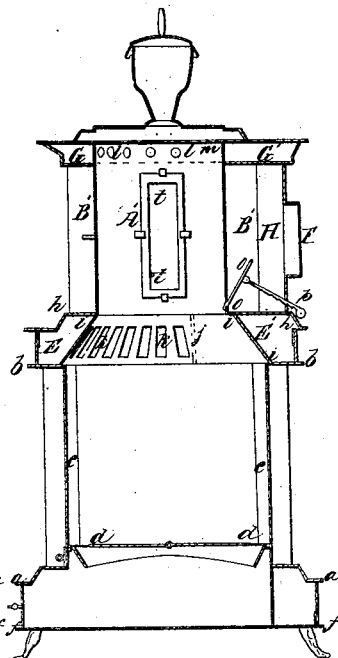


Fig: 3.

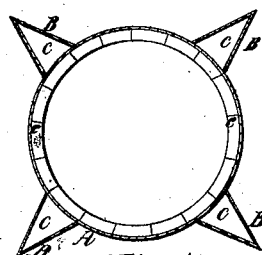


Fig: 4.

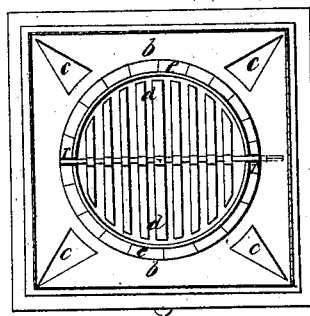


Fig: 5.

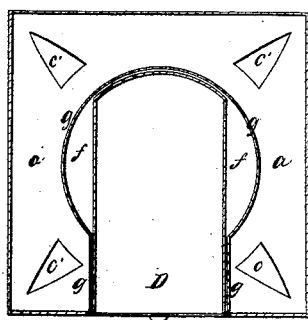


Fig: 6.

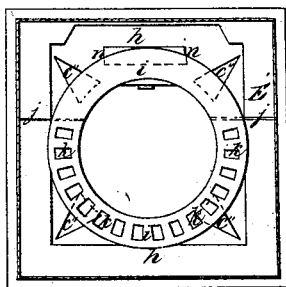
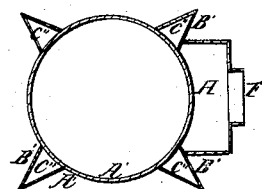


Fig: 7.



UNITED STATES PATENT OFFICE.

HENRY STANLEY, OF WEST POULTNEY, VERMONT.

COAL-STOVE.

Specification forming part of Letters Patent No. 3,876, dated January 4, 1845; Reissued April 10, 1860, No. 944.

To all whom it may concern:

Be it known that I, HENRY STANLEY, of West Poultney, in the county of Rutland and State of Vermont, have made certain new and useful Improvements in Stoves or Apparatus for Heating Apartments, which I denominate "Stanley's Coal-Burner"; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, Figure 1, is a front elevation of my stove, and Fig. 2, a vertical section thereof through its middle from front to back.

This stove is formed in what I denominate two stories, a lower and an upper, the main body of each of them consisting of a cylinder A, and A', and of four radiating flues, B, B, and B', B', giving an exterior form to each of them, such as is shown in the horizontal section, Fig. 3, made through the middle of the lower story; but somewhat varied, as will hereafter appear, in the upper story. The cylinder, A, and the radiating flues, B, B, rest on the upper plate, a, a, of the plinth, C, C, in which plinth there is an ash drawer, D. The said cylinder and flues extend upward to the lower plate, b, b, of a chamber, E, E, situated between the two stories. The horizontal plates a, a, and b, b, have circular openings through them corresponding in size with the cylinder, A, and four triangular openings corresponding with the four triangular radiating flues, B, B.

In Fig. 4, the plate, b, b, is shown, the upper story of the stove being removed; c, c, are the four triangular holes through said plate, corresponding with the place of the radiating flues, B, B, below them. The fire-chamber which extends from the grating, d, d, near the bottom of the lower cylinder, up to the plate b, b, is lined with fire brick, e, e.

Fig. 5, is a top view of the plate a, a, having, like the plate b, b, a large center opening through it corresponding with the fire-chamber, and four triangular openings, c', c', corresponding with the radiating flues B, B, which are to rest upon and embrace them.

D, is the ash-drawer, and this is surrounded by a partition, g, g, which extends from the bottom plate f, f, of the stove, to the plate a, a; leaving a flue-space in the plinth on each side and at the back of the ash-

drawer, through which the heated air that is to descend through the front radiating flues may pass to the back ones, up which it is to ascend.

Between the upper and lower stories there is an intermediate, or middle, chamber, E, E, which extends from the plate b, b, up to the plate h, h, upon which the four radiating flues B', B', and the cylinder A', of the upper chamber rest. Fig. 6, is a view of this intermediate chamber, supposing the lower story to be removed (including its plate, b, b) and the eye to be directed upward toward the upper chamber; i, i is a conical partition extending from top to bottom of the chamber, E, its upper edge coinciding with the lower end of the cylinder, A' and its lower edge resting on the upper plate, b, b, of the lower story; and, of course, embracing the cylindrical fire-chamber. The intermediate chamber is divided into two compartments, an anterior and a posterior, E, and E', by partitions, j, j, one of which is shown by dotted lines at j, Fig. 2. The conical partition i, i, has perforations through it, as shown at k, k, to admit the heated air, and gaseous products of combustion from the fire-chamber into the anterior chamber, E; but they do not enter the posterior chamber until they are about to pass off at the exit pipe, F, Fig. 2.

The radiating flues, B', of the upper story, rest on the plate h, h, of the intermediate chamber, and include the triangular holes c'', c'', Fig. 6; they extend up to the cap, or cornice chamber, G; into the anterior part of this cap chamber I make a number of holes, l, l, through the upper part of the cylinder A'; which openings are found greatly to increase the radiation from the cap, and the whole upper portion of the stove; behind these holes, as at the place of the dotted line m, Fig. 2, there are partitions in the cap space G, cutting off the passage along them, back to the exit pipe; but the rear portion, G', of the cornice space communicates with the box, or channel, H, at the back of the upper story into which the exit pipe opens. The two rear radiating flues, B', open into the space G'.

Fig. 7, is a horizontal section through the middle of the upper story. H, is the flue space in its rear, from which proceeds the exit pipe F, and which opens above into the cornice space, G'; and into the lower

part of it there is, also, an opening through the plate, *h*, as seen at *n, n*, Fig. 6, principally in dotted lines. The respective openings, chambers, and flues which I have thus
 5 described, serve for the passage of heated air when it is intended to circulate through the radiating flues; but I also make the ordinary provision for allowing a direct passage from the fire chamber to the exit pipe.
 10 For this purpose, I place a shutter, or damper, *o, o*, in the rear of the upper cylinder, *A'*, through which there is an opening to which it is adapted; this opening leads into the space *H*, and the damper may be
 15 managed by a handle, *p*, or otherwise; *r, r*, Fig. 4, is a rod by which the grate may be vibrated; *s, s*, Fig. 1, is a small door opening just under the grate, either for regulating the draft, introducing a poker, or
 20 tilting the grate, so as to drop the contents of the fire-chamber into the ash-drawer; *t, t*, are openings which are made on three sides of the upper cylinder, and which are furnished with sheets of mica; the front opening
 25 is in a door through which the fuel is to be introduced.

When the fire has been kindled in this coal burner, and the damper *o, o*, has been closed, the heated gases from the fire-chamber will, in great part, pass through the
 30 openings, *k, k*, in the conical partition *i, i*, and into the anterior chamber *E*; they will thence descend through the front radiating flues, *B, B*, and pass along the spaces in the plinth to the rear radiating flues, and
 35 up them into the posterior chamber, *E'*; a portion of the heated gases will pass thence directly into the flue space *H*, through the opening *n, n*, in the plate *h*, Fig. 6; another portion will find its way to the exit
 40 pipe, by passing through the rear radiating flues of the upper story, into the cornice space *G'*, and thence down to the exit pipe. I have sometimes essayed to pass the
 45 whole draft up through these radiating flues, by closing the opening *n, n*, but the general draft is thereby obstructed; the opening *n, n*, is, therefore, necessary to the proper action of the stove, and when this is not made too

large, there will be an abundant draft up, 50 and radiation from, the rear flues. The heated air which rises directly up into the cylinder *A'*, passes through the openings *l, l*, in its upper end, into the anterior cornice space *G*, and creates a descending draft 55 through the front radiating flues *B'*, into the chamber *E*, and then takes the same course with that which had passed through the openings *k, k*, namely, down the front radiating flues, *B, B*. 60

Having thus, fully described the manner in which I construct my coal burner, and shown its operation as resulting from the particular combination of its respective parts, what I claim therein as new, 65 and desire to secure by Letters Patent, is—

The manner in which I have combined and arranged the two stories thereof, consisting of two cylinders, with the eight triangular radiating flues arranged around, 70 and in contact with, them; said flues communicating with the flue space in the plinth, with the intermediate chamber, and with the cornice space, as described; the two latter being divided by partitions into anterior 75 and posterior portions, in the manner and for the purpose set forth; and there being, also, openings, such as are herein described and represented, through the upper end of the upper cylinder into the cornice space, 80 in the manner and for the purpose above made known; it being distinctly understood that I do not make any claim to either of the individual parts, taken separately and alone; but that I limit my claim to the 85 combination and arrangement thereof as a whole; not intending, however, by this claim to confine myself, in constructing my stove, to the particular form of the respective parts, as described and represented, but to 90 vary these as I may deem expedient while I attain the same end by means substantially the same.

HENRY STANLEY.

Witnesses:

THOS. P. JONES,

EDWIN L. BRUNDAGE.