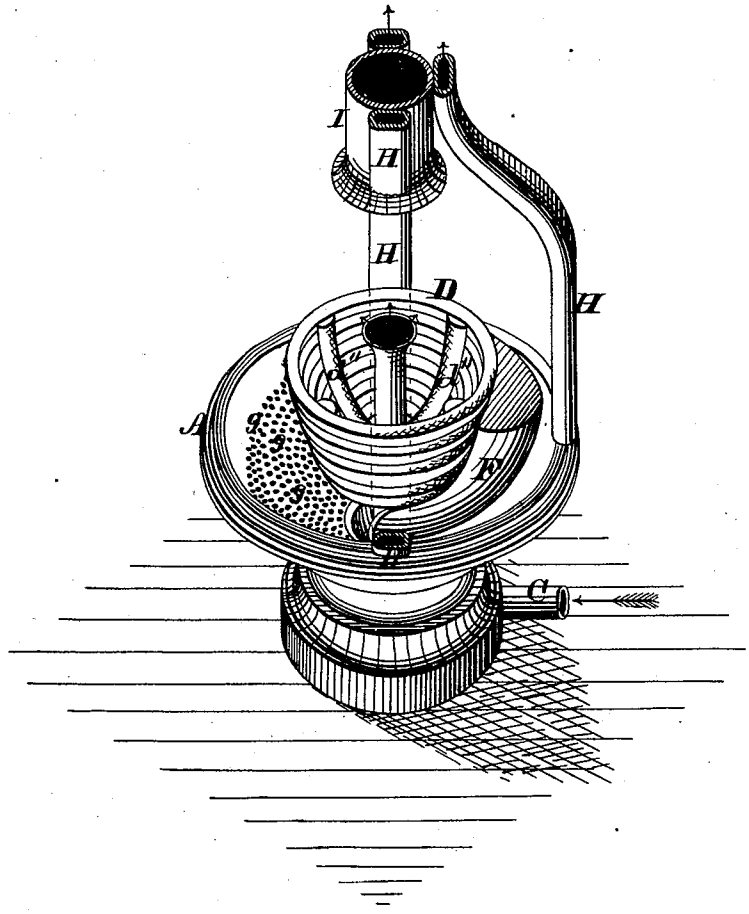
2 Sheets--Sheet 1.

P. J. HARDY.

Heating-Stove.

No. 163,987. Patented June 1, 1875.

Fig. 1.



WITNESSES:

Jas. C. Hutchinson

John R. Young

INVENTOR.

P. J. Hardy, by

Prindle and Lay his Attys

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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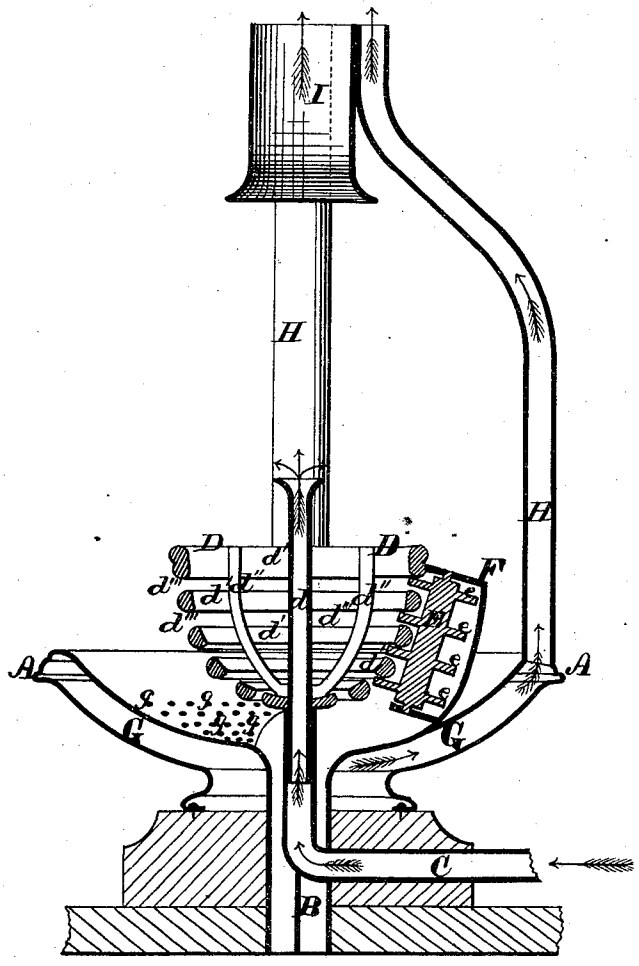
Fig. 2.



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UNITED STATES PATENT OFFICE.

PIERRE J. HARDY, OF NEW YORK, N. Y.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **163,987**, dated June 1, 1875; application filed May 3, 1875.

To all whom it may concern:

Be it known that I, PIERRE J. HARDY, of New York city, in the county of New York and in the State of New York, have invented certain new and useful Improvements in Heating-Stoves; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of my stove with its casing removed, and Fig. 2 is a vertical central section of the same upon a line extending from front to rear.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to render less objectionable the operation of removing ashes from a grate, and to enable a supply of fresh heated air to be supplied, either to the combustion-chamber, or to the room within which the stove is placed; to which end it consists, principally, in combining, with the grate-clearing shaft, an inclosing casing, which prevents the outward passage of ashes, substantially as is hereinafter specified. It consists, further, in constructing the bottom of the ash-pit hollow, connecting such space with the exit-flue, and providing within the upper wall of the same a number of small openings, through which dust and ashes from falling coals will be drawn, substantially as and for the purpose hereinafter shown.

In the annexed drawings, A represents the base of my stove, which is made concave upon its upper side, and at its center communicates through a vertical duct, B, with a suitable ash-pit placed beneath. Passing downward through the center of the duct B, and from thence outward to the exterior of a building, is a pipe, C, which receives the vertical spindle *d* of a semi-spherical basket-grate, D, said grate being capable of complete rotation in a horizontal plane. The spindle *d*, which extends upward above the grate, is hollow, and forms a continuation of the air-shaft C. The grate D is formed of a series of horizontal rings, *d'* and *d'*, which at their inner sides are connected together by means of several radial vertical ribs, *d''* and *d''*, so as to leave between said rings clear spaces *d'''*, for the removal of ashes, which result is accomplished by means of a shaft, E, that is pivoted within suitable bearings at the rear side of said grate, has the same general inclination as the latter, and is provided with a number of toothed disks, *e* and *e*, one of which passes into each space *d'''*.

As thus arranged, it will be seen that by rotating the grate D the toothed disks *e* and *e* will remove all ashes and clinker from the spaces *d'''*.

In order that dust may be prevented from rising while the grate is being cleared, a casing, F, is placed around the shaft E, and incloses the same at all points, except at its front side and lower end.

To prevent dust from arising when coals or ashes fall from the front side of the grate, the base A is made double, and the space G between its upper and lower portions is placed in communication with the exit-flue by means of two or more pipes, H and H, which pass upward from the outer portion of said base, and unite at the upper end and center of the stove. A series of small openings, *g*, *g*, and *g*, are provided within the upper side of the base, at such points as coal or ashes are liable to fall upon, and through said openings all dust and loose ashes will be drawn into the spaces G by the current of air that passes through the same at all times when the stove is in use. In addition to the office named, the pipes H and H operate as standards for the support of the exit-flue I and the upper portions of the stove.

When the stove is in operation, the heat of the burning fuel within the fire-pot will cause an upward current of air within the air-duct C, which air may either escape into the combustion-chamber, or may be conveyed into and assist in warming the room.

The mechanism shown and described for removing cinders and ashes from the grate is not especially claimed, the same being the subject of another application for patent.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the grate D, and with the shaft E, provided with the disks *e* and *e*, that pass into the openings *d'''* of said grate, the casing F, arranged to inclose said shaft at

all points, except at its front side and lower end, substantially as and for the purpose specified.

2. In combination with the basket-grate D, the concave hollow base A, having interiorly a correspondingly-shaped air-space, G, which communicates, through openings *g* and *g*, with the space surrounding said grate, and, by means of the pipes H, H, and H, is connected with the exit-flue, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of April, 1875.

PIERRE J. HARDY.

Witnesses:

GEO. S. PRINDLE,

WILLIAM FITCH.