W. H. GOEWEY.

Coal Stove.

No. 41,430. Patented Feb. 2, 1864.

Fig. 3.

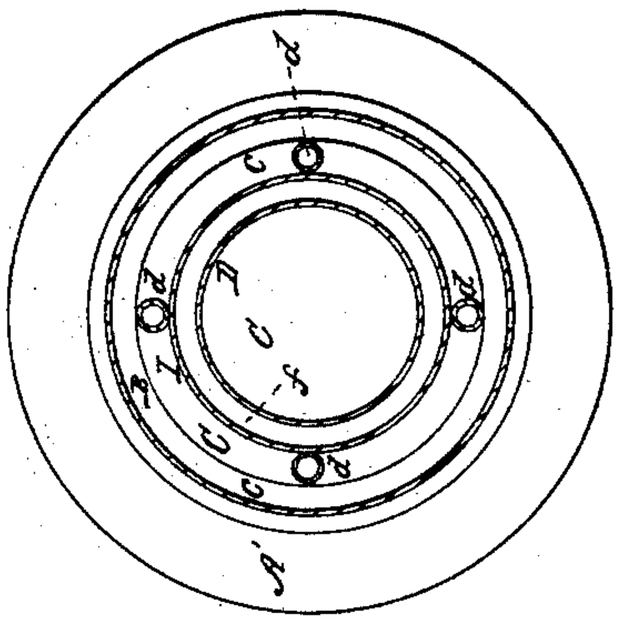


Fig. 1.

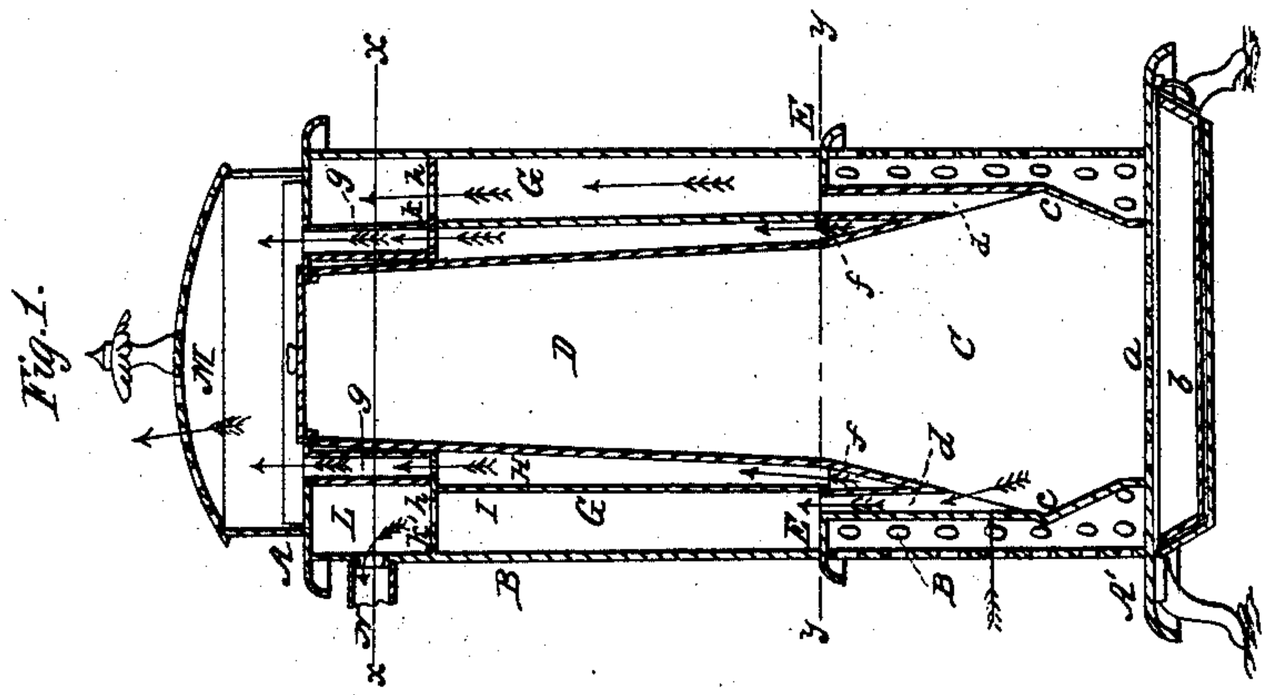
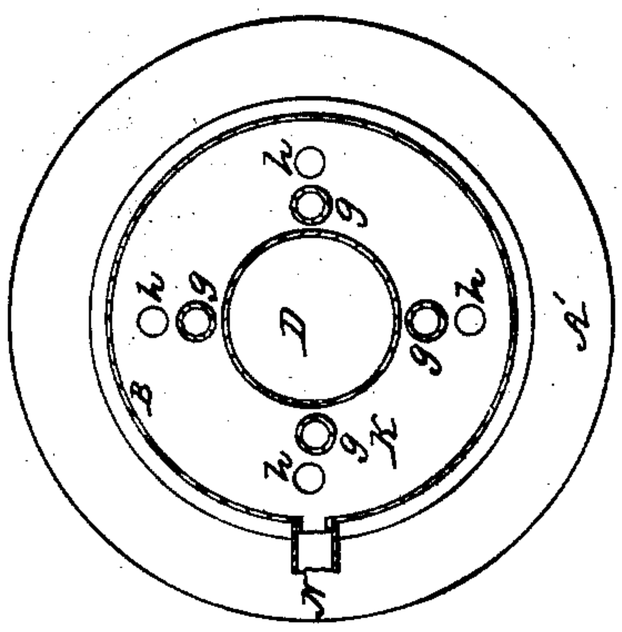


Fig. 2.



Witnesses:

Charles H Cheney

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UNITED STATES PATENT OFFICE.

WILLIAM H. GOEWEY, OF ALBANY, NEW YORK.

IMPROVEMENT IN COAL-STOVES.

Specification forming part of Letters Patent No. **41,430**, dated February 2, 1864.

To all whom it may concern:

Be it known that I, WILLIAM H. GOEWEY, of Albany, in the county of Albany and State of New York, have invented a new and useful Improvement in Coal-Stoves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of my improved stove; Fig. 2, a transverse horizontal section of the same in the plane of line *x x*, Fig. 1; Fig. 3, a similar section in the plane of line *y y*, Fig. 1.

Like letters of reference indicate corresponding parts in all the figures.

My improved stove is of that class known as "base-burning," having a fire-pot at the bottom and a magazine or supply-chamber extending therefrom upward to a suitable height for containing a reserve of fuel.

In general construction, my stove consists of a top and bottom casting, A and A′, of usual shape, and connected by an ordinary sheet-iron cylinder forming two sections, B and B′, the latter being of ornamental open-work, so as to allow the outside air to enter. Within the lower section, B′, of the cylinder is situated the fire-pot C, over an ordinary grate, *a*, and ash-box *b*, and from the open top of this fire-pot extends the usual magazine or supply-chamber, D, for containing the reserve fuel, having any suitable cover, *i*, thereon. The fire-pot is preferably of enlarged diameter at a suitable distance above its bottom, as represented at *c*, thus making it in the shape of the double frustum of a cone; and from this enlargement extend a suitable number of pipes, *d d*, for the passage of the products of combustion, four only being represented in the drawings. The upper ends of the pipes open through a horizontal partition, E, about on a line with the top of the fire-pot, and an outer gas or smoke chamber, G, which is separated from an inner air-chamber, H, surrounding the magazine, by an intermediate cylinder, I, reaching to a suitable height, as shown most clearly in Fig. 1. An annular air-passage, *f*, around the magazine connects the chamber H with the open space around the fire-pot below, so that the communication is uninterrupted.

At the top of the intermediate cylinder, I, is a horizontal diaphragm, K, cutting off all passage outside the magazine, except through air-pipes *g g*, leading from the chamber H, and openings *h h*, leading from the gas-chamber G. Above this diaphragm there is a space, L, inclosed between it and the closed top casting, A, of the stove, or its equivalent, which forms another diaphragm similar to I. The pipes *g g* extend through from one diaphragm to the other, while the openings *h h* are only through the lower diaphragm.

The heated air that escapes through the pipes *g g* may pass through a perforated top or cover, M, to the stove, as represented in the drawings, or it may enter a chamber having a cut-off valve or damper; or any other desirable arrangement may be employed.

An exit-pipe, N, opens from the space L for the escape of the products of combustion, as usual. Thus arranged, with the draft entering at the grate *a*, the products of combustion will pass upward from the fire-pot through the pipes *d d* into the chamber G, thence into the space L, through the openings *h h*, and finally escape at the exit-pipe N, as indicated by the red arrows in Fig. 1.

The air that enters the open-work of the lower section, B, of the outer cylinder becomes heated and rarefied by contact with the fire-pot, and arises through the annular passage *f* into the inner chamber, H, thence through the pipes *g g* above into the room, as indicated by the black arrows, Fig. 1, or, if desired, into a room above, by a suitable tube for the purpose. In addition to the heat this air receives from the radiation of the fire-pot, it is constantly receiving accession, as it rises, from the heat in the outer gas or smoke chamber, and this accession is considerable.

By this arrangement I adapt a base-burning stove to the heating of a column of air, which effect, from the peculiar construction of this class of stoves, has heretofore been difficult to obtain. The construction and arrangement is simple and cheap, and not liable to disorder. I heat the ascending column of air in the simplest manner by bringing it first in direct contact with the fire-pot and surrounding the same, and then inclosing the thin ascending sheet by the outer chamber, that receives all the heated gases and direct products of combustion. In this manner I economize the heat to the best advantage, while there is

no interference with the direct radiation from the stove.

I do not claim heating air in an interior chamber and discharging the same into the room, as I am aware that such an effect has before been produced; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The chambers G and H, separated by the intermediate cylinder, I, the diaphragm K, provided with the pipes *g* and openings *h*, and the space L, communicating with the exit-pipe, in combination with the fire-pot C, having pipes *d d*, and the magazine D, of a base-burning stove, the whole arranged and operating substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WM. H. GOEWEY.

Witnesses:

GEORGE B. NEAR,

JOHN H. GOEWEY.