

(No Model.)

W. F. BEECHER.

COAL STOVE.

No. 379,629.

Patented Mar. 20, 1888.

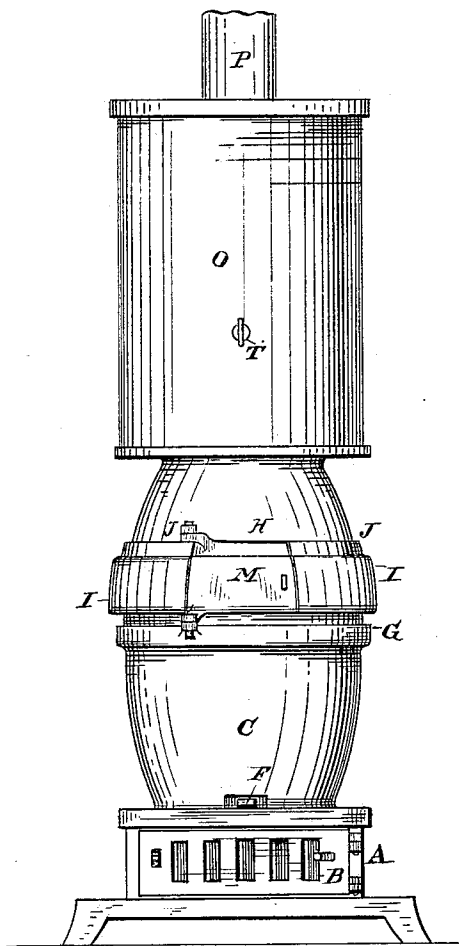


Fig. 1

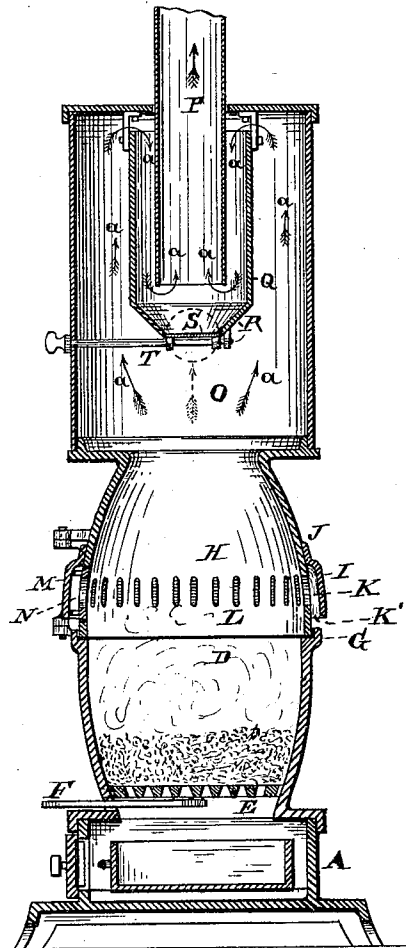


Fig. 2

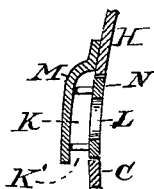


Fig. 3

WITNESSES.

J. H. Lapham,
J. V. Mathews.

INVENTOR,

W. F. Beecher
W. H. Burdick
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. BEECHER, OF CLEVELAND, OHIO.

COAL-STOVE.

SPECIFICATION forming part of Letters Patent No. 379,629, dated March 20, 1888.

Application filed February 7, 1887. Serial No. 226,785. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BEECHER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Coal-Stove; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my invention consists in making the fire-place of the stove in two sections and connecting with the upper section on the exterior an annular jacket or curtain in close contact with the stove on the upper part, and open below under the curtain, for the admission of air into the fire-box through a series of slots or openings in the upper section of the stove, which openings are under the said curtain.

Above the fire-box is attached a drum, in which passes the heat and gaseous productions of the combustion of fuel in the fire-box. This drum is provided with a direct and diving-flue draft controlled by a damper connected with the said drum mechanism.

For a more full and complete description of the said invention, reference will be made to the following specification and to the annexed drawings, making part thereof, in which—

Figure 1 is a front elevation of the stove. Fig. 2 is a vertical transverse section; and Fig. 3 is a detached enlarged section.

Like letters of reference refer to like parts in the several views.

The purpose of the said improvements is to reduce to a minimum the unconsumed fuel and to utilize the gaseous productions of the combustion by consuming the smoke and inflammable gases evolved from the fuel, the advantages of which are too well understood to require being set forth herein.

The general form of the stove is circular, as shown in the drawings, in which A represents the lower section mounted upon legs or other supports. The base forms also the ash-pit, provided with a drawer, in which are draft-openings B, Fig. 1, with a damper.

Mounted upon the base A is the lower section, C, of the fire-box D, Fig. 2, having a grate, E, and a lever, F, connected with the grate for sifting out the ashes. At the upper end of the section C is formed an annular rabbet or shoulder, G, in which is fitted the lower

end of the section H. These two sections form the lower part of the stove, in which is the fire box or place. To the upper section, H, is attached a circular jacket or curtain, I, which, at the upper part, J, is in close contact with the exterior of the section H. Below the contraction of the parts at J the curtain depends and projects outward, forming a space, K, Fig. 2, between the interior of the curtain and the exterior of section H, which space is open to the atmosphere at the end of the curtain, as seen at K', Fig. 2. The space K encircles the section H, in which are a series of slots or holes, L, which extend into the fire-box, as shown, and are in open relation with the circular space K under the curtain, by which means the air is admitted into the fire-box through the space K and the opening L, for the supply of oxygen in supporting the combustion of the fuel.

The door M is hinged to the section H. To the front section of the door is attached a plate, N, Figs. 2 and 3. There are openings in the said plate corresponding to the slots L, a space K between the plate and door, and an opening, K', essentially the same as shown in Fig. 2. This arrangement of the curtain and door, in connection with section H, admits of a current of air passing through the space K into the fire-place through the slots L from various directions.

Directly over the fire-box is mounted a drum, O, in which is a direct-draft flue or pipe, P, inclosed at the lower part by an annular diving-flue, Q, the upper end of which is attached by brackets to the top of the drum, so as to admit of space between the head of the drum and top of the diving-flue, as seen in Fig. 2. The lower part, R, is tapering, having an opening provided with a wing-valve, S, fastened to a valve-rod, T, pivoted to the lower end of the diving-flue and extending to the exterior of the drum, as shown, so that the wing-valve S may be operated from the outside of the stove.

It will be supposed that the fuel in the stove is fired. On opening the valve S the draft is directly through the pipe P without divergence, but on closing the valve S the draft is then in the direction of the arrows *a*, which causes the smoke and gases from the burning fuel to ascend through the drum on the outside of the diving-flue Q, down the inside there-

of, and then out through the pipe P. This diving-flue arrangement within the drum causes the smoke and inflammable gases from the fuel to be consumed by ignition from the increased heated air in the drum evolved from the diving-flue by the passage of the heat when the valve S is closed, as the air in the drum, to a certain extent, becomes superheated, causing the consumption of the combustible products of the fuel passing through the drum. There is also a material economy in the consumption of fuel in the fire box or place D by the admission of air through the slots L, as the air becomes heated more or less in the annular space K before entering the fire-place; hence it is in a heated condition and is brought in contact with the fuel, where the air or oxygen is most needed to generate the greatest heat from the fuel; but as soon as the unconsumed inflammable product enters the drum, when

the valve S is closed, a secondary combustion takes place in the drum, producing additional heat by the means and in the manner before mentioned. When the valve S is open, as indicated by the dotted line, the draft is then directly through the pipe P, as shown.

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

In combination, the stove-body having openings, and the curtain secured at its upper edge closely to said body and depending therefrom at a slight distance from the body to form an air-chamber, said curtain having a door, M, substantially as described.

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

WILLIAM F. BEECHER.

Witnesses:

W. H. BURRIDGE,
B. F. EIBLER.