

A. WHITE.

Improvement in Base-Burning Stoves.

No. 114,738.

Patented May 9, 1871.

Fig. 1.

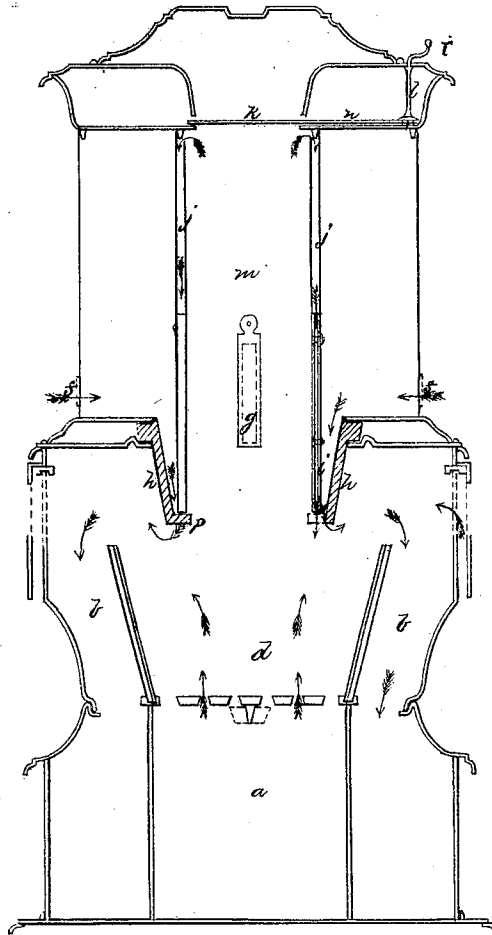
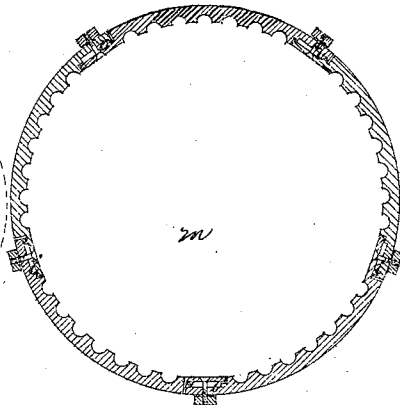
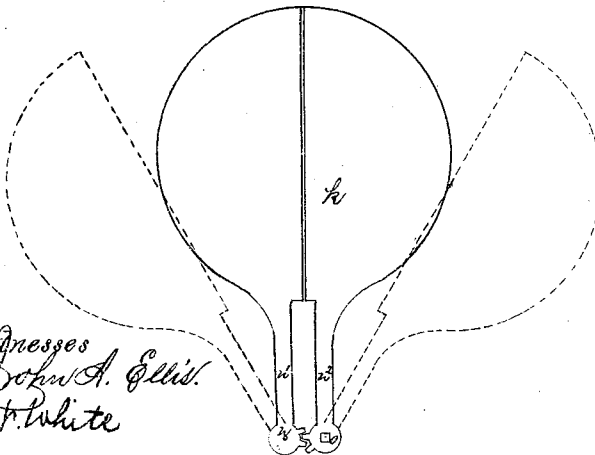


Fig. 4.



Fig. 2.

Fig. 3.



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# UNITED STATES PATENT OFFICE.

ALEXANDER WHITE, OF ROCK ISLAND, ILLINOIS.

## IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 114,738, dated May 9, 1871.

*To all whom it may concern:*

Be it known that I, ALEXANDER WHITE, of Rock Island, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Base-Burning Stoves for Bituminous Coal; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a magazine or reserve hopper for bituminous-coal base-burning stoves and furnaces, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a longitudinal vertical section of the entire stove. Fig. 2 is an enlarged plan view of the magazine-cover. Fig. 3 is an enlarged horizontal section of the lower part of the magazine, and Fig. 4 shows a modification of the construction of the lower part of the magazine.

To insure the success of a bituminous-coal base-burner, it is essential that some means be provided for disposing of the gases that arise in the magazine, or else these gases will fill the magazine and condense in the form of coal-tar; or they will carry the fire upward through the fuel and ignite the reserve coal in the magazine. It is also desirable that these gases be consumed, and these are the main objects of my invention. To accomplish this end I construct the lower part, *m*, of my magazine of cast-iron or other suitable material, and provide several thin passages, *i i*, within the wall or shell of said magazine. This casting may be made in vertical sections or staves, with wide laps at the joints, said laps being thinned down, except at the edge, so that when put together the larger portion of the laps will stand apart far enough to form the desired passage through the entire length of the section, as shown at *i*, Fig. 1. The upper part of the magazine I make of two thicknesses of sheet-iron, the outer shell, *j*, fitting snugly on the outside of the lower part, *m*, and also on a flange or rib on the top plate. The inner shell

fits snugly on the inside of the lower part, to which it is fastened, and stops a sufficient distance from the top plate to allow the gases in the magazine to pass into the space between the two sheet-iron shells, and thence into the passages *i* and to the fire, as shown by arrows in Fig. 1. If desired, the inner sheet-iron shell may be of the same length as the outer one and have perforations at the top.

The magazine may be connected to the top or covering plate sufficiently loose to allow the said magazine to be shaken from right to left by means of a poker or other suitable instrument inserted in the front opening and shaken horizontally.

The lower or cast-iron part, *m*, of the magazine is corrugated, fluted, or grooved longitudinally on the inner surface, for the purpose of preventing the fuel, while coking, from adhering to the same, as the points only come in contact with the coal and do not form sufficient hold to retain it. These grooves also form so many minute passages for returning the gas to the fire.

The magazine is retained in position by resting on ribs *p* on the inverted conical ring *h*. These ribs may be of any desired number, and may be either at the base of said ring or at any point between the base and the top.

In the wall of the magazine is an opening, *g*, for the purpose of admitting a poker or other instrument to agitate the fuel or coke in the lower part of the magazine when desired, which opening can be got at by a door in the shell or drum of the stove. This opening may be provided with a door or cover, either pivoted, hinged, or sliding.

The cover *k* for the magazine is made in two half-disks, with arms *n' n''*, on which are segments of cogs. One of these arms is fastened by a pin or rivet, *r*, to the top plate. The other has a square hole, *o*, that receives the crank *l*, which passes through it and into a round hole in the top plate. This crank passes up through the top cover of the stove. When the crank is moved to the left, it carries the half of the cover to which it is attached to the right and off the opening to the magazine, and at the same time to cogs or pins on the arm *n''*, engages the cogs on the arm *n'*, and carries that part of the cover to the left and off the said opening, as shown by the dotted lines in Fig. 2.

If desired to cast the lower part, *m*, of the magazine in one piece, the inner surface should be provided with wide grooves provided with shoulders, as shown in Fig. 4, for a strip, *b*, to rest against and form the gas-passage *i*, said strip being riveted or otherwise fastened to the casting.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A magazine for a base-burning stove, formed in two parts, the upper part composed of two sheet-iron shells with a space between them, and the lower part cast whole or in sections, with hollow tubes or passages through the same, and the inner surface grooved, fluted, or corrugated, all substantially as and for the purposes herein set forth.

2. In combination with a magazine constructed as above, the opening *g*, for the purposes set forth.

3. In combination with the magazine of a reservoir-stove, the bisected cover *k*, with arms *n' n''*, operated by crank *l*, and segments of cogs, all arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALEXANDER WHITE.

Witnesses:

I. D. RUGGLES,  
C. E. HAWLEY.