No. 816,024. PATENTED MAR. 27, 1906.

E. D. MARSHALL.

MAGAZINE HEATING STOVE.

APPLICATION FILED SEPT. 1, 1905.

Fig. 1.

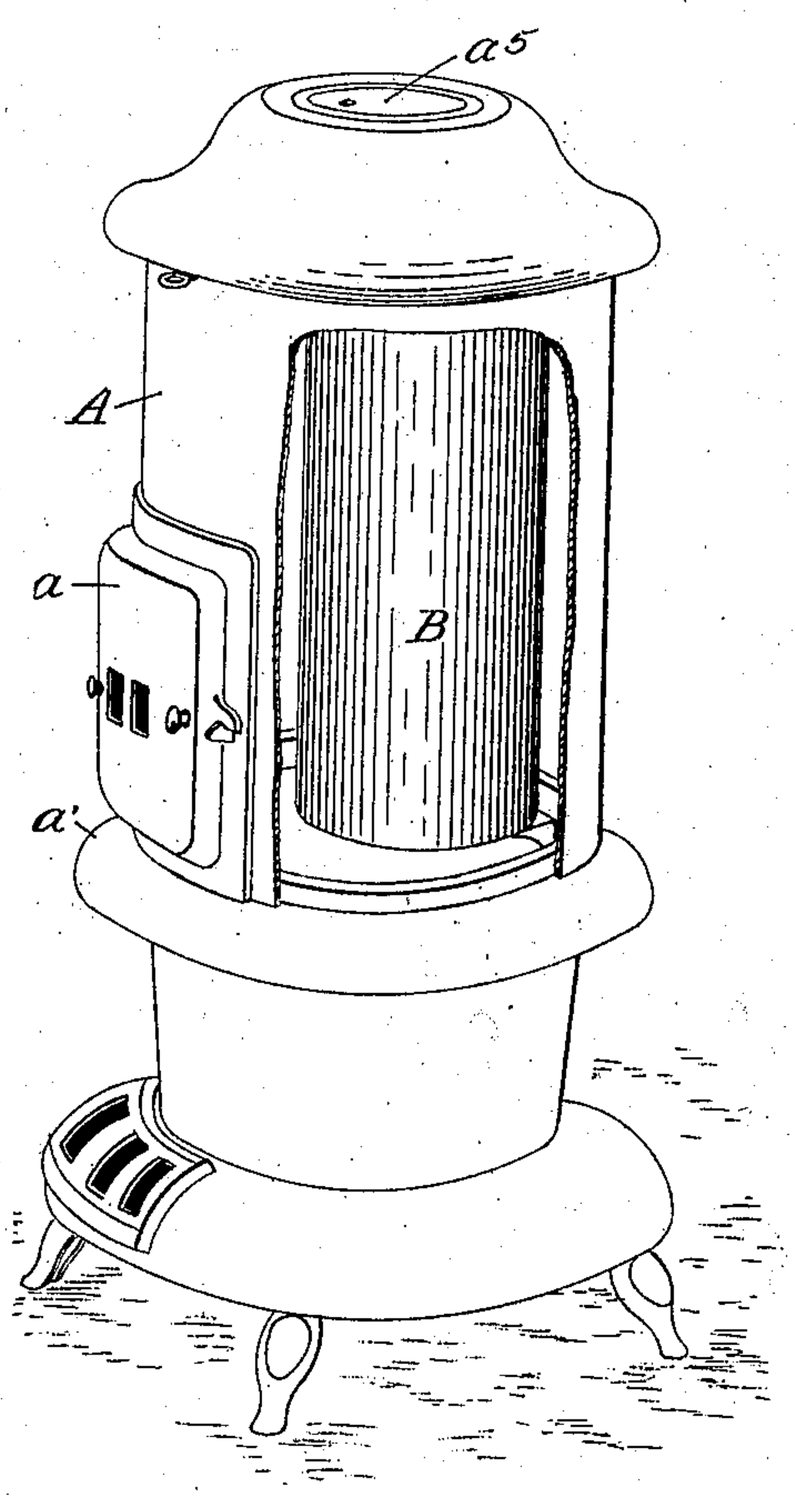


Fig. 2.

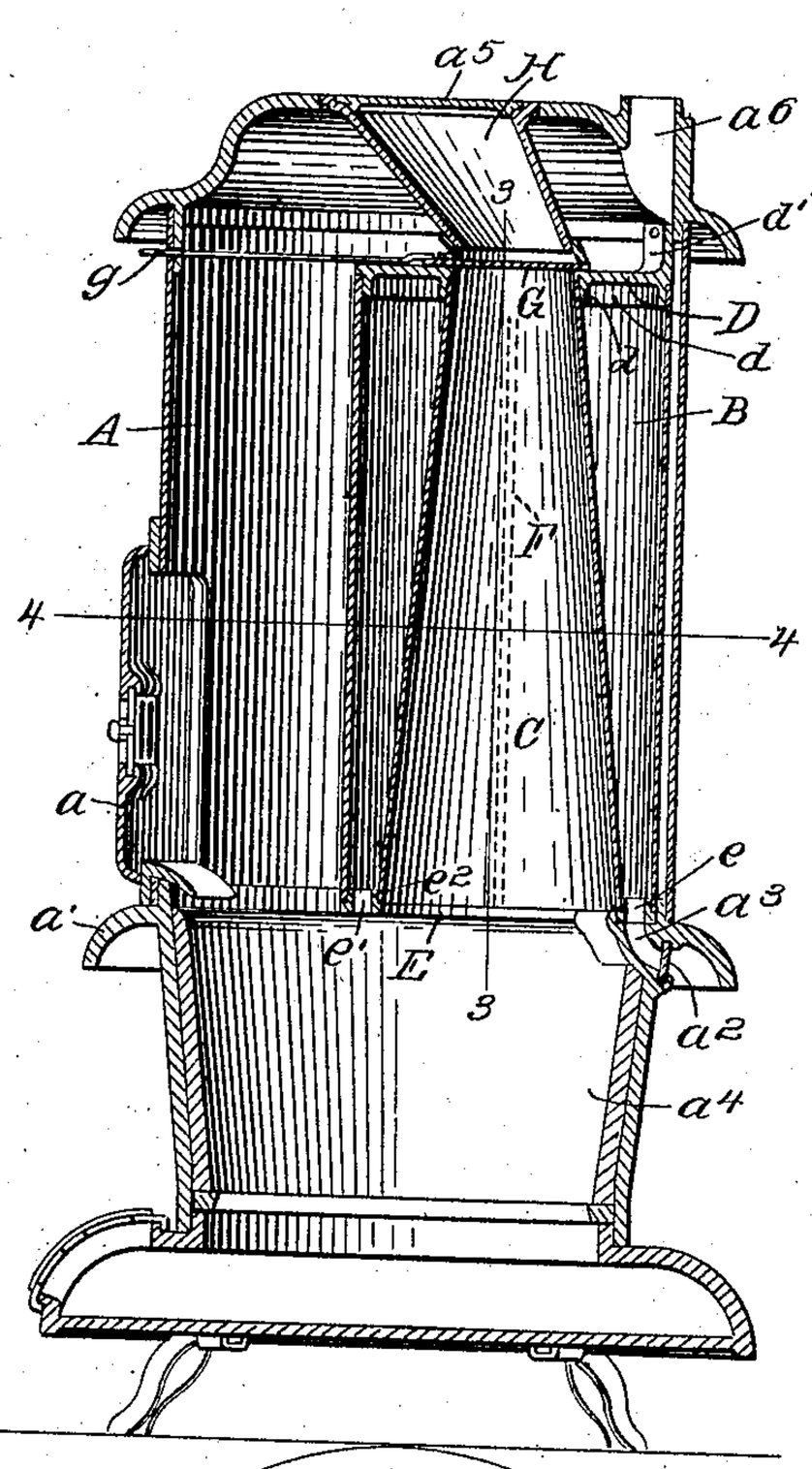


Fig. 3.

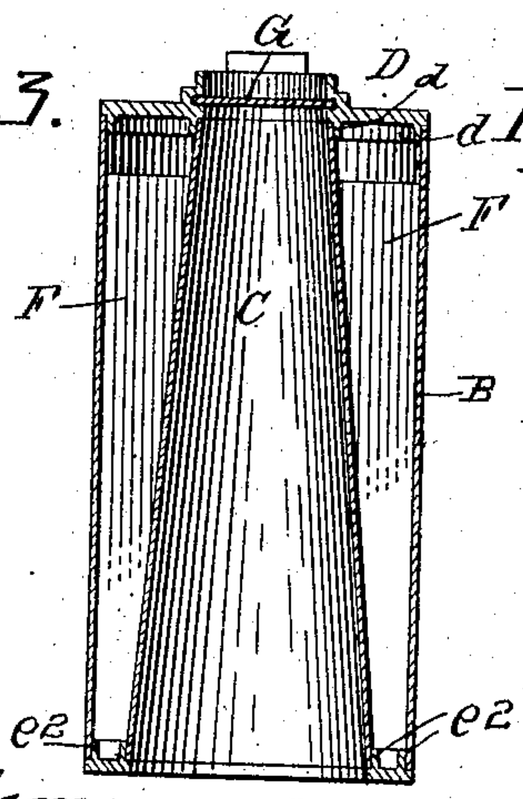
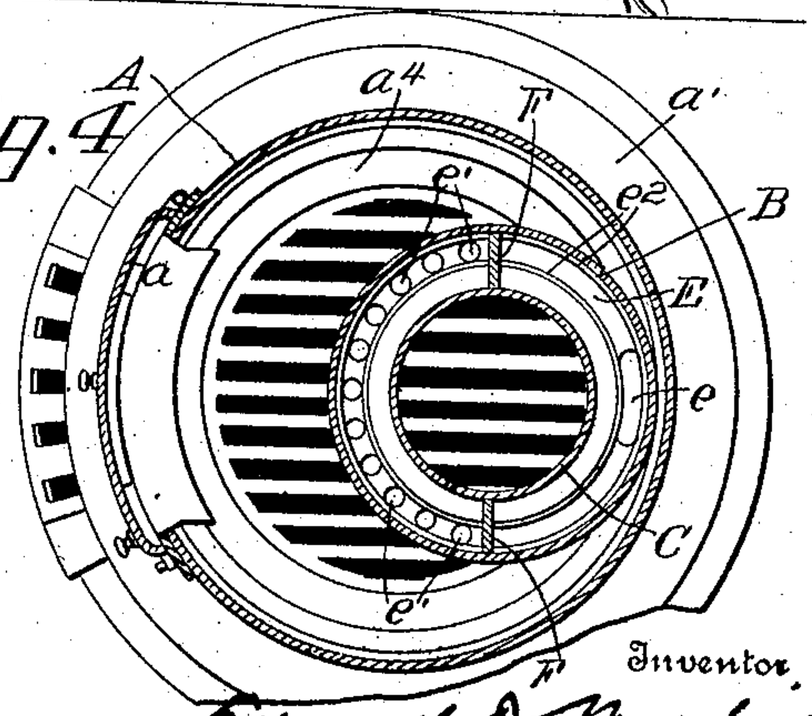


Fig. 4.



Witnesses

F. C. Gibson.

L. B. Bridges

Inventor,

Ellsworth D. Marshall,

By Davis & Davis,

Attorneys.

UNITED STATES PATENT OFFICE.

ELLSWORTH DAVID MARSHALL, OF SIDNEY, OHIO.

MAGAZINE HEATING-STOVE.

No. 816,024. Specification of Letters Patent. Patented March 27, 1906.

Application filed September 1, 1905. Serial No. 276,711.

To all whom it may concern:

Be it known that I, ELLSWORTH DAVID MARSHALL, a citizen of the United States of America, and a resident of Sidney, county of Shelby, State of Ohio, have invented certain new and useful Improvements in Magazine Heating-Stoves, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a heating-stove provided with my improvements, the combustion-chamber of the stove being broken away to show the jacket of the air-chamber or magazine; Fig. 2, a vertical transverse section of the same; Fig. 3, a detailed vertical section on the line 3 3, and Fig. 4 a horizontal section on the line 4 4.

The object of this invention is to provide a magazine heating-stove with simple improvements whereby a maximum heating capacity is obtained with a minimum of fuel and explosions of gas in the fuel-magazine are avoided, as more fully hereinafter set forth.

To the accomplishment of this object and such others as may hereinafter appear the invention consists of the parts and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters designate like parts throughout the several views.

Referring to the drawings by reference characters, the letter A designates the main wall of the combustion-chamber, provided with a door a and a circumferential flange a' of the usual construction. A removable lid a^5 fits into an opening in the fuel-chute H, which chute inclines backwardly and downwardly and is connected to the upper end of an upward-tapering fuel-magazine C, communication between the chute H and the fuel-magazine being adapted to be cut off by a substantially gas-tight valve G, which valve is operated by a rod g.

The cylinder B surrounds the magazine C and in connection therewith and the connecting-heads D and E forms an air-chamber which entirely surrounds the magazine. The lower head E is flanged at e^2, and the upper head D is flanged at d for the attachment of the ends of the magazine and cylinder B. The heads D and E are suitably supported within the combustion-chamber, and the air-chamber formed between them is divided vertically by means of partitions F, which extend from the lower head E to near the upper head D and are located at diametrically opposite sides of the fuel-magazine.

The magazine and air-chamber are located eccentrically with reference to the cylindrical stove-body—that is, at or near the rear wall thereof. An air-inlet a^3 (controlled by a suitable register a^2) is formed in the fire-pot section a^4 and is in communication with a hole e, formed in the lower head E at the rear. A series of holes e' are formed in the lower head in front of the partitions F for the escape of the air into the combustion-chamber.

It will be observed that while a fire is burning in the stove and the valve a^2 is open the air-supply is drawn in through the inlets e a^3 at the bottom of the rear section of the air-chamber and thence is compelled to pass up over the upper ends of the partitions F and down through the outlet-openings e'. In starting the fire the draft may be taken direct, as usual, through the ash-door and up through the grate, and after the fire is started the draft will be sufficient to draw the air in through the magazine in the manner set forth. It will be observed that the products of combustion are free to pass up and around the side and top of the air-magazine and out through the outlet a^6.

It will be observed that by taking the air in at the rear lower end of the magazine and compelling it to pass upward and then downward before it meets the flames not only insures that the air will be heated to a considerable degree, but also that the temperature of the fuel-magazine will be kept down to a minimum, thereby avoiding as much as possible the generation of explosive gas in the fuel-chamber and permitting the use of soft coal without danger of explosions. It will be observed also that by reason of the arrangement of the magazine and the air-jacket and outlets e' the heated air will be delivered directly over and down into the hottest part of the fire, so that complete combustion of the generated gases will ensue and danger of explosions from accumulated gases be thereby avoided. Thus setting back the magazine and the air-chamber has the further advantage that an extended inlet conduit or pipe is rendered unnecessary, and ample space is provided in front for examining and tending the fire.

It will be observed that my improvements are simple in construction and will add but

little to the cost of the stove and will render it unnecessary to make any material changes in the construction of the stove.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the exact arrangement and construction shown.

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

1. In combination with a heating-stove, a fuel-magazine supported in the combustion-chamber thereof near the rear wall of the stove, a downdraft air-chamber surrounding said fuel-magazine, partitions extending upward to near the top of the air-chamber so as to divide the air-chamber into a rear and a front section, the lower end of the front section being over the center of the fire-pot, an air-inlet leading into the lower end of the rear section and an air-outlet leading from the lower end of the front section of the air-chamber down into the fire-pot.

2. In combination with a heating-stove provided with a fuel-magazine and means whereby said magazine may be charged from the top, means closing the top of said magazine, an air-chamber surrounding the fuel-magazine substantially its full length and having partitions extending upward to near the top of the air-chamber thereby dividing the air-chamber into a rear and a front section, an air-inlet leading into the lower end of the rear section and an air-outlet leading from the lower end of the front section of the air-chamber down into the fire-pot.

3. In combination with a heating-stove provided with a fuel-magazine in its combustion-chamber, an air-chamber surrounding the fuel-magazine and closed at its top, said air-chamber being located near the rear wall of the stove, partitions extending upward to near the top of the air-chamber, an air-inlet leading into the air-chamber at the rear of the partitions, and a series of air-outlets leading out of the lower end of the air-chamber in front of the partitions.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 26th day of August, 1905.

ELLSWORTH DAVID MARSHALL.

Witnesses:

DAVID OLDHAM,

C. W. FRAZER.