No. 649,214. Patented May 8, 1900.

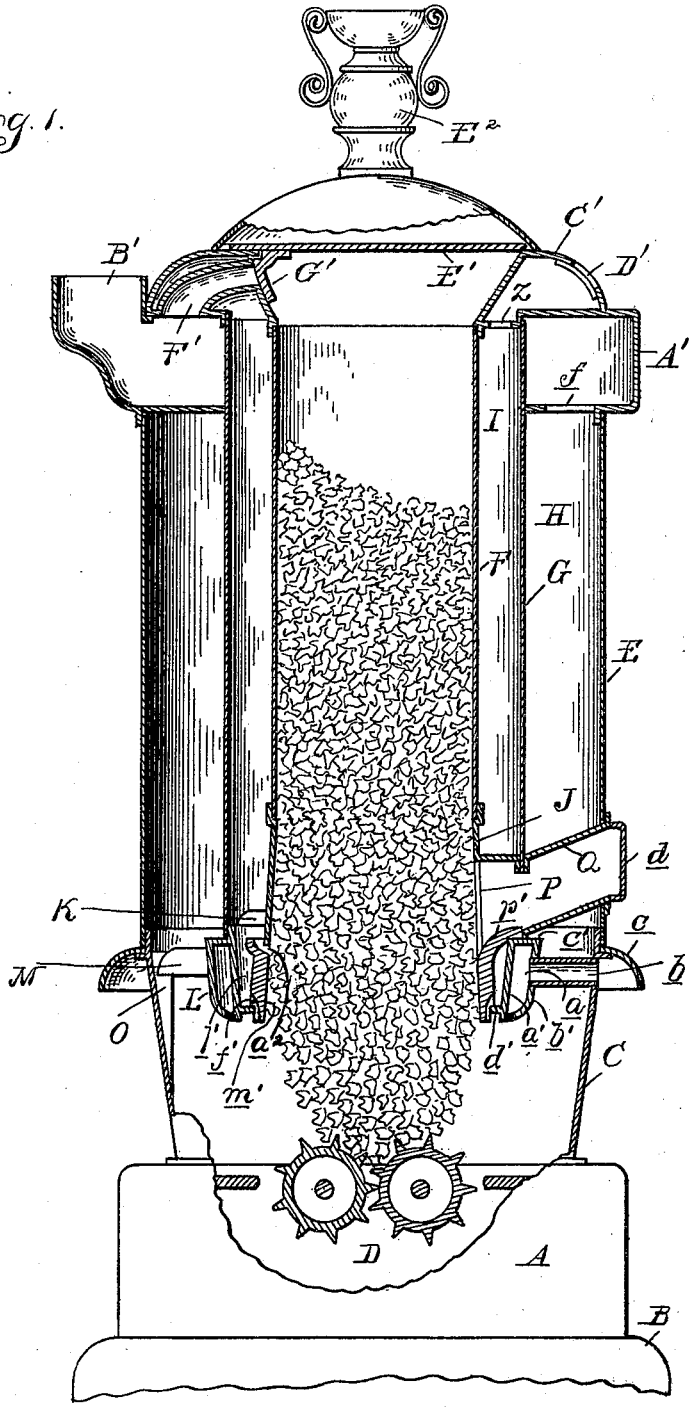
E. W. RIDER.

MAGAZINE STOVE.

(Application filed July 17, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses
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H. C. Smith.

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Fig. 2.

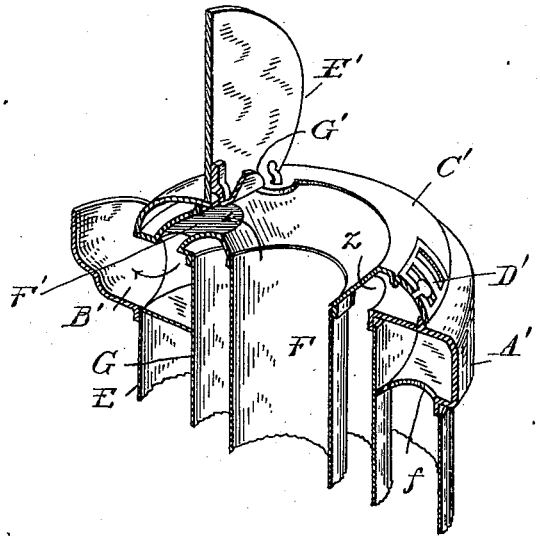


Fig. 3.

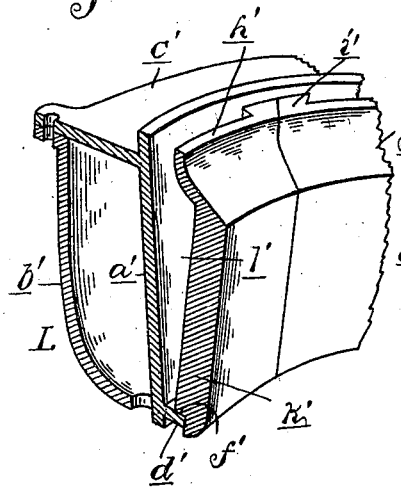


Fig. 4.

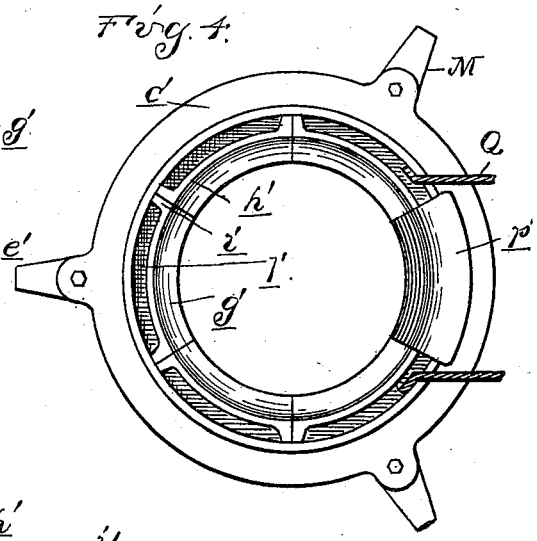
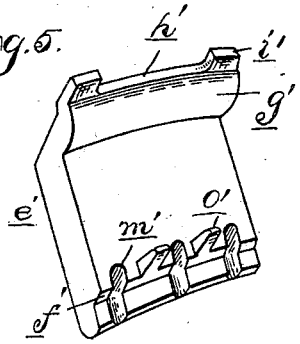


Fig. 5.



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UNITED STATES PATENT OFFICE.

EBENEZER W. RIDER, OF BAY CITY, MICHIGAN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF SEVEN-NINTHS TO THE RIDER HEATER COMPANY, OF DETROIT, MICHIGAN.

MAGAZINE-STOVE.

SPECIFICATION forming part of Letters Patent No. 649,214, dated May 8, 1900.

Application filed July 17, 1899. Serial No. 724,162. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER W. RIDER, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Magazine-Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to a magazine-stove of the downdraft type; and it consists in the peculiar arrangement, construction, and combination of the various stove parts and appliances, as will be more fully hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a vertical central section through my improved stove. Fig. 2 is a sectional perspective view of the upper portion or end thereof. Fig. 3 is a similar view of the lower stove end, illustrating the construction of the magazine-supporting ring and its lining. Fig. 4 is a plan view of the supporting-ring, showing the arrangement of the lining-sections; and Fig. 5 is a perspective view of one of the lining-sections.

The reference-letter A designates the ash-pit section of the stove, which is supported upon suitable legs B, and mounted upon said section is a fire-pot section C.

D designates the grate, preferably of the rotary type, at the base of the fire-pot section.

The reference-letter E designates an outer inclosing casing supported upon the fire-pot section, and F is a similar casing concentrically arranged within the outer casing, constituting the magazine of the stove. Between these two casings is concentrically arranged a third casing G, which divides the space between the outer and magazine casings into a combustion-chamber H and an air-chamber I, the latter encircling the magazine.

The lower end of the magazine terminates in a casting J, which is supported by means of lugs K upon a hollow ring L. The ring in turn is supported upon the fire-pot section C, the particular supporting means comprising lugs M upon the ring and complementary lugs O, formed upon the interior of the fire-pot section, as plainly shown in Fig. 1. The ring is provided with an air-inlet *a*, and *b* is an inlet-pipe leading from the exterior of the fire-pot section into the air-inlet, as shown. A guard *c* is formed upon the outer portion of the stove immediately above the air-inlet pipe, which conceals the latter from view.

The magazine is provided in addition to the feed-opening at its top with an opening P, and Q designates the door-frame, which extends outwardly from the opening P through the outer inclosing casing E.

d designates the door, which is secured to the frame in the usual manner.

The concentrically-arranged casing G is supported principally by the hollow ring L and at the front portion of the stove by the door-frame Q, to which it is secured by any suitable means.

Arranged upon the top of the combustion-chamber H is a circular casing A′, which is provided at a point substantially at the front of the stove with an opening or aperture *f*, through which the products of combustion are allowed to pass. B′ designates a smoke-pipe which communicates with the interior of the casing A′ at a point opposite the aperture *f* at the rear of the stove. This circular casing just described entirely covers the combustion-chamber, except at the very front portion of the latter, and directs the heat and likewise the products of combustion to the front of the stove, where they are allowed to pass into said circular casing and around the stove into and through the smoke-stack. Above this circular casing is arranged a hollow belt C′, which is provided with a damper D′ to admit the air therein and with a number of apertures *z*, which lead into the air-chamber I.

E′ designates a lid or cover for the stove, having an ornamental top or handle E^2, which cover is hinged to the hollow belt in any suitable manner for vertical movement.

The letter F′ designates a flue leading from the smoke-pipe B′ into the magazine F, the flue extending through the air-chamber I, but not communicating with the same.

G′ designates a damper fixedly secured to the cover or lid E′, which is adapted when the cover is down, closing the magazine-chamber,

to cover the flue F'. By this construction I have provided means whereby the gases from the combustion-chamber when the top or lid is opened will be directed and will pass into the smoke-pipe instead of entering the room. When the lid or cover is closed, the flue will likewise be closed, causing the heat and products of combustion to pass around the stove and out through the smoke-stack in the manner set forth.

As an additional safeguard to prevent the hollow ring from being destroyed by the intense fire I have provided a lining for the inner wall of said ring, so constructed that it may be readily and quickly applied to the ring and as readily detached from the same to permit the cleaning and replacing of the parts. This lining is formed, preferably, of a series of independent lining-sections, which are preferably wedge-shaped in construction, whereby upon the insertion of the final section all of the sections are locked together in place and prevented from falling out. One of the essential features of my invention therefore comprises such a construction of lining referred to and the peculiar construction of the ring, permitting the attachment of the lining thereto, and the detail construction of the parts will now be set forth.

The ring L is formed in two parts, comprising a section a', preferably L-shaped in configuration, constituting the inner wall of the ring, and a section b', which is bolted to the complementary member in any suitable manner, the two sections being spaced from each other by means of the transverse portion c' of the member a'. The lower portion of the inner wall of the ring is provided with an inwardly-extending flange d', upon which the lining-sections are adapted to rest, and the portion c' forms a support for the greater part of the concentrically-arranged casing G. In construction each lining-section comprises a body e', having a shoulder f' formed upon its lower portion and provided at its top with an inclined face g'. Extending upwardly from the inclined face in a plane parallel with the body is formed a flange h', and i' designates a laterally-extending lug projecting from the flange h'. The sides k' are tapered inwardly, shaping the body in the form of a wedge.

In applying the lining to the ring the sections are inserted through the door d and arranged upon the ledge or flange d' of the ring in the manner set forth in Fig. 3, the lugs i' upon each section holding the sections away at some distance from the wall a' of the ring to form an air-passage l', through which air from the air-chamber I is adapted to pass. Each section is likewise provided with a series of grooves m', whereby the air from the passage l' is permitted to pass into the fire-pot section C, and thence upwardly into the combustion-chamber H.

o' designates lugs formed upon the inner and lower portion of the section-bodies, which lugs are adapted to rest upon the small ledge or flange d', affording an additional support for the sections. The sections are placed in one by one, and on account of the wedge-shaped sides of the sections the insertion of the last of said sections locks the series in position. The sections thus described are similar in construction, with the exception of the one immediately adjacent to the door-frame, which is provided with an overhanging or curved portion p', which extends upwardly above the ring and outwardly into contact with the frame, forming a part of said frame and affording means for the ready insertion of the fuel and preventing the latter from falling between the sections and the ring.

The magazine F is supported upon the ring in such a manner that the lower portion of the magazine is above the lining-sections to form an air-passage a^2 therebetween, through which the air from the chamber I passes directly through the fuel and, mingling with the air-current from the air-passage l', passes up into the combustion-chamber in the usual manner.

It will be readily observed from the foregoing construction of my invention that I have provided a simple and efficient means of protecting the magazine-supporting ring from the intense heat of the fire and have so constructed the lining that it may be readily inserted or withdrawn from the stove when desired. Moreover, the lining is arranged in such manner that it is in alinement with the walls of the casing which constitute the magazine, forming an extension of said magazine at its lower end, whereby the fuel is delivered without obstruction into the fire-pot section.

What I claim as my invention is—

1. In a magazine-stove, the combination with the magazine, the smoke-pipe, a flue leading from the magazine to the smoke-pipe, a lid or cover for the magazine, and a damper carried by the lid adapted upon the opening of the latter to open the flue and upon the closing of the lid to cover the flue.

2. In a magazine-stove, the combination with an outer inclosing casing and an inner casing constituting a magazine, a concentrically-arranged casing intermediate the outer and magazine casings, dividing the space between said latter casing into an outer combustion-chamber and an inner air-chamber surrounding the magazine, a smoke-pipe communicating with the combustion-chamber, and a damper-controlled flue leading from the smoke-pipe to the magazine and extending through the air-chamber.

3. In a magazine-stove, the combination with an outer inclosing casing and an inner casing constituting the magazine, a concentrically-arranged casing intermediate the outer and magazine casings dividing the space between said latter casing into an outer combustion-chamber and an inner air-chamber surrounding the magazine, a circular casing

above the combustion-chamber communicating with the latter at a point in proximity to the front of the stove, a smoke-pipe communicating with the circular casing at the rear of the stove, and a damper-controlled flue leading from the magazine and extending through the air-chamber and into the circular casing above the smoke-pipe rod.

4. In a magazine-stove, the combination with the fire-pot section, a hollow ring mounted upon said section and having an air-inlet port formed therein, a magazine supported upon the ring and a lining detachably secured to the inner wall of the ring in alinement with the wall of the magazine-chamber.

5. In a magazine-stove, the combination with the fire-pot section, a hollow ring mounted upon said section and having an air-inlet port formed therein, a magazine supported upon the ring and a lining for said ring comprising a series of independent lining-sections detachably secured to the inner wall of the ring.

6. In a magazine-stove, the combination with the fire-pot section, a hollow ring mounted upon said section and having an air-inlet port formed therein, a magazine supported upon the ring, and a lining for the ring comprising a series of independent wedge-shaped lining-sections arranged entirely about the inner wall of said ring, spaced from the latter, and detachably mounted upon said wall.

7. In a magazine-stove, the combination with the fire-pot section, a hollow ring mounted upon said section and having an air-inlet port formed therein, a magazine supported upon the ring, an inwardly-extending annular flange formed upon the inner ring-wall, and a series of abutting wedge-shaped lining-sections detachably arranged upon the ring-flange and spaced from the ring, said series of sections being substantially in alinement with the magazine-wall.

8. In a magazine-stove, the combination with the magazine, a hollow supporting-ring therefor having an air-inlet port formed therein, and a lining detachably secured to the inner wall of the ring.

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

EBENEZER W. RIDER.

Witnesses:

M. B. O'DOGHERTY,

H. C. SMITH.