No. 738,619. PATENTED SEPT. 8, 1903.

C. MATTHEWS.

HEATING STOVE.

APPLICATION FILED MAR. 30, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

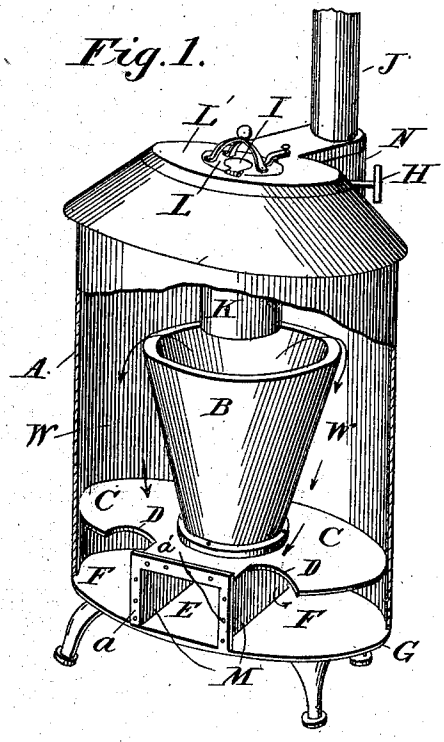
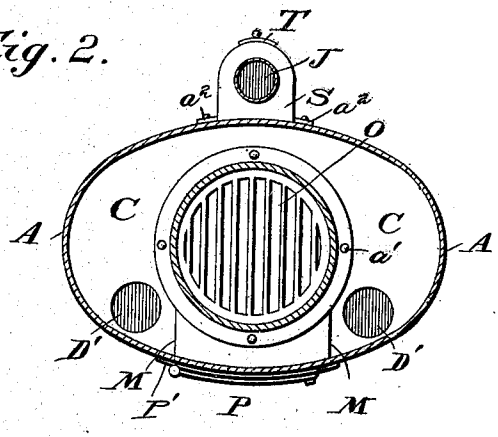


Fig. 2.



Witnesses:
Frank W Dearing
John A Stewart

Inventor:
Charles Matthews

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 738,619. PATENTED SEPT. 8, 1903.

C. MATTHEWS.

HEATING STOVE.

APPLICATION FILED MAR. 30, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

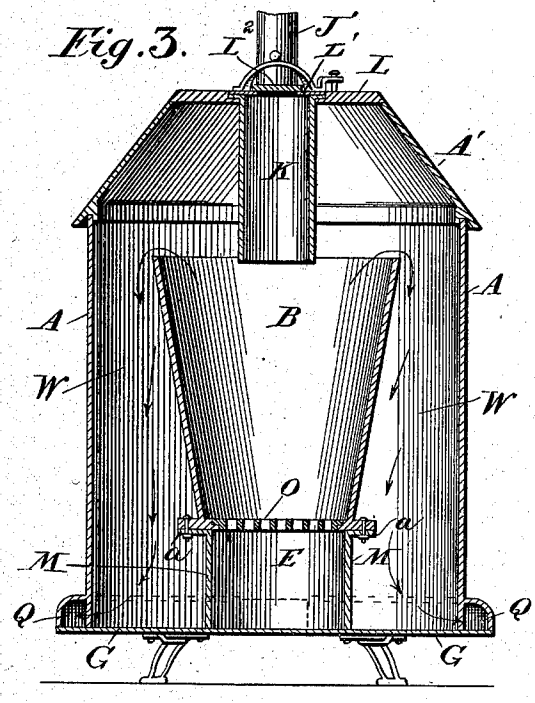


Fig. 4.

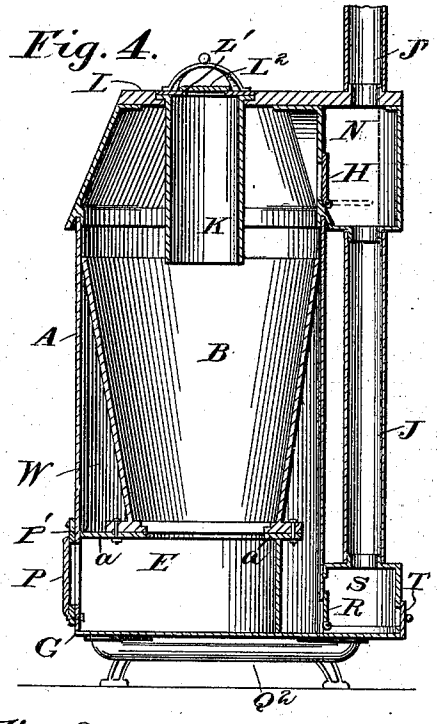


Fig. 5.

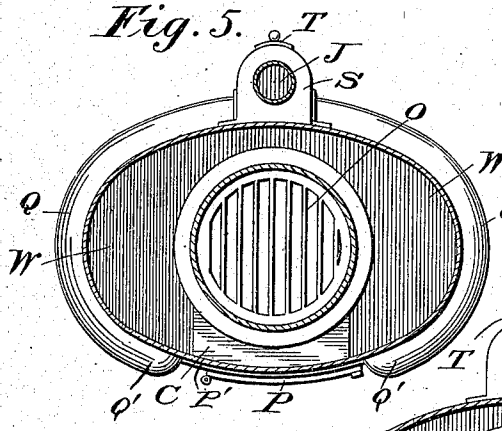


Fig. 6.

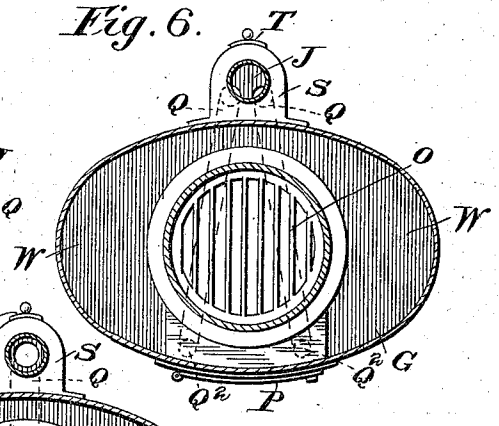
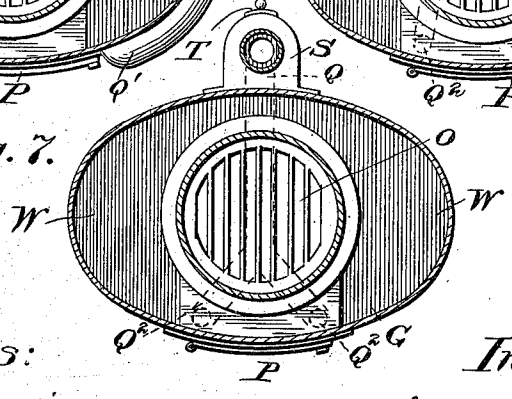


Fig. 7.



Witnesses:
Frank W. Degring
John A. Stewart

Inventor:
Charles Matthews

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 738,619. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

CHARLES MATTHEWS, OF COLUMBIA, MISSOURI.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 738,619, dated September 8, 1903.

Application filed March 30, 1903. Serial No. 150,180. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MATTHEWS, residing at Columbia, in the county of Boone and State of Missouri, have invented certain new and useful Improvements in Heating-Stoves, of which the following is a specification.

This invention relates to heating-stoves.

The invention resides, broadly stated, in a peculiar casting involving novel details of construction whereby increased heating-surface is provided.

More definitely stated, it consists in the hereinafter-described casting formed by upper and lower members, of which the former constitutes the fire-bowl and the latter the ash-pit.

The invention consists, further, in novel combination of parts, all of which I will now proceed to describe with reference to the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 is a sectional perspective view illustrating my invention. Fig. 2 is a horizontal sectional view taken through the fire-bowl above the laterally-extending division-flange and looking toward the bottom of the stove, the division-flange being shown slightly modified. Fig. 3 is a central vertical sectional view looking from the front of the stove, showing my invention in further modification. Fig. 4 is a similar sectional view, looking from the side of the stove, in further modification. Figs. 5 and 6 are horizontal sectional views through Figs. 3 and 4, taken above the grate and looking toward the bottom of the stove; and Fig. 7 is a similar sectional view in further modification.

In carrying out my invention I employ an outer casing A, having a substantially conoidal or other desired shape upper portion A'. On the rear and at the top of the casing A, I arrange a compartment N, communicating with the interior of the casing A through an opening closed by a damper H. At the base of the casing and at the rear I arrange a compartment S, communicating with the interior of the casing A through an opening closed by a damper R. The two compartments just described have connection by a pipe J. The lower compartment S is provided with a clean-out door T at the rear. A smoke-delivery pipe J' is connected with the compartment N. In the casing A, I suspend from the top plate L a suitable magazine K, closed at its upper end by a suitable lid L', having in it an opening closed by an adjustable slide-damper L^2.

Within the casing A, I arrange a peculiar casting forming the fire-bowl B, ash-pit E, and the division-flange C. The members B E C of the casting may be integral or formed separate and bolted together, as shown in the drawings. It will be noticed that the ash-pit is closed at its rear by the side walls M M. In Fig. 1 the lower part of the casting is shown constructed with a flange C C, extending laterally in all directions to the casing of the stove. This flange C C is supplied with openings D D, providing communication from the compartments W W to the compartments F F. The openings D D may be formed by cutting scallops in the lateral flange C C, as shown in Fig. 1, or by cutting holes D' D' therethrough, as shown in Fig. 2.

In the modified construction shown in Figs. 3, 4, 5, 6, and 7 the lateral flange C C is dispensed with, and thus providing unobstructed compartments or space from the top to the bottom of the stove.

In the modified form shown by Figs. 3 and 5 the stove is provided with exterior passage-ways Q Q, which open into the interior of the casing A at both sides of the door P to the ash-pit, as at Q' Q', and extend around the lower edge of the stove, opening into the sides of the compartment S, as shown in Figs. 3 and 5. These passage-ways may be modified, as shown by Figs. 5, 6, and 7, by employing pipes Q^2, which open to the interior of the stove through the bottom plate G on either side of the ash-pit and extend backward under the bottom of the stove, providing communication with the compartment S, as shown in Figs. 5 and 6, or they may join and extend backward under the bottom of the stove and enter the compartment S, as shown in Figs. 7.

The side and top edges of the ash-pit member E are provided with flanges *a*. (See Figs. 1, 3, and 4.)

The opening in the wall of the stove is closed by a suitable door P.

The flanges *a* are provided with perforations *a'*, adapted to receive bolts or rivets affording means for securing the casting to the outer casing. The same bolts or rivets are also used for securing the ash-pit door-frame P' to the stove. The compartments S and N are also bolted or riveted to the casing A, as indicated at a^2 in Fig. 2.

It will be noticed that in Figs. 1 and 2 the compartments W W and F F are in direct connection through the openings D D'. With the construction shown by Figs. 1 and 2 the lateral flange C C becomes heated by the hot gases from the fire-bowl B, passing around it and in contact with the exterior casing of the stove, and thereby effecting improved radiation from the exterior walls of the casing.

In the modified construction shown in Figs. 3, 4, 5, 6, and 7 the compartments W W extend from the top to the bottom of the stove without obstruction. With this construction the entire exterior casing comes into direct contact with the hot gases from the fire-bowl B, with the exception of a small portion under the ash-pit E.

The damper H may be opened for direct draft from dampers (not shown) in the door of the ash-pit P, up through the grate O, through the fire-bowl B, into the compartment N, and out the smoke-pipe J'. In the construction shown in Figs. 1 and 2 with the damper H closed, as indicated, the draft is up through the fire-bowl B and down through the compartments W W, through the openings D D', into the compartments F F, thence to the rear through these compartments on either side of the ash-pit and with the heat in contact with the bottom plate G, into the compartment S, up the pipe J, through the compartment N, and out the smoke-pipe J'. In the construction shown in Figs. 3, 4, 5, 6, and 7 with the damper H closed the draft is up through the fire-bowl B, and down through the compartments W W directly to the whole bottom of the stove, with the exception of the part under the ash-pit, without obstruction, thence, if the damper R, Fig. 4, is open, into the compartment S, up the pipe J, through the compartment N, and out the smoke-pipe J'. If the damper R is closed, the gases pass from the fire-bowl B, down through the compartments W W directly to the whole bottom of the stove except that part under the ash-pit, thence through openings into the pipes or passage-ways Q^2 Q^2, around or under the stove, (depending upon the arrangement of these pipes or passage-ways, as shown in the various figures,) into the compartment S, up the pipe J, through the compartment N, and out the smoke-pipe J'.

The magazine K extends down into the stove until its lower end is nearly or quite on a line with the upper edge of the fire-bowl B. It serves to convey coal to the fire-bowl and to prevent the coal from falling into the compartments W W. The fire is fed through the magazine K by removing the lid L'. When the slide L^2 is open, air passes down on top of the fire through the magazine K and causes the fuel and gases to be practically all consumed, thus saving fuel, preventing clinkers, and preventing a large amount of smoke from entering into the compartments W W.

The stove may be cleaned out through the door T in the compartment S.

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

1. The combination with the casing of a heating-stove, of an inner casting formed into upper and lower members, the said upper member constituting the fire-bowl and the said lower member constituting the ash-pit, a partition or flange extending laterally from the top of the ash-pit, to the inner walls of the said casing, and having openings therethrough, upper and lower openings into the uptake leading from compartments within the casing, and dampers closing the said upper and lower openings into the uptake, substantially as described.

2. The combination with the casing of a heating-stove, of an inner casting forming the fire-bowl and ash-pit, a partition or flange extending laterally from the upper end of the ash-pit member of the casting to the inner walls of the casing, forming upper and lower compartments around the said casting, openings through the said partition or flange, at the front of the stove, a smoke-uptake in rear of the casing, having communication with the said upper and lower compartments, through openings closed by dampers, and coal-feeding means, substantially as described.

3. The hereinbefore-described casting for heating-stoves, consisting of an upper member forming a fire-bowl, a lower member forming an ash-pit, and a laterally-disposed partition extending from the upper end of the said ash-pit member, the said partition being constructed with openings therethrough, substantially as described.

CHARLES MATTHEWS.

Witnesses:
FRANK W. DEARING,
JOHN A. STEWART.