

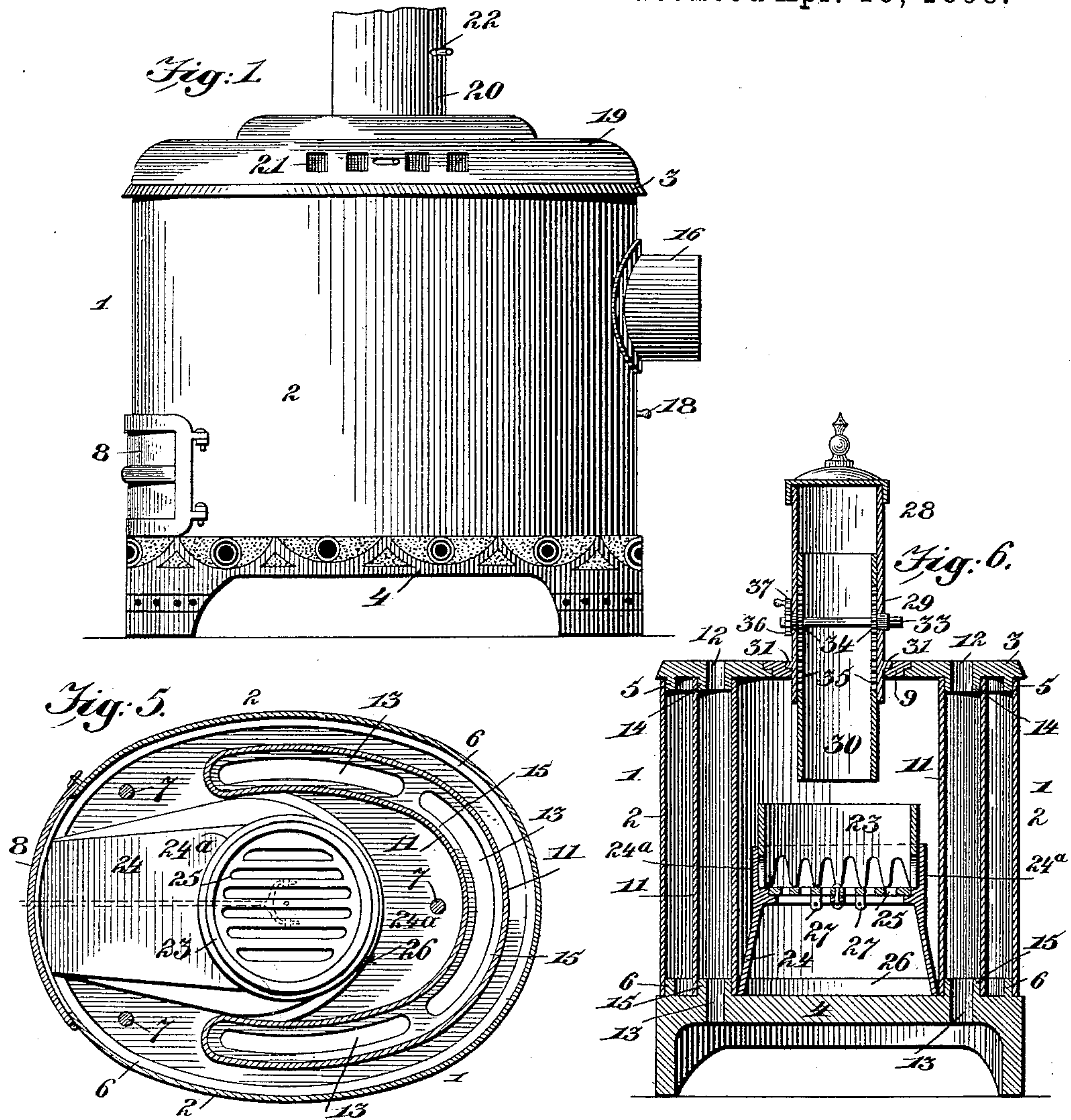
(No Model.)

2 Sheets—Sheet 1.

J. L. RITTER & L. H. HAZLEWOOD.  
HEATING STOVE.

No. 602,474.

Patented Apr. 19, 1898.



Inventors

Witnesses  
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*J. F. F. Riley*

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*C. A. Snow & Co.*

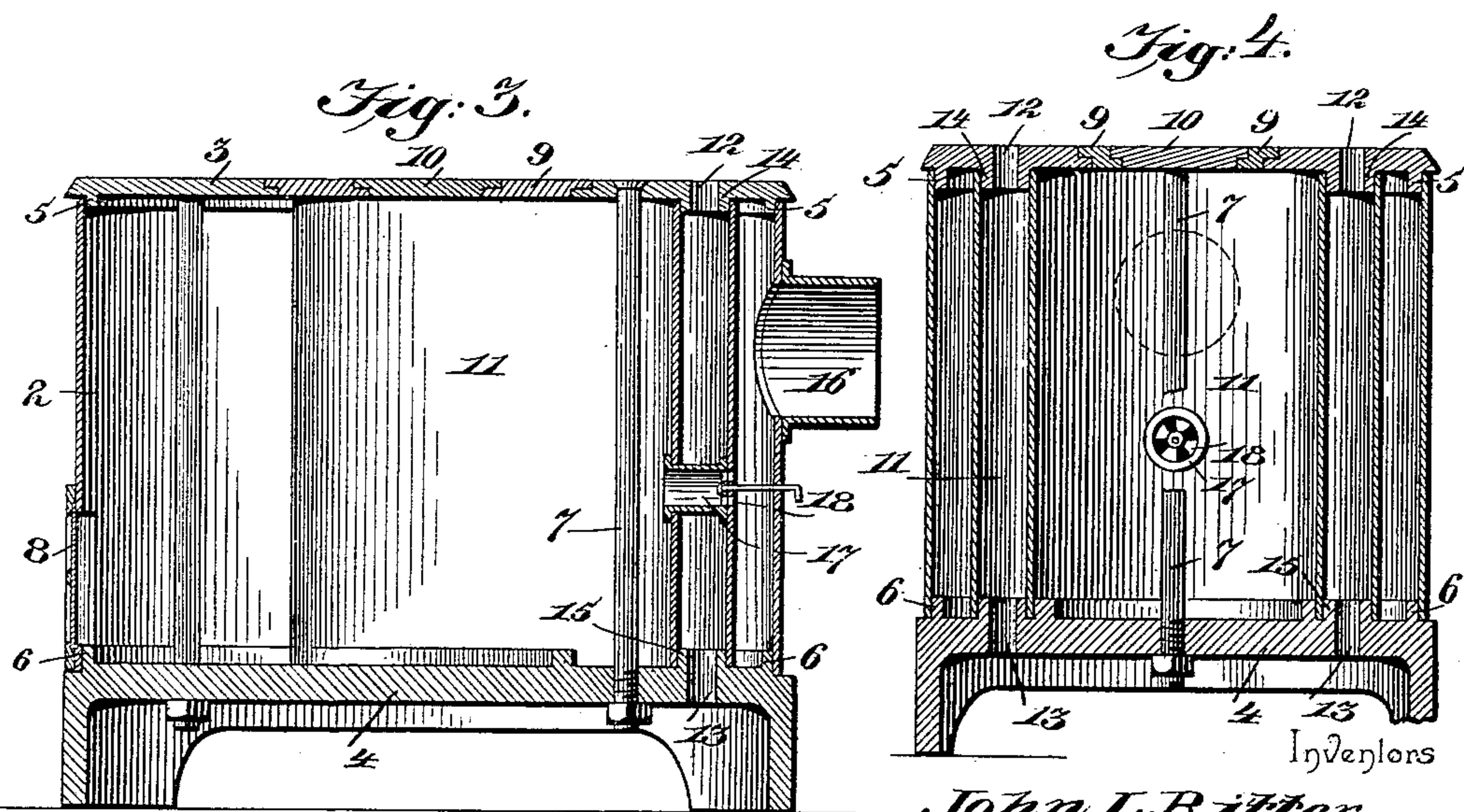
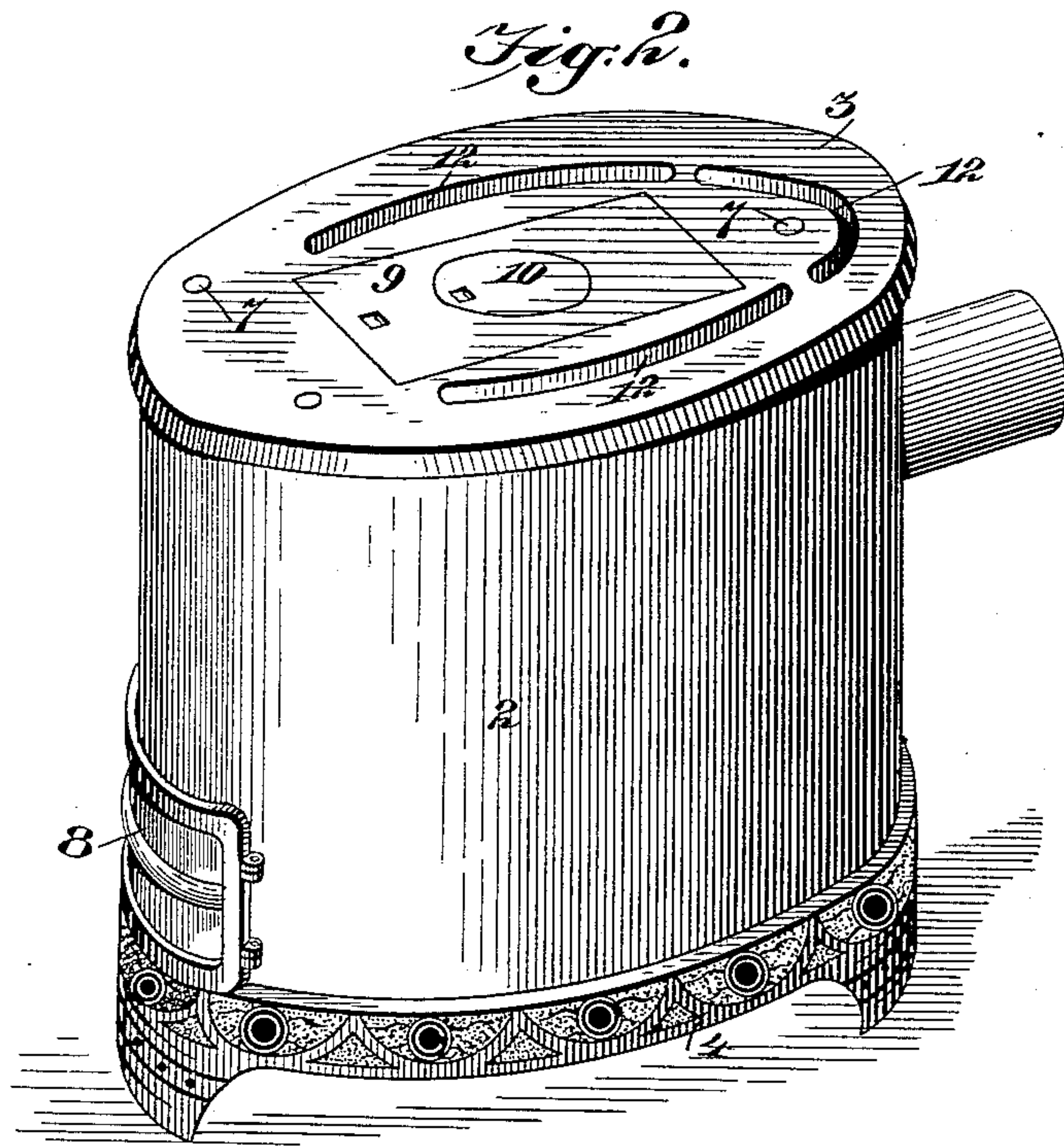
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# UNITED STATES PATENT OFFICE.

JOHN L. RITTER, OF SHENANDOAH, AND LEE H. HAZLEWOOD, OF RICHMOND, VIRGINIA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO SAID RITTER AND JAMES G. WHITLOCK, OF SHENANDOAH, VIRGINIA.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 602,474, dated April 19, 1898.

Application filed March 18, 1897. Serial No. 628,198. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN L. RITTER, residing at Shenandoah, in the county of Page, and LEE H. HAZLEWOOD, residing at Richmond, in the county of Henrico, State of Virginia, citizens of the United States, have invented a new and useful Heating-Stove, of which the following is a specification.

The invention relates to improvements in heating-stoves.

The object of the present invention is to improve the construction of that class of heating-stoves which are constructed largely of sheet metal and to provide a simple and inexpensive one in which the parts can be readily assembled should it become necessary to repair or replace any portion of it, and thereby avoid discarding the entire stove should only a small portion of the sheet metal be worn or burned out.

A further object of the invention is to provide a heating-stove which will be adapted to employ as a fuel either wood or hard or soft coal and which may be arranged to accommodate the fuel to be burned.

Another object of the invention is to enable the stove to be employed for heating a room overhead and to provide, when hard coal is burned, an adjustable magazine which will regulate the feed and control the amount of fire in the fire-pot.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation of a heating-stove constructed in accordance with this invention and shown arranged for heating a room overhead. Fig. 2 is a perspective view of the stove, the cap or hood being removed. Fig. 3 is a vertical longitudinal sectional view of the same. Fig. 4 is a transverse sectional view. Fig. 5 is a horizontal sectional view. Fig. 6 is a vertical sectional view, the parts being arranged to burn hard coal.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

1 designates a heating-stove casing composed of vertical sides 2 and a detachable top 3 and base 4. The stove, which is preferably substantially elliptical in horizontal section, has its sides constructed of sheet metal, and the top 3 and base 4, which are elliptical, are provided with peripheral flanges 5 and 6, arranged a short distance from the extreme outer edges of the said top and base to form annular recesses for the upper and lower edges of the sheet-metal sides and support the same. The top and base are connected by vertical rods 7, passing through perforations of them and provided at their upper ends with heads and at their lower ends with nuts, and these rods hold the parts of the casing securely together and enable them to be readily separated should it be necessary to repair the sheet-metal sides.

The top and base of the stove are preferably constructed of cast metal, and any desired form of legs or ornamentation of base may be employed.

The stove is provided at its front with a door 8, and when it is used for burning wood the fire is built upon the base directly, the parts being arranged as shown in Figs. 3 and 4, and the fuel may be introduced through the door 8 or through an opening in the top of the stove, such opening being normally covered by a removable oblong plate or lid 9. The plate or lid 9 is provided with a socket for the reception of a lifter, and when it is removed the opening is sufficiently large to enable knots in large pieces of wood to be readily introduced into the stove. The said plate or lid 9 is provided at its center with an ordinary pot-hole which is normally covered by an ordinary circular lid 10, and the latter may be readily removed when it is desired to place a kettle or other receptacle over the stove-hole.

Within the stove is arranged a vertically-disposed radiator 11, which is curved and arranged parallel with the sides and back of the stove, and it is composed of parallel inner and outer walls and forms a conduit for air, extending from the top to the bottom of the stove. The top and base of the stove are provided with curved openings 12 and 13, and



have projecting flanges 14 and 15 at their inner faces for supporting the radiator, and the flanges 14 and 15 are curved to conform to the configuration of the radiator. The curved openings are broken by connecting portions of the top and base to prevent those parts from being weakened by a continuous opening of the length of the radiator. The radiator is formed by taking a cylinder of sheet metal of the same form and of slightly less diameter than the sides 2 of the stove and bending in one end portion, so that the same presents a concave outer face and is parallel with the other portion of the radiator, making the latter substantially horseshoe-shaped. By this construction the radiator possesses substantially the same amount of heating-surface as the sides of the stove, and it forms a double heating-surface, as the inner side of the radiator is located adjacent to the fire and has the heat of the same impinging against it directly, while the products of combustion, in order to escape through the stovepipe or flue, are conducted around the back of the radiator to an opening 16, around which is placed an exterior collar or flange for the reception of an ordinary stovepipe. Both the inner and outersides of the radiator are thus heated to a high temperature, causing the air which passes up through the openings 13 of the base to be highly heated and making the stove an effective heating device.

The radiator is detachably secured in position by the rods 7, and it may be readily removed should it become necessary to repair the same or supply a new part.

In starting a fire a direct draft is obtained by means of a horizontal tube 17, which extends through the radiator at a point below the stovepipe-opening 16 and permits a draft from the fire through the center of the radiator to the stovepipe-opening without passing around the sides of the radiator. The tube 17 is provided with a damper 18, which permits the direct draft to be shut off after the fire is burning properly, and the damper is provided with a stem which extends through the back of the stove and enables the same to be manipulated from that point.

In order to adapt the stove for heating a room overhead, it is provided at its top with a hood 19, which receives the hot air arising from the openings of the top of the stove and causes the same to pass upward through a pipe or conduit 20, designed to lead to the room to be heated. The hood is provided with openings at the sides to permit the heat to escape into the room in which the stove is placed, and sliding dampers 21 are provided for covering such openings when it is desired to throw the heat into the room overhead. The pipe or conduit 20 is provided with a damper 22, which is closed when the sliding damper 21 is open and which throws all of the hot air into the room in which the stove is placed.

When coal is burned in the stove, a fire-pot 23 is employed and is mounted upon a casing 24, which forms an ash-pit, and a rotary grate 25 is mounted in suitable ways of the casing 24 at the bottom of the fire-pot. The casing 24 is provided with a cylindrical extension or flange 24<sup>a</sup>, which receives the lower portion of the fire-pot 23, as clearly illustrated in Fig. 6 of the accompanying drawings, and it extends a sufficient distance above the openings at the lower edge of the fire-pot to prevent any ashes falling out of the fire-pot and falling into the space around the casing. This construction insures all the ashes falling into the ash-pit. The base of the stove is provided with a transverse flange or rib 26, which is curved to conform to the configuration of the back of the ash-pit and which forms a stop for the same, and the ash-pit extends from the curved flange or rib 26 to the door of the stove. The grate is provided with a pair of depending lugs 27, which are perforated for the reception of the arms of a forked shaker that is introduced through the door of the stove.

When the fire-pot and ash-pit, which are readily removable, are employed for burning hard coal, an adjustable magazine 28 is employed and is composed of telescopic sections 29 and 30. The outer section 29, which is provided with a removable cap or cover, is detachably mounted in the pot-hole of the top of the stove and has an annular supporting-flange 31. The inner section 30 of the magazine is vertically movable, being provided at opposite sides with vertical slots 32, through which passes a horizontal shaft 33, and the latter carries pinions 34, which mesh with racks 35 at one side of each slot or opening 32. The shaft, which is journaled in suitable bearings and which has one end squared for the reception of a lifter or other suitable tool, carries a ratchet-wheel 36, which is engaged by a pivoted pawl 37, whereby the shaft is locked against rotation and the telescopic magazine held at any desired adjustment. By raising and lowering the movable section of the magazine the quantity of fire in the fire-pot may be controlled, so that a very little fire or a large amount of fire may be had, as required. When the lower end of the inner section 30 of the magazine is close to the grate, the fire-pot will be only partially filled with coal and only a small amount of fire will result; but by raising the inner section 30 the fire-pot may be completely filled with fire.

It will be seen that the stove is simple and comparatively inexpensive in construction, that it is adapted to burn either wood or hard or soft coal, and that it may be employed for heating one room or a room overhead also. It will also be apparent that it will enable access to be readily had to the sheet-metal portions of it, so that they can be repaired or replaced without discarding



the rest of the stove, and that a simple and effective device is provided for regulating the quantity of fire in the fire-pot.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What we claim is—

1. The combination of a heating-stove provided at its bottom with a transverse stop-flange and having a door at its front, a casing detachably arranged on the base of the stove and fitting against the said flange and adapted to be removed to permit the stove to be employed as a wood-burner, said casing forming an ash-pit and extending from the flange to the door, a fire-pot mounted on the casing, and a grate arranged at the bottom of the fire-pot in suitable ways of the casing, substantially as described.

2. The combination of a heating-stove provided at its bottom with a transverse stop-

flange and having a door at its front, a detachable casing arranged on the base of the stove and fitting against the said flange and adapted to be removed to permit the stove to be employed as a wood-burner, said casing being provided at its top with an upwardly-extending annular flange 24<sup>a</sup> and forming an ash-pit and extending from the flange of the bottom of the stove to the door, a removable fire-pot arranged within the annular flange of the casing, and a grate arranged at the bottom of the fire-pot in suitable ways of the casing, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOHN L. RITTER.  
LEE H. HAZLEWOOD.

Witnesses:

W. A. RICKS,  
C. T. BOOTH.