

J. B. GATHRIGHT & H. J. THIEMAN.
STOVE.

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1,043,587.

Patented Nov. 5, 1912

FIG. 1.

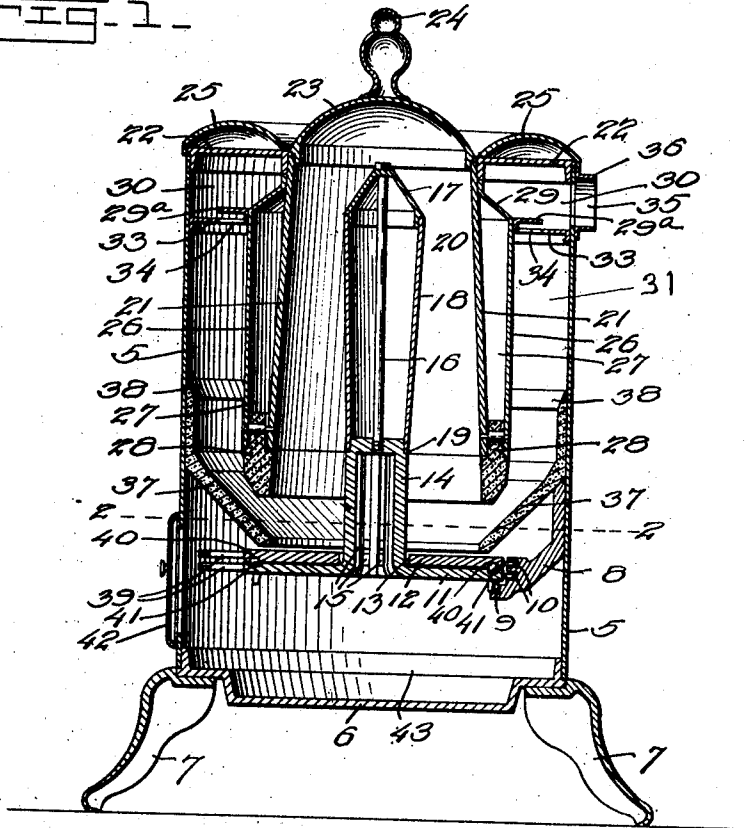
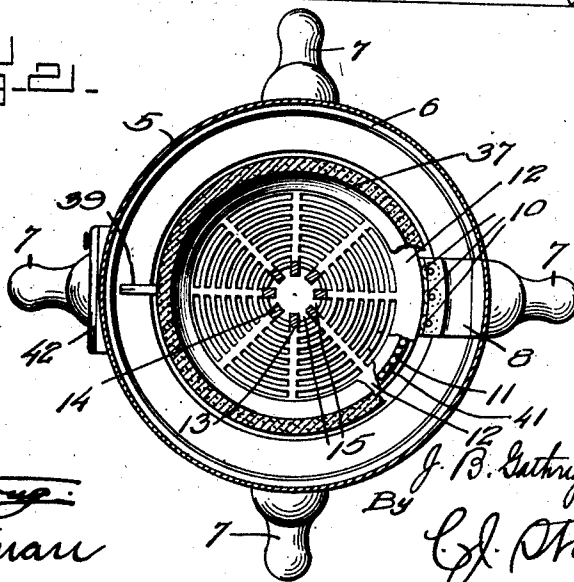


FIG. 2.



Witnesses
A. Stockman

Inventors
J. B. Gathright & H. J. Thiemann
By *C. J. Stockman*
Attorney

UNITED STATES PATENT OFFICE.

JOSIAH B. GATHRIGHT AND HENRY J. THIEMAN, OF LOUISVILLE, KENTUCKY.

STOVE.

1,043,587.

Specification of Letters Patent.

Patented Nov. 5, 1912.

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To all whom it may concern:

Be it known that we, JOSIAH B. GATHRIGHT and HENRY J. THIEMAN, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Stoves, of which the following is a specification.

One of the most important objects of the present invention is to provide a stove of the underdraft kind, having a magazine for fuel, and having the magazine and accessory parts so constructed that the fuel will freely feed to the fire and not lodge by pressure against the walls from coking, or otherwise, nor find any place of lodgment on any part of the stove above the fire line.

Another object is to construct such stove in such a way that it may be used for cooking as well as heating purposes.

A further object of the invention is to provide a correlation of parts such that an insulating air-chamber will be arranged between the exhaust or combustion chamber and the wall of the coal magazine, to prevent premature or excessive coking of the material before it reaches the fire pot.

In accordance with these objects and others which will hereinafter appear, we have provided a stove which is characterized by novel constructions of elements and novel correlations thereof, the stove shown in the accompanying drawings and hereinafter described in detail fully exemplifying what is now regarded to be the best form of the invention. It should be understood, however that changes may be made in the details without departing from the spirit of the invention as defined by the subjoined claims.

In the drawing: Figure 1 is a vertical, longitudinal sectional view through the center of a stove constructed in accordance with the invention. Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Similar reference characters indicate corresponding parts throughout both views in the drawing.

The stove comprises a body 5 and a bottom 6, the body being preferably of cylindrical shape and the bottom of drop form so as to serve as a pan for catching the ashes therein. The body is supported upon a suitable

number of legs 7, fixed thereto in any suitable manner.

Suitably fixed interiorly of the body 5 and spaced from the bottom 6 are brackets 8, on which are journaled vertical and horizontally disposed friction rollers 9 and 10 respectively for rotatably supporting main and floating grate sections 11 and 12 respectively, the floating section being superimposed upon the main section, and formed with a central opening 13 through which projects a vertical, central tubiformed dome 14, rising from the main grate section 11 to a point at or above the fire line in the stove body and being provided with vertical slots 15 or other suitable lateral apertures to afford proper draft and escape for the ashes. The upper end of the dome is closed and has fixed therein a central, vertical supporting stem rod 16, which carries at its upper end a conical head 17. This head 17 closes the upper end of a downwardly tapered guiding core or tube 18, the lower end of which is engaged and supported upon a shoulder 19 formed at the upper closed end of the dome 14. The core or tube 18 is designed to guide the fuel and prevent its lodging upon the grate dome 14, and extends upwardly centrally into the magazine chamber 20 for substantially the entire length of the same.

The magazine chamber 20 has its outer wall formed of an upwardly tapered inner cylinder or drum 21 and is suitably fitted at its upper end to an annular top ring 22 at the upper end of the body 5 of the stove, this ring 22 being designed to serve as a cooking head when it is desired to use the stove for such purposes. The upper end of the magazine chamber 20 is closed by a cover or lid 23 having a central hand knob 24 to permit it to be raised and lowered at will. The fuel is introduced through the upper open end of the magazine 20. Upon the flat top plate or ring 22 is an upwardly bowed or convex ring-like cap 25 which serves to give ornamental effect to the top of the stove when not being used for cooking purposes.

Surrounding the cylinder or drum 21 and spaced therefrom is a drum 26 forming with the cylinder or drum 21 an insulating air chamber 27 which extends around chamber 20 and is arranged between said chamber and the combustion chamber 31. The lower

end of this chamber 27 is closed by a fire brick ring 28 suitably secured in place between the said drums 21 and 26, while its upper end is closed by a circular plate or ring 29 which has a lateral projection or baffle ring 29^a extending into a smoke chamber 30 and cooperating with a baffle plate or ring 33 having an outlet 34 to provide a smoke passage from the combustion chamber 31 to the smoke chamber 30. The baffles 33 and 29^a are spaced apart at such distance that the entire area of the opening for the escape of the waste products into the chamber 30 will be practically equal to the area of the stove pipe thimble, the waste products passing through the outlet 34, thence under the plate or ring 29^a and into the chamber 30 and thence to an outlet draft flue 35 which is fixed to the body through the medium of a union 36 as usual.

Disposed above the floating section 12 of the grate is a hopper-shaped fire bowl 37, which is suitably fixed to the body 5 and protects the latter from excessive heat and guides the fuel on to the grate. The upper end of the bowl is preferably formed with a beveled edge 38, and this together with the hopper shape of the bowl prevents possibility of the ashes or other stuff banking or lodging thereon.

It will be noted that the guide tube or core 18 at its lower end is flush with the longitudinal surface of the dome 14 of the grate, so that there will be no obstruction thereat in the path of the fuel in the magazine chamber, and also that by reason of the tapering of the said core or tube 18 reversely with respect to the taper of the outer wall of the magazine 20, whereby the inner and outer walls of said magazine constantly diverge in their downward direction, proper feed of the fuel to the combustion chamber is secured and tendency of the lodgment of fuel in the magazine chamber, caused by coking, or otherwise, is effectually prevented. It will further be noted that the wall 21 of the continually widening magazine chamber forms with the wall 26 an insulating air chamber 27 around the magazine, and that this prevents premature or excessive coking of the fuel before it reaches the fire pot.

Formed on the main and floating sections 11 and 12 of the grate are forward extending stoker arms or levers 39 to permit the convenient shaking of the grate in the usual well-known manner, the floating section 12 being provided with ball recesses 40 receiving bearing balls 41 which are adapted to travel upon the main section 11 of the grate so as to avoid friction during the shaking of the said grate.

The front of the stove is provided with a door 42 to permit access to be had to the stoker levers as well as to allow for the re-

moval of the ashes from the ash pit 43, the door thereof having suitable draft openings and regulating devices therefor.

Having now described the preferred embodiment of the present invention what we believe to be new and desire to secure by Letters Patent, is:

1. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the main grate section, and terminating at or above the plane of the fire line, an inwardly tapered core supported on the dome, and an outwardly tapered cylinder surrounding the core forming a magazine chamber about said core.

2. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the main grate section, and terminating at or above the plane of the fire line, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core forming a fuel magazine about said core, and a drum concentrically disposed with respect to the cylinder, forming an insulating space around the fuel magazine and a combustion chamber between the body and said drum.

3. A stove comprising a body, main and floating grate sections supported in the body spaced from its bottom, a slotted dome rising centrally from the main grate section, and terminating at or above the fire line, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core and forming a magazine chamber about said core, a drum concentrically disposed with respect to said cylinder forming an insulating chamber between the magazine chamber and the combustion chamber, and a hopper-shaped fire bowl interiorly of the body above said grate sections.

4. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the grate, and terminating in a plane with the fire line, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core and supported by the top of the body to form a magazine chamber about said core, a drum concentrically disposed with respect to the cylinder for forming an insulating chamber between the magazine and combustion chambers, a hopper-shaped fire bowl interiorly of the body above said grate sections, and reversely extending spaced baffle plates fixed to the body and drum respectively to form an escaping chamber in communication with and above the combustion chamber.

5. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the

main grate section, and terminating at or above a plane with the fire line in said stove, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core to form a fuel chamber about said core, a drum concentrically disposed with respect to said cylinder for forming an insulating chamber between said magazine and the combustion chamber, a hopper-shaped fire bowl interiorly of the body above said grate sections, reversely extending spaced baffle plates fixed to the body and drum respectively to form an escaping chamber in communication with and above the combustion chamber, and means closing the lower end of the insulating chamber.

6. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the main grate section, and terminating at or above a plane with the fire line in said stove, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core to form a fuel chamber about said core, a drum concentrically disposed with respect to said cylinder for forming an insulating chamber between said magazine and the combustion chamber, a hopper-shaped fire bowl interiorly of the body above said grate sections, reversely extending spaced baffle plates fixed to the body and drum respectively to form an escaping chamber in communication with and above the combustion chamber, means closing the lower end of the insulating chamber, and

brackets fixed in the body and having horizontal and vertical friction rollers contacting with said grate sections.

7. A stove comprising a body, main and floating grate sections supported in the body, a slotted dome rising centrally from the main grate section, and terminating at or above a plane with the fire line in said stove, an inwardly tapered core supported on the dome, an outwardly tapered cylinder surrounding the core to form a fuel chamber about said core, a drum concentrically disposed with respect to said cylinder for forming an insulating chamber between said magazine and the combustion chamber, a hopper-shaped fire bowl interiorly of the body above said grate sections, reversely extending spaced baffle plates fixed to the body and drum respectively to form an escaping chamber in communication with and above the combustion chamber, means closing the lower end of the insulating chamber, brackets fixed in the body and having horizontal and vertical friction rollers contacting with said grate sections, the said cylinder and drum being terminated spaced from the plane of the floating grate section.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOSIAH B. GATHRIGHT.
HENRY J. THIEMAN.

Witnesses:

L. M. BRODERICK,
R. S. SAUERMANN.