J. RŸN.

Heating-Stove.

No. 226,201. Patented April 6, 1880.

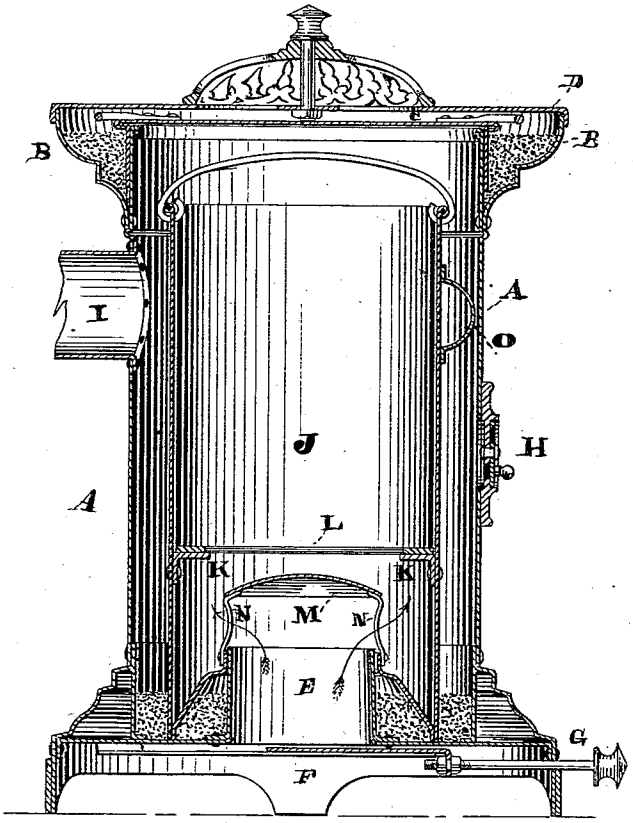


Fig. 1

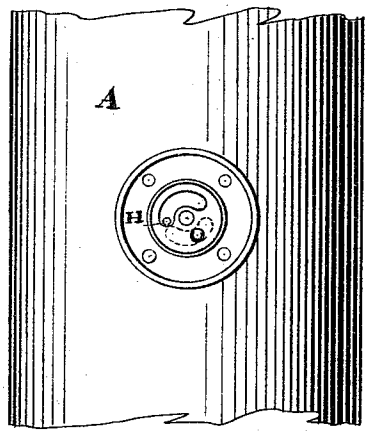


Fig. 2

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UNITED STATES PATENT OFFICE.

JOHN RŸN, OF CINCINNATI, OHIO.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 226,201, dated April 6, 1880.

Application filed July 25, 1879.

To all whom it may concern:

Be it known that I, JOHN RŸN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification.

The object of this invention is to provide a stove for heating purposes that will perfectly consume all the combustibles contained in the fuel, and thus produce a great amount of heat with a small quantity of fuel, and at the same time be perfectly safe, and avoid the accumulation of ashes and soot in the stove.

The invention consists in extending the central air-flue up into the outer shell to form the inner wall of a sand-space, so that the lower end of the fire-pot, when in place, will retain the gases and exclude the air from entering the chamber between the fire-pot and outer case.

It further consists of a peculiar arrangement of the fire-pot, by which it may rest upon the bottom of the shell and form an air-space between the outer shell and fire-pot, said fire-pot being readily removable, to be replaced by another filled with fresh fuel, when desired.

It finally consists in the combination of the outer shell with the inner fire-box to produce perfect combustion within the stove, and thus economize fuel and avoid the accumulation of soot and ashes within the stove.

In the accompanying drawings, in which similar letters of reference indicate like parts in the different figures, Figure 1 is a central vertical section of my improved stove, and Fig. 2 is a front-plan view of a part of the outer shell or case, to show the register for reducing the temperature of the stove.

Referring to the parts, A is the outer shell or case, in the form shown. This is a plain cylinder mounted upon a suitable base. Around the top of the cylinder, and projecting above it, is a molding, B. This leaves a space around the top of case A, which is filled with sand. (Shown in stippled section in Fig. 1.)

C is a close-fitting cover for the outer case. Its rim or flange passes outside of the top of the case, and, entering the sand in the annular space, retains the gases and excludes the air. The sand, serving as a seal, hermetically closes the joint.

D is a perforated cover which fits over the molding, and is surmounted by an ornamental cup or urn, to give a neat appearance to the structure. This should also be perforated, if it is made to cover much of the top D, so that the heat may be radiated into the room.

The cylinder A has a close-fitting bottom, which has a central opening, around which an upwardly-projecting air-supply pipe or flue, E, is secured. The supply of air to this flue is regulated by a slide-valve or damper, F, fitted to slide in guides secured to the bottom of the case, and actuated by a rod, G, which passes out through the base, and has a knob or handle upon the end. The outer case is also provided with a register, H, to regulate the temperature of the stove, and upon the opposite side with the customary pipe-thimble I, which in my stove, however, need be only about half the size of those in common use.

Within the outer shell is a fire-pot, J, which is considerably smaller than the outer case, so that when inserted an air-space is left between them. It is fitted with lugs K, upon which the grate L is supported, and has also a bail, by which it can be lifted out or replaced within the stove. The bottom of box J inclines inward and upward to a central flanged opening, which receives the upper end of air-flue E. The lower end of the pot J rests in sand in the space between the flue and outer shell.

M is a concavo-convex deflector supported beneath the grate L and over the flue E by arms N, which are secured to it and to the bottom of the fire-pot, and O are looped metal guides, three or more of which are secured around the outside of the cylinder J, to guide it to its place and retain it in a vertical position. These would, of course, answer the same purpose if secured to the interior of shell A, instead of to the exterior of the fire-pot.

The operation of my stove is as follows: The covers C and D being removed, the fire-pot, filled with coke or other suitable fuel, is inserted, and kindling placed upon top of the fuel is lighted, and the covers replaced. The fire is supplied with the requisite oxygen through flue E. In a short time the air within the stove will be raised to a high temperature, and sufficient draft created to conduct the

products of combustion, including the ashes, which, as combustion is perfect, will be reduced to a fine light powder, into the uptake, in which, or the chimney, a suitable offset or trap may be provided to receive any heavy portions of ashes to be removed, when desired, through a door. The heat of the fire is governed by the supply of atmospheric oxygen admitted through flue E, the amount of this being regulated by the damper F at the bottom of the stove.

Should the stove become too much heated it is cooled by opening the register H and reducing the temperature of the air within the stove by a supply of cool air from the room. The supply of air passing through flue E is distributed against the interior of the fire-pot by the deflector M, and partially heated before it reaches the incandescent fuel. As the fuel in the fire-pot is burned first at the top, (and so downward,) the ashes will be always formed at the top and carried off by the draft as it rises through the incandescent fuel. Thus the stove will always remain clean, and the fire will need no stirring or attention other than by regulation of the dampers until the fuel in the fire-box is burned out, when the fire-pot is removed and replaced by another one filled with fuel, the intention being to furnish two fire-pots with each stove.

I am aware that a packing of sand has heretofore been used to render the top and bottom joints of stoves practically air-tight; and this construction I do not broadly claim.

I claim—

1. In a heating-stove of the character described, the outer shell, A, having a close-fitting bottom and an upwardly-projecting flue, E, in combination with a fire-pot, J, having its bottom arranged to rest in sand contained within the space between the outer shell and the flue, substantially as described.

2. The combination, substantially as specified, of the outer case, A, having flue E, with the fire-pot J, having a central opening to receive the said flue, and a deflector, M, supported between said flue and the grate of the fire-pot, for the purpose specified.

3. The combination of the outer case, A, with the described fire-pot J, said outer case being provided with a lower supply-flue, E, and sand-chambers at top and bottom, the upper chamber to receive the flange of cover C and the lower to receive the lower end of fire-pot J, so that said cover and fire-pot may be removed and replaced as often as desired, the sand within said chambers sealing the joints, substantially as specified.

JOHN RYN.

Witnesses:
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