

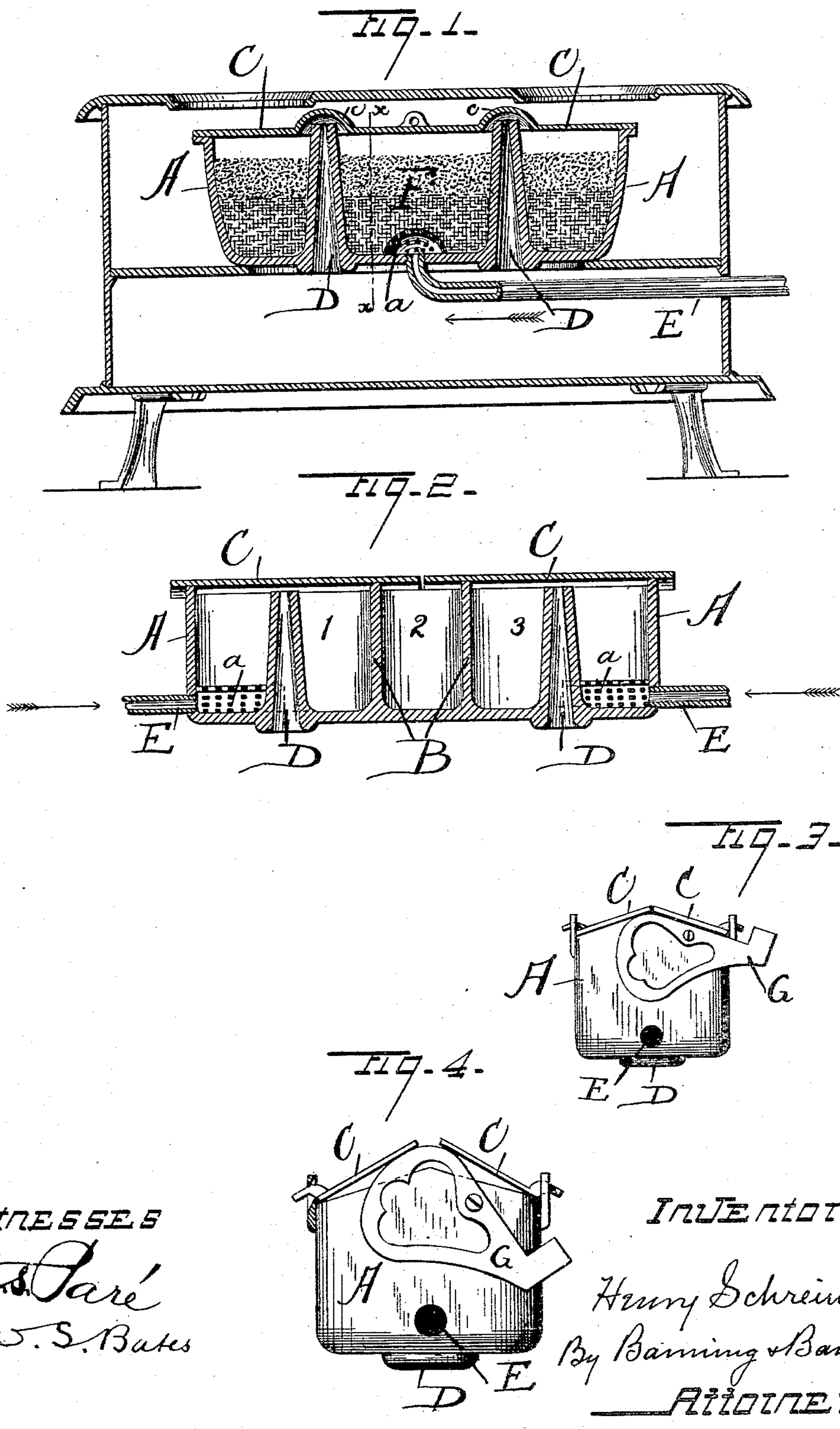
(No Model.)

H. SCHREINER.

HEATING APPARATUS FOR STOVES.

No. 369,411.

Patented Sept. 6, 1887.



WITNESSES

*as Jare*  
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# UNITED STATES PATENT OFFICE.

HENRY SCHREINER, OF CHICAGO, ILLINOIS.

## HEATING APPARATUS FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 369,411, dated September 6, 1887.

Application filed July 27, 1886. Serial No. 209,215. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY SCHREINER, a citizen of the United States, residing at Chicago, in the State of Illinois, have invented a new and useful Heating Apparatus for Stoves, of which the following is a specification.

The object of my invention is to provide a stove, whether for cooking or other purposes, with means to permit quick heating and cooling; and the invention consists in the features and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical central section, showing my improved heating apparatus with a single chamber applied to an ordinary cooking-stove; Fig. 2, a longitudinal vertical section of the apparatus divided into three chambers or apartments; Fig. 3, an end view of the apparatus shown in Fig. 2, particularly showing the eccentric for opening the lids; and Fig. 4, the same as Fig. 3, showing the parts enlarged and the lids partly open.

A are the walls of the heating apparatus, B the partitions, and C the lids thereof; D, the air-inlets; E, the oil-pipe; F, the packing, and G the eccentric for opening the lids.

The apparatus consists, essentially, of a vessel or box preferably oblong or oval in shape, and which may have but one chamber or be divided into as many compartments as desired. As shown in Fig. 1, it has but one chamber, while as shown in Fig. 2 it has three. This box or vessel has suitable lids or covers, and is provided with a hole or opening to receive the end of an oil-pipe, and also with one or more air-inlet pipes extending up through the packing. The ends and partitions of the boxes may be higher in the center than at the sides, (see Figs. 3 and 4,) so that the lids may rest and fit closely thereon when closed, and still be at their highest point slightly above the upper end of the air inlets or pipes, or the ends and partitions may be cut off square, so that the lids may be flat and still rest and fit closely thereon, the lids in such case being provided with raised portions at such points as will be immediately over the ends of the air-pipes when the lids are closed. (See Fig.

1.) There may be only one of these lids, or as many as desired; but I prefer to have two, meeting in the middle from side to side, when the apparatus has but a single chamber, and two for each fire-chamber, or chamber into which the oil is let, when it is divided into several compartments. When two lids are used, they may be hinged at the sides of the box, respectively, in the manner shown in Figs. 3 and 4, so that they can be readily raised and the flame first allowed to escape from the middle portion of each chamber; but when a single lid is used it may be hinged at one side, and of course opened and the flame first allowed to escape from the other.

At the outside of each end I provide an eccentric or other suitable means for opening the lids when two are used, which eccentric may be operated by hand or in any convenient way. The turning of this eccentric of course causes both the lids to open at the same time and in opposite directions—that is, from the center upward and outward.

It will of course be understood that it is desirable to have the arrangement such as to permit the lid or lids to be opened from a point entirely outside of the stove.

The lid or lids may be secured at the upper edge or edges of the side or sides of the box, as the case may be, in any convenient manner, but of course so as to permit them to be opened to the extent and for the purpose desired; but, as already suggested, I prefer to secure them in the manner shown in Figs. 3 and 4, in which is illustrated what I term a "peculiar" form of hinge. This hinge is formed by passing an ear or outwardly-projecting portion secured to or formed integral with the lid through an opening, preferably oblong, in an upwardly-projecting portion secured to or formed integral with the side of the box, the fitting of course being sufficiently loose to permit the lid to be opened as from an ordinary hinge. If so desired, the outside of the part of the projecting portion on the side of the box immediately under its opening and the inside thereof immediately above its opening, or the under side of the projecting portion of the lid, or both, may be slightly cut away or beveled



to permit the lid to be fully opened; but it will generally be found sufficient, and I consider it preferable, to cut away or bevel only the projecting portion of the box under and above its opening.

The bottom portion of the vessel or box is packed with mineral wool, asbestos, or other similar material to any depth desired, and above this packing I also prefer to put in an additional packing—say of sand or ashes. The darkened or lower portion of the packing shown in Fig. 1 may be considered as of mineral wool and the upper portion of sand or ashes; but it will of course be understood that different kinds of packing are not necessary, or, when used, required to be of any particular proportions, although I always prefer to use mineral wool at the bottom.

A suitable oil tank or reservoir may be placed in any convenient position and connected with the box by a pipe, E, this pipe of course being provided with any cocks or valves that may be desired. Ordinarily, however, a single stop-cock will be sufficient to permit the oil to be turned on or shut off, and in practice I prefer to use only one. Inside of the box, near the bottom and immediately above or around the hole or opening for the oil-pipe, I place a perforated cap or covering, a, to prevent the packing from getting into or stopping up such hole or opening. For ordinary cooking-stoves a simple vessel or tank holding a gallon of oil, more or less, may be secured to the wall—say behind and above the stove—and when thus used it can be provided with a hole at the top, which will prevent the accumulation of gas and consequent explosion; and of course any oil suitable for the purposes desired—as, for instance, and most generally, kerosene or residuum oil—may be used.

In operation my improved heating apparatus is placed in the fire-box of a cooking or other stove, being connected with the oil-tank by means of the oil-pipe above mentioned, which may, if desired, be run down to the floor and under the stove, and then inserted from the bottom or from any other convenient place. The oil being turned on, of course passes through this pipe into the packing, preferably at its bottom, and then rises therein until it permeates or saturates the packing thoroughly or to any extent desired. This of course causes the hydrocarbon vapor to form in the box above the packing, which can be readily lighted or ignited by a match or otherwise, and the fire thus started may be allowed to burn as rapidly and intensely as desired until the stove is sufficiently heated for cooking or whatever other purpose may be in view.

It will of course be understood that the lids are to be opened whenever a fire is started, and that the fire can be controlled or regulated by the opening or closing thereof. For instance, if it is desired to have the flame spread to the fullest extent possible, the lids may be thrown entirely open, while if it is

only desired to have a small flame, they may be opened very slightly.

As shown in Fig. 1, my heating apparatus has but one chamber or compartment, and this is provided with one oil-pipe and two air-inlets; but, as shown in Fig. 2, the apparatus is divided into three chambers or compartments, 1 2 3, and each of the end compartments is provided with an air-inlet and an oil pipe, the oil-pipe in this case being forked or divided into two branches at some convenient point, so as to have one part or branch enter each end chamber. This form of apparatus is especially designed for use when it is desired to vary the size of fire; and with the idea of especially adapting it to the producing of small fires, I prefer to pack the middle chamber, 2, with coal-ashes or any other non-conductor of heat which will answer the purpose. This middle chamber, being thus packed, of course effectually separates the end chambers from each other, so that a fire can be built in one at a time, as may be desired, and generally this use of one chamber will be found convenient for ordinary cooking purposes.

The special advantages of my invention will be readily understood; but, briefly stated, some of them consist in providing a stove with a simple economical heating apparatus, which enables the fire to be started or put out instantly and without danger, and the use of which enables the quick heating of the water-back as well as the ovens and other parts of an ordinary cooking-stove.

I do not herein claim, specifically, the ratchet mechanism for opening or closing the lid of the heating apparatus, but intend to make the same the subject of another application to be hereafter filed.

I am aware that hydrocarbon-burners have been made whereby the oil saturates a porous substance and is ignited at the top, and do not claim this as a part of my invention.

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

1. As a new article of manufacture, a heating apparatus for stoves, comprising a metallic vessel or box provided with packing material at the bottom, an oil-inlet pipe opening into the packing material from or near its bottom, an air-inlet pipe extending or opening above the packing material, a hinged lid or cover, and an eccentric for opening the same, substantially as described.

2. As a new article of manufacture, a heating apparatus for stoves, comprising a metallic vessel or box having a lid hinged at each side thereof and meeting at a point between the sides when closed, an eccentric for opening the same and provided with packing material at the bottom, an oil-inlet pipe extending into the packing material from or near its bottom, and an air inlet or pipe extending or opening above the packing material, substantially as described.



3. As a new article of manufacture, a heating apparatus for stoves, comprising a vessel or box provided with packing material at the bottom, an oil-inlet pipe extending into the  
5 packing material, an air inlet or pipe extending or opening above the packing material, and lids hinged at the sides of the box, re-

spectively, and an eccentric for opening the same simultaneously and in opposite directions, substantially as described.

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Witnesses:

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