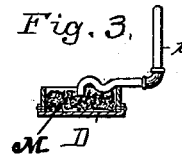
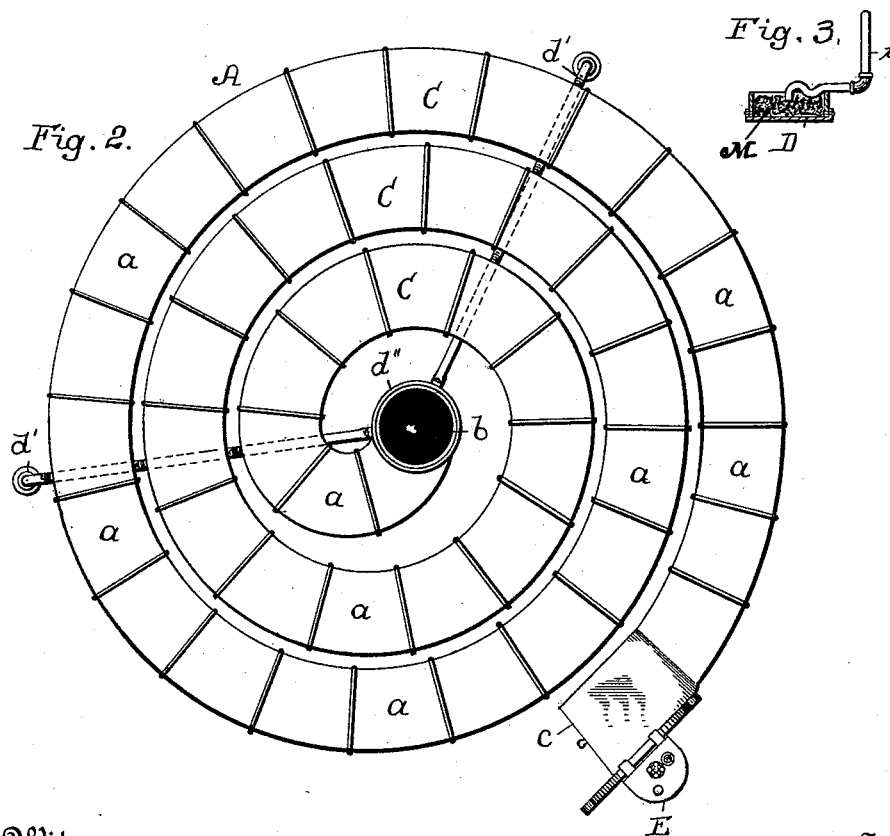
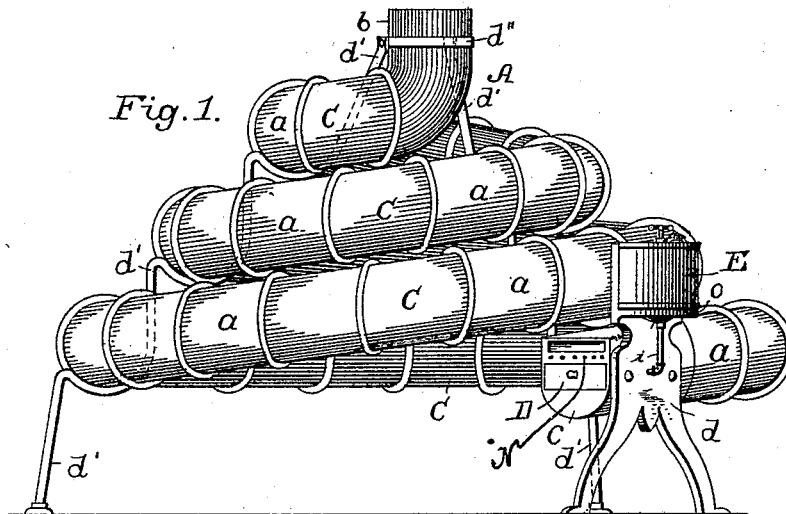


(No Model.)

A. H. RUSSELL.  
VAPOR STOVE.

No. 419,564.

Patented Jan. 14, 1890.



Witnesses

L. G. Fischer  
A. A. Higdon

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By His

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# UNITED STATES PATENT OFFICE.

ALBERT H. RUSSELL, OF KANSAS CITY, MISSOURI.

## VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 419,564, dated January 14, 1890.

Application filed February 21, 1889. Serial No. 300,642. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT H. RUSSELL, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Heaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to certain improvements in stoves or heaters, having for its object economy of fuel, while being adapted to serve for general heating, as also to heat water for domestic or other purposes; and to these ends it consists of the sundry combinations of parts, including their construction, as will more fully appear from the following description and illustration, in which—

Figure 1 is a side elevation of one form of the embodiment of my heater or stove. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view of the drawer-like burner with the feed-pipe entering the same.

In carrying out my invention I employ a series of pipe-coils C C in the formation of the heater or stove A—in the present instance stove-pipe sections *a a* being used, although other kinds of pipe may be employed—the same being preferably arranged in planes rising pyramidal-like one above the other, and gradually and uniformly decreasing or varying in diameter. This arrangement detains the heat from a burner D, located in the extremity of the lower coil, in its passage through the pipe-coils, and furnishes an extended area of heat-radiating surface, securing the full benefit of and thoroughly utilizing the heat. This pyramid or pile of pipe is supported upon legs or rods *d' d'*, adapted to form seats thereon for the respective coils, being stair-stepped and having their horizontal portions curved, the upper approaching ends of said legs or rods being connected to a ring or collar *d''*, embracing the extreme upper end *b* of the pipe-coils. At the point *b* is applied or connected the smoke exit or pipe. (Not shown.)

D is the burner, which preferably consists of a rectangular drawer-like pan, which is adapted to slide through the end of and into

the approximately rectangular end portion *c* of the heater or lowermost pipe-coil C, having a flat top and vertical sides. The end portion *c* is provided in a plane above the generator with air-ingress openings, setting up a hot-air circulation in the heater or stove.

The flat top of the end portion *c* of the heater or stove furnishes a suitable surface upon which any suitable vessel or article to be warmed may be placed. To this end portion *c* at one side is bolted or riveted a leg or support *d*, with which is cast, some distance below its upper end, a shelf or bracket *o*, upon which is disposed and supported in an elevated position the tank or reservoir E, containing the petroleum or oil for feeding to the generator and conversion into gas or a vapor, as presently seen.

The feed-pipe *i* connects the reservoir with the burner D, and is inserted at its lower end in the asbestos filling M in the latter.

The drawer-like pan is adapted to be withdrawn to ignite the fuel therein, after which it is replaced, and the combustion in said pan vaporizes the oil in the discharge end of the supply-pipe, thereby causing an intense heat, which creates an upward current of air through the stove, said upward current being fed by the perforations or air-ingress openings N, which are arranged above the burner.

From the above it will be seen that the products of combustion generated at the lower end of the spiral or pyramidal stove are conducted around and upward through the entire length of said stove, thereby enabling the greater portion of the heat thereof to be extracted by the sides of the pipes, thus effecting an economy of fuel.

I have described the drawer-like pan as being provided with asbestos filling and adapted for connection with a hydrocarbon-reservoir; but it is not necessary to use this kind of fuel in the combustion-pan, as other kinds may under certain conditions be preferred.

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

The stove or heater having its body or casing formed of a series of pipe-coils arranged in planes one above the other and gradually and uniformly decreasing in diameter upward, and the stepped rods or legs, each step thereof being curved and forming a seat for a pipe-coil, the upper approaching ends of said legs being connected with a ring or collar embracing the vertical central

portion of the top pipe-coil, substantially as is specified.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT H. RUSSELL.

Witnesses:

F. G. FISCHER,  
A. A. HIGDON.