(No Model.)

J. A. SUPPIGER.

STOVE.

No. 486,910. Patented Nov. 29, 1892.

FIG. 7

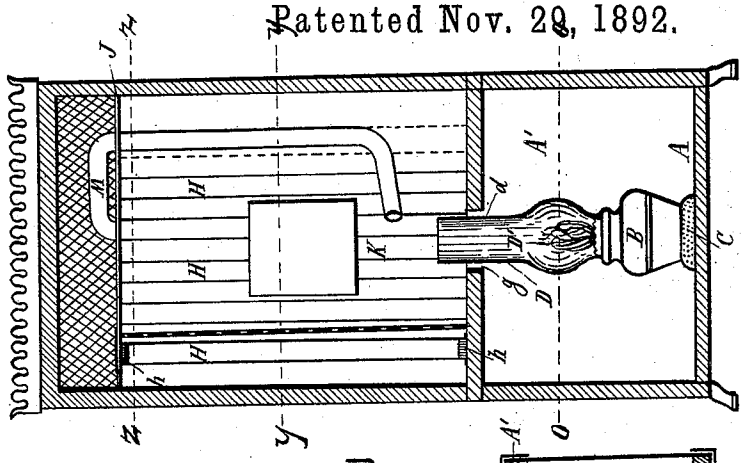


FIG. 4

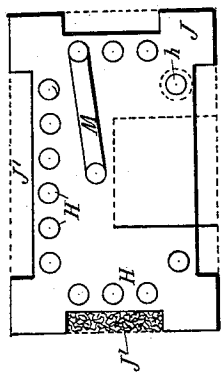


FIG. 5

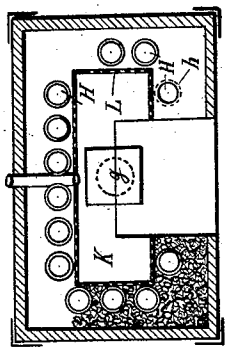


FIG. 6

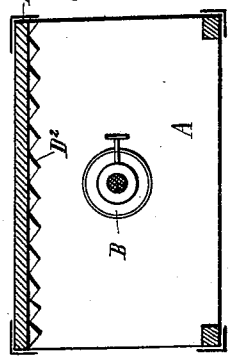


FIG. 1

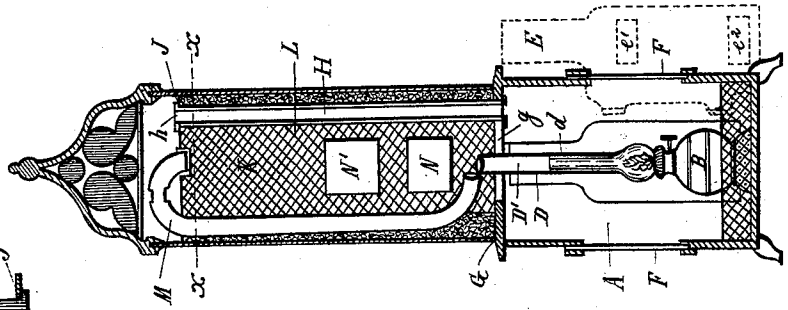


FIG. 3

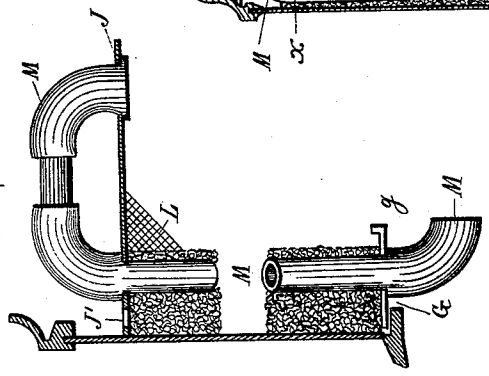
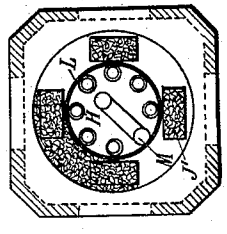


FIG. 2



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH ALOIS SUPPIGER, OF HIRSLANDEN, NEAR ZURICH, SWITZERLAND.

STOVE.

SPECIFICATION forming part of Letters Patent No. 486,910, dated November 29, 1892.

Application filed June 23, 1892. Serial No. 437,793. (No model.) Patented in Switzerland October 23, 1891, No. 4,376; in England April 12, 1892, No. 7,059, and in Belgium April 20, 1892, No. 99,318.

To all whom it may concern:

Be it known that I, JOSEPH ALOIS SUPPIGER, a citizen of the Republic of Switzerland, residing at Hirslanden, near Zurich, Switzerland, have invented certain new and useful Improvements in Stoves for Heating and Lighting Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The said invention has been patented in Switzerland, No. 4,376, dated October 23, 1891; in England, No. 7,059, dated April 12, 1892, and in Belgium, No. 99,318, dated April 20, 1892.

It is well known that a lamp or gas-burner after a time will sensibly raise the temperature of the room in which it burns.

The object of this invention is to recover conveniently the heat thus disengaged and use it in a stove without disagreeable odors as a means of cooking, melting, or heating and of lighting the articles to be cooked, heated, or melted, so that they will be visible. This object I attain by the construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 represents a vertical section of one form of stove embodying my invention. Fig. 2 represents a horizontal section of the same on the line $x\ x$ of Fig. 1. Fig. 3 represents a detail view, enlarged, in elevation, of the pipe of circulation slightly changed in arrangement and certain proximate parts. Figs. 4, 5, and 6 represent horizontal sections, respectively, on the lines $z\ z$, $y\ y$, and $o\ o$ of Fig. 7, Fig. 5 showing the chamber only partly filled with pebbles; and Fig. 7 represents a vertical section through another form of stove embodying my invention.

A designates the combustion-chamber formed in the hollow lower part of the stove, and B a lamp or other calorific device which is set therein on the base-plate thereof. For the admission of this lamp one of the side walls of the said combustion-chamber is provided with a door E, (indicated by dotted lines in open position in Fig. 1,) said door being mainly of glass and provided with openings e' and e^2. This door may, however, be dispensed with, as a mere opening will suffice. A tube D fits on the chimney of the said lamp and may be adjusted upward or downward. It has a small opening d to allow inspection of the said chimney. This tube extends up through an opening g in the partition-plate G, which separates the combustion-chamber from the upper part or heating-chamber of the stove. A similar plate J extends across the upper part of the stove. A bent circulating-pipe M extends up through the plate J and then down through the same to the neighborhood of the tube D or lamp-chimney. It serves to convey gases to the said chimney, so that they may be consumed without giving off obnoxious odors perceptible outside of the stove. Very pure petroleum is used, and such fumes as may issue from tube D will be entirely consumed.

The central part of the heating-chamber is occupied by an open casing L, of wire network or perforated sheet metal, preferably rectangular in cross-section and well packed at the sides with a layer of loose pebbles or similar material. For additional heating effect one or more hot-air tubes H may be extended up through these pebbles from partition-plate G to top plate J, fitting into cylindrical sockets h at both ends. The circulation-tube M also extends up through these pebbles, and the plate J is provided with an opening or openings J′ for permitting the supply of such material to the space about the said tubes.

Openings N N′ are made in the network casing L to allow the introduction of the substance to be melted or burned or baked or otherwise acted on by heat.

The form of stove, furnace, or heater shown in Figs. 4, 5, 6, and 7 is more especially designed for large articles and has a greater number of tubes H. The rear wall A′ of the combustion-chamber is provided with an undulating mirror D^2 to break up and soften the light. The other three sides of this chamber are of white or colored glass; but the construction, combination, and arrangement of the various operating parts are as already described. As shown in Fig. 3, the bent lower end of circulation-pipe M may extend below the plate G

into the immediate neighborhood of the lamp-chimney. In this case the tube D will not be needed.

The small stove illustrated in Figs. 1 to 3 may be set on a bedroom table, bureau, or other articles of furniture, and will not give forth any smoke or cause inconvenience of any kind.

The larger form of stove or furnace illustrated in Fig. 7 may be used for firing pottery or for any purpose when articles of some size are to be treated by heat or a very considerable degree of heat is required.

The circulation-tube M may be arranged either in the middle or at the side of the stove, according to convenience, and more than one such tube may be employed. In the larger form of stove the pebbles may be dispensed with. Their value when employed is as a heat-retaining packing. These stoves, of course, have no need for grates, dampers, ash-boxes, and other parts common to many calorific devices. They are very well secured against the risk of setting any external object on fire, and they are easily moved about and managed. Moreover, the amount of light which they give is sufficient to make the articles which are being heated, baked, or melted visible, and it will also serve for general illuminating purposes. The network casing L serves to keep the pebples in place in the heating-chamber K, and also allows the heat to pass more rapidly through it than if it were solid. In pottery-furnaces, where the spaces between the carriages are stuffed with pebbles and clay, the network L becomes useless on account of the care required in the masonry.

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

1. A stove or heater provided with a combustion-chamber and a heating-chamber arranged above it, in combination with a lamp or its equivalent arranged in the former chamber and a circulation-pipe having its upper end arranged to receive gases from the heating-chamber in the upper part of the stove instead and its lower end arranged to discharge the same downward into the flame of the lamp to be consumed, substantially as set forth.

2. In a stove or heater, a combustion-chamber and a heating-chamber arranged above the same, in combination with an open-work casing L, arranged in the said heating-chamber, a lamp or its equivalent arranged in the said combustion-chamber, and a bent circulation-tube which is arranged to receive hot air or gases from the upper part of the heating-chamber and discharge the same down into the flame of the said lamp, substantially as set forth.

3. In combination with the combustion-chamber and the heating-chamber, the lamp arranged in the former and the open-work casing, circulation-pipe, and hot-air pipes H, arranged in the latter chamber, all substantially as set forth.

4. In combination with the combustion-chamber and the heating-chamber arranged above it, the lamp in the former chamber, the bent circulation-pipe arranged in the latter chamber and discharging downward into the flame of the lamp, and the tube D, which fits on the lamp-chimney and extends up within the heating-chamber into proximity to the said circulation-pipe, substantially as set forth.

5. The partition-plate G and upper plate J, forming the combustion-chamber and heating-chamber, in combination with the tube or tubes H, secured at the upper and lower ends to the said plates by cylindrical sockets *h*, the open-work casing L, inclosing a space in the middle of the said heating-chamber, and the lamp and circulation-tube, substantially as set forth.

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

JOSEPH ALOIS SUPPIGER.

Witnesses:

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KARL KOLB,

Zurich.