3 Sheets—Sheet 1.

J. S. WILLIAMS.

Kerosene-Stove.

No. 221,644. Patented Nov. 11, 1879.

Fig. 1.

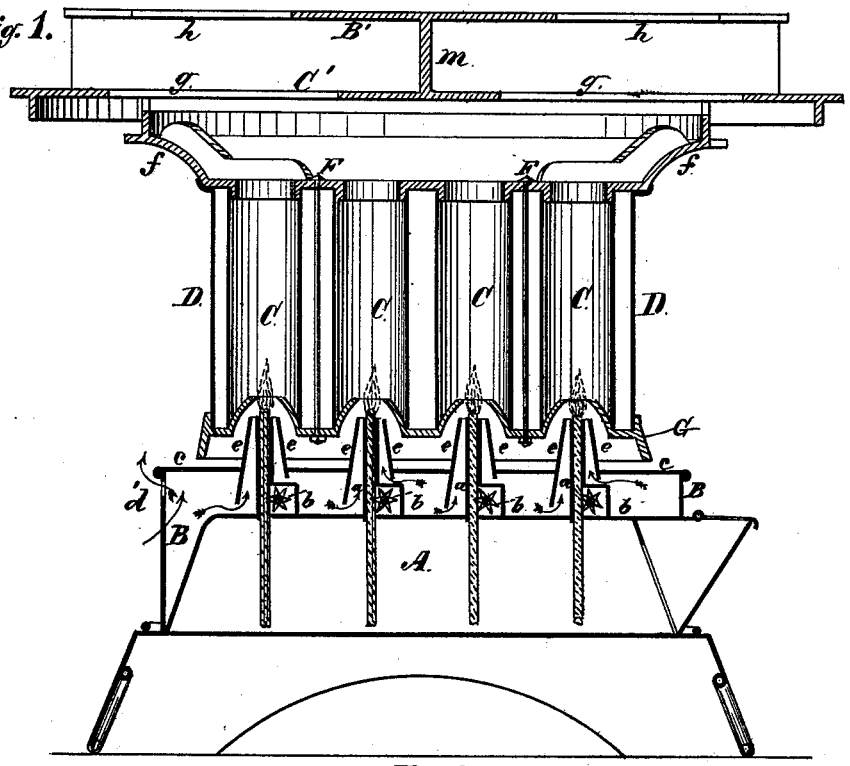
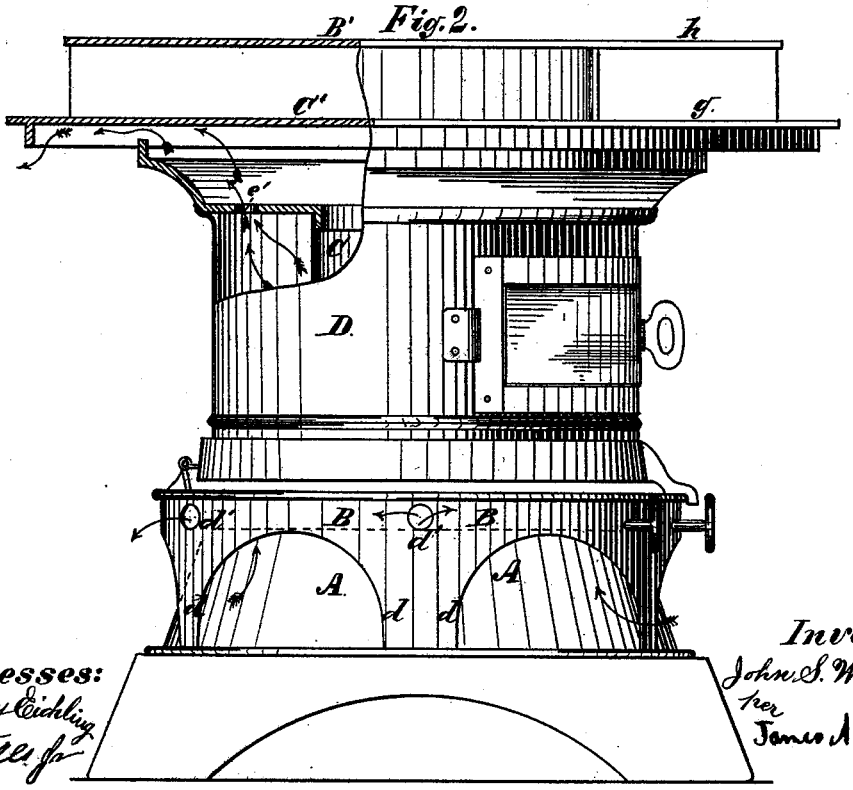


Fig. 2.



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3 Sheets—Sheet 2.

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Fig. 3.

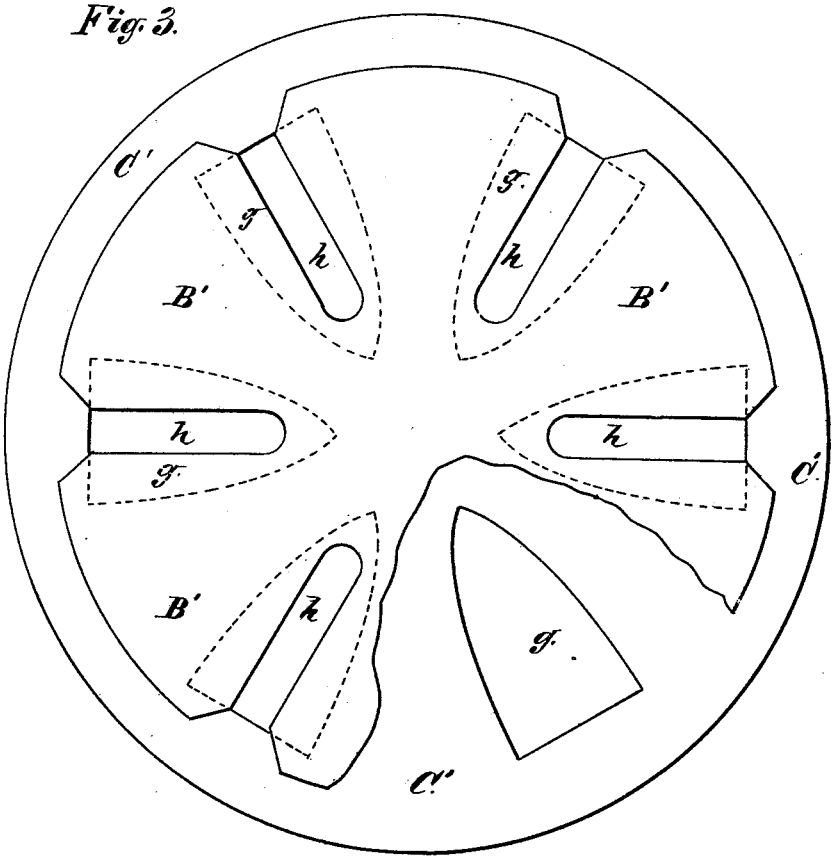
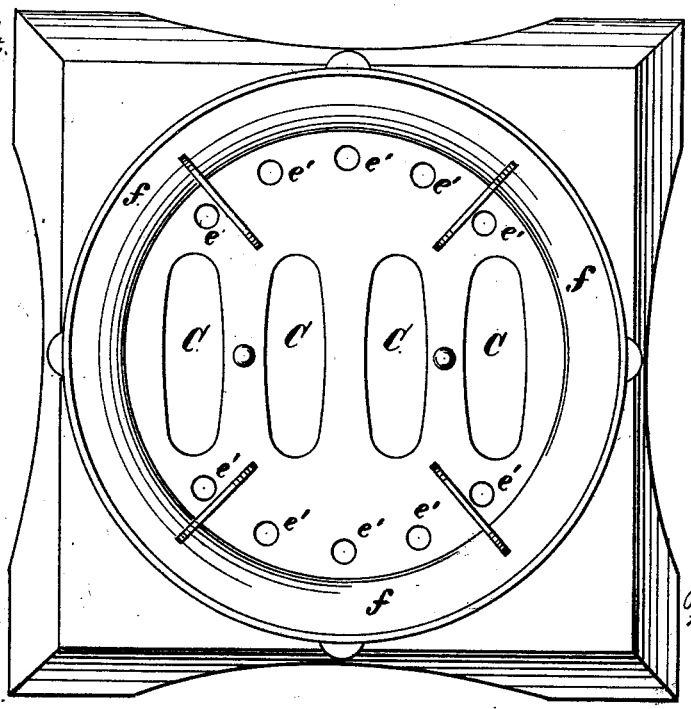


Fig. 4.



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3 Sheets—Sheet 3.

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Kerosene-Stove.

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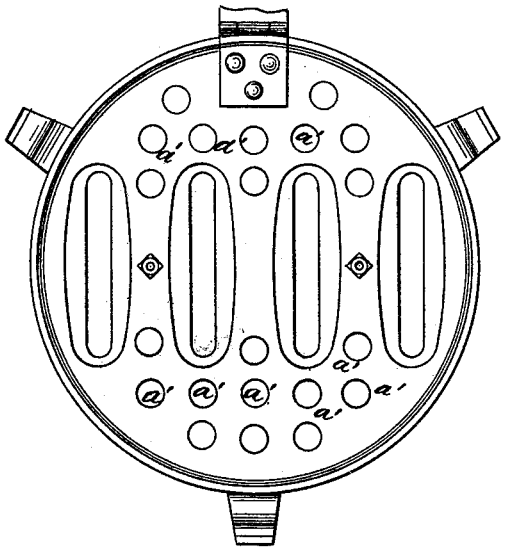
Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN S. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPHINE H. WILLIAMS, OF SAME PLACE.

IMPROVEMENT IN KEROSENE-STOVES.

Specification forming part of Letters Patent No. **221,644**, dated November 11, 1879; application filed March 6, 1878.

To all whom it may concern:

Be it known that I, JOHN S. WILLIAMS, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Kerosene-Stoves, of which the following is a specification.

This invention is designed not only for ordinary heating and household purposes, but also for warming railway-cars, and for other uses to which kerosene-stoves have not hitherto been practically applied.

The invention comprises certain novel combinations of parts for keeping the wick-tubes cool without the use of water, for removing the heat from said tubes, for insuring a full and reliable draft to support combustion and a large volume of heated air for warming purposes, and for heating sad-irons when required.

Figure 1 is a vertical sectional view of a stove made according to my said invention. Fig. 2 is a side view and partial section of the same. Fig. 3 is a plan view of that portion thereof designed for heating sad-irons. Figs. 4 and 5 are plan views of certain portions of the apparatus.

A is the oil-reservoir, having the wick-tubes *a* and the usual ratchet-wheels, *b* for vertically adjusting the wicks. Around and over the reservoir A is a jacket, B, of sheet metal, the top *c* of which is at some distance—say one-half inch, more or less—from the top of the reservoir. In the circumferential portion of this jacket are openings *d d*. Around each wick-tube is a tapering deflector, *e*.

The top *c* of the jacket B is made of sheet-zinc, as distinguished from iron, the former readily yielding any heat it may accumulate, whereas the latter would remain hot under the same circumstances. Above each wick-tube is a chimney, C. These chimneys are surrounded by a cylinder, D, and a top plate, F, through which latter open the upper ends of the chimneys. This top plate is perforated with numerous holes, as shown at *e'* in Fig. 4.

Upon the top of the cylinder D is provided a flaring rim or flange, *f*, on which is placed the sad-iron heater E. This consists of two parallel plates, B' C', placed one above the other, and connected at a suitable distance apart by a stem or brace, *m*, as shown in Fig. 1.

Formed radially in the lower plate, C', are a number of openings, *g*, of a shape corresponding to that of an ordinary sad-iron, but of somewhat smaller size. Coincident with these openings *g*, but formed in the upper plate, B', are a corresponding number of radial openings, *h*, open at their outer ends, and of only about sufficient width to permit the handle of a sad-iron to slip into them.

The device thus constituted is placed upon the flaring top of the cylinder D, as represented in Figs. 1 and 2, in such position that the heated air and hot gaseous products of combustion issuing from the chimneys will pass to or toward the openings *g*.

In the use and operation of the stove the wicks—or, in other words, the burners—are lighted, and forthwith the air for combustion passes up within the jacket B under the sheet-zinc top *c*, and thence through the deflectors *e* to the flame. The heated products of combustion pass up through the chimneys C and out therefrom underneath the sad-iron heater, and come in direct contact with the under surfaces of the sad-irons placed over the openings *g*, (resting upon the edges of said openings,) with their handles in the openings *h*, the said irons being by this means rapidly heated.

The heat from the wick-tubes transmitted by conduction to the zinc top *c* is taken up and removed by the air passing continually in contact therewith, (thus keeping the wick-tubes cool and preventing the transmission of heat to the contents of the oil-reservoir A,) and by heating said air assists the combustion. When a portion of said air is supplied direct to the flame through and by means of the deflectors *e*, another portion of the air, passing up through the perforations *a'*, passes through the space within the cylinder D and in contact with the outer surfaces of the chimneys, and, becoming warmed thereby, issues through the openings *e'*, and is thence distributed to warm the room or apartment, whether of a dwelling, railway-car, or other locality.

It is, of course, to be understood that the sad-

iron heater may be removed when desired, and that this device is not required in the employment of the stove in warming railway-stoves, &c. Any air passed into the jacket B that cannot readily pass therefrom in one or the other of the ways just explained passes out through the openings *d'*.

What I claim as my invention, and desire to secure by Letters Patent, is—

The sheet-zinc top *c*, having deflectors *e*, said deflectors surrounding the wick-tubes and extending downward nearly to the top of the reservoir, in combination with the chimneys C, the cylinder D, having the perforated top F and cone-plate G, jacket B, having openings *d d'*, and the oil-reservoir, all substantially as and for the purpose set forth.

JOHN S. WILLIAMS.

Witnesses:
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FRANCIS W. LAMB.