N. H. SHERBURNE.

COAL-OIL STOVE.

No. 180,946. Patented Aug. 8, 1876.

Fig. 1.

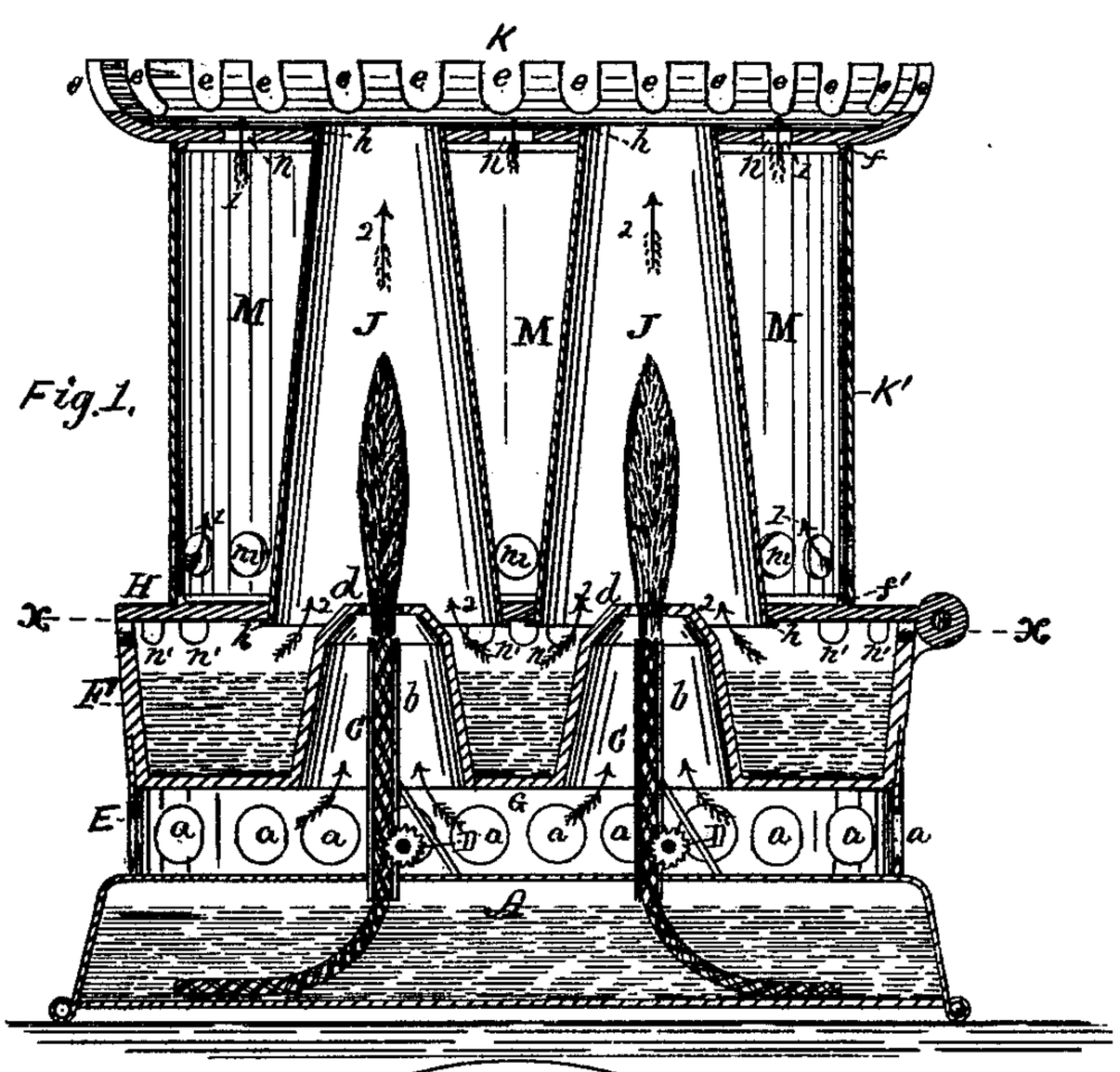
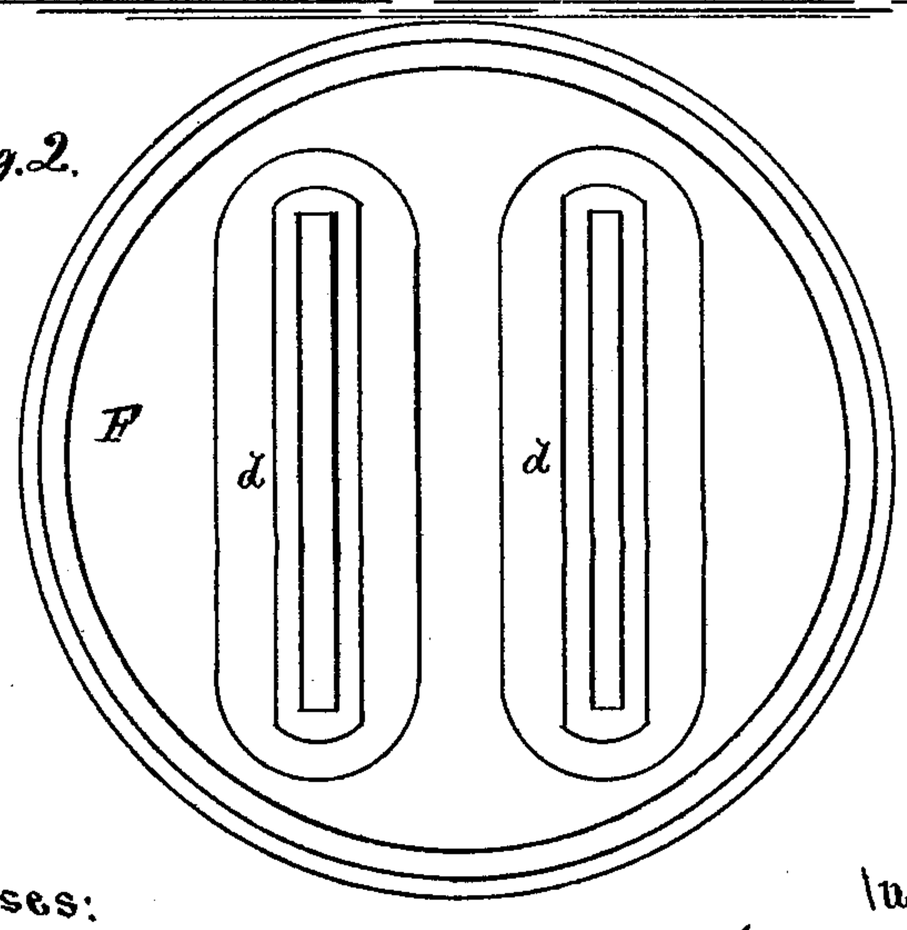


Fig. 2.



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UNITED STATES PATENT OFFICE.

NORMAN H. SHERBURNE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO NELSON C. GRIDLEY, OF SAME PLACE.

IMPROVEMENT IN COAL-OIL STOVES.

Specification forming part of Letters Patent No. **180,946**, dated August 8, 1876; application filed June 21, 1876.

To all whom it may concern:

Be it known that I, NORMAN H. SHERBURNE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Coal-Oil Stoves; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 represents a vertical central section of a coal-oil stove embodying my invention; and Fig. 2 represents a sectional plan of the same, taken on the line *x x*, Fig. 1.

Like letters of reference indicate like parts.

My invention relates to that class of coal oil stoves employed for the purpose of cooking; and the object of my invention is to simplify the construction of such stoves, and to so arrange the several parts thereof with relation to each other as to produce a more perfect combustion, and thereby intensify the heat and prevent the escape of odor. To that end my invention consists in the employment of a steam-generating reservoir, so arranged as to discharge the steam into the chimneys of the burner, and in contact with the flame at or above the point of combustion; also, in the combination, with the chimneys of the burner, provided with a perforated cap, of a jacket surrounding the chimneys, and so as to form a hot-air chamber, and provided at its base with openings for the admission of cold air, which, as heated, ascends through the openings in said cap, and against the vessel placed thereon; and, also, in the arrangement of the chimneys, perforated cap, and jacket, and in the manner of connecting them together, as hereinafter more fully described.

In the drawing, A represents the base or reservoir for containing the oil, which may be made in an annular form, as shown, or in any other suitable form that will support the several parts of the stove. C C are the wick-tubes, which communicate with the interior of the reservoir, and extend upward therefrom in the usual manner. D D are ratchets for adjusting the wicks. E is an annular sheet-metal rim, which is permanently attached to the upper surface of the base, near its periphery, and extends upward therefrom, as shown in Fig. 1, and is provided with a series of openings, *a*, through which the air can freely pass. F is an annular water-reservoir, which is adjusted to fit into, and rest upon, the upper edge of the rim E, and so as to leave an air-space, G, between its lower surface and the upper surface of the base A. The said reservoir F may be made of either sheet or cast metal, its bottom being so formed as to provide deflecting-cones, one or more, *d d*, which extend upward through the chamber of the reservoir, and above the sides thereof, as shown. The said cones are so located, relative to the respective wick-tubes, as to allow the latter to extend upward into the openings in the cones, as shown in Fig. 1, and are so constructed as to leave an air-space, *b*, around the wick-tubes, and between the wick-tubes and cones, respectively, through which the air ascends to supply the flame. H is an annular cast-metal plate, which is hinged or otherwise secured to the reservoir F, so as to form a cover for the same, and which will admit of being removed therefrom at will, and is provided with openings formed through the same immediately over the respective cones *d d*, and of the proper size to allow the base of the chimneys J J to pass through said openings, respectively. K is a cast-metal cap, upon which the cooking-vessels are supported, and is made concave, and is provided at its base with openings, through which the upper end of the respective chimneys pass, and is also provided with a series of openings, *e*, formed through its upper edge, which will admit of the escape of the air ascending through the chimneys. K′ is a sheet-metal jacket, which is made in an annular form, and of the proper size to encircle the chimneys J J, and so as to form an air-chamber, M, between the outer surface of the chimneys and the inner surface of the jacket, as shown in Fig. 1, and is secured in place around said chimneys by flanges *f f′*, formed upon the upper surface of the cover H and the lower surface of the cap K, and adjusted to enter and closely fill the ends of the jacket. The arrangement of the chimneys and jacket is such that when the ends of the jacket

are fitted around the flanges of the cap and cover, the chimneys can be readily passed through the openings, respectively, in the cap and cover, and the ends of the chimneys bent outward, so as to form flanges *h h*, which bear against the upper surface of the cap and lower surface of the cover, so as to firmly connect the chimneys to the cap and cover. The jacket K′ is provided at its base with a series of small openings, *m*, through which the cold air is admitted into the chamber M. The cap K is also provided with a series of openings, *n*, formed through its base between the chimneys, and between the chimneys and jacket, as shown in Fig. 1. By providing the openings in the base of the jacket and in the cap, a current of air is caused to enter the chamber through the openings in the jacket, and is heated by the heat radiating from the chimneys, and causes it to ascend, as indicated by arrows 1, through the opening in the cap, to and in contact with the cooking-vessel resting upon the cap, thereby utilizing the heat radiated from the chimneys, which would otherwise be lost. The water-receptacle F is provided with a series of small perforations, *n′*, formed through its upper edge, as shown in Fig. 1, and through which a current of air is admitted into said water-receptacle. The air, passing through the said perforations, intermingles with the steam generated from the water contained in the receptacle F, and is drawn upward by the ascending current of air in the chimneys, and so as to cause the steam to ascend into the chimneys, as indicated by arrows 1, and in contact with the flame immediately above the deflecting-cones, thereby greatly increasing the combustion, assisting in the burning of the smoke, and consequently intensifying the heat. The walls of the deflecting-cones are insulated from the wick-tubes, and so as to admit of a free circulation of air around them, by which means the air within the cones is heated by the downward radiation of the heat from the flame, and causes it to ascend rapidly through the cones to, and in contact with, the flame, while at the same time the walls of the cones are sufficiently heated to heat the water in the reservoir F to generate steam.

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

1. The water-reservoir F, located above the oil-pot, and provided with the deflecting-cones *d d*, surrounding the wick-tubes, respectively, and arranged to form the air-space G between said reservoir and the oil-pot, and the air-spaces *b* between the wick-tubes and the inner surfaces of the cones, substantially as and for the purposes specified.

2. The combination, with the water-reservoir F, provided with the deflecting-cones *d d*, surrounding the wick-tubes, as described, and with the ventilating-perforations *n′*, of the cover H, adapted to receive the lower end of the chimneys, substantially as specified.

3. The combination, with the cover H, cap K, and jacket K′, of the chimneys J J, secured within the cap and cover by the flanges *h h*, substantially as and for the purposes specified.

NORMAN H. SHERBURNE.

Witnesses:

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