J. McG. ADAMS.
Coal-Oil Stove.

No. 207,637. Patented Sept. 3. 1878.

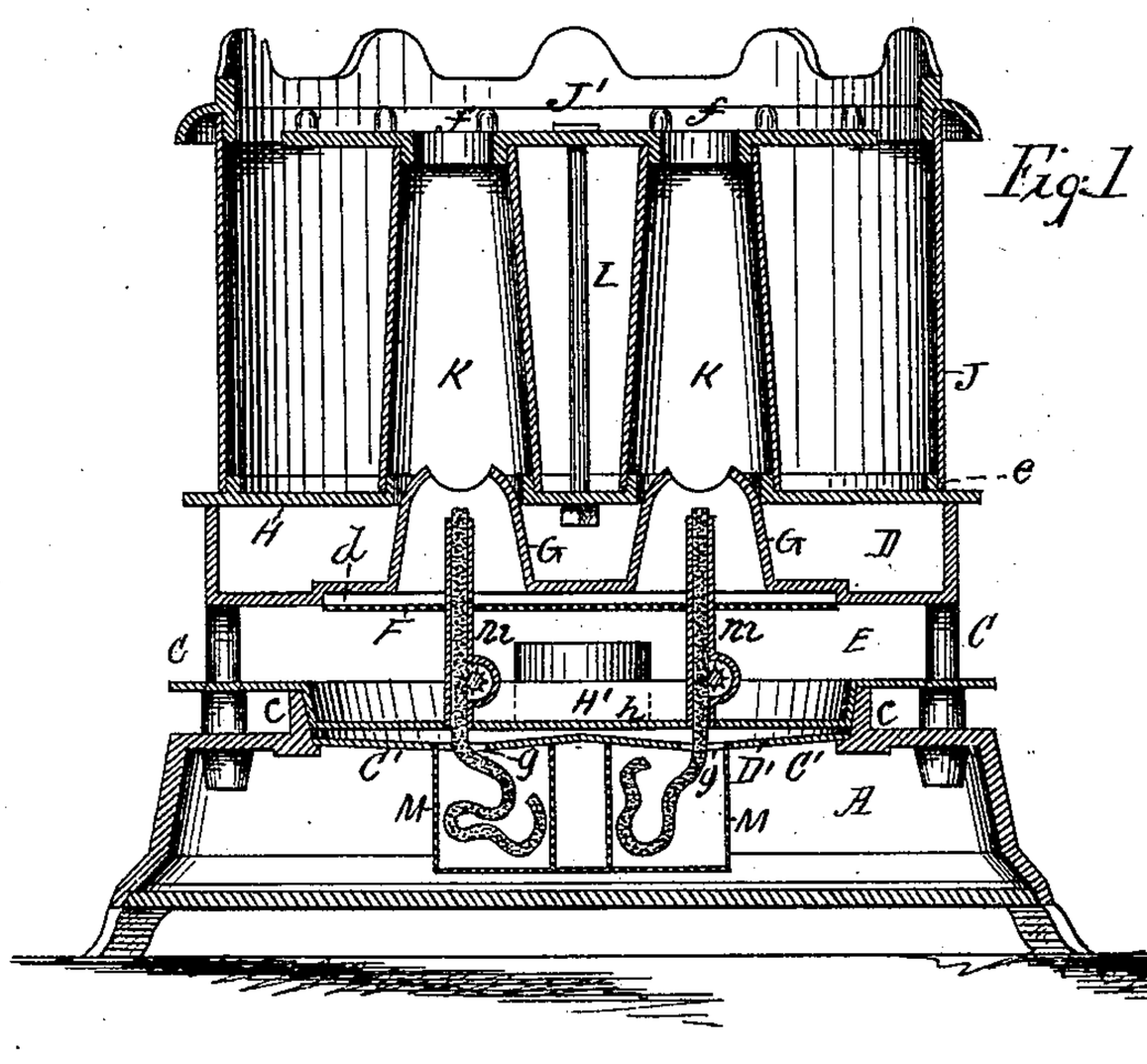

Fig: 1

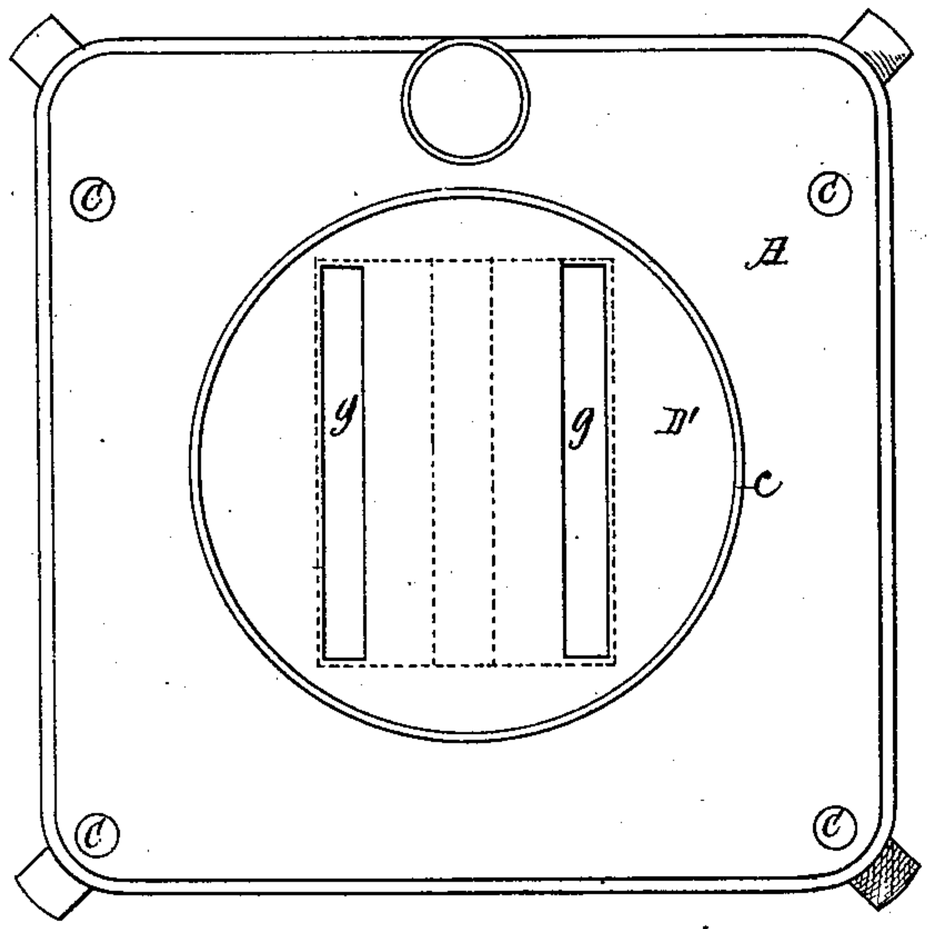

Fig: 2

Witnesses
G. C. Hoffman
N. McSherburne

Inventor
J. McGregor Adams
By Sherburne & Co
Attorneys,

UNITED STATES PATENT OFFICE.

J. McGREGOR ADAMS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN COAL-OIL STOVES.

Specification forming part of Letters Patent No. **207,637,** dated September 3, 1878; application filed March 27, 1878.

To all whom it may concern:

Be it known that I, J. McGREGOR ADAMS, of Chicago, in the county of Cook and State of Illinois, have invented certain 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 drawing, forming part of this specification, in which—

Figure 1 represents a central sectional elevation of a coal-oil stove embodying my said invention, and Fig. 2 represents a plan of the base or oil-reservoir, with the superstructure removed.

Like letters of reference indicate like parts.

My invention relates to that class of coal-oil stoves designed more especially for the purpose of cooking; and the object of my invention is to improve the construction of such stoves, so as to render them more convenient in use, more perfect in operation, and to prevent them from being exploded by the formation of explosive gases within the oil-reservoir. To that end my invention consists in the arrangement of the several parts, as herein described and claimed.

In the drawing, A represents the oil-reservoir, which may be made of any suitable metal, but preferably of cast-iron, and in any suitable form that will receive and support the superstructure constituting the stove proper, but preferably in the form shown in Fig. 2. Permanently secured to each of the respective corners of the oil-reservoir A is a metal column, C, extending upward therefrom, as shown in Fig. 1.

D represents a water-reservoir, which is also preferably made of cast metal, and is supported at each of its corners upon one of the columns C, so as to leave an air-space, E, between its lower surface and the upper surface of the reservoir A, through which space the air can freely circulate. The central portion of the lower wall or bottom of the reservoir D is raised above the plane of the lower edge of the side walls thereof, so as to form an annular recess or chamber, *d*.

F is an annular perforated diaphragm, which is fitted into the chamber *d*, so as to leave a space between its upper surface and the lower surface of the top or upper wall of the chamber.

G G are deflecting-cones, which are formed on the lower wall or bottom of the reservoir D, and which extend upward through the chamber of said reservoir to a point slightly above the upper edge of the side walls thereof. H is a metal plate, which is supported at each corner upon one of the columns C, and so as to rest upon the upper edge of the walls of the reservoir D and form a cover to the said reservoir. This plate is provided with openings formed through the same immediately over the respective cones G G, through which the upper ends of said cones loosely pass, so as to leave a slight space between the outer surface of the said cones and the inner surface of the openings, through which the steam generated from the water in the reservoir D can freely pass.

J is an annular sheet-metal jacket, which rests upon the plate H, and is held in place by an annular flange, *e*, formed on the upper surface of the said plate, so as to fit into the lower end of the said jacket. J′ is a cast-metal cap, which is fitted upon the upper end of the jacket J, and upon which the cooking utensils are supported. This cap is provided with openings *f f*, formed through the same centrally over the openings in the plate H, as shown in Fig. 1.

K K are the chimneys, which are fitted between the plate H and cap J′, centrally over the respective cones G G, and are held in place by flanges formed around the openings in the plate and cap, which flanges fit into the ends of the chimneys, so as to prevent them from being displaced laterally. L is a vertical screw bolt, which passes through the plate and cap centrally between the chimneys, so as to firmly connect the plate, cap, jacket, and chimneys together, so that the latter can be removed from over the reservoir D when desired.

The several parts which I have so far described are arranged in substantially the same manner as is shown and described in a previous application for Letters Patent filed by me on the 25th day of June, 1877, and there-

fore constitute no part of this invention, and my object in describing the same is to show with clearness the operation of my present invention, which I will now proceed to describe.

C′ represents an annular opening, which is formed in the upper wall of the oil-reservoir A, centrally therein, and is surrounded by an upward-projecting flange or rim, *c*, formed on the upper surface of the reservoir, as shown in Fig. 1. D′ is an annular sheet-metal plate, which is fitted into the opening C′, and firmly secured therein by being soldered to the wall of the opening. This plate is provided with openings *g g*, formed through the same centrally under the openings in the respective deflecting-cones G G, and through which the wicks loosely pass into the oil-reservoir, as shown in Fig. 1.

M M are receptacles formed of fine wire-cloth or finely-perforated sheet-tin, and are attached to the lower surface of the plate D′ around the respective openings *g g*, and extend downward to a point near the bottom of the reservoir, and into which the respective wicks pass. The arrangement of these receptacles is such as to allow the oil to freely flow through the meshes or perforations in the walls thereof, so as to saturate the wicks; and the meshes or perforations are of the requisite degree of fineness to prevent the flame from passing through them should the oil or gas within either of the receptacles become ignited, and thereby to prevent the flame from communicating with the oil in the reservoir outside of the receptacles.

H′ is a deflecting-plate, which is depressed at the center, so as to form an annular recess, *h*, the wall of which is of the proper diameter to fit loosely into the rim *c*, so as to allow the plate proper to rest upon the upper edge of the rim, as shown in Fig. 1. This plate is provided at each corner with a proper opening, through which one of the columns loosely passes, the object of which is to secure the proper adjustment of the plate.

m m represent the wick-tubes, which are permanently attached to the deflecting-plate H′, centrally over the respective openings *g g* in the plate D′, and extend upward through the diaphragm F into the respective deflecting-cones, as shown in Fig. 1, and are each provided with a suitable ratchet for adjusting the wick.

The size of the openings *g g* in the plate D′ is such as to allow the wicks to pass loosely through them into the receptacles, and the arrangement of the deflecting-plate is such as to admit of being lifted off the oil-reservoir when desired, the object of which is to allow the wicks to be easily removed from the receptacles should they become disengaged from the wick-tubes by a backward movement of the ratchets.

The plate D′ is inclined from the center downward and outward toward the respective openings *g g*, and from the periphery downward and inward toward the said openings, as shown in Fig. 1, the object of which is to cause the oil which may drip from the respective wicks to pass back into the reservoir.

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

1. The combination, in a coal-oil stove, of the plate D′, provided with the openings *g g*, arranged to allow the respective wicks to pass loosely through them, with the receptacles M M, substantially as and for the purpose specified.

2. The combination, with the receptacles M M and plate D′, provided with the openings *g g*, of the removable deflecting-plate H′, supporting the wick-tubes, and arranged to cover said openings, substantially as and for the purpose specified.

3. The combination, with the receptacles M M and removable deflecting-plate H′, supporting the wick-tubes, of the plate D′, provided with the openings *g g*, and inclined from the center outward and from its periphery inward toward said openings, substantially as and for the purpose specified.

J. McGREGOR ADAMS.

Witnesses:
N. H. SHERBURNE,
C. COWLES.