3 Sheets—Sheet 1.

O. EDWARDS.

OIL STOVE.

No. 188,288. Patented March 13, 1877.

Fig. 1.

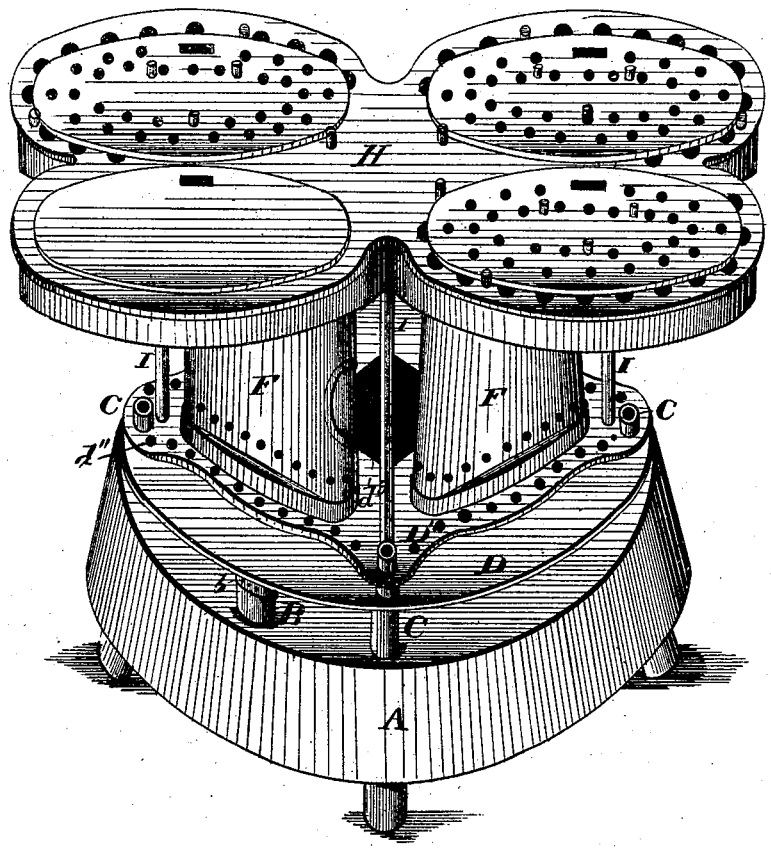

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Fig. 2.

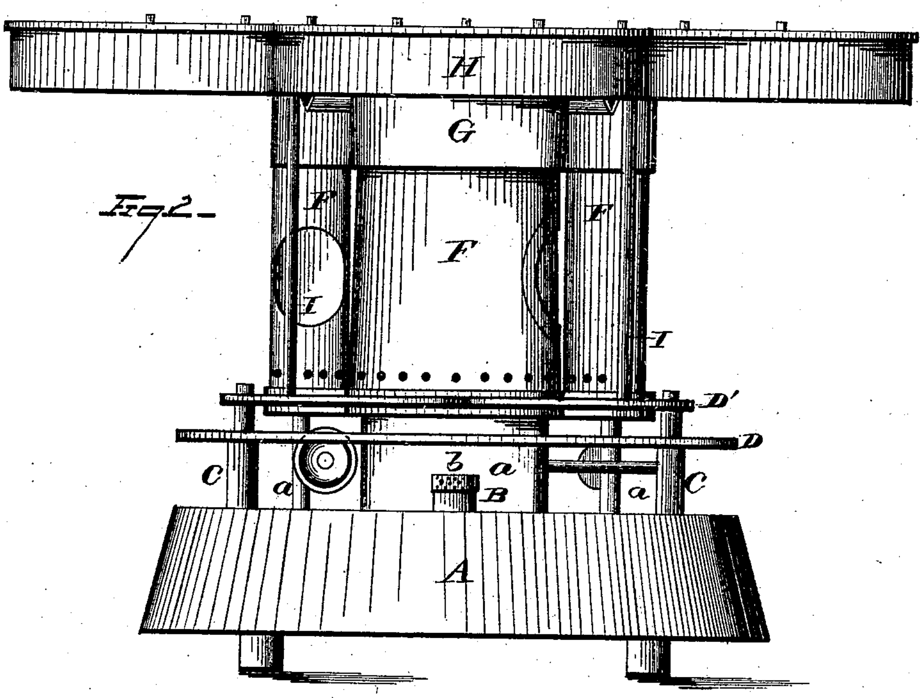

Fig. 3.

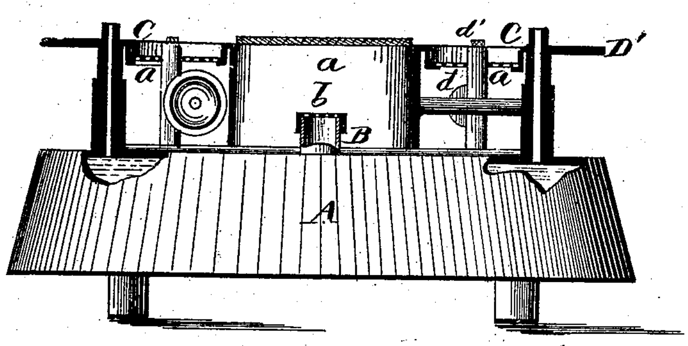

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Fig. 5.

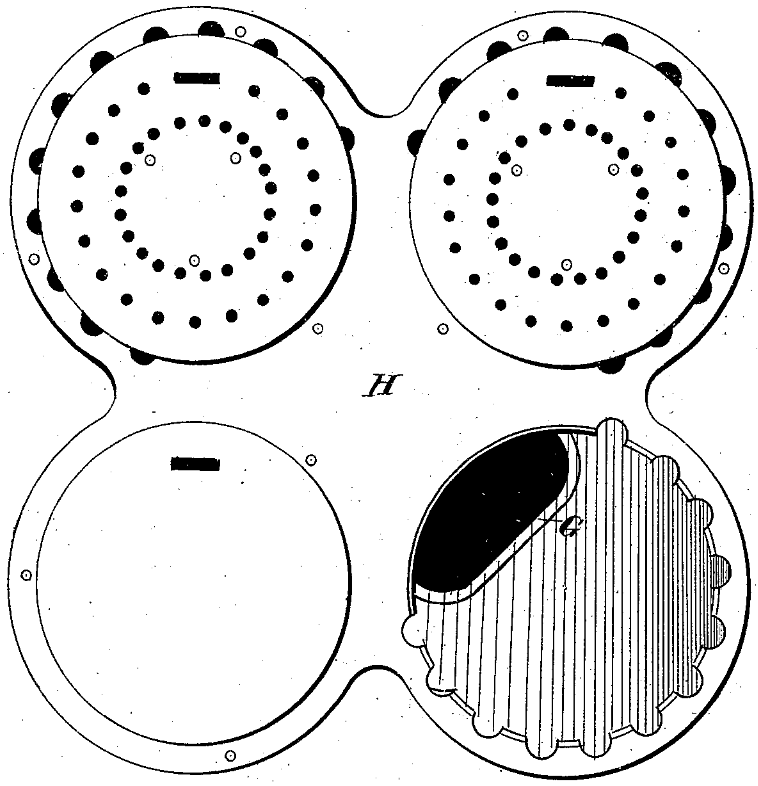


Fig. 4.

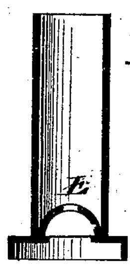


Fig. 6.

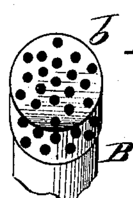
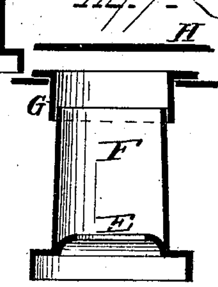


Fig. 7.



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UNITED STATES PATENT OFFICE.

OLIVER EDWARDS, OF FLORENCE, MASSACHUSETTS.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **188,288**, dated March 13, 1877; application filed October 12, 1876.

To all whom it may concern:

Be it known that I, OLIVER EDWARDS, of Florence, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Oil-Stoves; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved oil-stove. Oil-stoves, as ordinarily constructed, are objectionable, mainly from the fact that effective means have not been provided for guarding against the undue heating of the oil in the reservoir, which often results in the generation of gases within the same, and a resultant explosion of the stove.

The object of my invention is to provide a stove of such a construction that accidents by explosion will be avoided, and also to simplify the parts of the structure, and render the stove less cumbersome and of less initial cost than the oil-stoves now on the market.

My invention consists, first, in the combination, with the feed-tube of the oil-reservoir, of an open-work cap loosely fitted to said tube, whereby a free exit is formed for the escape of gases accumulating in the reservoir, and also allowing the cap to be forced bodily from the tube should the generation and accumulation of gas within the reservoir exceed the quantity provided for escape through the perforations in the cap; second, in the combination, with the oil-reservoir and the upper portion of the stove, of hollow standards, constructed to extend through the oil-reservoir, and thereby constitute conduits to ventilate the oil in the reservoir; third, in the combination, with the reservoir and top of an oil-stove, which parts are rigidly secured by supporting-rods, of two or more independent and removable chimneys, whereby ready access may be had to each and every wick for trimming or lighting the same, without the necessity of disturbing the other portions of the stove; fourth, in the combination, with the removable chimneys of an oil-stove, of vertically-movable collars suspended from the upper drum, whereby the chimneys may be raised and removed from the wick-tubes, while the collars constitute the upper portion of a continuous chimney when the lower portion of the same is in position for use; fifth, the combination, with two or more removable chimneys of an oil-stove, of a supporting-diaphragm constructed with openings corresponding in form and size with the lower portions of the chimneys, said openings provided with a depending ledge or flange, and lugs extending inwardly therefrom, whereby the chimney is securely seated in said diaphragm and retained against lateral displacement; sixth, the combination, with the reservoir of an oil-stove, having a deflecting-plate located immediately above the same, of a chimney-supporting diaphragm, the latter formed with a central opening, whereby a constant circulation of cold air over the deflecting-plate upwardly through the supporting-diaphragm is secured; seventh, the combination, with the reservoir of an oil-stove, of a deflecting-plate located above the same, and supported by hollow standards extending through the upper portion of the oil-reservoir, whereby the hollow standards serve as supports for the plate, and also as means for ventilating the oil in the reservoir; eighth, the combination, with the removable chimneys of an oil-stove, of a supporting-diaphragm and independent perforated base-burner plates located below said diaphragm, whereby a sufficient quantity of air is admitted to the burners through said plates; ninth, in certain details of construction, as will be hereinafter described, and fully pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my improved oil-stove. Fig. 2 is a side elevation of the same. Fig. 3 shows a detached view of the reservoir, partly in section. Fig. 4 represents a vertical section of one of the chimneys, having a burner combined therewith. Fig. 5 is a plan view of the top of the stove, with a portion of one of the lids broken away. Fig. 6 represents a detached view of the feed-tube provided with its perforated cap. Fig. 7 is a vertical section of the chimney and movable collar.

A designates the oil-reservoir, which is supported by legs or posts. The oil-reservoir is

provided with a feed-tube, B, through which the reservoir is supplied with oil. Tube B is furnished with a loosely-fitting cap, *b*, which latter is perforated with small holes, to allow of the free escape of gas from the reservoir to the open air.

Should the generation of gas within the reservoir be of such rapidity that it could not freely escape through the openings in the perforated cap, still no danger of an explosion could exist, as a slight pressure of gas within the reservoir would operate to blow the cap bodily from the feed-tube, and thus insure a free opening for the exit of the contained gases.

Open-ended hollow standards C serve as supports for the upper portion of the stove, and also establish an open communication between the interior of the reservoir and the outer air, whereby the accumulation of gases within the reservoir is prevented. Should the reservoir become sufficiently heated, from any cause, to generate gas within the same, the hollow standards would convey the gas at a sufficient distance away from the burners to prevent any ignition or explosion of the same. Hollow standards are each constructed with two shoulders, one above the other, upon which rest, respectively, the deflecting-plate and supporting-diaphragm of the stove.

Deflecting-plate D is provided with holes near its edge, to register with the several hollow standards C, said plate being supported on the lower shoulders of said standards. This plate operates to insulate the frame of the burners and the oil-reservoir, and acts as a guard against the radiation of heat from the lamps downwardly upon the upper surface of the oil-reservoir. Diaphragm D′ rests upon the upper shoulders of the hollow standards C, and supports the chimneys of the stove in openings *d*, which latter correspond in size and form to the lower portion of said chimneys. Openings *d* are each provided with a depending flange, from the lower edge of which small lugs extend inwardly, and serve as supports for a loose perforated base-burner plate, *d′*, the latter operating to admit air directly to the burner from below the supporting-diaphragm. Diaphragm D′ is perforated about its edge with holes *d″*, to allow of an ascending draft around the outer surfaces of the several chimneys, while a central upward draft is secured, by means of a large central opening, d^3, in diaphragm D′, thus causing a continual current of cold air to pass over the deflecting-plate D, and prevent the undue heating of the same.

Chimneys F and burners E are preferably connected together in a rigid manner, to facilitate the ready attachment or removal of such parts. Chimneys F are constructed with an annular series of small perforations near their lower edges, which serve to admit air to the flame. The lower edges of said chimneys rest upon the perforated base-burner plate *d′*, while the upper portion of the chimney is retained in an upright position by means of a vertically-movable collar, G, which latter is constructed with an outwardly-turned upper flange, which rests upon the lower wall of the stove-drum.

Collar G is made of greater length than the thickness of the upper drum, in order to prevent any accidental displacement of the collar within the drum. When it is desired to remove the chimney for any purpose it is raised, and carries with it the movable collar G, until the lower edge of the chimney is raised from without the depending flanges in the supporting-diaphragm D, when the chimney may be moved laterally away from the wick-tube and detached from the collar G.

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

1. In an oil-stove, the combination, with the reservoir feed-tube, of an open-work cap loosely fitting over said tube, substantially as and for the purpose set forth.

2. The reservoir of an oil-stove, provided with hollow standards, which serve to support the upper portion of the stove, and also to ventilate the oil contained in the reservoir, substantially as and for the purpose described.

3. In an oil-stove wherein the reservoir supports the top of the stove, the combination, with the wick-tubes, of two or more independent removable chimneys, having burners secured thereto, substantially as and for the purpose described.

4. The reservoir and top of an oil-stove, connected by top-supporting rods, in combination with two or more independent removable chimneys, substantially as and for the purpose described.

5. In an oil-stove having its top supported by rods, the combination, with two or more wick-tubes, of removable chimneys, whereby the chimneys may be readily inserted or removed without disturbing the other parts of the stove, substantially as and for the purpose set forth.

6. The combination, with the removable chimneys of an oil-stove, of vertically-movable collars, the latter supported by the upper drum of the stove, substantially as and for the purpose specified.

7. The combination, with the removable chimneys of an oil-stove, of a diaphragm provided with openings formed with a depending flange, for retaining the chimneys against lateral displacement, and lugs secured to said flange to support perforated plates on which the chimneys rest, substantially as and for the purpose specified.

8. The combination, in an oil-stove, of its reservoir with a deflecting-plate located above the same, and a superposed plate constructed to support the chimneys, said upper plate provided with a central opening for the passage of air, substantially as and for the purpose set forth.

9. In an oil-stove, the combination, with the reservoir and hollow standards connecting the interior of the reservoir with the outer air, of a deflecting-plate for protecting the reservoir from the heat, substantially as and for the purpose set forth.

10. In an oil-stove, the combination, with a diaphragm supporting the upper part of the stove, of standards provided with shoulders, upon which the diaphragm rests, said standards made hollow and serving as vents for the reservoir.

11. The combination, with two or more independent removable chimneys of an oil-stove, of independent perforated base-burner plates, substantially as and for the purpose set forth.

12. In an oil-stove, the combination, with a reservoir-deflector, of a plate supporting the upper part of the stove, said supporting-plate having perforations about its edge to admit of a draft of air through the same, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of October, 1876.

OLIVER EDWARDS.

Witnesses:
S. A. PARSONS,
H. K. PARSONS.