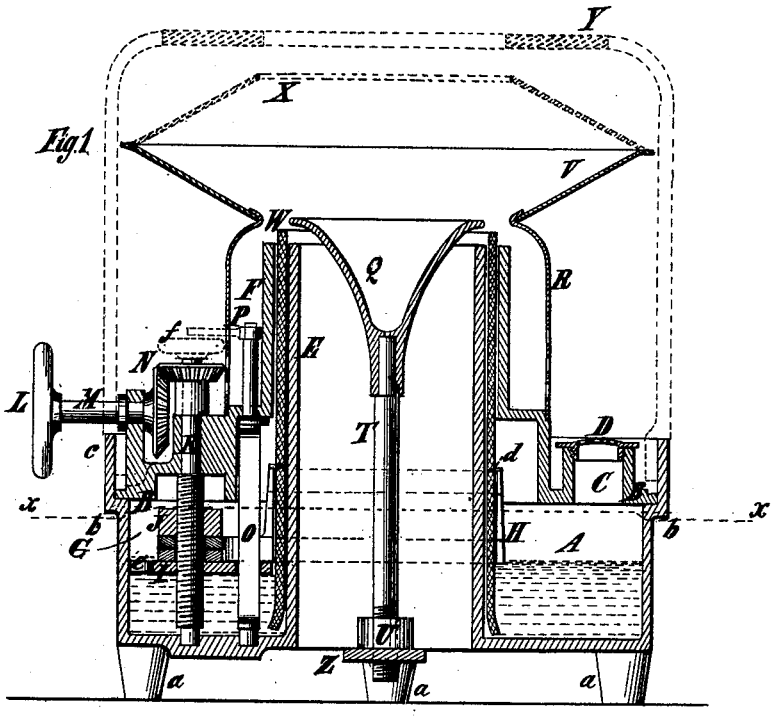
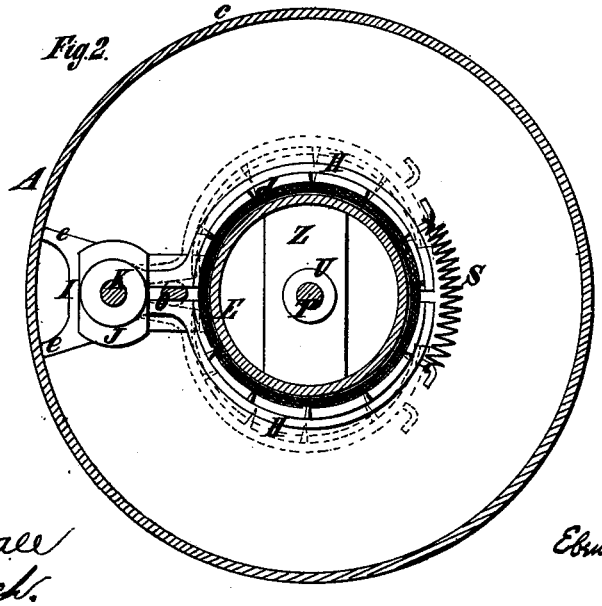
E. BLACKMAN.

Oil-Stove or Lamp.

No. 197,318. **Patented Nov. 20, 1877.**

Fig3





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IMPROVEMENT IN OIL STOVES OR LAMPS.

Specification forming part of Letters Patent No. **197,318**, dated November 20, 1877; application filed October 23, 1877.

To all whom it may concern:

Be it known that I, EBENEZER BLACKMAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Oil Stoves or Lamps, of which the following is a specification:

The object of the present invention is to produce a strong, durable, and compact oil stove or lamp, which shall be safer and susceptible of maintaining a greater heat than those commonly used.

I employ wick-adjusting mechanism arranged in the oil fount or reservoir, and consisting of pivoted jaws adapted to embrace the wick, to be raised and lowered as well as opened and brought together, to release and embrace the wick by means of devices extending outside the said fount or reservoir; and I employ an annular wick-tube and deflectors for directing air upon the inside and outside of a flame issuing from said wick-tube, all as will be hereinafter explained.

In the accompanying drawings, Figure 1 is a central vertical section of an oil stove and lamp embodying my invention. Fig. 2 is a horizontal section thereof, taken on the plane of the dotted line *x x*, Fig. 1; and Fig. 3 is a central vertical section of a modified form of deflector adapted for use with the said stove and lamp.

Similar letters of reference designate corresponding parts in all the figures.

A designates the oil fount or reservoir of my improved stove and lamp. It may be of any suitable form; but when it is to form part of a stove it is preferably made cylindrical, and may be advantageously cast in iron, with supporting-legs *a*. It is shown as having at the upper portion an internal shoulder or ledge, *b*, upon which rests, and may be secured, by cement or otherwise, a cap-plate or disk-like cover, B, and it is shown as having above said shoulder or ledge an upwardly-extending rim, *c*. If desirable, water may be introduced within this rim *c*, and above the cap-piece or cover B, to preclude the heating of the oil fount or reservoir to a dangerous extent; but as I have arranged my draft-inducing apparatus so that currents of cool air constantly pass over all parts of the fount or reservoir which are adjacent to the flame, I think the use of water will be found unnecessary. C is a filling-mouth, shown as arranged on the cap-piece B of the oil fount or reservoir, and as provided with a perforated screw-cap, D, capable of being removed at pleasure.

In this example of my invention I use a wick-tube of annular form, composed of an inner circular part, E, and an outer circular part, F, the wick W being placed in the annular space between them. The part E may, to insure strength and rigidity, be cast with the oil fount or reservoir A, and, as shown, it extends upward from the bottom thereof, is open from end to end, and forms a flue through which a draft of air entering under the oil fount or reservoir may be induced to the inner side of a flame issuing around its upper end. The outer part F is shown as cast with the cap-piece or cover B, and extends to about the same height as the inner part E. Preferably at the base of this outer part F of the wick-tube, I provide an annular chamber, G, communicating with the oil fount or reservoir, and of sufficient size to receive within it the mechanism for adjusting the wick, so that, without increasing the depth or height of the entire oil reservoir or fount, abundant provision is afforded for the upward movement of the wick-adjusting mechanism in raising the wick.

The wick-adjusting mechanism which I have illustrated consists of two semicircular jaws, H, embracing the inner part E of the wick-tube, and provided, preferably near the top, with teeth *d*, for engaging with the wick W. These jaws H are pivoted at one end, so that they may be opened or spread apart to release their hold on the wick, and I have shown them both pivoted to a stock-piece, I, under a bridge, J. At their free ends they are provided with a spring, S, which draws them together around the wick when not otherwise actuated.

K designates a screw engaging with the stock-piece I or its bridge J, or both. It is shown as extending through the oil fount or reservoir A from the cap-piece or cover, passing through the jaws H, so as to form their pivot, and fitting in a step-bearing in the bottom of the said fount or reservoir. By turning this screw in one direction or the other, the stock-piece and the jaws may be raised or

lowered, and thus the wick W may be adjusted. Preferably, the stock-piece is provided with arms *e*, bearing against the interior of the oil fount or reservoir, so as to preclude the screw from turning in the said stock-piece sidewise, and thereby causing either jaw H of the wick-adjusting mechanism to bear with undue force upon the wick and bind it on the inner part E of the wick-tube. It will be seen that the jaws H of the wick-adjusting mechanism may be raised into the chamber G, and hence the advantages of this chamber will be appreciated.

I desire to call special attention to the arrangement of the entire wick-adjusting mechanism within the oil fount or reservoir. The object of this is to increase the safety of the stove or lamp, by avoiding all opportunity for the flame or fire to extend into the fount or reservoir through any opening for the accommodation of the said mechanism. It is obvious that the opening through which a rotary shaft like the screw K passes may be more effectually packed than slots which are requisite for the wick-adjusting mechanism ordinarily used.

Any suitable means for manipulating the screw K in order to raise or lower the jaws H of the wick-adjusting mechanism may be employed. I have shown for this purpose a hand-wheel, L, on a counter-shaft, M, transmitting motion to the screw K through bevel-wheels N; but, if desirable, a hand-wheel may, in lieu of this, be arranged directly on the shank of the screw K, as shown by the dotted lines at *f* in Fig. 1, as it will not become sufficiently heated to burn the fingers.

O designates a device for spreading or opening the jaws H of the feeding mechanism to release them from the wick, in order that they may be depressed to take hold of the wick lower down. This device consists of a rod fitting in bearings in the bottom of the oil fount or reservoir A, and in its cap-piece or cover B, and flattened where it passes between the jaws H. By turning this rod in one direction it fits between the jaws H without disturbing them; but by turning it in the other direction it obtrudes itself between them, so as to force them away from the wick, as shown by the dotted outline in Fig. 2. When the wick becomes so burned away that it cannot be raised any higher by the wick-adjusting mechanism, the jaws H of the latter are released from the wick by turning the rod O by the lever P, and they are then depressed by turning the screw K, and subsequently released from the rod O, so that the spring S may cause them to embrace the wick lower down. Then the wick may be raised higher by raising the jaws H through the screw K.

Q R (see Fig. 1) designate two deflectors, the former of which is arranged within the part E of the wick-tube so as to direct air to the inner side of the wick, and the latter of which surrounds the outer part F of the wick-tube so as to direct air to the outer side of the wick. The deflector Q is of an inverted conoidal form, and supported on a rod, T, which is shown as fitting in a screw-socket, U, in a bridge or cross-piece, Z, so that it may be adjusted vertically, at pleasure. If preferable, however, the rod T may be fixed, and this deflector may be adjusted upon it by means of screw-threads. The deflector R is shown as resting upon the top of the chamber G, in the cap-piece or cover B, and it is contracted inwardly nearly opposite the top of the wick, and provided with an upwardly and outwardly extending flange or inverted conical portion, V. This deflector R and its flange V are very much like the holder or base for which United States Letters Patent No. 123,325 were granted to me, on the 6th day of February, 1872, but the lower part of the deflector R is perforated to serve as an air-distributer, through which air may pass to the tip of the wick. Instead of perforating the deflector R, it may be supported on an ordinary air-distributer. When my improvements are embodied in a lamp for heating purposes, the deflector R and its flange V may be made of sheet metal, but when said improvements are embodied in a lamp for illuminating purposes, the said deflector and flange may advantageously be made of glass.

By dotted lines X in Fig. 1, I have illustrated that a cone-shaped concentrator may be arranged on the flange V of the deflector R to direct the heated products of combustion to the bottom of a kettle or like article supported above it.

The means for supporting articles above the stove or lamp may be of any suitable kind. Those I have shown consist of a ring or annular plate, Y, erected on standards resting on the oil fount or reservoir A.

The device shown in Fig. 3 is a cap, of sheet metal or other material, adapted to fit within the inner part E of the wick-tube, and perforated, so that air may be directed by it upon the inner side of the wick. This may be preferable to the deflector Q for some purposes.

It will be seen that by my invention I have produced a very simple, compact, and safe lamp or stove, wherein the wick may be conveniently adjusted, and yet all danger of communicating fire from the flame to the oil-fount or reservoir avoided; and that, owing to the abundant drafts of air provided for, and the arrangement of the deflectors close to the point of combustion, a very intense heat may be obtained.

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

1. The combination, in a stove or lamp, of wick-adjusting mechanism arranged in the oil fount or reservoir, and adapted to move with the wick in adjusting it, and adapted to be operated from outside the oil fount or reservoir to release its hold on the wick and take hold of a different portion, substantially as specified.

2. The combination, with the oil fount or res-

ervoir of a stove or lamp, of wick-adjusting mechanism consisting of jaws provided with teeth for engaging with the wick, and adapted to be opened or spread apart to release the wick, or brought into proximity with each other to embrace the wick, substantially as specified.

3. The combination, with the oil fount or reservoir of a stove or lamp, of jaws adapted to embrace the wick, and a screw-shaft adapted to be manipulated outside the fount or reservoir for the purpose of raising or lowering said jaws, substantially as and for the purposes specified.

4. The combination, with the oil fount or reservoir of a stove or lamp, of jaws pivoted in place, and adapted to embrace the wick, and means for raising and lowering, as well as opening and closing, said jaws from outside the said fount or reservoir, substantially as specified.

5. The combination, with the oil fount or reservoir of a stove or lamp, of jaws adapted to embrace the wick, and pivoted together at one end, a spring connecting said jaws at their free ends, and a device for spreading or opening said jaws, substantially as and for the purpose specified.

6. The combination, in an oil-stove or lamp with jaws pivoted together, and adapted to embrace the wick, of a stock-piece for supporting said jaws, substantially as specified.

7. The combination of the oil fount or reservoir A, its cap-piece or cover B, wick-tube E F, wick-adjusting jaws H, with their spring S, elevating-screw K, and spreading or opening rod O, and the deflectors Q R, substantially as and for the purpose specified.

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