E. BLACKMAN.

Oil-Stove or Lamp.

No. 203,994. Patented May 21, 1878.

Fig.1.

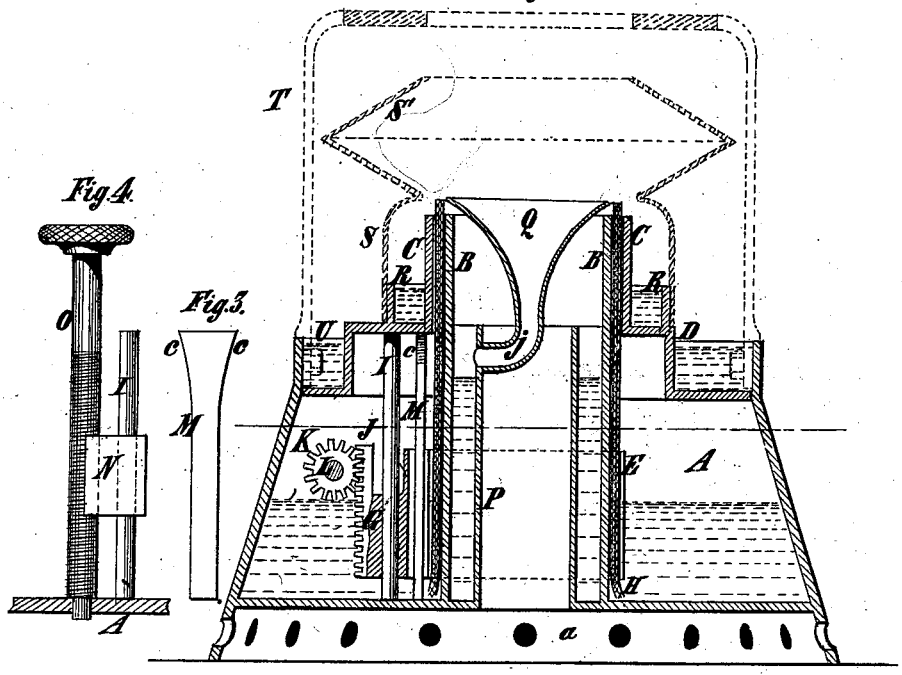
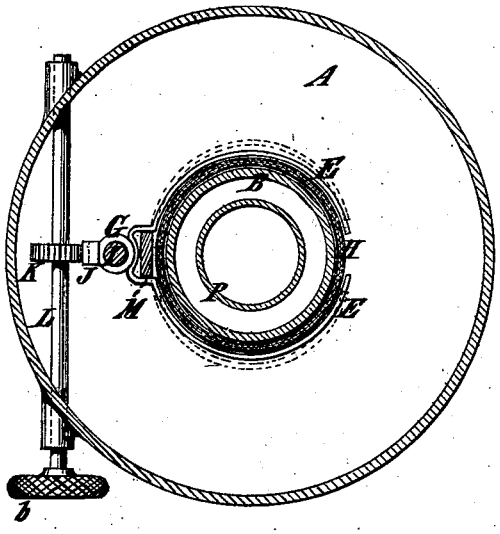


Fig.4.

Fig.3.

Fig.2.



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UNITED STATES PATENT OFFICE.

EBENEZER BLACKMAN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN OIL STOVES OR LAMPS.

Specification forming part of Letters Patent No. **203,994**, dated May 21, 1878; application filed December 24, 1877.

To all whom it may concern:

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

My invention relates in part to Letters Patent numbered 197,318, granted to me November 20, 1877. In the invention embraced in said Letters Patent I employed feeding mechanism comprising jaws adapted to embrace the wick, and pivoted together or to a common support, so that they may be opened to release, or closed to engage with, the wick, at pleasure.

In this part of my present invention I employ jaws, made partly or wholly of elastic material, adapted to be opened automatically by suitable devices to release them from the wick, and adapted, when free from such devices, of their own force to embrace the wick. I combine with these jaws a rack and a pinion mounted on a shaft extending outside the oil reservoir or fount, to provide for conveniently raising or lowering the wick.

In another part of my present invention I employ a tank or tanks in proximity to the sides or walls of an annular wick-tube, for containing water for cooling said wick-tube and for producing jets of steam, which are conducted, through the aid of deflectors, to the point of combustion to increase the draft and enhance the effectiveness of the stove or lamp.

In the accompanying drawing, Figure 1 is a central vertical section of an oil stove or lamp embodying my invention. Fig. 2 is a horizontal section thereof. Fig. 3 is a side view of a device for spreading or opening the aforesaid spring-jaws automatically; and Fig. 4 is a side view of mechanism, which I may employ in lieu of that shown in Figs. 1 and 2, for elevating and lowering said jaws.

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

The reservoir A of this stove or lamp may be of any suitable form, and is preferably supported by legs or a perforated base-piece, *a*, providing for the admission of air under it to the inside of an annular wick-tube, B C, the part B of which extends upward from the bottom of said reservoir, and the part C of which preferably extends upward from the cap-piece D of said reservoir. E designates two spring-jaws extending from a stock-piece, G, and made of semicircular strips of elastic material, adapted to embrace the wick H below the cap-piece D of the oil-reservoir, and preferably provided with teeth for engaging with the wick. The stock-piece G is supported upon a rod, I, extending vertically upward within the oil-reservoir, and is free to slide up and down thereon. On the said stock-piece is a toothed rack, J, which engages with a pinion, K, on a shaft, L, extending horizontally through the oil-reservoir, so that it may be operated by a hand piece or wheel, *b*, outside the same, and through this rack and pinion the stock-piece and the said jaws may be raised or lowered at pleasure.

M designates a rod or plate extending up vertically within the oil-reservoir, and against the edges of which portions of the spring-jaws E which are adjacent to the stock-piece G impinge. The upper portion of this rod or plate M is flaring, or provided at its edges with diverging inclines *c*. Hence, as the spring-jaws move up within the reservoir A, close to its cap-piece D, they are spread apart by means of these inclines *c c*, and, releasing their hold of the wick, permit it to be adjusted by hand independently of the said jaws, to enable the latter to engage with different portions thereof, or be removed and replaced by a new wick. If preferable, I may provide the stock-piece G with a nut or section of a nut, N, (see Fig. 4,) internally screw-threaded and engaging with a vertically-arranged screw-threaded shaft or rod, O, for raising and lowering the said spring-jaws; but I do not regard such nut and screw as forming part of my invention.

P designates a receptacle or tank, arranged inside the inner part B of the wick-tube of the stove or lamp, and formed, in the present instance, of a shell fitting at the bottom against the said part of wick-tube, so that the latter shall form one wall of the said receptacle or tank. In this receptacle or tank I intend to introduce water, for the purpose of keeping cool the portion of the wick-tube which is in proximity to the oil-reservoir, and for the additional purpose of enabling such heat as may

be transmitted to said part of the wick-tube from the point of combustion to generate steam, that may be directed to the point of combustion to increase the draft of air thereto and enhance the effectiveness of the stove or lamp.

Q designates an inverted conoidal deflector, for directing air and such steam as may be generated, in the manner just described, to the inner side of the flame issuing from the stove or lamp. Preferably this deflector is made hollow, and is supported by a tube, *j*, communicating with the interior of the receptacle or tank P, for when thus made and supported it may serve as a funnel through which water may be conveniently supplied to the said receptacle or tank P. If the tube *j* were made in sections, or the deflector Q secured to it by means of a screw-thread, convenient provision for adjusting the deflector would be afforded.

R designates a tank, fitting around the exterior of the part C of the wick-tube, and consisting, in the present instance, of a band or rim united to the cap-piece D, so that the latter shall form the bottom of said water-tank, and the said part C of the wick-tube be the inner wall of said tank. Water may be introduced into this tank R to keep the part C of the wick-tube and the adjacent portion of the cap-piece D cool, and obviate the transmission of heat therefrom to the contents of the reservoir A.

Such heat as may be transmitted to the water in the tank R may serve to generate steam therefrom, which, by passing the outer side of the flame issuing from the wick-tube, may induce the draft of air thereto, and enhance the effectiveness of the combustion. S designates a deflector, of conoidal form, for directing the draft of air and such steam as may be generated from the receptacle R against the outside of the flame issuing from the wick-tube. It is represented as fitting upon the cap-piece D of the reservoir outside the rim or band forming the exterior of the water-tank R; and hence the said rim or band serves the additional purpose of retaining said deflector S in position.

The portion of the said deflector above the water-tank R is perforated, to admit of the entrance of air within the deflector. I have shown above said deflector S an expanded combustion-chamber, S′, contracted at the upper portion to direct the products of combustion to a kettle or other utensil supported upon the frame T, with which I have provided my stove or lamp. If desirable, a water-tank, U, above the lower portion of the cap-piece D, may be employed, so as to the more perfectly preclude the heating of the contents of the reservoir A.

It is obvious that by my invention I provide a stove or lamp wherein the wick may conveniently be adjusted and replaced, and wherein a very effective combustion may be had, owing to the provision for generating steam and directing it to the point of combustion, so that it may increase the draft thereto.

It is obvious that instead of making the jaws of elastic material throughout their extent, they may be made with good results elastic only in proximity to the stock-piece from which they extend.

I am aware that a wick-adjuster composed of a sheet-metal elastic clamp formed in the same piece with a shank is old. Hence I do not claim such a wick-adjuster as my invention.

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

1. The combination, in a lamp or stove, of jaws made of or comprising elastic material, a stock-piece supporting said jaws, a rack mounted on such stock-piece, and a pinion engaging with said rack, and carried by a shaft extending outside the lamp or stove, where it may be conveniently operated, substantially as and for the purpose specified.

2. The combination, with wick-adjusting mechanism comprising jaws capable of being spread apart to disengage them from a wick, of a spreader, by which said jaws are automatically spread apart upon being raised to the proper position therefor, substantially as specified.

3. The combination, with spring-jaws adapted to embrace and engage with a wick, or be spread apart and disengaged therefrom, and means for elevating said jaws, of a rod provided in a suitable portion with diverging inclines, substantially as and for the purpose specified.

4. The combination, with an annular wick-tube in a stove or lamp, of a water-tank arranged on the inner side of the same, and a funnel for introducing water thereto, substantially as and for the purpose specified.

5. The combination, with an annular wick-tube in a stove or lamp, and a water-tank arranged upon the inner side thereof, of an inverted conoidal deflector, communicating with said water-tank and serving as a funnel for filling the same, substantially as specified.

6. The combination, in a stove or lamp, of an annular wick-tube, water-tanks arranged, respectively, inside and outside thereof, and deflectors extending over said water-tanks, substantially as and for the purpose specified.

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