E. J. M. BECKER.

KEROSENE BURNER.

No. 187,803. Patented Feb. 27, 1877.

Fig. 1.

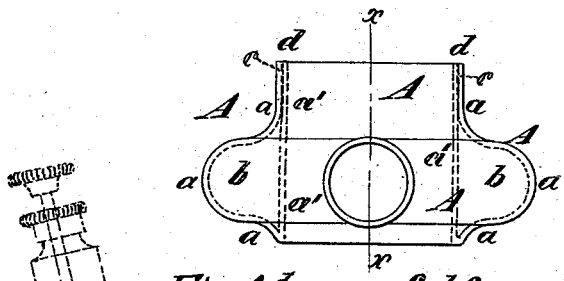


Fig. 2.

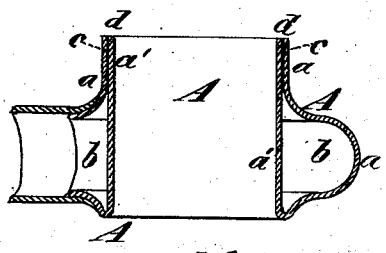


Fig. 4.

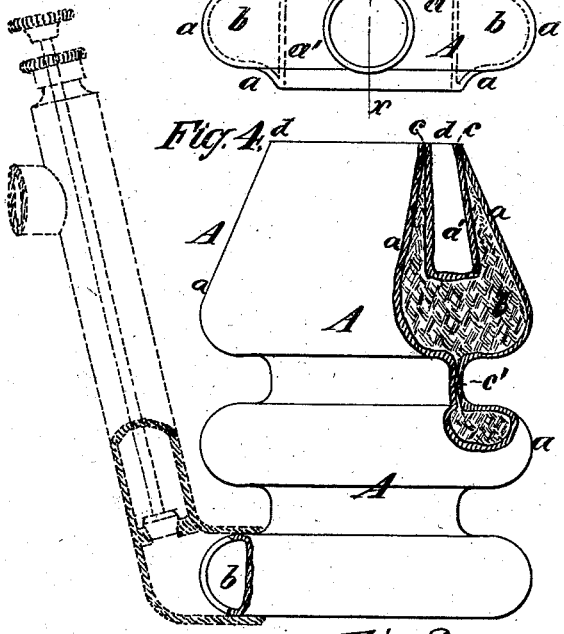


Fig. 5

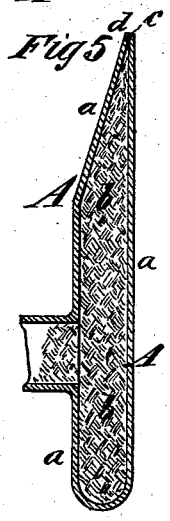


Fig. 6.

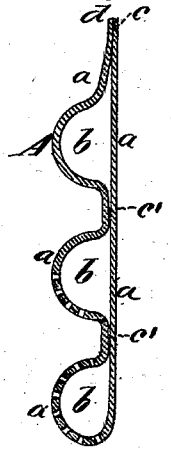


Fig. 3.

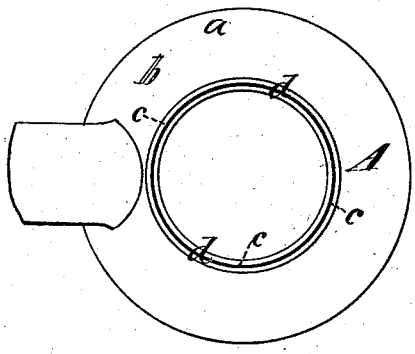


Fig. 7.

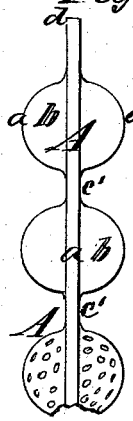


Fig. 8

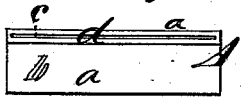
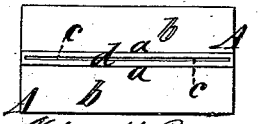


Fig. 9.



Witnesses
E. F. Sperry
Fred. Haynes

E. John M. Becker.
INVENTOR.

UNITED STATES PATENT OFFICE.

E. JOHN M. BECKER, OF NEW YORK, N. Y.

IMPROVEMENT IN KEROSENE-BURNERS.

Specification forming part of Letters Patent No. **187,803**, dated February 27, 1877; application filed July 10, 1876.

To all whom it may concern:

Be it known that I, E. JOHN M. BECKER, of the city, county, and State of New York, have invented a new and useful Improvement in Burners for Kerosene and other Fluids, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

The invention relates to that kind of burners in which the fluid is ignited directly without the intervention of a wick.

The invention has for its object the production of a burner which will operate by capillary attraction.

The invention consists in a novel construction of the burner, substantially as hereinafter described, whereby the desired result is obtained in a most efficient and advantageous manner.

In the drawing, Figure 1 represents a side elevation of my improved burner, in form of an Argand burner; Fig. 2, a vertical section of the same on the line *x x;* Fig. 3, a plan view of the burner. Fig. 4 is a partial broken side elevation of a modification of my improved burner, showing in dotted lines the supply-pipe and regulating-valve. Figs. 5, 6, and 7 represent burners of flat construction, embodying my invention. Figs. 8 and 9 are plan views of the modified burners represented in Figs. 6 and 7, respectively.

A is the burner, which, in Figs. 1, 2, 3, and 4, is of cylindrical form. *a* is the outer, and *a'* the inner, wall of the burner; both walls are united at their lower ends. Either one or both walls may be bilged out to form a receptacle or receptacles, *b*, for the fluid. The receptacles serve the purpose of providing the burning end or surface *d* of the burner with fluid, and for storing some of the fluid, that the flame be kept alive for a certain time, even should the fluid in the fount be used up. That part of the walls of the burner A terminating in the burning end *d* is contracted, so as to form a narrow capillary slit or passage, *c*. The capillary passage *c* is designed to attract the fluid to the burning end *d* of the burner A, and to allow the placing of the burner above the level of the fluid in the reservoir, for the purpose of preventing the overflow of the fluid through the capillary passage in the burning end.

For the purpose of keeping the flame of the burner from igniting the fluid in the supply-pipe, the chamber or receptacle *b* may be stuffed with incombustible material; or partitions of porous material or wire-gauze may be inserted either in the burner or supply-pipe. I may also employ a burner having its sides entirely parallel, for effecting capillary attraction to its burning end of the fluid in the supply-pipe.

Referring to the modification of the burner, as represented in Fig. 4 of the drawing, the number of chambers *b* is increased. Each chamber is connected with the next following by a passage or capillary passage, *c'*, and the fluid is introduced through the lowest chamber to the burning end. The supply-pipe may, however, be connected to any place on the burner between the burning end and the lowest chamber.

The supply of fluid to the burner may be regulated by means of an adjustable valve, so as to partly or entirely stop up the interior of the supply-pipe. The end of the valve-stem and the tube incasing it should preferably project upward above the fluid-level, to prevent unnecessary packing and overflow. The supply of fluid may also be regulated by compressing the passages *c'* between the chambers above the supply-pipe, or the capillary passage *c* of the burner.

The devices for regulating the supply of fluid, as above indicated, will be made subject of a separate patent.

The burner represented in Fig. 5 is of flat construction, and is furnished with but one large chamber and a short capillary passage, and is as well adaptable to a common globe-lamp as to a student-lamp.

The burners represented in Figs. 6 and 7 are also of flat construction, and have a number of chambers on their lower end, perforated to allow the fluid to enter between the walls, from whence it is carried to the burning end. The burners of this construction are preferably stuffed with non-combustible and porous material, and designed to be used in common globe-lamps.

I do not confine myself to any particular shape in which the burning end of the burner may be formed, nor to the construction, number, or shape of the chamber.

I claim as my invention—

The burner A, constructed to form the chamber *b*, which is provided at its upper end with the narrow capillary slit *c*, and at its lower part directly joined to the supply-pipe, to supply the flame with fuel without the use of a wick, substantially as specified.

E. JOHN M. BECKER.

Witnesses:

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