(No Model.)

C. TRENCH.

OIL BURNER.

No. 520,093. Patented May 22, 1894.

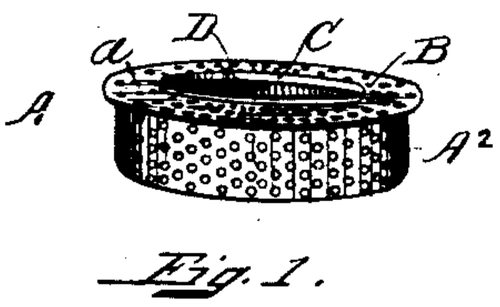

Fig. 1.

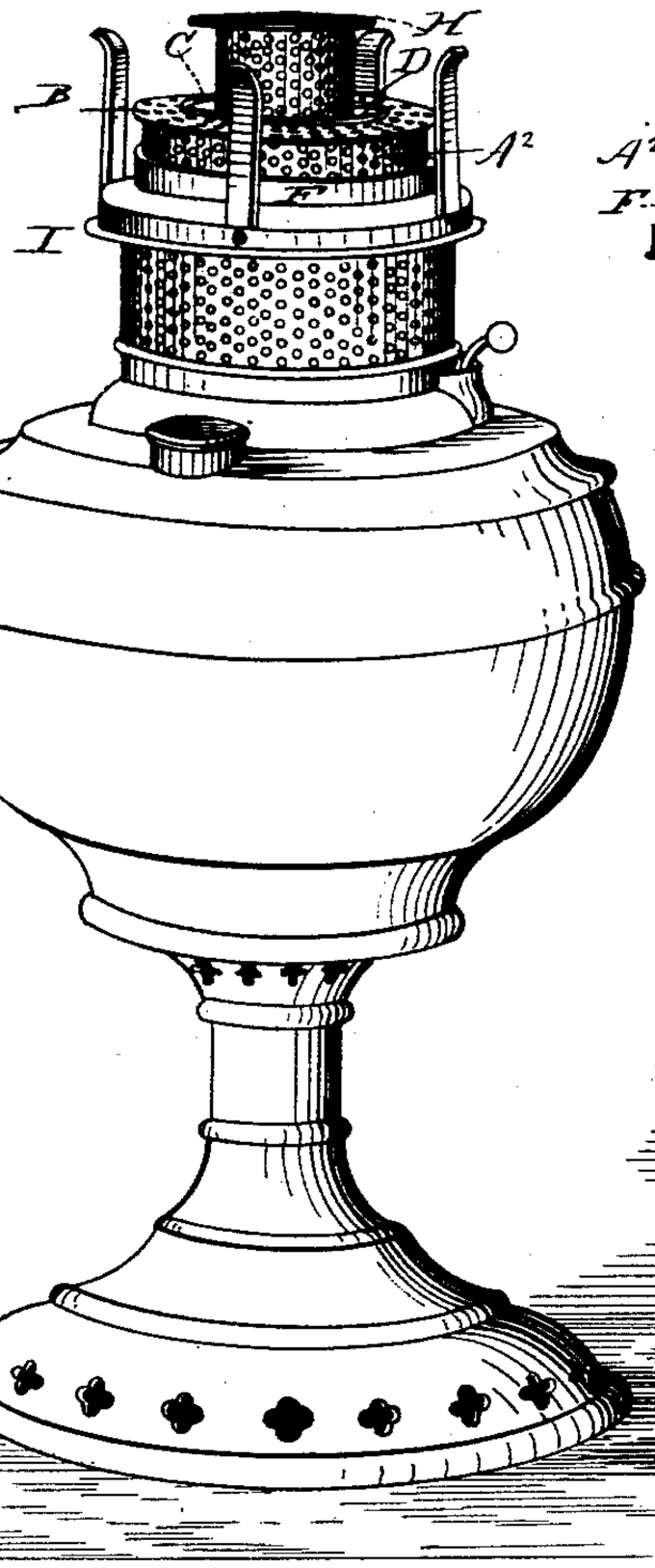

Fig. 6.

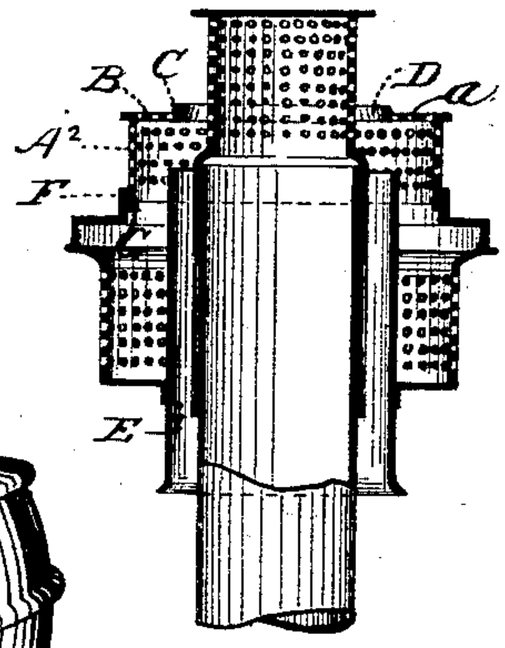

Fig. 4.

Fig. 2.

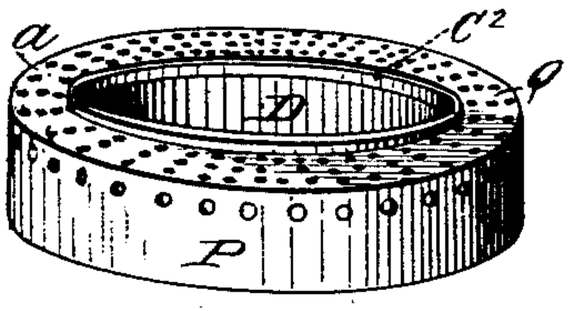

Fig. 3.

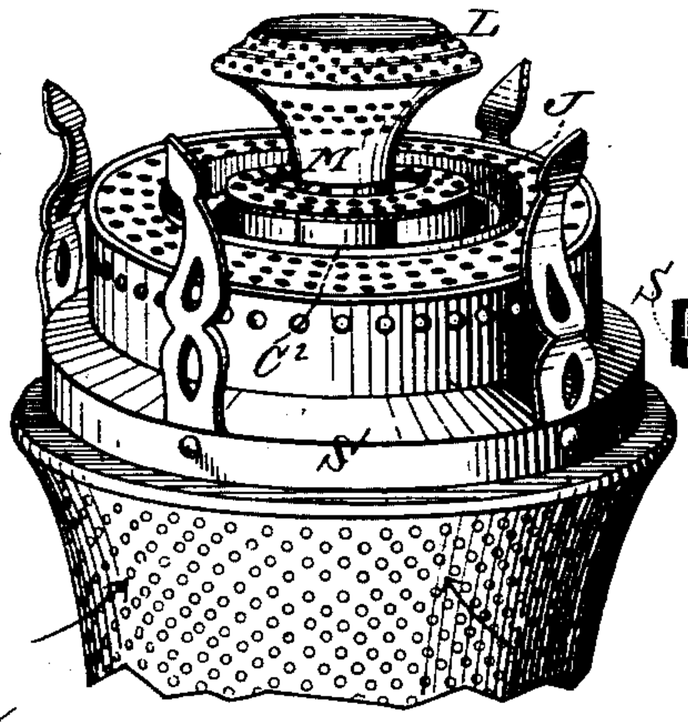

Fig. 7.

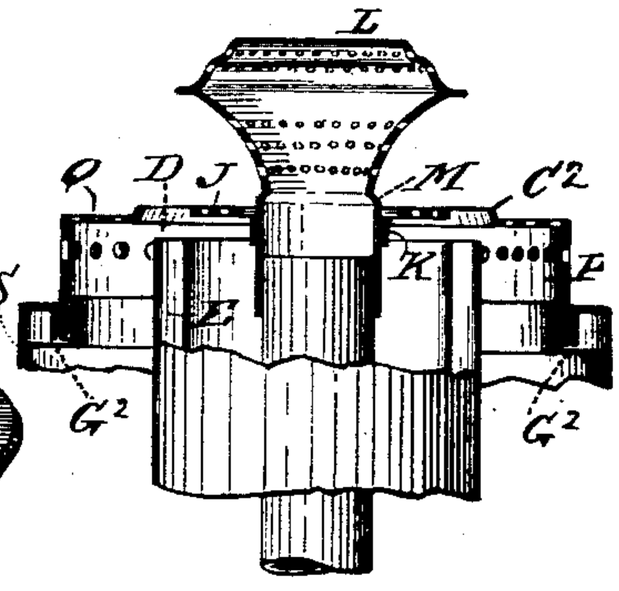

Fig. 5.

Witnesses
B. B. Clark.
H. E. Remick Jr.

Inventor.
Charles Trench,
per—H. E. Remick
his atty.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES TRENCH, OF BOSTON, MASSACHUSETTS.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 520,093, dated May 22, 1894.

Application filed November 5, 1892. Serial No. 451,049. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TRENCH, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Oil-Burners, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in oil-burners, and especially to matter embraced in Letters Patent of the United States issued to me December 31, 1889, No. 418,427.

The object of my present invention, is to secure a maximum of thermatic insulation of the main body of the flame from the wick tubes of central draft lamps employing "flame-spreaders," through the interposition of the horizontal foraminous barrier or separator J, in the one case, and in the other, to furnish an additional air supply to the outer envelope of flame above and outside of the wick tube through the adaptation of the foraminous circular air receiver A, as hereinafter more fully set forth.

In contradistinction to my former patent above alluded to, my present improvement relates, solely, to the method of constructing and adjusting movable circular and foraminous plates, which I term receivers and separators, to that class of central-draft lamps in which flame-spreaders are employed. The purpose of the receiver is to furnish facilities for additional drafts of air to the outer envelope of flame, while the separator interposes a foraminous shield between the wick tube and the "flame-spreader," through which the flame penetrates, and is slightly distended concentrically away from the base of said "spreader" furnishing through its foraminous construction means by which additional jets of air may be diverted within the concentric base of the flame, so as to feed the inner envelope of the same below the "spreader," and adjacent to the wick tube, where it is most efficient in supplying oxygen—as does the receiver—to the zone of partial combustion practically through the admission of a multitude of jets or currents of air just above the point of ignition, and below any "flame-spreader" with which my separator may be employed as an auxiliary, securing greater brilliancy and increased illuminating capacity; it also insures an unwavering flame, as the full draft of air from the circular passage surrounding the base or shank of the "spreader," is broken into jets before impact against the inner envelope of flame.

The utility of my improvement is exemplified in this specification and in the annexed drawings forming a part thereof.

Figure 1, denotes an outer foraminous construction for surrounding the circular wick below the spreader of a central-draft lamp, with a horizontal platform slightly projecting over a vertical wall. Fig. 2, illustrates the inner circular diaphragm, also foraminous, and below the flame-spreader when it is of the design exhibited in Fig. 7, Fig. 3, being a foraminous construction substantially corresponding to the device shown in Fig. 1, but used in connection with the design exhibited in Fig. 2. Fig. 4, denotes a vertical longitudinal section of my invention as applied to one form of a central-draft burner with flame-spreader, and exhibited in Fig. 6. Fig. 5, indicates in similar section the assembled devices shown in Figs. 2 and 3, when used in connection with a central-draft burner and flame-spreader seen in Fig. 7. Fig. 6, shows the application of my invention to the form of circular draft lamps known as "The Rochester," while Fig. 7, is known as the "B and H" burner involving similar principles on which my invention is organized. I adapt these examples of popular lamps to exhibit, in perspective, the applicability of my improved invention thereto.

Similar letters of reference indicate like parts in the various figures thereof, referring to which—

A, is the air receiver comprising the foraminous vertical circular wall A^2, upholding the horizontal perforated platform B, provided integrally with the raised annular rim C, and the circular opening D, surrounding the wick-tube E. The said rim C, imparts strength and prevents re-curvation of the construction, the whole being supported within and by the circular wall F. The burner is provided with the annular internal shoulder G, in a manner to permit the ready removal of said receiver when the wick requires trimming. The form of spreader to which the described construction is adapted is seen

at H, in connection with the burner I. I now refer to Figs. 2 and 3. Herein, the inner circular perforated diaphragm J, has a depending collar or flange K, adapted to support the part J, around the shank of and below the flame-spreader L, as in Fig. 5. The opening to admit the base M, of the flame-spreader will be observed at N, the converging projections O, insuring an insular space around the base of the spreader L, against which they rest when operatively placed as in Fig. 5.

P, designates the circular insulating wall perforated or otherwise, adapted, with its co-acting plate J, previously described, to that form of burner on which it is illustrated. Said wall upholds the foraminous top or platform Q, also provided with a raised strengthening rim C^2, similar to the platform B, and for a like purpose. This outer construction is removably supported upon the annular shoulder G^2, of that part of the burner seen at S, similar to the hereinbefore described parts of Fig. 6.

Having explained the construction of my improved invention, which I desire to secure by Letters Patent of the United States, I claim—

1. In a circular oil burner the receiver A, comprising a vertical wall P and a horizontal floor Q, each of foraminous construction, and the annular rim C forming the central aperture D, all arranged, constructed and adapted to operate in conjunction with any flame-spreader to separate the flame from the wick tube to admit additional air to the zone of partial combustion adjacent to the base of the flame or top of the wick tube, substantially in the manner and for the purpose set forth.

2. In a central draft lamp and a flame-spreader therewith employed, the air receiver A, foraminously constructed and adapted to supply air to the exterior envelope of the wick flame, in combination therewith, the foraminous separator J, interposed between the base of the flame and the flame-spreader, to separate the flame from the top of the wick tube and also adapted to supply air to the inner envelope of the flame; said receiver and the separator co-acting to supply and direct air to the zone of partial combustion to increase the luminosity of the flame, substantially as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 28th day of October, A. D. 1892.

CHARLES TRENCH.

Witnesses:
CHAS. N. TYLER,
R. M. SALTONSTALL.