

(No Model.)

C. H. PHELPS.

OIL BURNER.

No. 384,275.

Patented June 12, 1888.

Fig. 1.

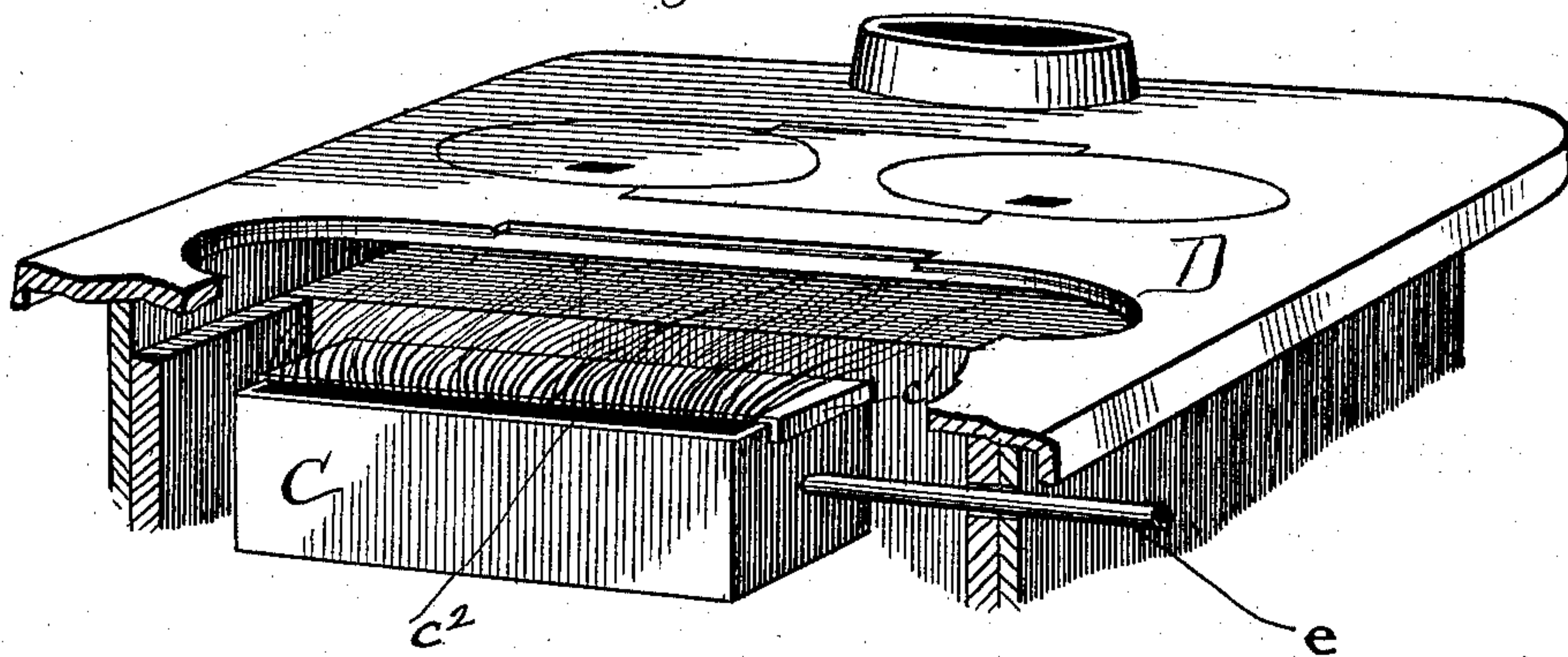


Fig. 2.

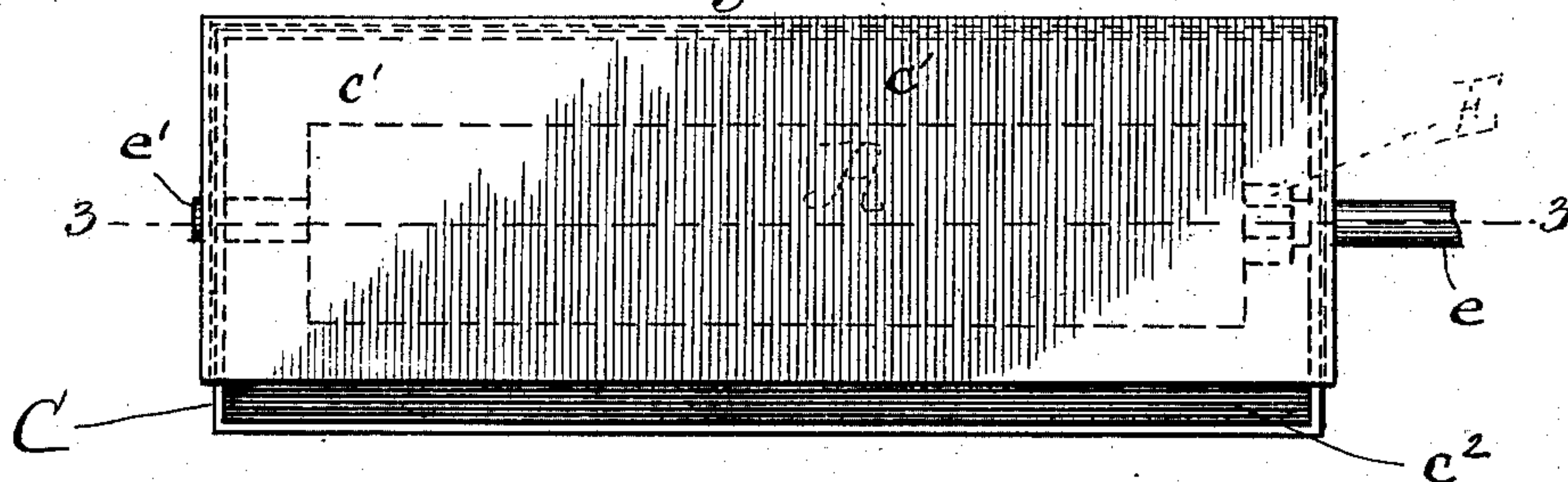


Fig. 3.

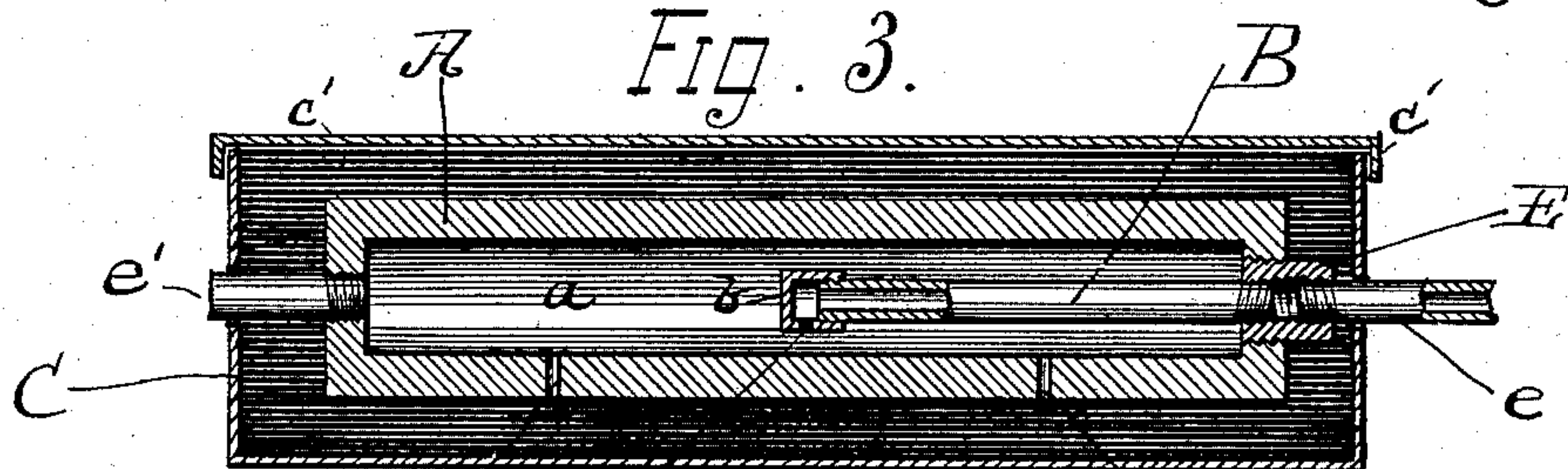
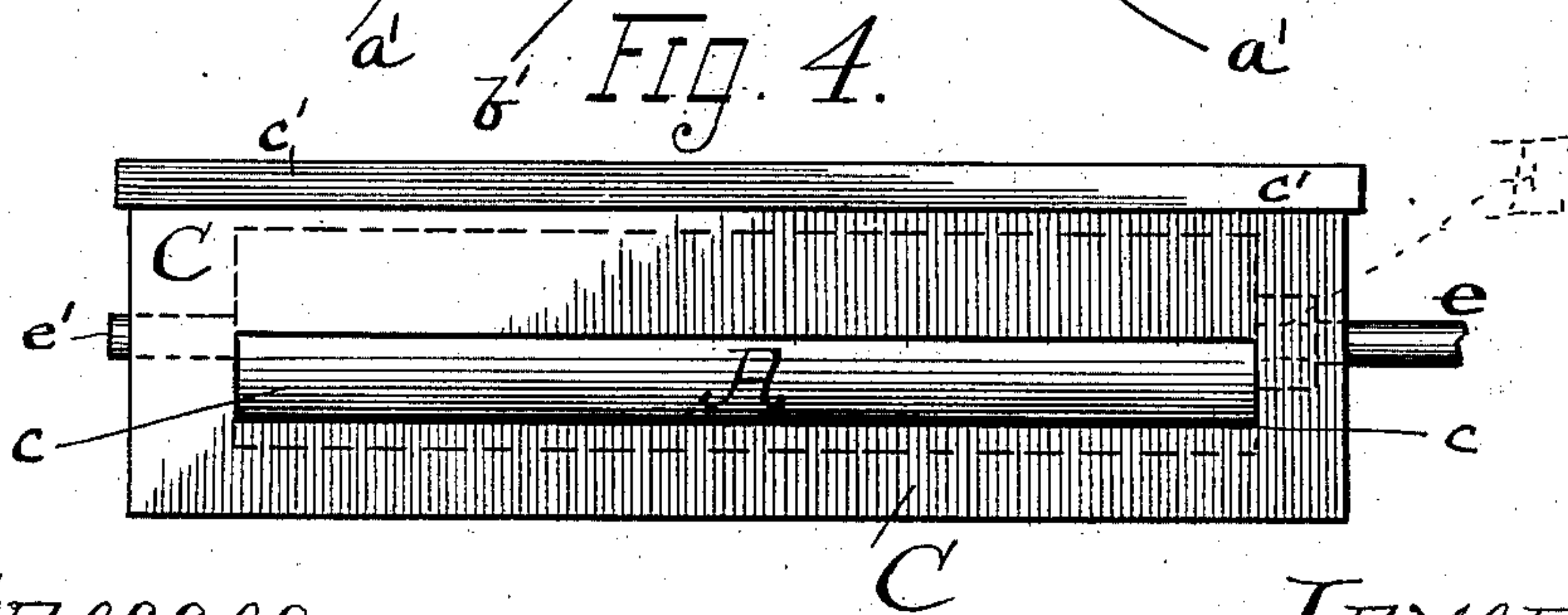


Fig. 4.



Witnesses,  
L. Mann.  
Alfred Norton.

Inventor.  
Charles H. Phelps



# UNITED STATES PATENT OFFICE.

CHARLES H. PHELPS, OF CHICAGO, ILLINOIS.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 384,275, dated June 12, 1888.

Application filed May 16, 1887. Serial No. 238,409. (No model.)

### *To all whom it may concern:*

Be it known that I, CHARLES H. PHELPS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Oil-Burners, of which the following is such a full, clear, and exact description of the invention as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate like parts wherever used.

In said drawings, Figure 1 illustrates a portion of an ordinary cooking-stove to which my newly-invented oil-burner has been attached. Fig. 2 is an enlarged plan view of the burner. Fig. 3 is a central vertical sectional view of the same, taken on line 3 3 of Fig. 2, and Fig. 4 is a rear view.

The invention is designed to obviate the many defects present in oil-burners now in use, at the same time to produce a simpler, cheaper, and more durable construction. Among the defects existing in present constructions the greatest is the coking or filling up of the retort, which finally clogs the openings therein and necessitates the repairing of the burner by submitting the retort to a high degree of heat for greater or less periods of time. Another serious objection which my invention is designed to overcome is the fact that heretofore it has been customary to conduct the oil to be burned directly into the retort in a cooled condition, which makes it more difficult to vaporize, and which invites a deposit of those particles or elements of the oil which are only combustible when submitted to great heat.

My invention consists, essentially, of an outer pipe or retort and an inner pipe provided with proper holes or openings and a draft or fire-box surrounding said retort.

In the drawings the retort is lettered A, and the inner pipe B, the fire-box C, and the stove D. The retort A is preferably made round, cast with hollow interior portion, *a*, and downwardly-projecting holes or openings *a'*.

The inner pipe, B, is provided on one end with a cap, *b*, in which is a hole or opening, *b'*, on the under side, while the other end of the pipe B is secured in a joint or plug, E, which

in turn is screwed into one end of the retort A. The oil-supply pipe *e* passes through the end of the fire-box C and is screwed into the plug E, thus securely sustaining one end of the retort in position within the fire-box, as clearly shown in Fig. 3. The pin *e'* performs a similar office at the other end of the retort. At the rear of the fire-box C an opening, *c*, is made to admit proper draft to the flame, and the sliding lid *c'* on the top of the box makes the exit-opening *c''*, as shown, which may be increased or diminished, as desired, by sliding said lid *c'* backward or forward.

The operation of the invention is as follows: The oil is admitted through the pipe *e* (being regulated by means of an ordinary plug valve or cock, not shown) and passes into the pipe B through the small opening *b'* into the space *a*, and from thence through the openings *a' a'* to the fire-box, where it is ignited. The draft admitted through the opening *c* causes the flames of the burning oil to find exit through the opening *c''*, passing around or encircling the periphery of the retort A, and causing said retort to become highly heated. In a short time the pipe B also becomes hot and heats the flowing oil, so that when the oil issues from the hole *b'* into the space *a* it is in a heated state and readily becomes vaporized and issues through the openings *a' a'* as a gas, which is there ignited, as just explained, and which continues to burn until the supply of oil is turned off.

I regard it as highly important that the holes or openings *b'* and *a' a'* should be made vertical and downwardly opening, as all matter in the oil which might have a tendency to stick and clog the holes if placed in any other position is easily forced out into the fire chamber or box C by the pressure or blast created by the burning oil.

I have shown the retort as being placed within the box C; but I do not wish to be limited to such construction, nor to the particular configuration of the retort or box, as it will be readily understood by those skilled in the art that other forms may be used without at all departing from the spirit or principle of my invention.

I have also shown my oil-burner as applied to the ordinary cooking-stove; but I do not wish to be limited to such use, as it may be

used with equal advantage in an open fire-space, furnace or the like. I prefer also to extend the pipe B to about the center of the retort A, as shown, and, if preferred, the cap  
5 b may be omitted, the end of the pipe B plugged, and the hole b' cut near the end of the pipe B, instead of in the cap b, as illustrated.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. The combination of the retort A, having openings a' a', located on the under side thereof, the supply-pipe B, secured therein and having a downwardly-discharge opening, b',

and the box C, having a lid, c', as described, 15 whereby draft-openings may be provided, substantially as specified.

2. The combination of the box C, having a lid, c', and draft-openings c c', with a retort, A, supported within said box by pins and hav- 20 ing on its under side the openings a' a', and a supply-pipe, B, secured within said retort and having a downwardly-discharge opening, b', at its inner end, substantially as specified.

CHARLES H. PHELPS.

Witnesses:

TAYLOR E. BROWN,  
E. H. POWERS.