

T. S. SPEAKMAN.
Lamp for Burning Oil.

No. 47,173.

Patented April 4, 1865.

Fig. 1

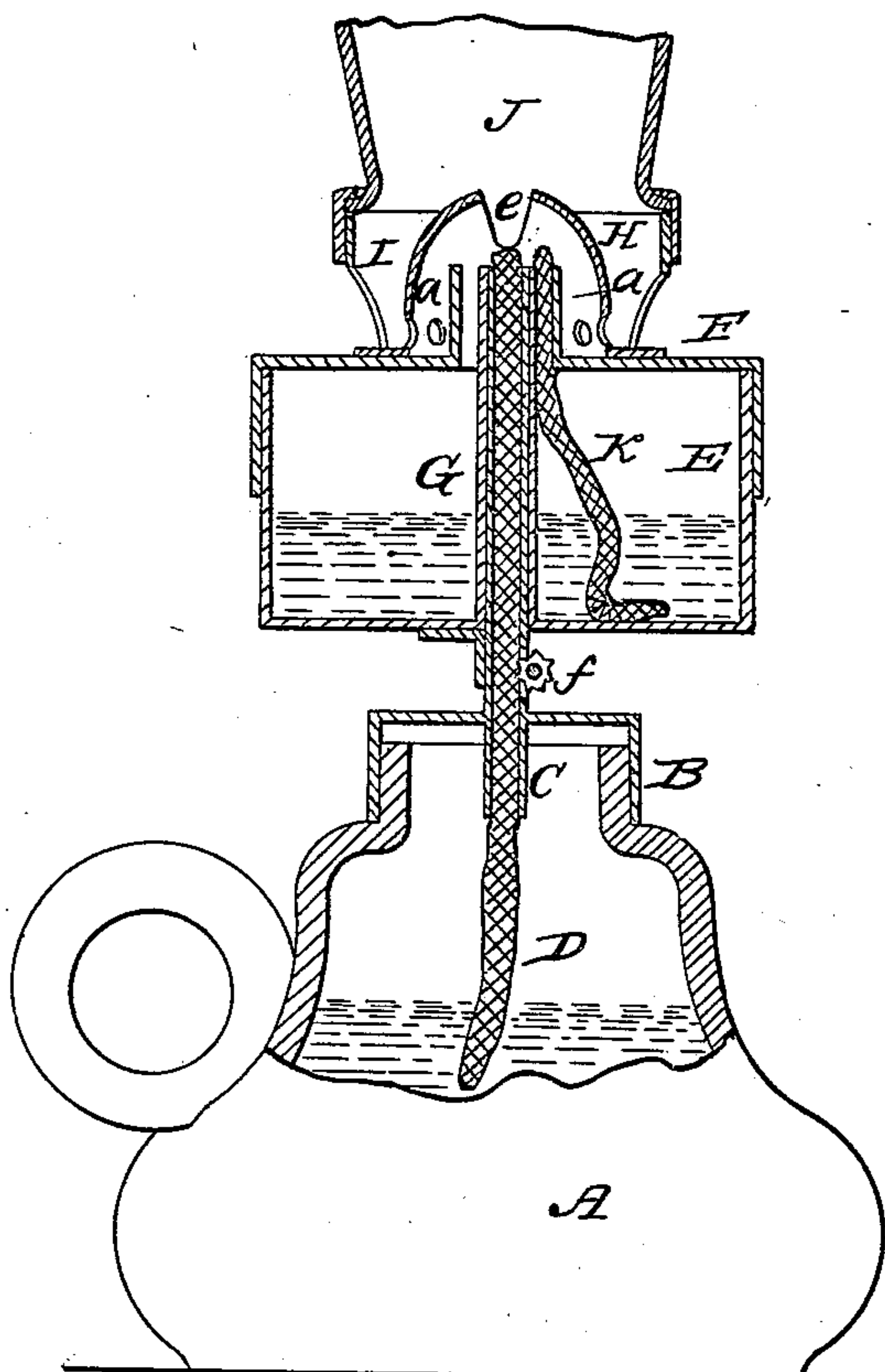


Fig. 3

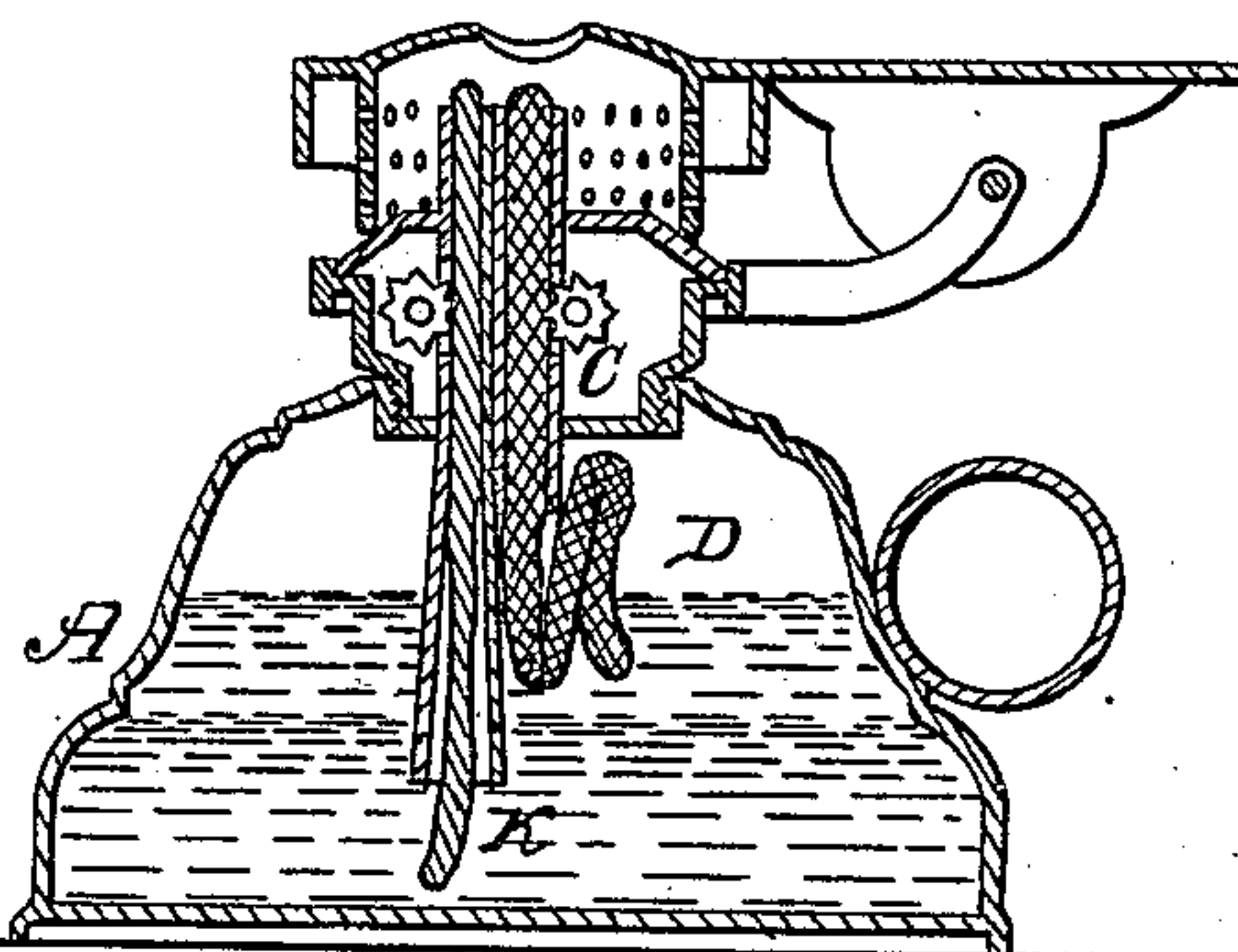


Fig. 2

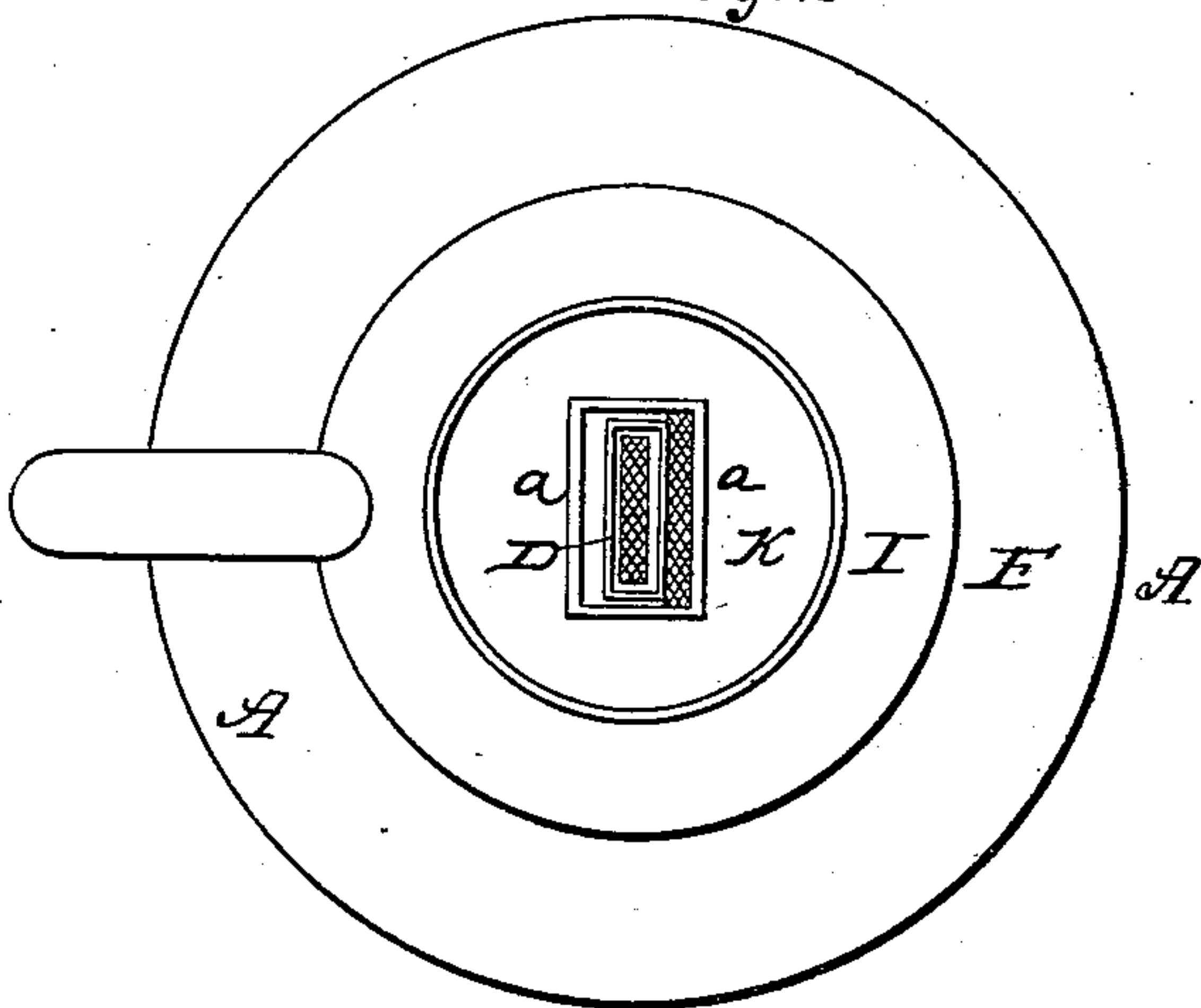
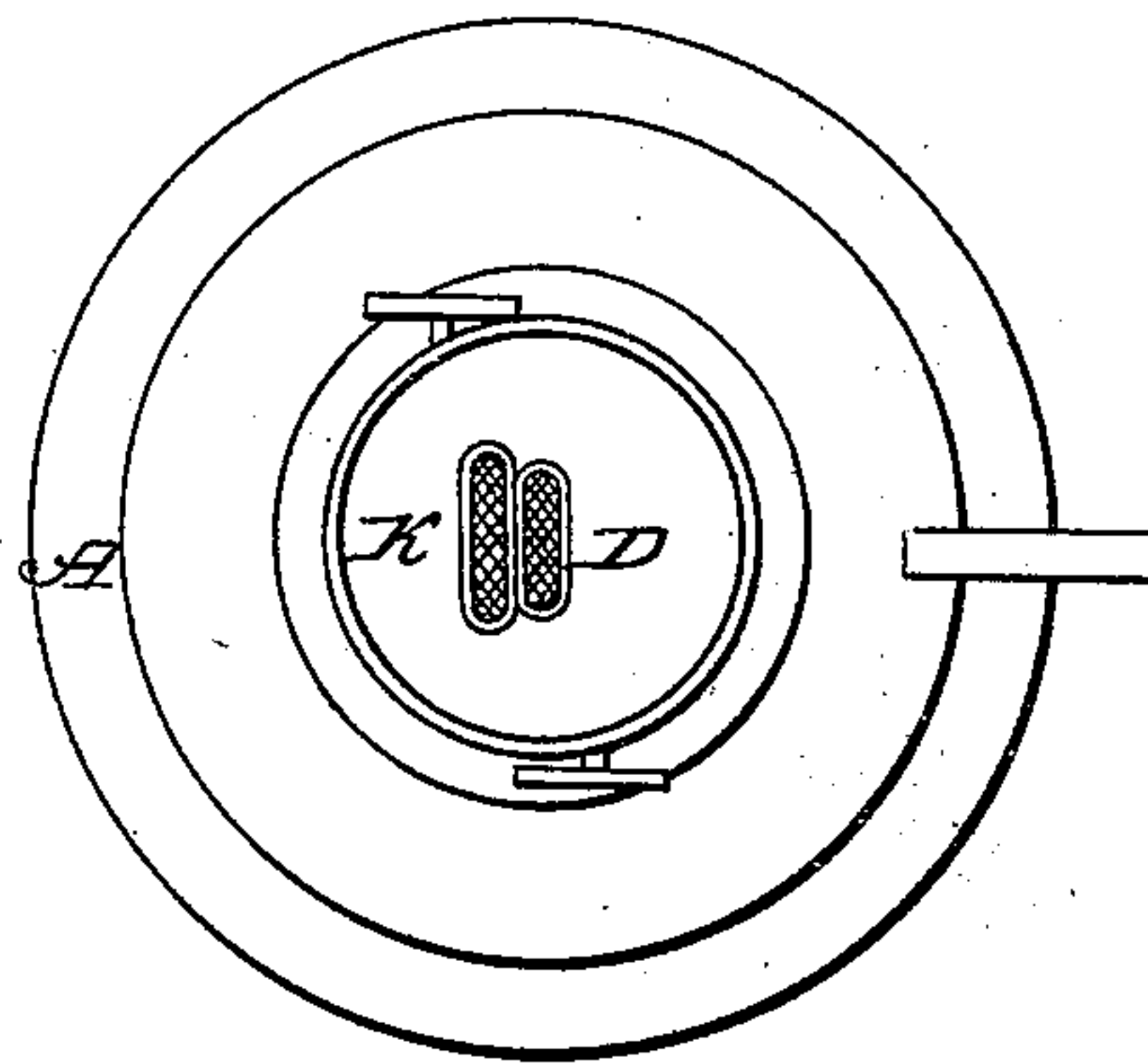


Fig. 4



Inventor

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UNITED STATES PATENT OFFICE.

THOMAS S. SPEAKMAN, OF CAMDEN, NEW JERSEY.

IMPROVED LAMP FOR BURNING OIL.

Specification forming part of Letters Patent No. 47,173, dated April 4, 1865.

To all whom it may concern:

Be it known that I, THOMAS S. SPEAKMAN, of Camden, New Jersey, have invented an Improvement in Illumination; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of the use, in connection with lamps for burning animal, vegetable, or mineral oils or fatty matters, of a wick or its equivalent, for conveying to the flame a supply of water to be converted into aqueous vapor and decomposed by the flame, so that the gases evolved from this decomposition of the aqueous vapor may consume the excess of carbon in and increase the brilliancy of the flame, all substantially as described herein-after.

In order to enable others to carry out my invention, I will now proceed to describe the manner in which, it may be put into practice.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of a coal-oil lamp designed for carrying out my invention; Fig. 2, a plan view of Fig. 1; Fig. 3, a vertical section of a modified lamp, and Fig. 4 a plan view of Fig. 3.

On reference to Figs. 1 and 2, A represents the reservoir of the lamp, which may be made of any form which the manufacturer may consider most tasty and convenient, and of any of the materials heretofore employed for the same purpose. To the mouth of the reservoir is adapted a metal cap, B, to which is secured a tube, C, of the usual form for receiving a flat wick, D. Above the reservoir A is another reservoir, E, containing a supply of water. From the bottom of this reservoir a tube, G, projects upward through the cap F, the tube being of proper dimensions for receiving the wick-tube, C. On the cap F of the reservoir E is a hollow projection, *a*, which is of the oblong form represented in Fig. 2, and which surrounds those portions of the wick-tube C and exterior tube, G, which project above the said cap F. Over this projection *a* and the tubes within the same is placed the usual perforated dome, H, having the ordinary elongated opening, *e*.

I is an annular strip of metal connected to the cap F of the reservoir E by such legs or projections as will not interfere with the access

of a plentiful supply of external air to the space about the dome and to the interior of the chimney.

A proper supply of any of the animal, vegetable, or mineral oils, or of fatty matter heretofore used for illuminating purposes is deposited in the reservoir A, and a wick, K, situated on one side of the tube G, is introduced into the space between the said tube and the inside of the hollow projection *a*, the lower end of the wick being immersed in the supply of water contained in the reservoir E.

On igniting the upper end of the wick D the flame will, in the first instance, assume the form and condition of that of an ordinary oil-lamp, but in a very short time the heat of the flame will decompose all or a portion of the water which rises to the upper end of the wick K. By this decomposition of the water oxygen and hydrogen gases are evolved, and these, uniting with the flame produced by the oil, will consume the excess of carbon, which in ordinary oil-lamps passes off in smoke. By this union of the gases evolved from the decomposed water with the flame the latter is rendered more brilliant and entirely free from the offensive vapors which emanate from the oil-lamps of ordinary construction, at the same time the gases evolved from the decomposed water adding to the illuminating quality of the flame, it will be evident that the consumption of the oil must be economized.

It will be seen that the usual serrated wheel, *f*, and spindle are used for adjusting the wick D. A similar device may also be applied to the adjustment of the wick K, for it should be understood that the best results can only be obtained by a proper adjustment of the wicks in relation to each other.

In the modification illustrated in Figs. 3 and 4 there is but one reservoir, A, which contains both the oil and the water, a supply of the former floating on the surface of the latter. The tube containing the wick K and the wick itself are carried downward into the supply of water, the wick D being so arranged as to be immersed in the oil only above the water. This modification of my invention, which will be readily understood by those familiar with the construction of lamps without further description, is applicable to small lamps in which the upper end of the wick K is but a short distance above the water.

Although I prefer the use of a chimney in connection with my improved lamp as a means of rendering the flame steady, the carbon is so effectually consumed that the flame will burn brilliantly and will be free from the usual smoke without the aid of a chimney.

It will be evident that the arrangement and construction of the two reservoirs may be modified without departing from the main features of my invention. A reservoir, for instance, may be separated by a partition into two compartments, one for containing the oil and the other for the water.

My invention, moreover, is not dependent upon a burner of any peculiar construction. Any of the burners heretofore used in connection with oil or lard lamps may be used with very slight alterations, providing means are adopted for conveying a continuous supply of water to the flame, to be there converted into aqueous vapor and decomposed, as described. Neither is my invention confined to lamps having flat wicks, as it can be readily applied to such as have circular wicks. It is also applicable to oil-lamps used for generating heat for culinary and other purposes. Any of the wicks or appliances heretofore used for con-

veying a supply of fluid to the flame may be used in connection with the oil or water reservoirs.

My invention is also applicable to flames produced by illuminating-gas containing an excessive amount of carbon, such as the gas produced by the consumption of resin or the residuum of coal-oil after distillation.

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

1. The use, in combination with lamps for burning animal, vegetable, or mineral oils or fatty matters, of a wick, or its equivalent, for conveying to the flame a supply of water, substantially as and for the purpose herein set forth.

2. The use of the heat of the flame for producing the aqueous vapor which is conveyed to the flame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS S. SPEAKMAN.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.