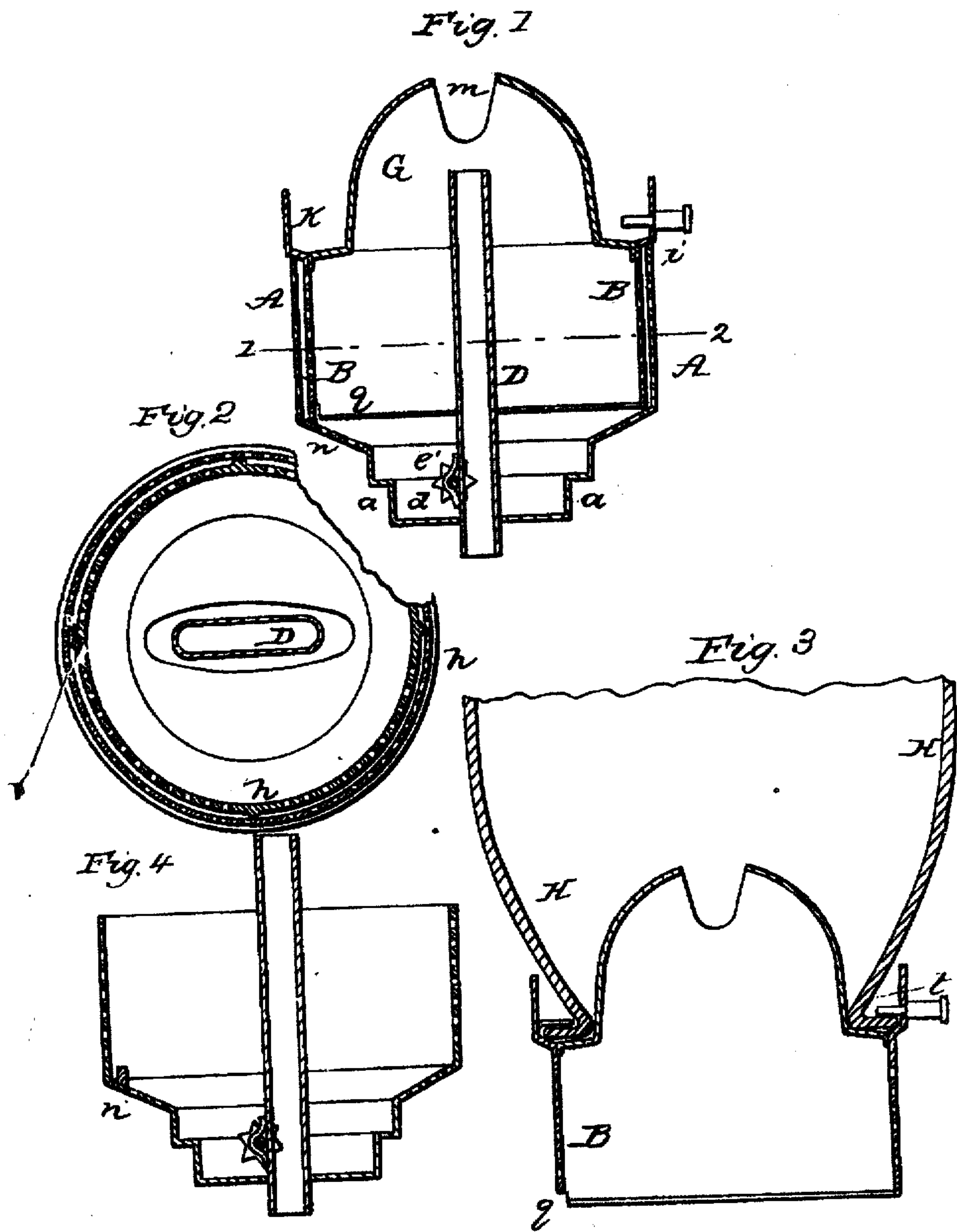


J. T. VANKIRK.
Coal Oil Burner for Lamps.

No. 37,930.

Patented March 17, 1863.



Witnesses
H. Albert Steel.
C. Howson.

Inventor
Henry Howson
Atty. J. T. Van Kirk

UNITED STATES PATENT OFFICE.

JOSEPH T. VANKIRK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COAL-OIL BURNERS FOR LAMPS.

Specification forming part of Letters Patent No. 37,930, dated March 17, 1863.

To all whom it may concern:

Be it known that I, J. T. VANKIRK, of Philadelphia, Pennsylvania, have invented certain Improvements in Burners for Coal-Oil Lamps; 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, first, in a case to which a dome or deflector is permanently attached, and which is combined with and rendered detachable from another case substantially in the manner described hereinafter, so as to allow the wick to be readily trimmed and lighted, and so that much of the danger of breaking the glass chimneys when wicks of ordinary lamps have to be trimmed or lighted may be avoided.

My invention is for the causing of an annular space intervening between two perforated cases, through which the air passes to the flame, as described hereinafter, the object of this portion of my invention being to increase the brilliancy and steadiness of the flame.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of my improved burner for coal-oil lamps; Fig. 2, a sectional plan on the line 1 2 of the burner inverted; Figs. 3 and 4, sectional views showing the two parts of the burner detached from each other.

Similar letters refer to similar parts throughout the several views.

My improved burner consists of two parts detachable from each other, the most prominent feature of one part being the outer cylindrical case, A, and that of the other part the inner cylindrical case, B. The case A has at its lower end the usual annular projection, *a*, to be screwed into the cap of the fountain or reservoir containing the supply of coal oil, and to the closed end of this projection *a* is secured the usual flat-wick tube, D, through openings in which project the teeth of cog-wheels *a* on a spindle, so that by turning the latter the wick may be raised or lowered at pleasure. Near the upper edge of the inner case, B, is formed a shoulder, *i*, which rests on the upper

edge of the outer case, A, and above this shoulder is the vertical flange *k*, which may be ornamented in the usual manner. To the inside and near the other edge of the inner case, B, is secured the dome or deflector G, which has at the top the usual elongated opening, *m*, situated directly above the wick-tube D. Both inner and outer cases are perforated with a number of small holes, and an annular space intervenes between the two cases, as seen in Figs. 1 and 2, there being on the case B any convenient number of vertical ribs *h*, Fig. 2, bearing against the outer case and maintaining one case in a proper concentric position in respect to the other. In the lower edge of the case B is cut a notch, *q*, Fig. 3, and to the outer case, A, is secured a pin or projection, *n*, adapted to the said notch, the latter being so situated in respect to the wick-tube and projection *n*, so situated in respect to the elongated opening in the dome, that on placing the case A within the case B, and then turning the latter until its notch *q* coincides with the projection, the elongated opening of the dome must be in its proper position in respect to the wick tube. The glass chimney H is confined to the burner by lips bent down from and forming part of the vertical flange *k* and by the spring pin *t*, (for which Letters Patent were granted to me on the 17th of July, 1860,) after pulling back which pin clear of the flange of the chimney the latter can be removed from the burner.

Having now described the construction of my improved burner for coal-oil lamps, I will proceed to explain the advantages which it possesses over ordinary burners.

It will be seen that the dome or deflector G is permanently secured to and forms an integral part of the inner case, B, and that the whole, together with the chimney, is detachable from the outer case, A. When the wick of the lamp has to be trimmed, which is a matter of frequent occurrence, the case B, with the chimney attached, is elevated from and clear of the case A when the latter is left in the condition seen in Fig. 4, the wick-tube projecting above the edge of the case, and being consequently accessible to any suitable instrument for trimming the wick. In ordinary coal-oil lamps both the chimney and dome must be removed before the wick can be properly trimmed, and

by this removal not only is the danger of breaking the chimney incurred, (and the breakage of chimneys may be attributed more to this necessity of detaching them entirely from the burners than to any other cause,) but the removing and readjusting of both chimney and dome must of necessity cause considerable trouble and delay.

There can be little or no danger of breaking the chimney in removing it with the dome and case B of my improved burner, as the case forms a secure base or foundation, which, deposited on a table, serves to maintain the chimney in a vertical position, ready for application with the case B to the outer case, A, after the wick has been properly trimmed.

In lighting the wicks of ordinary coal-oil lamps it is necessary to remove the chimney and to hold the lighted match or taper in an inverted or angular position, owing to the presence of the dome, before the wick can be lighted—a troublesome operation under any circumstances. To light the wick of my improved burner, however, all that is necessary is to remove the case B with its dome and chimney, no preliminary unfastening being required, when the end of the wick is at once exposed in a prominent position for the application of the lighted match or taper. After the ignition of the wick, the case B, with its chimney, dome, &c., can be at once, and without resorting to any elaborate adjustment, connected to the case A, the dome assuming its proper position with respect to the wick-tube.

I have found by repeated tests that a more brilliant and steady flame is the result of causing the air to pass through two perforated cases and through the annular space between

the cases, than when it has to pass through one perforated case only to the flame.

The perforations of the two cases A and B may be round, elongated, or of any form and dimension desired.

Although I prefer the arrangement shown in the drawings of the inner and outer case, it will be evident that the case which forms a part of the dome may fit over the case which is screwed to the cap of the reservoir.

It is not essential that the two cases A and B should be cylindrical. Both may be tapering, or partly tapering and partly cylindrical, as the judgment of the manufacturer may deem most appropriate.

Although I prefer the perforating of the outer cases, as described, they may be made perfectly plain at the sides, providing an ample supply of air can be admitted through openings *x x*, near the lower end of the case A.

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

1. The case B, with the dome or deflector G connected permanently to the same, when combined with and rendered detachable from the case A, substantially as and for the purpose herein set forth.

2. So constructing and arranging the perforated cases A and B that an annular space shall intervene between the two, for the purpose specified.

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

J. T. VANKIRK.

Witnesses:

HENRY HOWSON,
JOHN WHITE.