

C. C. BRIAND.
OIL BURNER FOR LAMPS.
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1,008,691.

Patented Nov. 14, 1911.

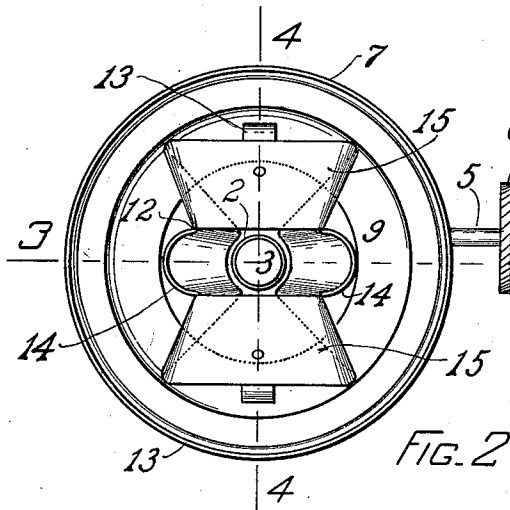


FIG. 2

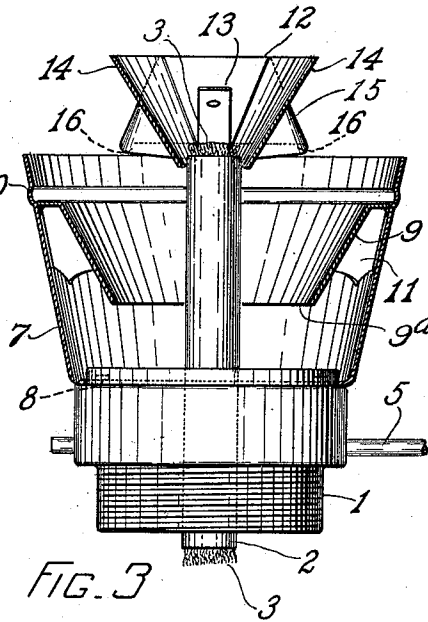


FIG. 3

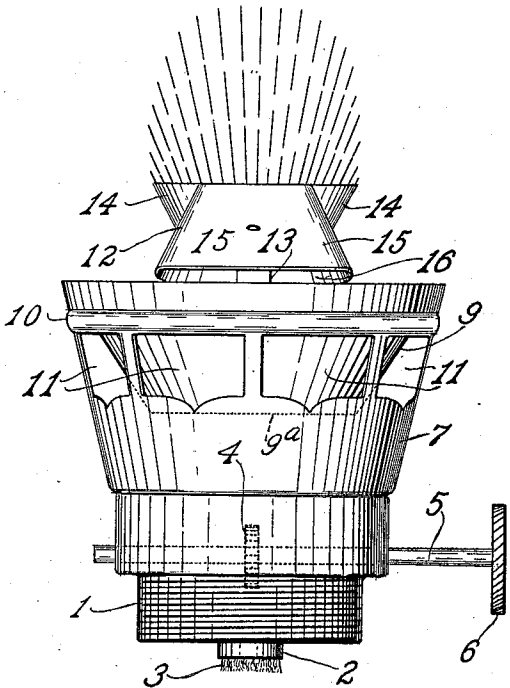


FIG. 1

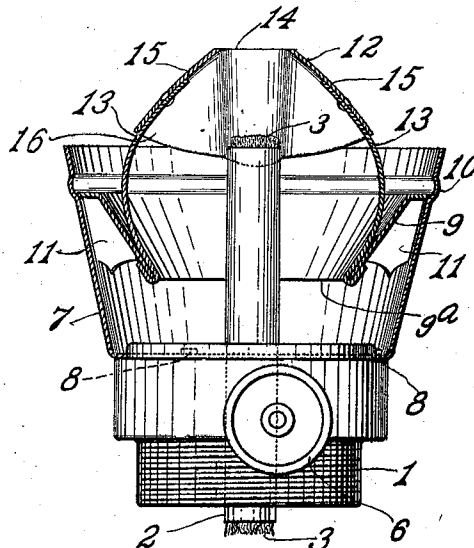


FIG. 4

WITNESSES
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UNITED STATES PATENT OFFICE.

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OIL-BURNER FOR LAMPS.

1,008,691.

Specification of Letters Patent. Patented Nov. 14, 1911.

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To all whom it may concern:

Be it known that I, CHARLES C. BRIAND, a citizen of the United States, and a resident of Revere, county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Oil-Burners for Lamps, of which the following is a specification, reference being had to the drawings accompanying the same and forming a part thereof.

My invention relates to an oil burner for lamps of substantially the form and arrangement of parts as shown in the drawings illustrating same and accompanying this specification, and is designed to burn for a long time without attention and without a chimney or similar protecting device.

In the drawings accompanying this specification—Figure 1 represents a side elevation of my oil burner and the shape of the flame of same when burning; Fig. 2 is a plan view of my oil burner; Fig. 3 is a sectional elevation through line 3—3 Fig. 2; and Fig. 4 is a partial sectional elevation taken on line 4—4, Fig. 2.

In the drawings, 1 illustrates the lower screw threaded portion of the burner which is designed to screw into the top of a lamp; and 2 the wick tube secured in the center of the portion 1; 3 illustrates a section of the wick in said tube. A star pointed wheel 4 is secured upon the spindle 5 and is designed to raise and lower the wick; 6 is a small knurled wheel secured to the spindle 5, its purpose being to enable the same to be more easily turned. The outer casing 7 of the top of the burner is made in the form of an inverted truncated cone, its lower portion having small openings in the inturned lower end designed to pass over projections 8 on the body part 1, and upon being revolved to pass under the inturned edges to secure the burner part 7 to the body part 1. The part 7 of the burner has secured to it near its upper edge the part 9, which part 9 is made of sheet metal in the form of a hollow inverted truncated cone, its upper edge being out-turned and spun into the ring portion 10 to firmly hold it in place. The lower end 9^a extends downwardly slightly below the lowest point in the air openings 11, 11, etc. The portion 12 is made in a form to protect the upper end of the wick from side drafts, and to furnish air spaces to provide

an upward current of air to mix with the gas formed by the oil in the lamp so as to cause the lamp to burn with an incandescent or white flame.

The part 12 is provided with downwardly deflecting shields 15, 15, provided with air spaces 16, 16, which communicate with the opening through which the upper end of the tube 2 projects. The shields 15, 15, are so disposed as to protect the upper end of the wick and at the same time provide an air space between said shields and the wick tube 3. The part 12 is also formed with the two outward and upwardly flaring portions 14, 14, designed to provide an air space in which a vacuum is created by the heat of the flame which operates to spread the flame outwardly in fan-shape, as illustrated in Fig. 1, rather than project it upwardly in a round pencil form as is ordinarily formed by the flame of a round wick. The outward and upwardly flaring portions 14 and the shields 15, 15, are especially designed to form the air ducts 16, 16 for the purpose of causing the flame to spread in fan-shape.

The object of the inverted truncated hollow cone shaped portion 9 is to provide an ingress for the air to pass in through the air inlets 11 down, and then upwardly around the tube 3, and be drawn into the air spaces 16, 16, thence to the flame of the wick; although the inverted cone 9 permits an ingress of air to the wick to support combustion it protects the flame from a sudden rush of air inwardly through the inlets 11 and upwardly to cause the flame to flare, the action apparently being that when a current of air is projected into the inlets it divides or follows around the curved surface of the inverted cone 9 and outwardly at the inlets 11 on the opposite side without causing a strong upward current through the inside of the inverted cone 9 to affect the flame. Furthermore, the form of the shields 15, 15, is such that a current of air on them does not affect the flame; and furthermore, the walls of the shields 15 extend downwardly at their lower ends to a point where they are partially protected by the inverted cone shaped parts 7 and 9 against a sudden inflow of air.

By providing a small round wick, combustion takes place slowly, so that a filling of oil in an ordinary lamp will cause the

flame to burn steadily for a long time; in fact, for several days without attention, this feature being particularly desired in lamps for use on railways, such as the lamps on switches, semaphores and the like, where located at isolated points hard to reach every day. Furthermore, the form of the burner adjacent the wick, such as the outwardly flaring portions 14, 14, causes a vacuum and air currents induced thereby which produces a flat fan-shaped flame from a round wick, which of course produces a greater number of light rays than would be possible to produce by a round flame consuming the same amount of oil and producing the same number of light units.

The portion 12 having the shields 15, 15, is supported in place by the downwardly projecting wings 13, 13, which are either made integral with the body part 12 or of pieces secured to it at their upper ends, their lower ends being riveted or otherwise secured to the inverted cone-shaped portion 9.

I do not wish to limit my invention to the exact form of the air inlets 11, the portions 7 and 9, or the portion 12, nor the relative proportions of said parts to each other, as the form and dimensions thereof may be varied without departing from the spirit of my invention.

What I claim is—

1. In a burner, the combination with a round wick tube, of oppositely disposed shields extending above the end of said wick tube, arranged to provide air spaces with openings to said air spaces above the end of the wick tube; oppositely disposed flaring portions flaring upwardly and outwardly, arranged to form flame spreaders; and an inverted truncated cone surrounding the lower end of said shields.

2. In a burner, a threaded portion provided with a wick tube; a hollow portion in the form of an inverted truncated cone connected to said threaded portion; air inlets near the top of said hollow portion; a second hollow portion within said first named hollow portion, formed in the shape of an inverted truncated cone having its lower end extending slightly below the air inlets; and oppositely disposed shields and flaring por-

tions, both being arranged to surround the upper end of the wick tube.

3. In a burner, in combination a hollow inverted cone; air inlets on the periphery of said cone near the top; an inner inverted truncated cone, its top end secured to the top end of the first mentioned cone, its lower end extending below said air inlets; a wick tube extending upwardly in said last mentioned cone; and oppositely disposed shields surrounding the upper end of the wick tube, arranged to form oppositely disposed air ducts, and oppositely disposed flaring portions which flare upwardly and outwardly.

4. In a burner a threaded portion provided with a round wick tube; a portion in the form of an inverted truncated cone detachably secured to the threaded portion; air inlets near the top of said truncated cone; a second truncated cone within said first named cone having its lower end extending slightly below the air inlets; and shields and flaring portions arranged to surround the upper end of the round wick tube.

5. In a burner, in combination a hollow portion in the form of an inverted cone, having air inlets near the top thereof around its periphery; an inner inverted truncated cone secured at its top end to the top end of the first-mentioned cone, and arranged to form an air space between said cones, the lower end of the inner cone extending below the air inlets in the outer cone; a wick tube extending upwardly in said inner cone; oppositely disposed shields extending above the end of said wick tube and forming air ducts therein; and oppositely disposed upwardly and outwardly flaring portions extending above the end of said wick tube, the shield and the flaring portions surrounding said wick tube with an annular air space between them and the wick tube.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses, this the 12th day of October, A. D. 1907.

CHARLES C. BRIAND.

Witnesses:

H. M. KELSO,
R. P. ELLIOTT.