

(No Model.)

J. H. SIMPSON.
SAFETY LAMP ATTACHMENT.

No. 433,911.

Patented Aug. 5, 1890.

Fig. 1.

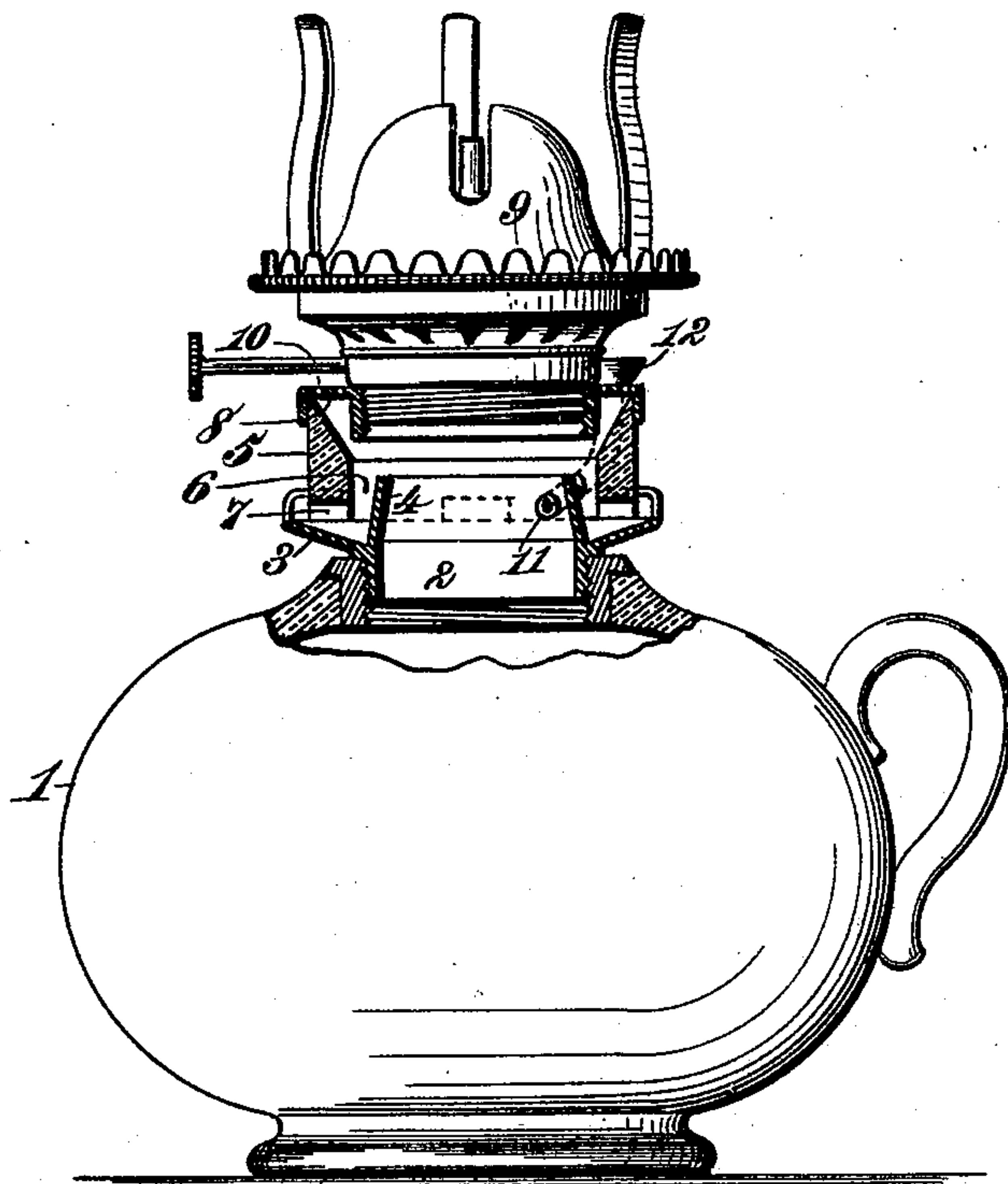
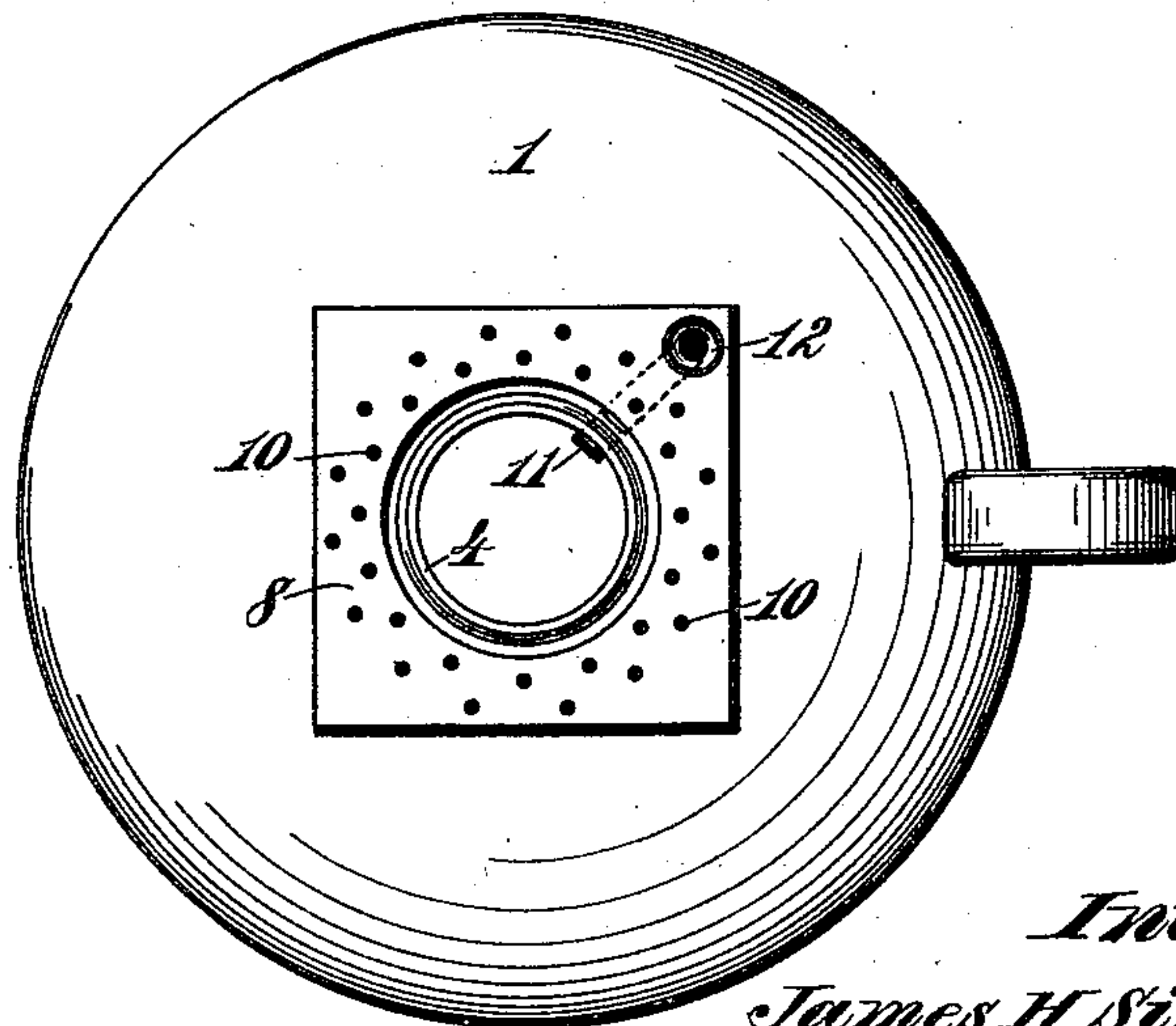


Fig. 2.



Witnesses.

Robert Emmett,

J. A. Rutherford,

Inventor.

James H. Simpson.

By

James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

JAMES H. SIMPSON, OF RICHMOND, VIRGINIA, ASSIGNOR OF FOUR-FIFTHS
TO JULIAN BINFORD AND THOMAS S. WHEELWRIGHT, BOTH OF SAME
PLACE.

SAFETY-LAMP ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 433,911, dated August 5, 1890.

Application filed May 3, 1890. Serial No. 350,473. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. SIMPSON, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Non-Explosive Safety-Lamps, of which the following is a specification.

The object of my invention is to provide a non-explosive safety-lamp attachment that will prevent the generation or accumulation in the lamp of explosive vapors and convey them upward to escape or be consumed in the flame; and it is also the purpose of my invention to provide the lamp with means for filling it without removing the burner.

To these ends the invention consists in the features of construction and novel combinations of parts in a non-explosive safety-lamp as hereinafter described and claimed.

In the annexed drawings, Figure 1 is a vertical section of a lamp embodying my improvements. Fig. 2 is a plan of the same.

Referring to the drawings, the numeral 1 designates an oil-reservoir of any suitable form and construction. In the neck of this oil-reservoir is screwed an annular ring 2, on the lower side of a base-plate or tip 3, which is provided on its upper side with a slightly-conical annular wall 4, that is preferably integral with said plate. To the upper side of the base-plate 3, surrounding the inner annular wall 4, at a slight distance therefrom, is secured a tubular pillar 5, which rises above said inner wall and forms therewith an annular passage 6, immediately above the base-plate. The lower part of the pillar 5 is provided on all sides with a series of openings 7, for the admission of air to the annular passage 6 to produce a draft to convey the explosive gases and vapors upward and prevent their accumulation in the oil-reservoir and connected parts of the lamp. In its upper end the interior of the tubular pillar 5 is curved or beveled outward, as shown, beneath an upper cap-plate 8, that is secured on the upper end of said pillar. The center of this cap-plate 8 is provided with a screw-threaded opening to receive the burner 9, and on the outside of the burner the said cap-plate is provided with an annular series of

openings 10, that are located above the outwardly beveled or curved interior portion of the pillar 5, to afford exit for the air which enters the lower openings 7 and passes upward through the annular air-passage 6, as before mentioned. The current of air thus produced at the base of the burner serves to keep the parts cool and prevent overheating, while the draft at the same time conveys away any vapors or gases generated in the oil-reservoir, and renders the lamp non-explosive, because any vapors not passing to the flame will find a ready exit through the air-openings 10 surrounding the base of the burner.

The upper and lower ends of the tubular pillar 5 may be flanged for attachment of the base-plate 3 and cap-plate 8, or said parts can be connected in any suitable and well-known manner.

In order to permit the lamp to be filled without removing the burner 9, a filling-tube 11, having an outer funnel-shaped end 12, is extended through the cap-plate 8, pillar 5, and inner annular wall 4, and opens on the inner side of said wall above the oil-reservoir.

Besides forming an annular air-passage with the tubular pillar 5, the inner annular wall 4 serves as a guard to prevent the oil from swashing out when the lamp is moved about. It also guides past the air-inlets 7 any gas or vapor from the oil, and causes such vapors to pass upward, where they will escape through the air-exits 10 or be consumed by the flame.

The pillar 5 is made of glass, in that the conductivity of such material is less than metal, and hence I reduce the generation of gas in the lamp-fount.

What I claim as my invention is—

1. In a non-explosive safety-lamp, the combination, with the screw-ring 2, of the flaring base-plate 3 and conical annular wall 4, both rising from the screw-ring, the pillar 5, supported by the flaring base to provide the intervening annular space 6, and rising above the conical wall, and having its lower portion provided with air-inlet orifices opening into said annular space at a point below the upper end of the annular wall, and the perforated burner-carrying cap-plate located on

the upper end of the pillar above the conical wall, substantially as described.

2. In a non-explosive safety-lamp, the combination, with the screw-ring 2, of the flaring
5 base-plate 3 and the annular wall 4, both rising from the screw-ring, the glass pillar 5, resting on the flaring base-plate to provide the intervening annular space 6, and having its lower portion provided with air-inlet ori-
10 fices opening into the annular space at a point below the upper end of the annular

wall, and the perforated burner-carrying cap-plate 8, located on the upper end of the glass pillar above the annular wall, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAS. H. SIMPSON.

Witnesses:

T. S. WHEELWRIGHT,
DOUGLASS WHERRY.