

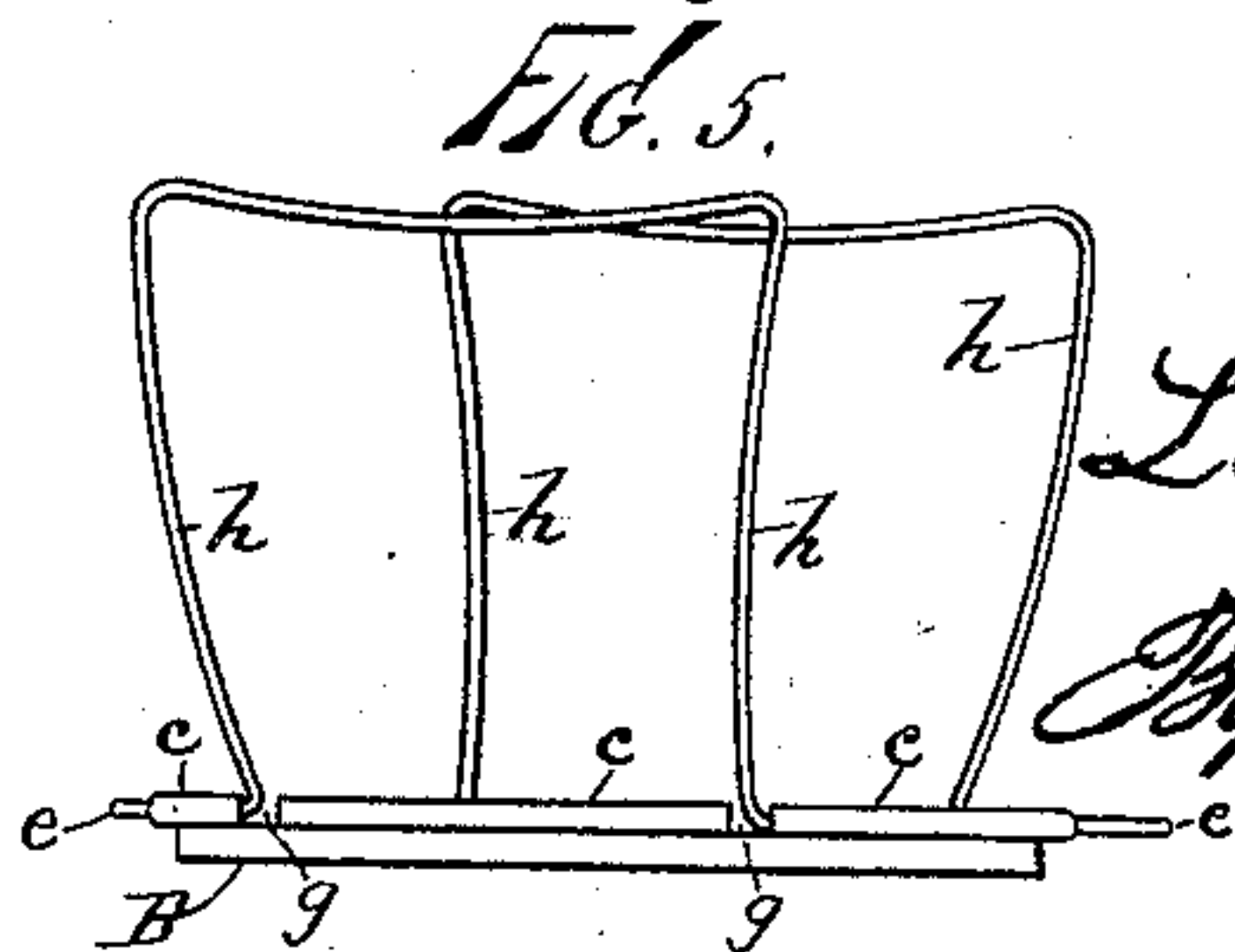
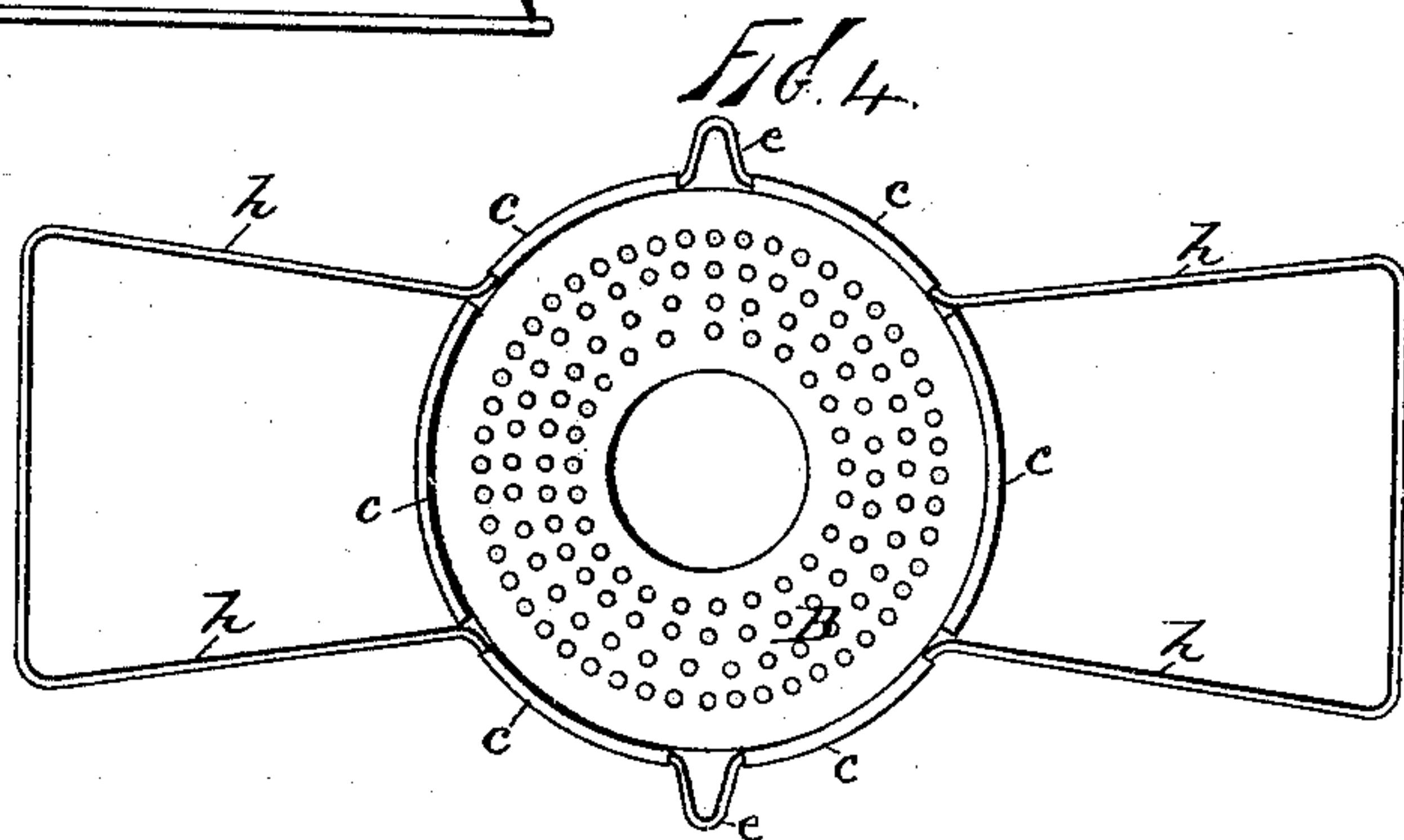
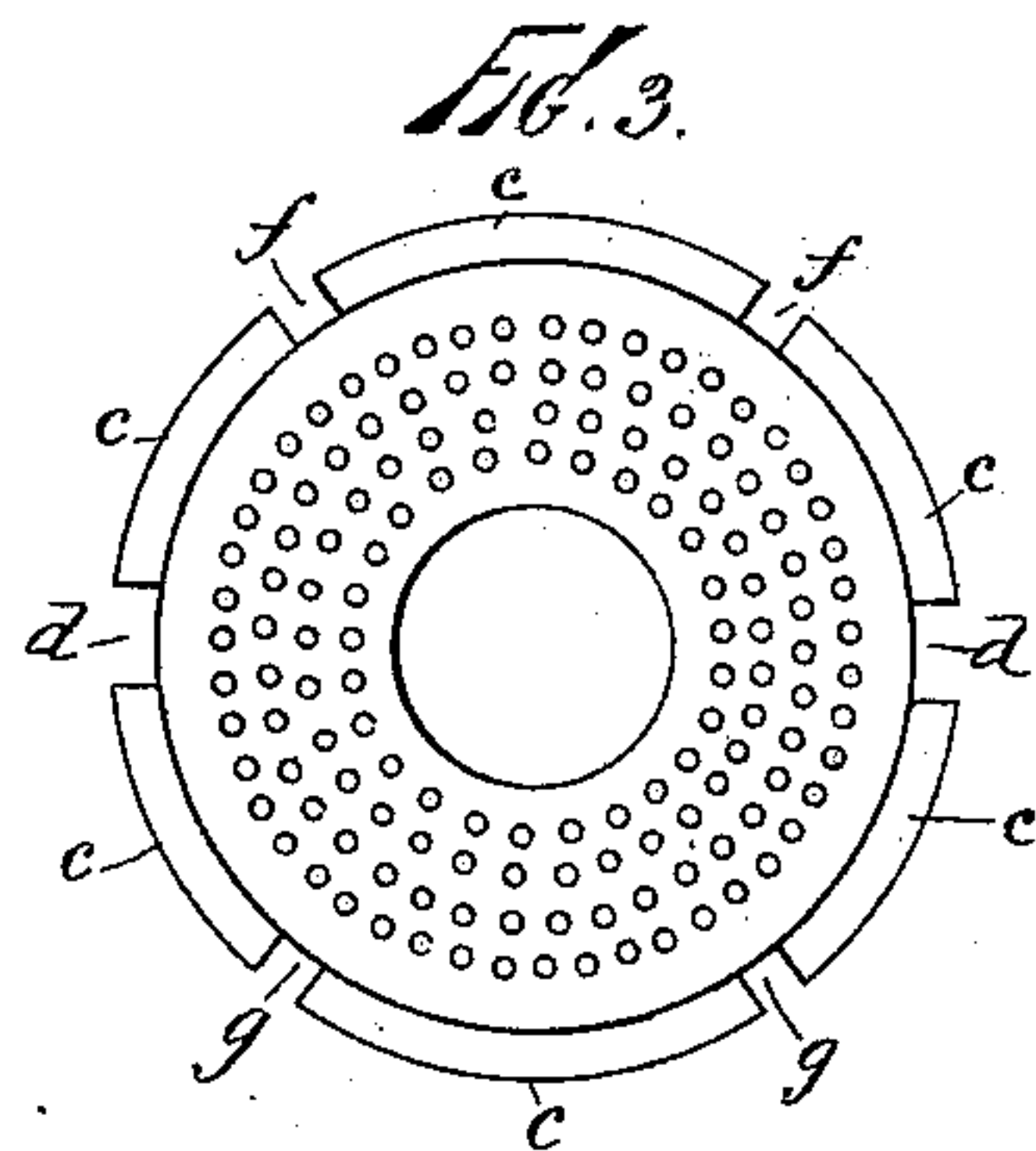
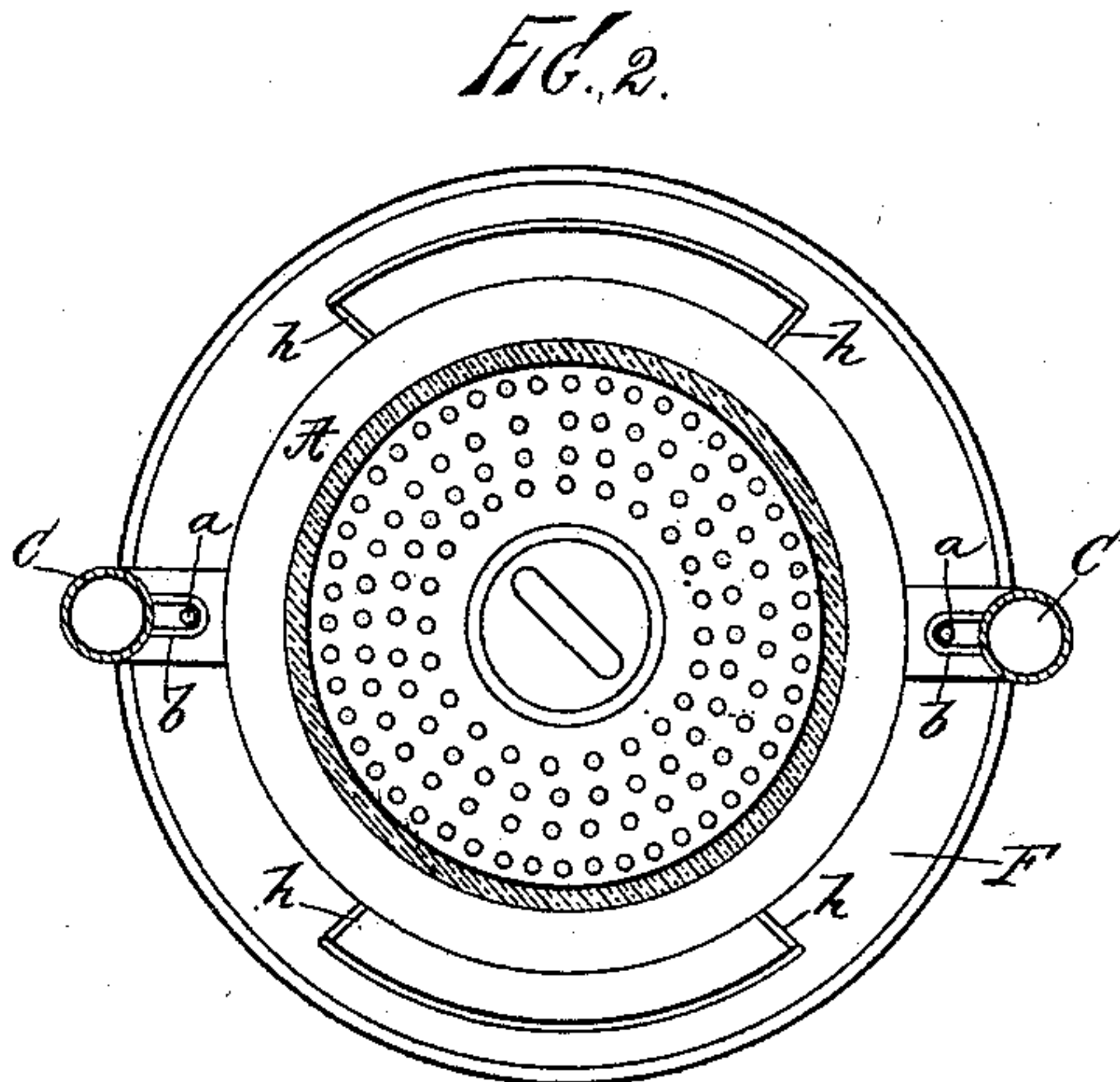
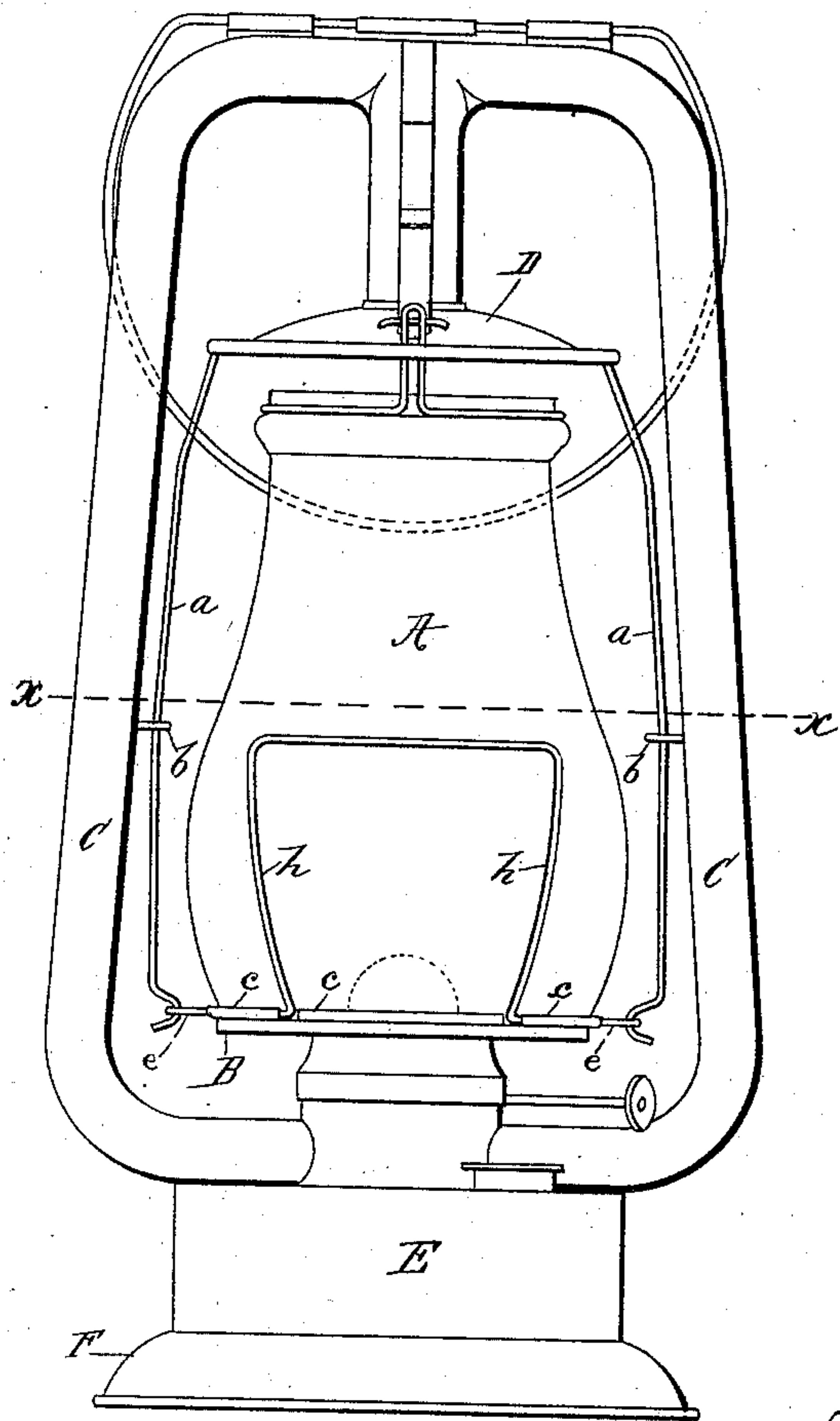
(No Model.)

L. F. BETTS.

TUBULAR LANTERN OR LAMP.

No. 389,832.

Patented Sept. 18, 1888.



Witnesses:  
John Buckler,  
L. H. Osgood,

Inventor:  
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# UNITED STATES PATENT OFFICE.

LEWIS F. BETTS, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO THE  
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## TUBULAR LANTERN OR LAMP.

SPECIFICATION forming part of Letters Patent No. 389,832, dated September 18, 1888.

Application filed March 7, 1888. Serial No. 266,391. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS F. BETTS, of New York city, county and State of New York, have invented certain new and useful Improve-  
5 ments in Tubular Lanterns or Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 My invention relates to tubular lanterns or tubular lamps, and has for its object the production or provision of a simple, cheap, effective, and easily-constructed guard or protector for the removable globe, involving certain pe-  
15 culiarities of construction and operation, as will be hereinafter first fully explained, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of a tubular lantern having my improved guard applied thereon or in connection therewith. Fig. 2 is a horizontal section and plan view upon a plane through line *x x* of Fig. 1. Fig. 3 is a plan of the perforated  
25 bottom plate detached from the globe, the flange or rim thereof being shown as extended and slotted to permit the application or location of the guard-wire. Fig. 4 is a plan of the bottom plate, showing the guard-wire attached  
30 thereto and ready to be afterward bent up in proper shape to form the guard. Fig. 5 is a view in elevation showing the guard and perforated bottom plate, the former being bent to final position and the whole ready for use in  
35 the lantern.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

40 A is the glass globe or flame-protector, which rests upon a perforated bottom plate, B.

C C are side tubes which conduct air down to the under side of the burner-cone, as in tubular lantern or lamp structures generally. D represents the dome; E, the oil-pot, and F  
45 the base-piece or rim thereof.

In the example shown the globe, the perforated bottom plate thereof, and the dome are made vertically adjustable to uncover the burner-cone, the lift-wires *a a*, connected with  
50 the perforated bottom plate, being guided in

suitable loops, *b b*, secured to the air-tubes. The air-tubes afford a guard or protection for the globe at points on opposite sides. The guard-wire is intended to protect the spaces or parts between the tubes and not protected by  
55 the tubes.

I supply the bottom plate, B, with a rim or flange, *c*, of width sufficient to turn upon and hold the guard-wire, and this rim I perforate or slot or notch at opposite points, as at *d d*,  
60 where the hinge-loops *e e* project, and also as at *f f* and *g g*, where the longer portions *h h* of the guard-wire project. The guard-wire *e h h* is intended to be continuous, though of course it may be made of parts or pieces  
65 properly joined. This wire, being bent to about the form shown in Fig. 4, is secured (while flat) to the rim or flange *c* by bending the latter, and afterward may be further se-  
70 cured by solder, if desired. Being thus secured the guard is afterward bent up to final position, (in any suitable press or by any suitable tool,) as in Fig. 5, and is then ready for use. The guard is thus easily and quickly  
75 made and answers all other desired purposes. The loops *e* receive the lower ends of the lift-wires *a*, by which the bottom plate is elevated; and they permit the turning or tilting of the bottom plate to facilitate withdrawal  
80 of the globe from or insertion between the two parts of the guard. This construction constitutes a hinge-connection between the lift-wires and bottom plate. A similar form of guard may be applied without the loops *e e*,  
85 as when the lift-wires are not employed; but the guard-wire should be continuous (or practically so) and capable of being secured and bent up after the manner above explained.

I make no claim herein to the mere attachment of independent guard-wires to the bot-  
90 tom plate; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In combination with the perforated bottom plate of a tubular lantern or lamp, a con-  
95 tinuous guard-wire applied in the notched or recessed flange secured thereon and having the oppositely-projecting portions bent up to constitute the guard, substantially as shown and described.

2. In combination with the perforated bottom plate of a tubular lantern or lamp and the lift-wires, a continuous guard-wire applied in the notched or recessed flange of the bottom  
5 plate, the said wire affording the main loops for the guard, and the hinge-loops for engagement with the lift-wires, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of 10 two witnesses.

LEWIS F. BETTS.

Witnesses:

I. J. ALLEN,  
JOHN H. KUHLE.