

(No Model.)

O. M. SMITH.
TUBULAR LANTERN.

2 Sheets—Sheet 1.

No. 410,459.

Patented Sept. 3, 1889.

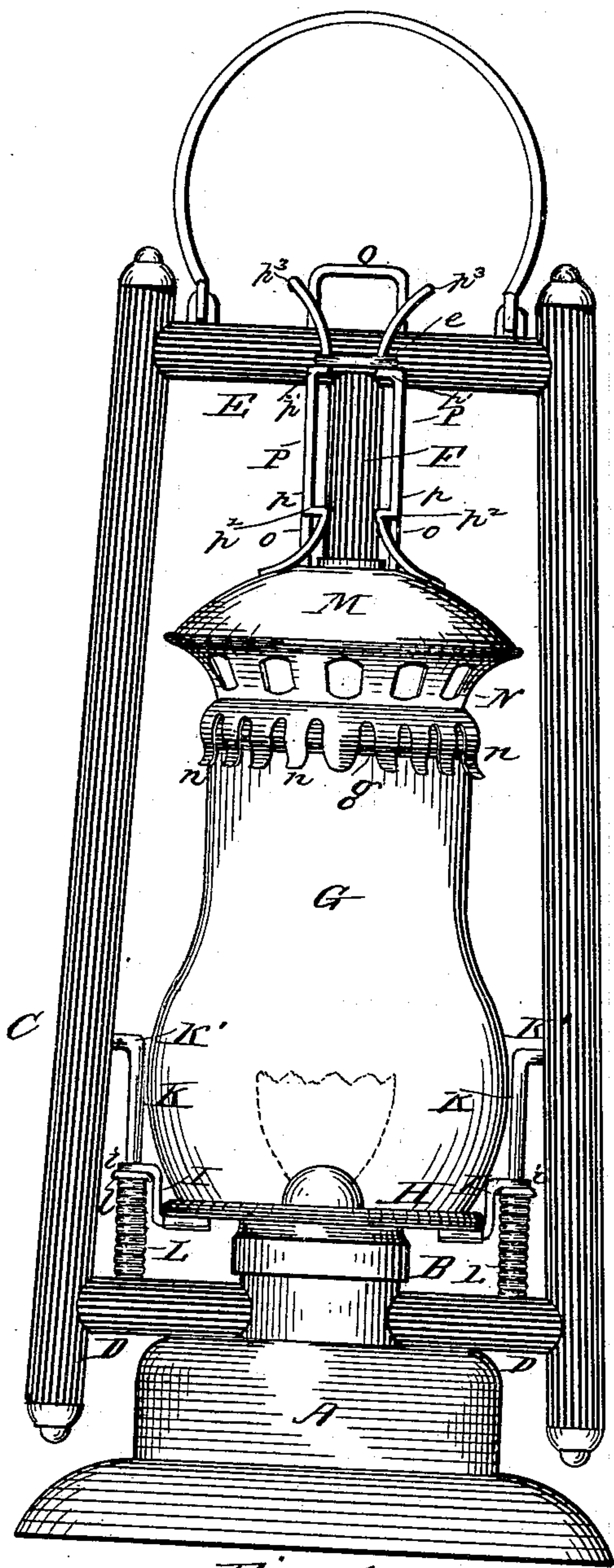


Fig. 1

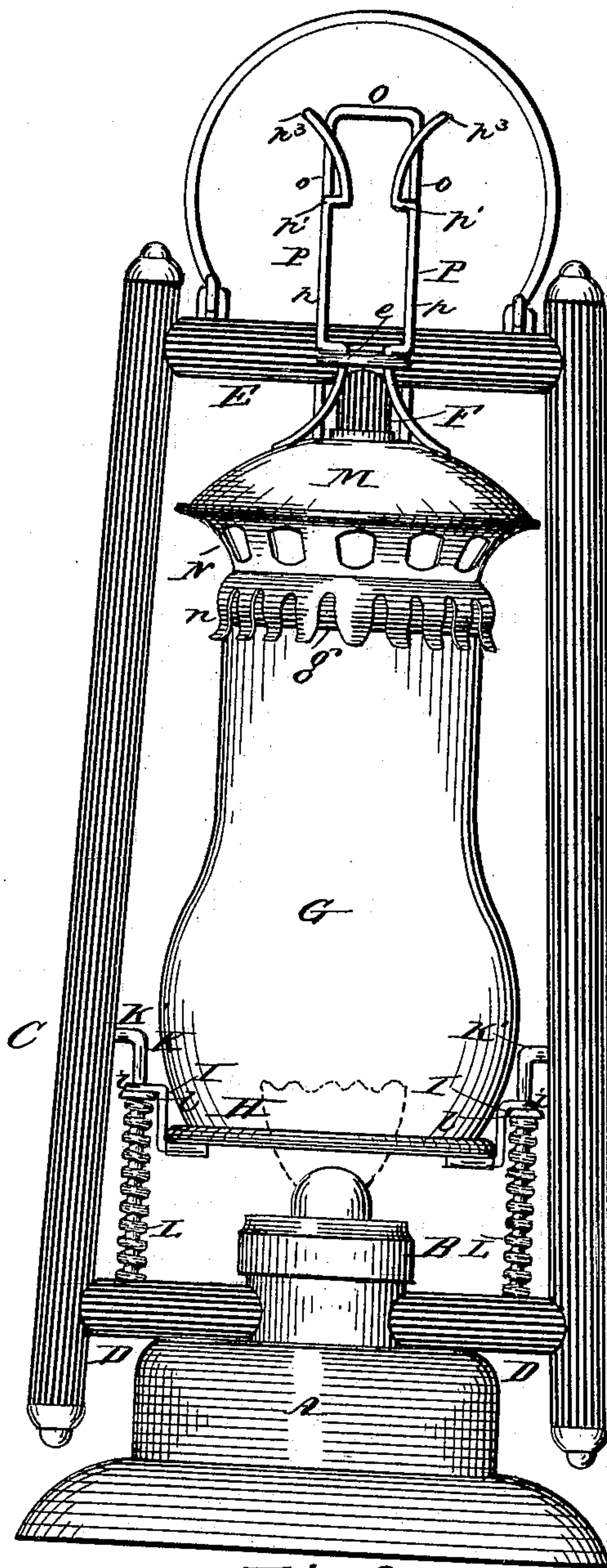


Fig. 2

Witnesses

Albert B. Blackwood

O. M. Humphrey By His Attorneys Connolly & Co

O. M. Smith
Inventor

(No Model.)

O. M. SMITH.
TUBULAR LANTERN.

2 Sheets—Sheet 2.

No. 410,459.

Patented Sept. 3, 1889.

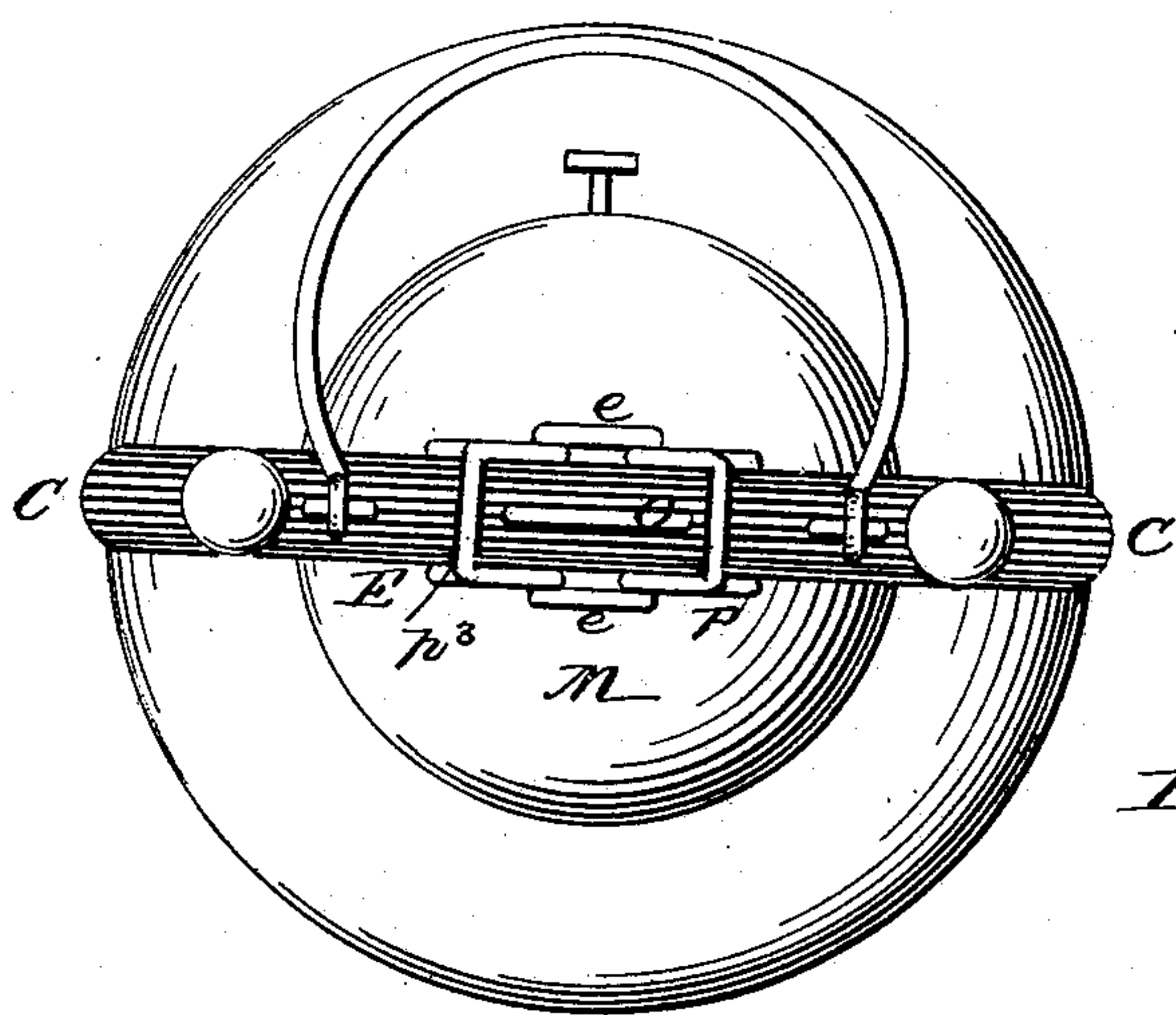


Fig. 3

Witnesses

Albert B. Blackwood.

O. M. Humphrey

O. M. Smith

Inventor

By his Attorneys Connelley & Co.

UNITED STATES PATENT OFFICE.

ORREN M. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM GRANGE, OF SAME PLACE.

TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 410,459, dated September 3, 1889.

Application filed March 17, 1888. Serial No. 267,544. (No model.)

To all whom it may concern:

Be it known that I, ORREN M. SMITH, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain
5 new and useful Improvements in Tubular Lanterns; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of
10 this specification.

My invention has relation to lanterns, and relates specially to that class of lanterns commonly known as "tubular lanterns;" and my
15 invention has for its object the provision of novel means for supporting the shade or globe of the lantern in position and for raising and lowering the same and maintaining it in either a raised or lowered position, as desired; and my invention has for its further
20 object the provision of means whereby the shade or globe of the lantern may be easily and readily removed from the lantern at will.

My invention consists in the novel construction, combinations, and arrangements of parts
25 for supporting the globe or shade in position, for raising and lowering the same, for maintaining it in a raised or lowered position, and for allowing of the ready removal of the globe or shade, all as hereinafter described and
30 claimed.

Referring to the accompanying drawings, illustrating my improvements, Figure 1 is an elevation of a lantern embodying the said improvements, the globe or shade being in its
35 lowered position; Fig. 2, a similar view showing the globe or shade elevated; and Fig. 3, a detail view, in section, of the dome of the lantern and a portion of the shade or globe.

A designates the fount of the lamp, and B
40 the burner thereof. C C are the side tubes, and D D the lower horizontal tubes connecting the side tubes C C to the burner B; E, the upper horizontal tube, and F a short vertical tube projecting downwardly from the
45 tube E into the dome of the lamp. All these parts may be of the usual construction; but I prefer the construction shown and described in my application for Letters Patent of even date herewith, Serial No. 267,732.

50 G designates the globe or shade of the lan-

tern, formed with a bead *g* near its upper end. The globe G rests upon top of a circular plate of metal H, which has a central orifice through which the burner B projects, and has holes around the burner for the admission of air. Said plate H is swiveled upon
55 arms I I, which have eyes *i i*, through which pass vertical rods K K, having laterally-bent upper ends K' K', said rods being soldered or otherwise firmly secured to the side tubes
60 C C and the horizontal tubes D D. Beneath the eyes *i i* are caps *ll*, which surmount spiral springs L L, that surround the vertical rods K K. The eyes *i i* and the caps *ll* slide easily
65 upon the rods K K, and the tendency of the spiral springs L L is to raise the caps and the arms I I, and with them the air-plate H, the globe G, and other movable parts of the lamp.

M designates the dome of the lantern, consisting of a circular dished plate having a hole in its center for the passage of the vertical tube F. From the edge of the dome M depends a perforated flange N, the lower edge of which terminates in a series of spring-
75 tongues *n n n*, that embrace the bead *g* on the globe G with sufficient force to secure the said globe to the dome, so as to sustain the globe from falling by its own weight, but that are sufficiently elastic to permit of the
80 globe being removed by a slight pull when desired. The lower ends of the tongues *n n* are turned out slightly, so as to facilitate the insertion of the globe.

To the top of the dome M is attached a
85 guide consisting of the vertical rods *o o* and cross-piece O, made of a single piece of wire bent twice at right angles, the vertical rods *o o* passing through the horizontal tube E, and the cross-piece O being above said tube.
90

P P designate spring-catches, which are fixed to the top of the dome and serve to maintain the globe and the dome in either an elevated or lowered position. Each of said catches consists of a single piece of wire,
95 which comprises a cross-piece and two depending legs *p p*, which embrace the horizontal tube E and are secured at their lower ends to the top of the dome M. The legs *p p* of the catches P P pass through loops or
100

staples $e e$, fixed on the sides of the horizontal tube E , and each of said legs $p p$ has a shoulder p' near its top, which serves to engage with staple e when the globe and dome
 5 are in their lowered position and hold the same against the upward pressure of springs $L L$, as shown in Fig. 1.

In addition to the shoulders $p' p'$, each of the legs p is formed with a shoulder p^2 near
 10 the dome, and the shoulders p^2 , engaging with staples $e e$, serve to sustain the globe and dome in their elevated position, as shown in Fig. 2. Above the shoulders $p' p'$ the catches $P P$ are curved or bent outwardly to such an extent as will permit them to be pressed toward
 15 the guide-rods $o o$ a sufficient distance to allow of the shoulders $p' p^2$ clearing the staples $e e$ when the dome is raised and lowered. The cross-pieces $p^3 p^3$ at the top of the catches
 20 $P P$ impinge against the rods $o o$ when the catches are pinched together in raising or lowering the dome, and serve to prevent said catches from being bent out of shape.

Operation: When the lantern is to be
 25 lighted or extinguished, the catches $P P$ are pinched together until the shoulders $p' p'$ clear the staples $e e$. The air-plate H , being elevated by the springs $L L$, raises the globe and dome to the position shown in Fig. 2, in
 30 which position they are maintained by the engagement of the shoulders $p^2 p^2$ with staples $e e$. To lower the globe and dome, the catches $P P$ are pinched together by grasping the cross-pieces $p^3 p^3$ between the thumb and fin-

ger of one hand until the shoulders $p^2 p^2$ are
 35 out of engagement with staples $e e$, and by then bearing down upon the cross-piece O of the guide-rods $o o$ the dome and globe are returned to the position shown in Fig. 1, and
 40 held in that position by the automatic engagement of the shoulders $p' p'$ with staples $e e$. When it is desired to remove the globe, it is grasped in the hand and by bearing
 45 down the plate H is depressed, and the globe is drawn out of the clamping-arms $n n n$, and the plate H turning on the swivel the globe is readily removed.

Having described my invention, I claim—

1. In a lantern, the combination, with the vertically-movable air-plate H and the globe G ,
 50 of the dome M , having a depending flange N , with spring-fingers $n n$, grasping bead g on said globe, substantially as described.

2. In a lantern, the combination, with the dome M , spring-catches $P P$, the horizontal
 55 tube E , and the staples $e e$, with which said catches engage, of the depending flange N , the spring-fingers $n n$ on said flange, and the globe G , having bead g engaging with said
 60 fingers, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of March, 1888.

ORREN M. SMITH.

Witnesses:

CHAS. E. GRANGE,
 SAML. A. LEWIS.