

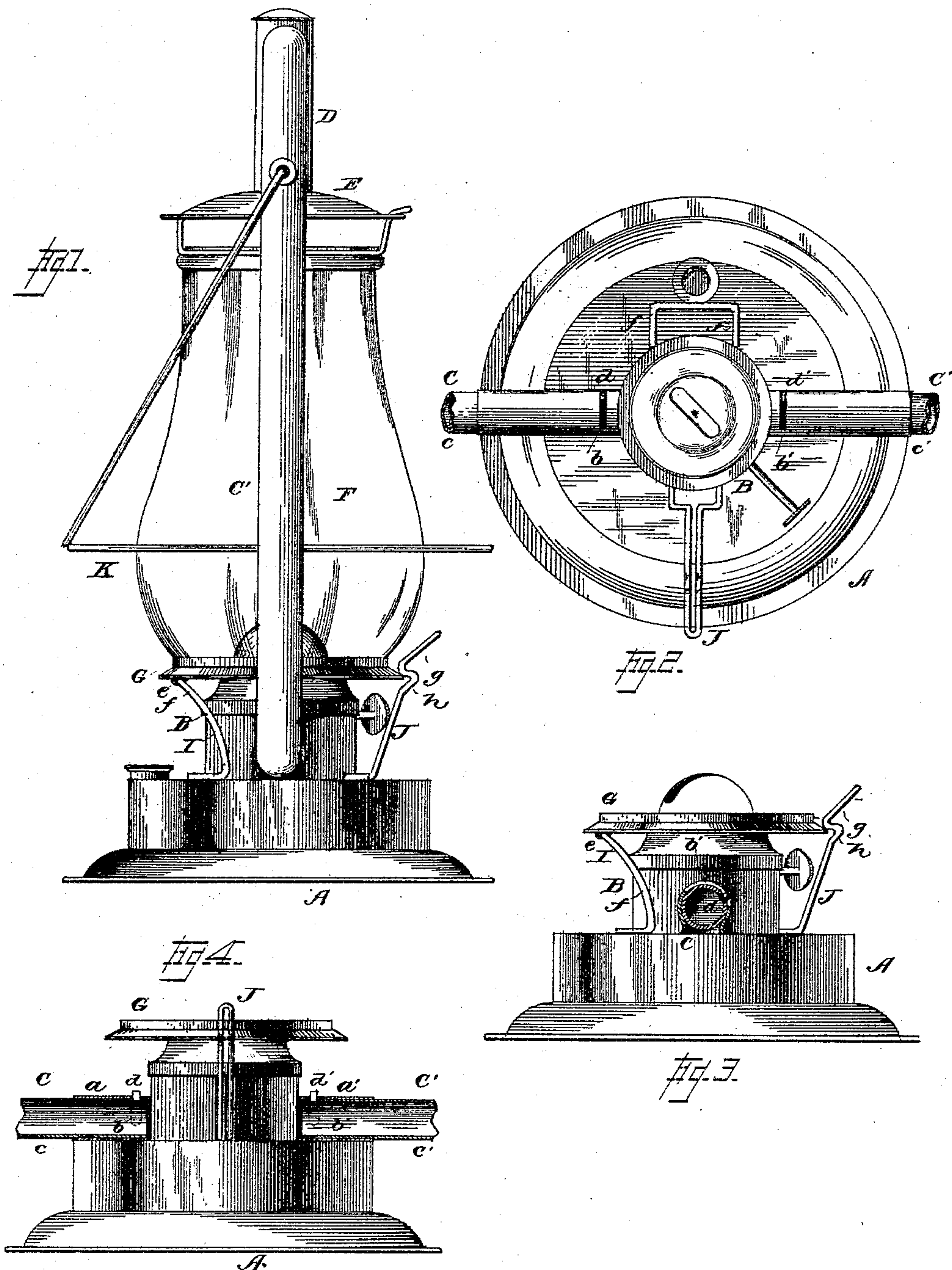
(No Model.)

2 Sheets—Sheet 1.

W. C. STEWART.  
TUBULAR LANTERN.

No. 411,937.

Patented Oct. 1, 1889.



Witnesses  
*E. H. Perry*  
*Frank L. Dyer*

Inventor  
*William C. Stewart*  
by *Geo. W. Dyer*  
Attorney

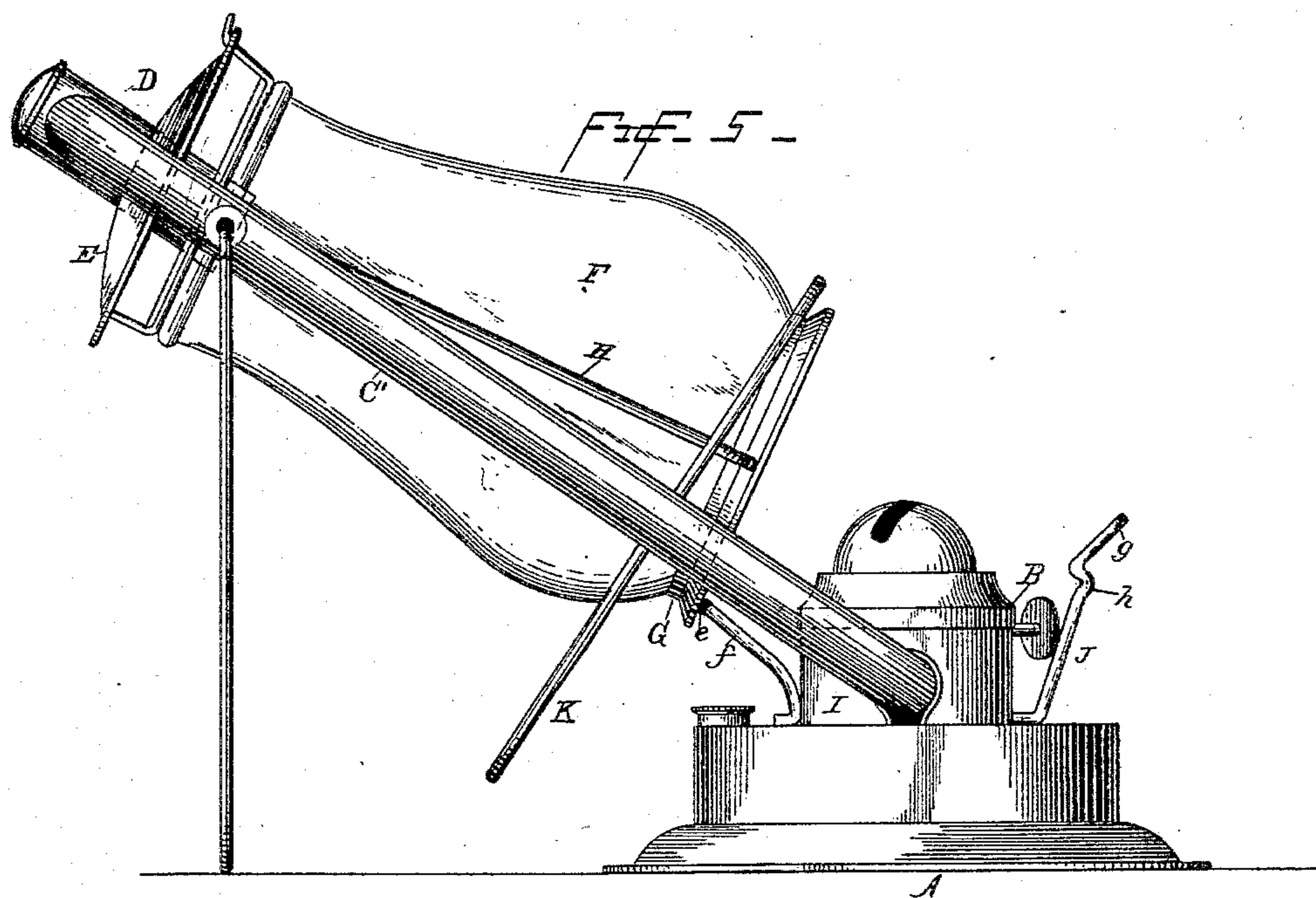
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Witnesses  
Norris A. Clark.  
Arthur W. Cole.

Inventor  
William C. Stewart  
By his Attorney  
Frank L. Seyer



# UNITED STATES PATENT OFFICE.

WILLIAM CHARLES STEWART, OF BELLAIRE, OHIO.

## TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 411,937, dated October 1, 1889.

Application filed February 21, 1889. Serial No. 300,639. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM CHARLES STEWART, a citizen of the United States, residing at Bellaire, in the county of Belmont and State of Ohio, have invented certain 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, which will enable others skilled in the art to which it appertains to make and use the same.

The invention forming the subject of this application appertains to a new and improved tubular lantern, and the various novelties of construction therein relate principally to means whereby the globe and supports may be moved from position above the burner-cones, so that free access may be had to the latter, and also to means for securely locking such globe and its supports in position over the burner-cones when the lantern is in use.

In a prior application for Letters Patent for improvements in tubular lanterns I have described a device for raising and throwing the globe to one side of the burner-cones, consisting, principally, of a hand-lever pivoted to the oil-pot, and in the present application the same result is accomplished by hinging the lower extremity of the side air-conducting tubes to the oil-pot and burner-cones, so that the said side air-conducting tubes and globe and supports may be moved pivotally away from the burner-cones, and by means of an intermediate bearing for the globe-disk the globe will at the same time be elevated from the burner-cones.

I do not pretend to maintain that I am the first to hinge the side air-conducting tubes of a tubular lantern to the base of the same, as this is shown in the patent to R. J. Thomas, No. 309,896, dated December 30, 1884, and to Elias J. Hale, No. 252,315, dated January 17, 1880, both for improvements in tubular lanterns; but I do maintain to be the original inventor of auxiliary means used in conjunction with such arrangements, whereby the globe is elevated from the burner-cones of the lantern, as the side tubes are pivotally moved on the base.

In order that a lantern may prove a success commercially, it is absolutely necessary that the globe be lifted entirely clear of the burn-

er-cones when it is desired to gain access to the wick, in order that the burner-cones may not become worn or displaced by the globe. This objection is very readily apparent in the patent of Thomas and of Hale, and it is the principal object of my invention to overcome this objection, which I have done by pivotally securing the globe-supporting disk to the top of the oil-pot, so that when the side air-conducting tubes are moved pivotally on the base the globe and supports will be elevated, and the globe-disk will not wear against the burner-cones or even come into contact therewith.

My invention relates, secondarily, to an improved automatic latch so constructed and arranged that when the globe and its supports are being moved back to their original position over the burner-cones the said latch will engage automatically with the globe-supporting disk, and there can be no accidental disarrangement of the moving parts of the lantern.

These different improvements will be more fully hereinafter described and embodied in the claims, and they are illustrated in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of the entire lantern, showing the parts in a closed position; Fig. 2, a plan view of the base, burner-cones, and supporting-disk, and a portion of the side air-conducting tubes and globe, showing the parts in an open position; Fig. 3, an elevation, partly in section, of the same portion of a lantern, showing the parts in the same position; Fig. 4, a sectional view of a portion of the side air-conducting tubes and the base and burner-cones, and Fig. 5 a side elevation showing the globe as being lowered.

In the views the different parts of the lantern are designated by identical letters of reference in each view.

The form of the lantern illustrated is well known, and of course I make no claim to such parts as the base A, burner-cones B, side air-conducting tubes C C', central air-conducting tubes D, canopy or bell E, globe F, supporting-disk G, or connecting-braces H H', for such parts are old.

The joint of the lower ends of the air-conducting tubes is made telescopic and is constructed, preferably, as follows: Two short cy-



lindrical tubes  $a a'$  are secured to the top of the base A in any suitable manner, but preferably by soldering, and each of these short tubes is diametrically opposite from the other and extends out about to the periphery of said base, though, of course, it should be understood that this is a matter of preference only, and is by no means indispensable. Each of these short tubes communicates with the space in the base directly beneath the burner-cones, and on the upper portion of said tubes is a slot  $b b'$ , extending about one-third of the distance of the entire circumference of each. The extreme lower or horizontal portion  $c c'$  of each of the side air-conducting pipes is inserted within each of said short tubes  $a a'$ , thereby forming a telescopic joint, so that the air-conducting tubes may be moved pivotally on the short tubes. A lug  $d d'$  is secured to the lower horizontal portion of each side conducting-tube and moves within the slot  $b b'$ , so that the pivotal movement of the side air-conducting pipes will be limited to the movement of the lug  $d$  within the slot  $b$ . By this means of pivoting the side tubes to the base it will be evident that the lower end of the side tubes will be prevented from any lateral movement within the sleeves, and there is therefore no danger of the side tubes becoming accidentally separated from the lower portion of the lantern.

Such a joint as just described may be varied in a good many respects. For instance, the lugs and slot can be dispensed with, or, instead of inserting the lower horizontal portions of the side air-conducting pipes within the short tubes  $a a'$ , it might be just as advisable to place such lower horizontal portions on the outside of such short tubes; but by either of these forms the operation of the parts would not be materially changed. On the under side of the supporting-disk G, near its periphery, is a sheath or tongue  $e$ , secured in position, preferably, by soldering. Passing through this sheath or tongue is the upper portion of a metallic support I. This support is made, by preference, of a single piece of wire, and consists of the two curved upright portions  $f f'$ , secured to the top of the base A by any suitable means and connected together at their upper ends by the before-mentioned horizontal portion, which passes through the sheath or tongue  $e$ . This support can be varied somewhat—as, for instance, it could be made of two or more pieces, or with only one curved upright portion, or the upright portions could be made straight—but any such changes would not require inventive ingenuity to devise, but merely mechanical skill. Rigidly secured to the top of the base A, preferably by soldering, is a spring-catch J, diametrically opposite from the support I. This spring-catch can be made of a single piece of springy wire bent into the double form shown in the drawings, or it could be made of a single form; but whether of one form or the other it is

necessary that the latch should be provided with an upper inclined portion  $g$  and with a hooked or locking portion  $h$ , so that when the globe and its supports are being swung back into their original position over the burner-cones the disk G will come into engagement with the inclined portion  $g$  of the latch, and the latch will be gradually forced backward until the locking portion  $h$  engages with the inclined periphery of the globe-supporting disk G.

All the other parts of the lantern are made as is usual, with the exception that the opening in the canopy or bell for the passage of the central air-conducting pipe is made somewhat longer than is customary, so that the canopy or bell may be moved in an inclined position with relation to the plane of central conducting-tube.

In such a lantern as described the following operation takes place: When it is desired to gain access to the burner-cones, the latch is moved away from the disk G by the operator, so that the locking portion  $h$  will be disengaged from the inclined flanged periphery of said disk. The side air-conducting pipes can be now moved in the path of a circle on the base A, by reason of the before-described telescopic joint, and the globe and its supports will partake of the general motion of said air-conducting-pipes. The globe-supporting disk G is, however, secured to the immovable base A, to one side of the pivoting point, for the side air-conducting pipes, by means of the support I, so that portion of the said disk which carries the sheath or tongue  $e$  will remain stationary with the said base. Therefore the swinging motion of the side air-conducting pipes will tend to force the globe upwardly, and the canopy or bell will be moved toward the upper portion of the central air-conducting tube, and the parts will assume the position shown in Fig. 5. Upon swinging the air-conducting tubes to their original position the action of the parts just described will be reversed, and the periphery of the disk G will be caught and retained automatically by the latch J, as just mentioned.

In order to effectively protect the globe, it might be advantageous, though not absolutely necessary, to make use of a circular wire guide K, extending from one side tube to the other entirely around said globe.

Other additions might be made without changing the main spirit of my invention.

Having now described my invention and its operation, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a tubular lantern, the combination of the base, side tubes pivotally connected to the base, a globe movably connected to the central tube by means of the canopy, a supporting-plate for said globe pivotally attached to the base at one side of the side tubes, and connecting-braces secured to the canopy and globe-supporting plate, whereby when the



side tubes are moved to one side both vertical and lateral motions are imparted to the globe, substantially as set forth.

2. In a tubular lantern, the combination of  
5 the base, side tubes pivotally connected to the base, a globe movably connected to the central tubes by means of the canopy, a supporting-plate for said globe pivotally attached to the base at one side of the side  
10 tubes, connecting-braces secured to the canopy and globe-supporting plate, whereby when the side tubes are moved to one side both vertical and lateral motions are imparted to the globe, and a latch attached to the base  
15 and engaging with the globe-supporting plate when the parts are in their normal position, substantially as set forth.

3. In a tubular lantern, the combination of

the base, side tubes pivoted in sleeves *a a* on the base, slots *b b* within said sleeves, studs 20 *d d* in said side tubes and engaging with said slots, a globe movably connected to the central tube by means of the canopy, a supporting-plate for said globe pivotally attached to the base at one side of the side tubes, and 25 connecting-braces secured to the canopy and globe-supporting plate, whereby when the side tubes are moved to one side both vertical and lateral movements are imparted to the globe, substantially as set forth. 30

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

WILLIAM CHARLES STEWART.

Witnesses:

ELLSWORTH HIBBS,

WILLIAM PARKS.