

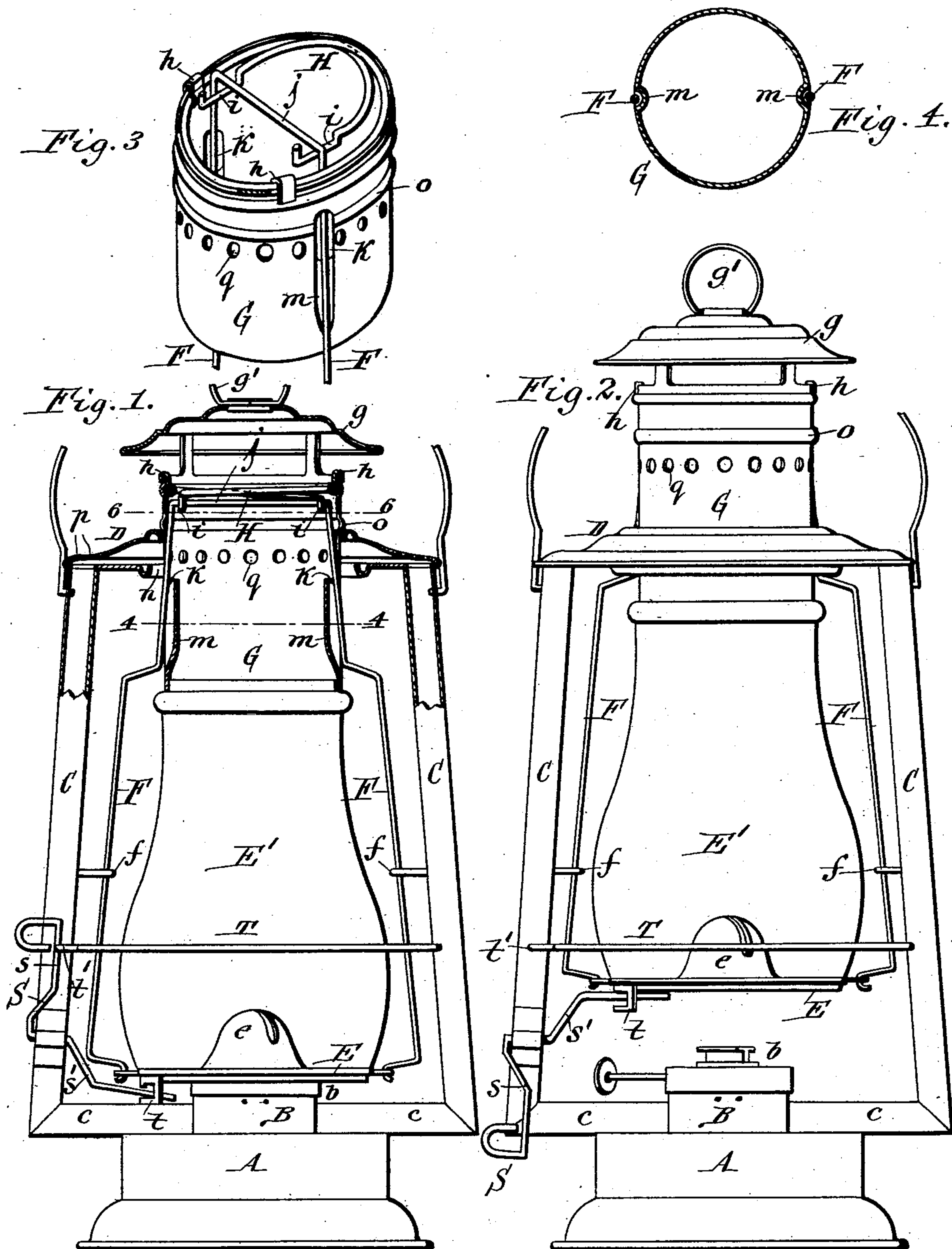
(No Model.)

2 Sheets—Sheet 1.

F. K. WRIGHT.  
TUBULAR LANTERN.

No. 570,588.

Patented Nov. 3, 1896.



Witnesses:  
Thos. L. Popp  
Henry L. Deck.

F. K. Wright Inventor.  
By Wilhelm Bonner  
Attorneys.

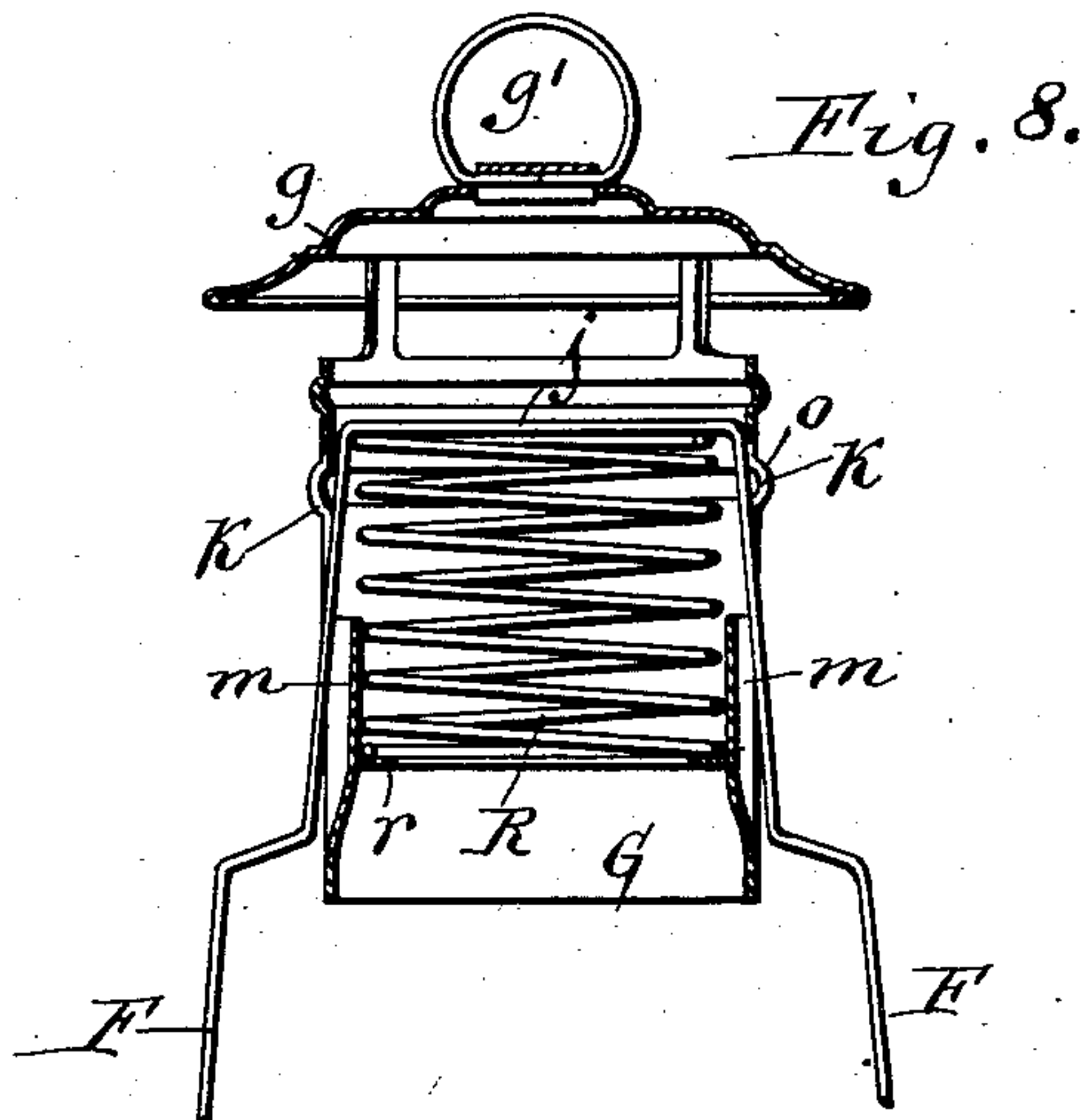
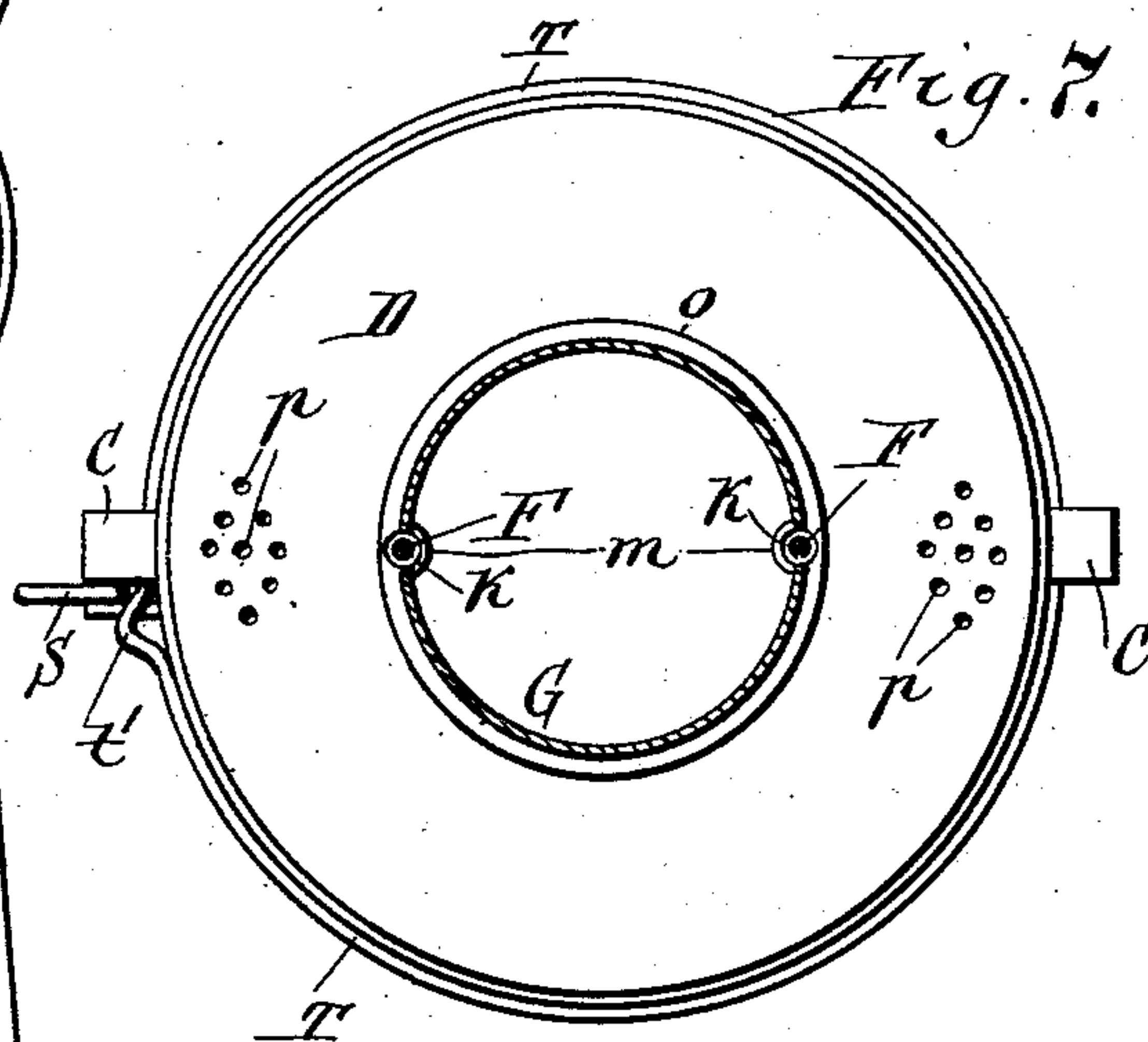
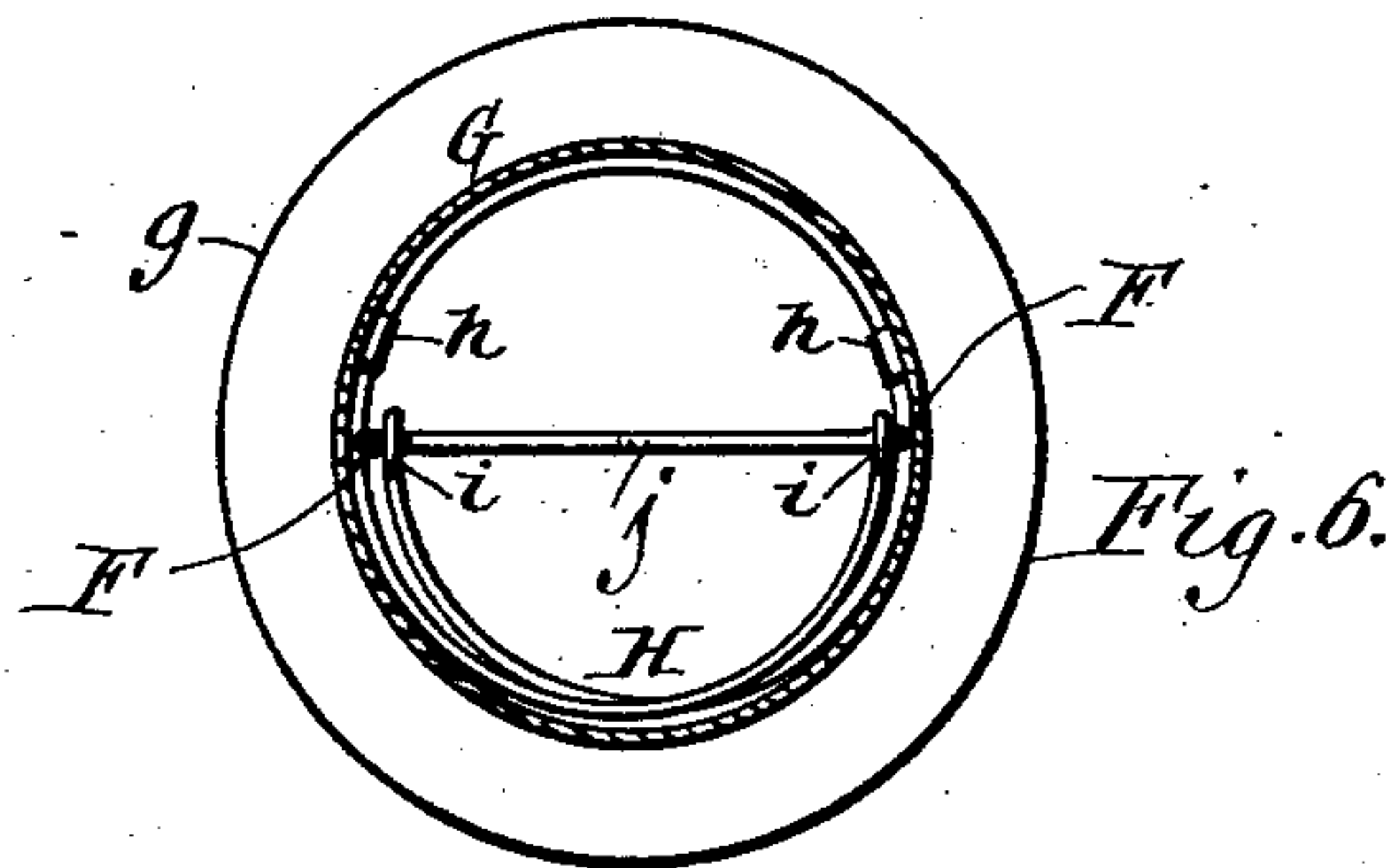
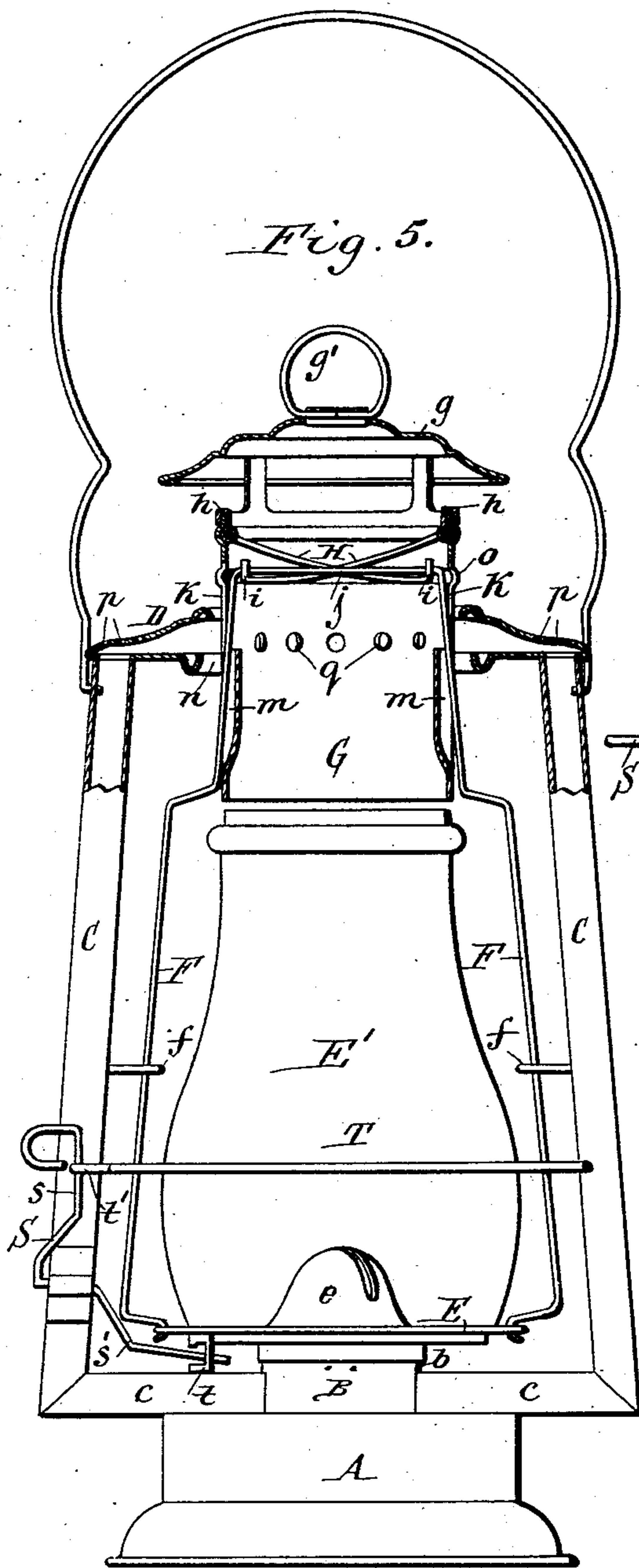
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

FREDERICK K. WRIGHT, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE  
STEAM GAUGE AND LANTERN COMPANY, OF SAME PLACE, AND THE  
R. E. DIETZ COMPANY, OF NEW YORK, N. Y.

## TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 570,588, dated November 3, 1896.

Application filed July 16, 1895. Serial No. 556,146. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK K. WRIGHT, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Tubular Lanterns, of which the following is a specification.

This invention relates to that class of tubular lanterns which are provided with a globe-frame which is vertically movable in the tubular-lantern frame and in which the globe is releasably held by spring-pressure.

The object of my invention is to provide a tubular lantern of the kind which takes its air supply into the tubes mainly from the outside of the globe, near the upper end thereof, with a lifting globe-frame in which the globe is removably held by spring-pressure and which is simple, efficient, and durable.

In the accompanying drawings, consisting of two sheets, Figure 1 is a partially sectional elevation of a tubular lantern provided with my improvements, showing the globe-frame resting in its normal position. Fig. 2 is a front elevation showing the globe-frame raised to expose the burner. Fig. 3 is a detached perspective view of the globe-collar with the cap surmounting it cut away. Fig. 4 is a horizontal section in line 4 4, Fig. 1. Fig. 5 is a sectional elevation of the lantern with the globe-collar raised for releasing the globe. Figs. 6 and 7 are horizontal sections in line 6 6, Fig. 1, looking, respectively, upward and downward. Fig. 8 is a vertical section of the upper part of the lantern, showing a modified construction of the globe-spring.

Like letters of reference refer to like parts in the several figures.

A represents the oil-pot; B, the lower air-chamber secured thereto; *b*, the burner; C, the side tubes, connected at their lower ends with the air-chamber B by horizontal branches *c* in the usual manner; D, the upper annular air-chamber, which is secured to the upper ends of the side tubes and which receives the air for the support of the flame and delivers such air to the side tubes in a well-known manner. All of these parts may be of any suitable or well-known construction.

The upper annular air-chamber, the air-tubes, and the oil-pot are rigidly secured together and constitute the rigid tubular-lantern frame.

E represents the perforated plate on which the globe *E'* rests, and *e* the burner-cone, which may be secured thereto.

F represents the side or lift wires or rods, which are connected with their lower ends to the globe-plate E in any suitable manner, preferably by hooks and eyes, as shown, and which extend upwardly from said plate and are guided in loops *f*, secured to the air-tubes.

G represents the globe-collar, which rests upon the bead at the top of the globe and which is yieldingly connected with the side wires by a spring in such manner that the globe-plate and the globe-collar are pressed, respectively, against the bottom and top of the globe. This collar is surmounted by the usual cap *g*.

As shown in Figs. 1, 3, 5, and 6, a coiled spring H is secured horizontally within the upper portion of the globe-collar G, preferably by two clips *h*, and the two arms of the spring terminate opposite the air-tubes in open hooks *i*. The lift-wires F are bent inwardly near the lower end of the globe-collar and extend from these bent portions upwardly along the outer sides of the globe-collar and are connected at their upper ends by a horizontal wire *j*, which rests upon the hooked arms of the spring in the globe-collar. This horizontal wire is preferably formed in one piece with the upright wires. The bent-wire portions at the junctions of the horizontal wire with the upright wires extend through upright slots *k*, formed in the side portions of the globe-collar. These slots allow the globe-collar to be raised independently of the side wires, and they are made of such length that the collar can be raised sufficiently, by straining the spring, to allow the globe to be removed from underneath the collar. The latter may be provided on its outer side with two upright indentations *m*, in which the upper portions of the side wires rest and by which the collar is guided on the side wires as it is moved up and down along the same in releasing and securing the globe.



The upper annular air-chamber D rests with its upper wall against the collar, while its lower wall extends not quite to the outer side of the collar, so as to leave a narrow annular opening *n* around the collar, through which the air enters the chamber from below. The globe-collar is capable of sliding up and down in the central opening of the upper wall of the air-chamber and is provided with an external bead *o*, by which it rests upon the upper wall in its normal position. The air-chamber is provided in its upper wall with two groups of air-inlet openings *p*, which are arranged over the air-tubes, and the globe-collar is provided with an annular row of openings *q*, which establish communication between the air-chamber and the interior of the globe-collar and tend to equalize the air-pressure in both. While I prefer this particular construction of air-supply devices, I do not intend to limit myself to the same, as other devices suitable for the purpose may be used without departing from my invention.

When the lantern is in its normal condition, the globe-plate rests upon the burner and lower air-chamber, the globe rests on the globe-plate, and the upward pressure which the arms of the spring exert upon the upper ends of the lift-wires holds the globe-collar firmly down upon the top of the globe and the latter down upon the globe-plate. The globe-collar can be raised against the pressure of the spring by taking hold of the ring *g'* on the cap *g*. The slots in the collar permit the latter to be raised sufficiently to clear the upper end of the globe and permit the removal of the latter from the globe-plate for cleaning the globe or replacing a broken globe by a new one. When the globe has been placed on the globe-plate, the collar is released and the spring causes the collar to be seated upon the bead of the globe and holds the latter firmly upon the globe-plate.

The form of the spring and its connection with the lift-wires can be modified in various ways. For instance, as shown in Fig. 8, a coiled spring R can be supported on a ledge or flange *r* within the lower portion of the globe-collar, and the horizontal wire connecting the upper ends of the lift-wires may extend across and rest upon the upper end of this spring.

The globe-plate, the globe-collar, the side wires, and the spring constitute the vertically-movable globe-frame, which can be raised in the lantern-frame for exposing the burner, as shown in Fig. 2. Various devices may be employed for raising and lowering this globe-frame and locking it in its normal position.

A suitable device for the purpose, which is shown in the drawings, consists of a lifting-lever S, which is pivoted horizontally to one of the side tubes and which has its outer arm *s* provided with a thumb-piece for manipulating it, and has its inner arm *s'* engaging in a horizontally-slotted plate *t*, which is secured to the adjacent side of the perforated globe-plate. This lever is locked in position for holding the globe-frame down by springing the lever behind an outwardly-projecting bend *t'*, formed in the horizontal guard-wire T near one of the air-tubes.

I claim as my invention—

1. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, a globe-collar capable of movement toward and from said globe-plate, a spring arranged within said collar, and lift wires or rods connecting said globe-plate with said spring, substantially as set forth.

2. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, lift wires or rods connected with their lower ends to said globe-plate, a globe-collar capable of vertical movement with said lift wires or rods and also independently of the same, and a spring carried by said globe-collar and connected with the upper portions of said lift wires or rods, substantially as set forth.

3. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, lift wires or rods connected with their lower ends to said globe-plate, a globe-collar provided with upright slots through which the upper portions of said lift wires or rods pass, and a spring arranged within said globe-collar and exerting an upward pressure against said lift-wires, substantially as set forth.

4. The combination with a tubular-lantern frame having in its upper portion an annular air-chamber, of a globe-collar capable of vertical movement in said air-chamber, a spring arranged within said globe-collar, lift wires or rods connected with said spring and capable of vertical movement with said globe-collar and also independently of the same, and a globe-plate connected with the lower ends of said lift wires or rods, substantially as set forth.

Witness my hand this 9th day of July, 1895.

FREDERICK K. WRIGHT.

Witnesses:

P. L. SALMON,  
F. C. CROWELL.