

(No Model.)

3 Sheets—Sheet 1.

F. RHIND.
ARGAND LAMP.

No. 454,528.

Fig 1. Patented June 23, 1891.

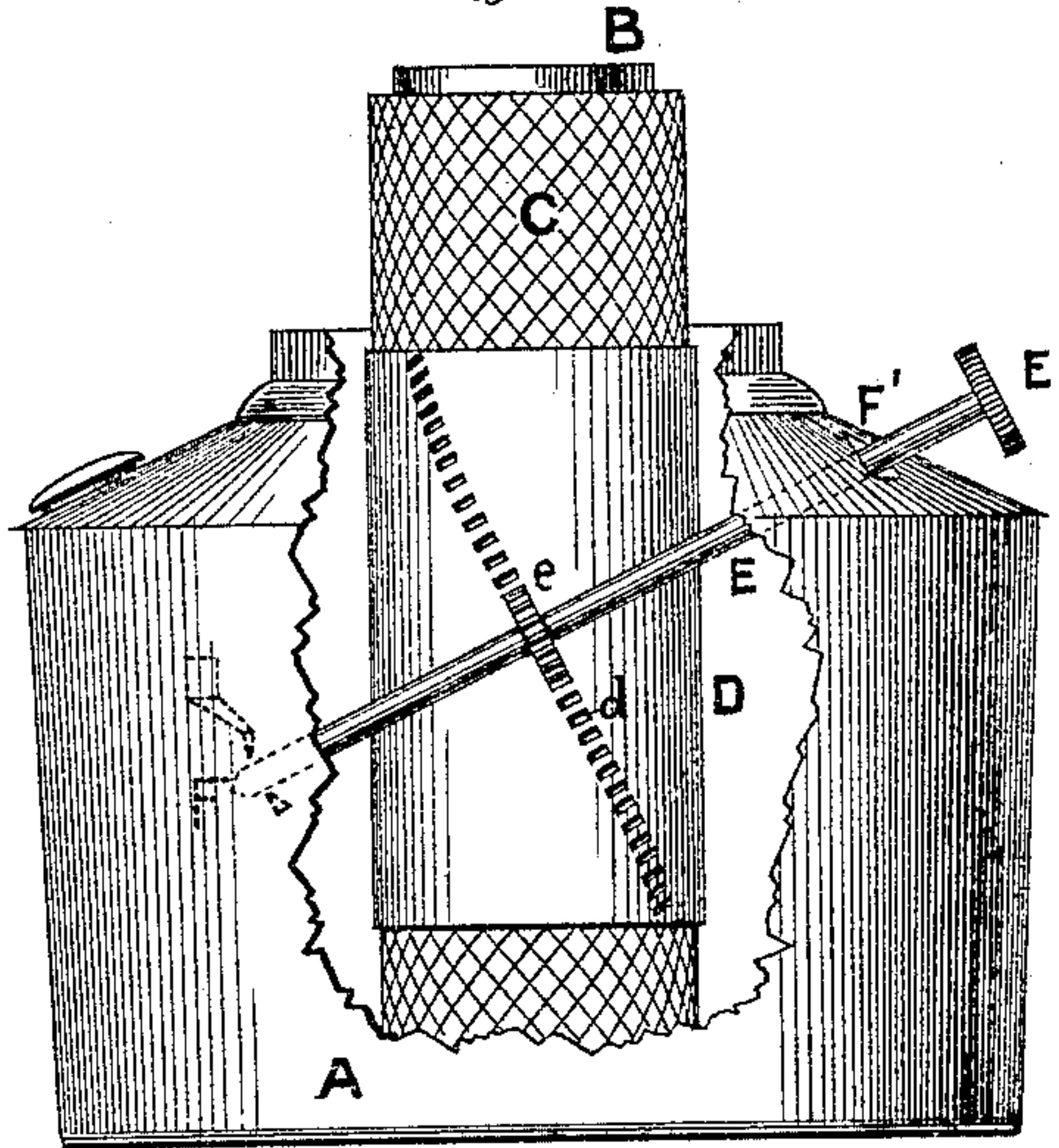
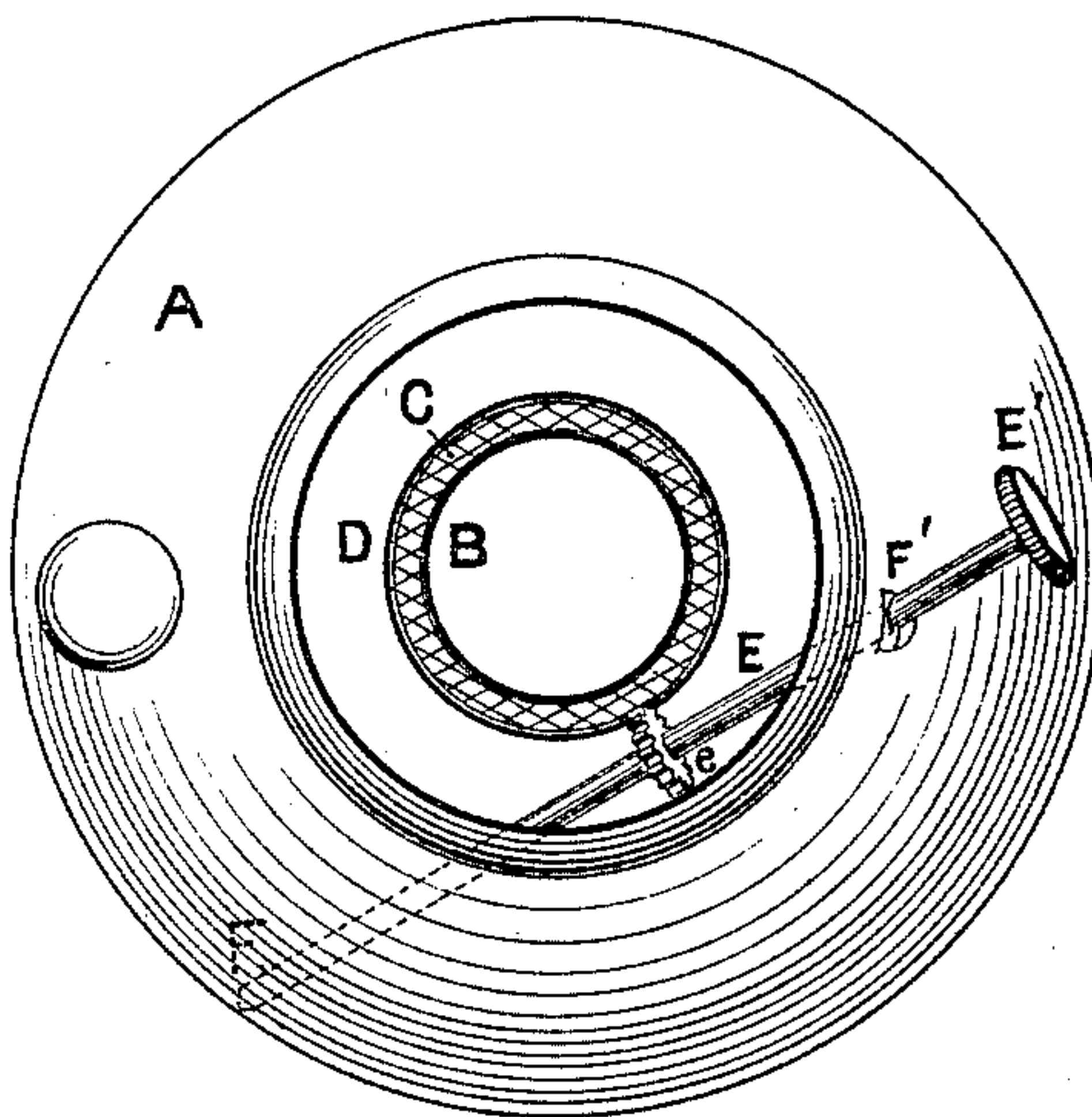


Fig 2.



WITNESSES

Lewis E. Frost
J. H. Kilbourne

Frank Rhind
INVENTOR

BY *Geo. L. Cooper*
ATTORNEY.

F. RHIND.
ARGAND LAMP.

No. 454,528.

Fig 3. Patented June 23, 1891.

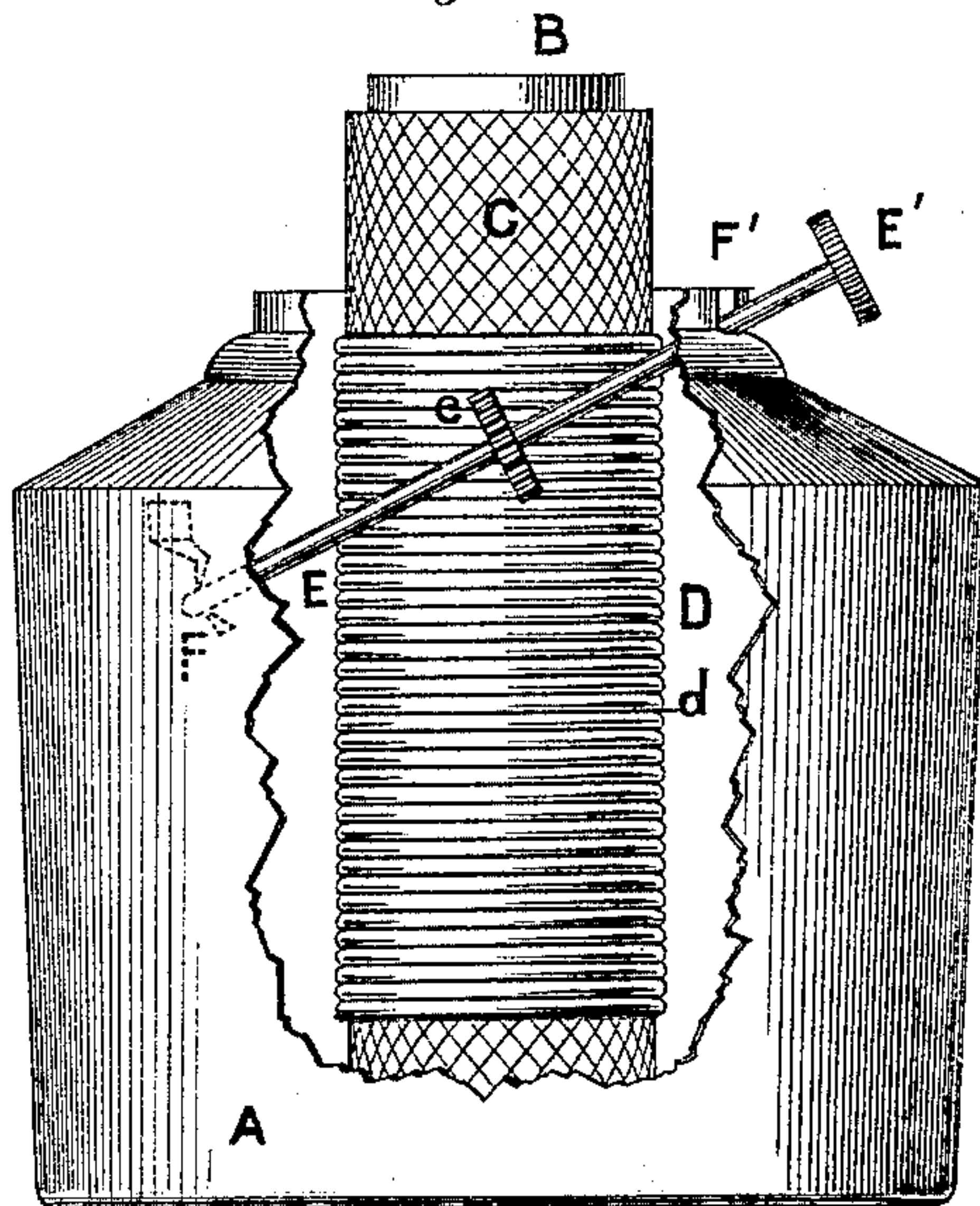
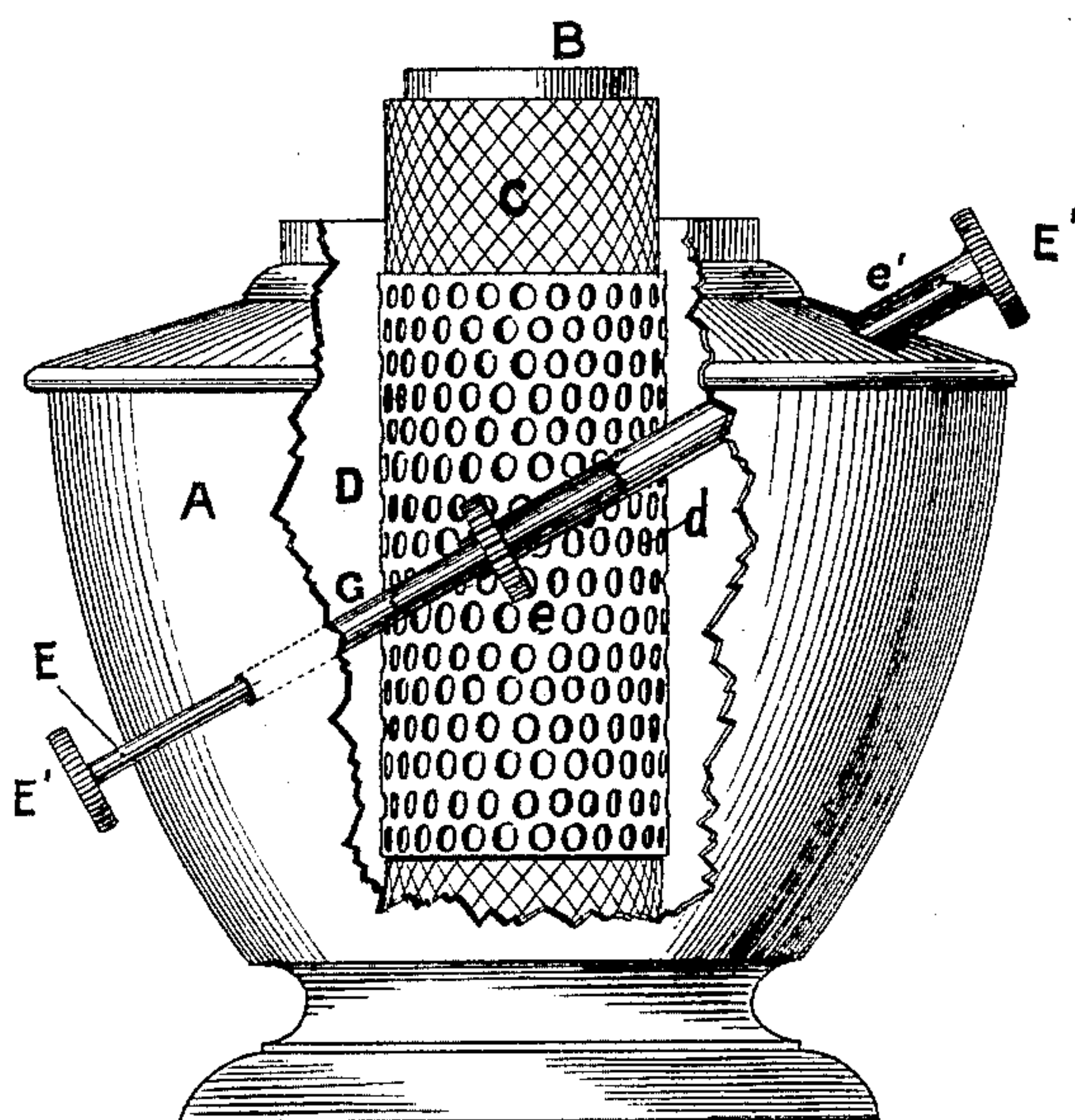


Fig 4.



WITNESSES

Lewis E. Frost
J. H. Kilbourne

Frank Rhind
INVENTOR

BY *Geo. L. Cooper*
ATTORNEY.

(No Model.)

3 Sheets—Sheet 3.

F. RHIND.
ARGAND LAMP.

No. 454,528.

Patented June 23, 1891.

Fig. 5.

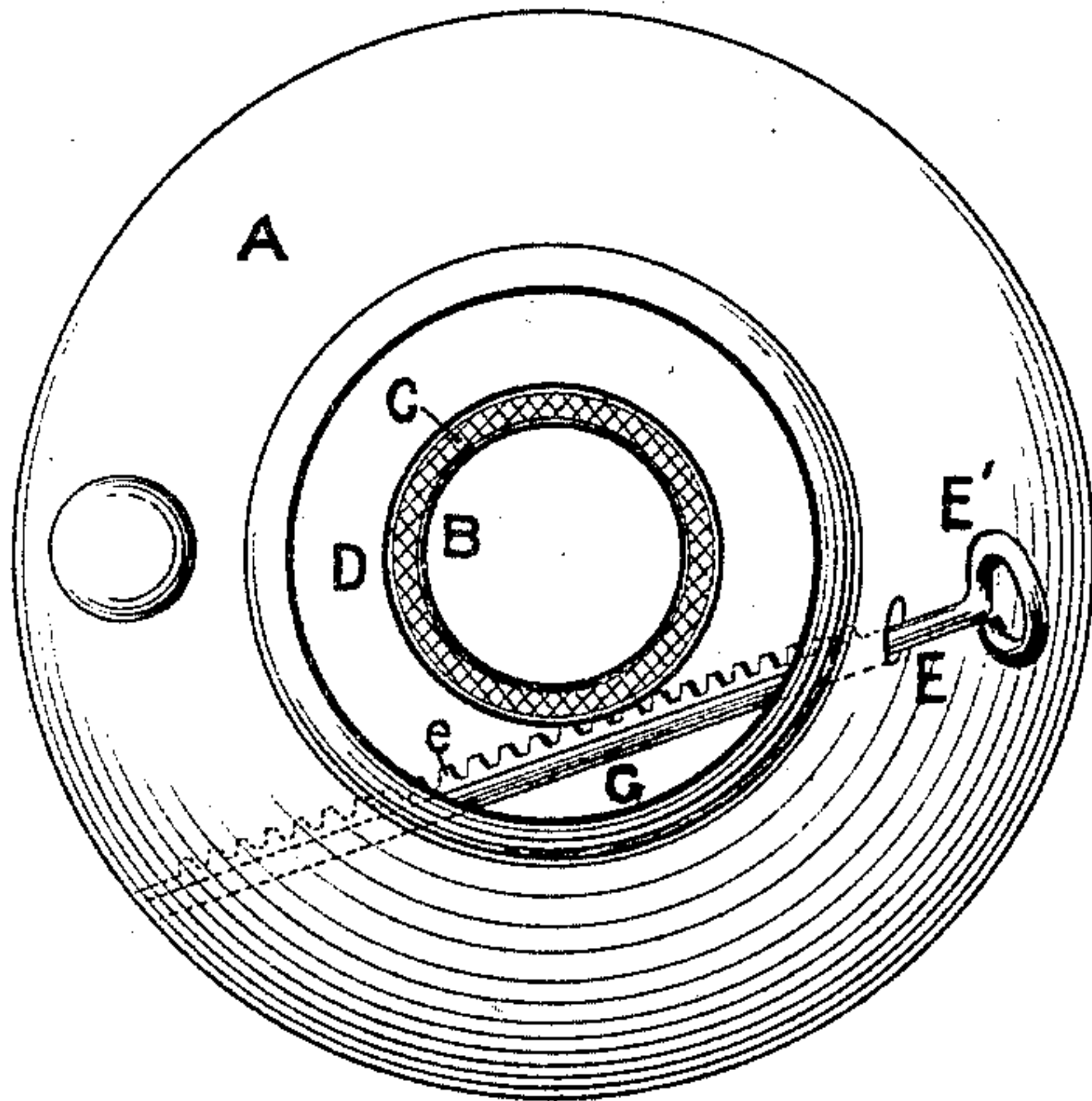


Fig. 6.

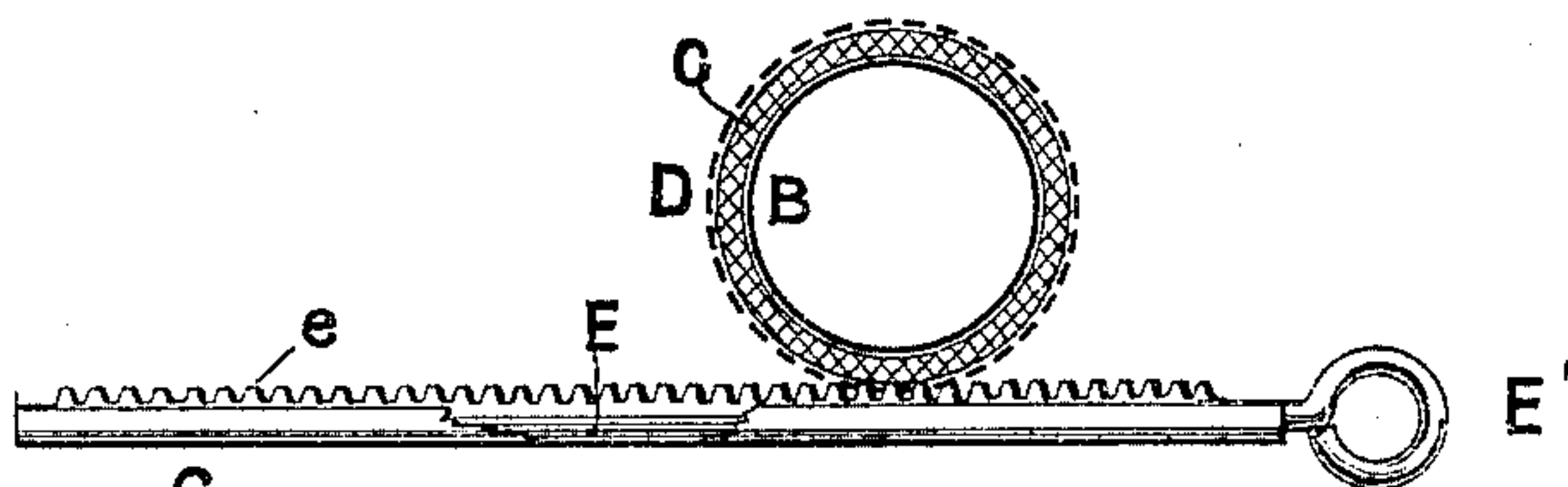


Fig. 7.

WITNESSES.

Lewis E. Frost
F. H. Kilbourne

Frank Rhind

INVENTOR

BY *John Cooper*

ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK RHIND, OF MERIDEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO
THE EDWARD MILLER & COMPANY, OF SAME PLACE.

ARGAND LAMP.

SPECIFICATION forming part of Letters Patent No. 454,528, dated June 23, 1891.

Application filed December 6, 1890. Serial No. 373,835. (No model.)

To all whom it may concern:

Be it known that I, FRANK RHIND, a citizen of the United States, residing at Meriden, Connecticut, have invented a new and useful Improvement in Argand Lamps, of which the following is a specification.

My invention relates to the wick-adjusting mechanism of Argand lamps, and is intended to produce a cheap and simple device which shall not be open to the objections heretofore urged against those of the same general character.

In the accompanying drawings, Figure 1 represents in elevation so much of an Argand lamp as is necessary to show my invention, partly broken away to show the interior mechanism. Fig. 2 is a top plan view of the same. Figs. 3 and 4 are elevations, partly broken away, showing modifications. Fig. 5 is a top plan view of another modification. Figs. 6 and 7 show details of the construction shown in Fig. 5.

The same letters refer to like parts in the several views.

A designates a lamp fount or body; B, an inner wick-tube; C, a wick; D, a wick-adjusting sleeve; *d*, a depression in the sleeve D; E, a wick-adjusting shaft or rod; E', a button or thumb-piece on the shaft E; *e*, a cog or spur wheel also on the shaft E; *e'*, Fig. 4, a sleeve connected with the shaft E; *e''*, Figs. 5 and 6, teeth on the shaft E; F F', bearings for the shaft E; G, Figs. 4, 5, and 6, a tube or guide passing through the font A.

In the example of my invention illustrated in Figs. 1 and 2 of the drawings the lamp fount or body A and inner wick-tube B may be of any desired size and form. The wick-adjusting sleeve D is provided with a spirally-arranged row of depressions *d*. As shown, they consist of perforations in the sleeve and together form a rack adapted to engage with the pinion or cog wheel *e*. The wick-adjusting shaft E is of ordinary construction, provided at its free end with a button or thumb-piece E', and also provided with the usual pinion or spur wheel *e*. The axle of the shaft E is inclined, so that its free end passes out of the top of the fount A, preferably above the level of the feeder-opening. The shaft is supported in bearings F F', as shown in Fig. 1.

The rack formed of the row of depressions or perforations *d* is preferably inclined at an angle of ninety degrees with the shaft E. It is obvious that a rotation of the shaft E, communicated to it through the button E', will act to raise or lower the sleeve D, and with it the wick C, in a spiral direction—i. e., the sleeve and wick will move on the tube B as a nut moves upon a bolt.

In Fig. 3 I have shown the sleeve D as transversely beaded or corrugated throughout its length, so that the depressions *d* run around the sleeve at right angles to its axis. It is plain that the operation of the device will be as before explained, except that on account of "slip" the rotation of the wick-sleeve and wick may be less in proportion to the vertical motion. In this case I have shown the bearing F' as a slot in the collar of the fount A, to be closed by the removable portion of the burner, which is not shown in the drawings. In this construction the shaft E may be removed from the fount A by first removing the detachable burner portion.

In Fig. 4 of the drawings I have shown a form of my device applied to a lamp which is adapted to be suspended from above. In this construction the inclined tube G passes through the fount A, being securely soldered to the side of the fount at its lower end. Through this tube G the shaft E passes. The shaft E is provided at each end with a button E'. At the higher end of the inclined shaft E a sleeve *e'*, surrounding the tube G, is secured. The pinion *e* is secured to the sleeve *e'*, and is adapted to engage with the depressions *d* in the sleeve D, as above described. It is evident that a rotary motion of either button E' will be communicated through the sleeve *e'* to the spur wheel or pinion *e*, and that the wick-sleeve D and wick C will be moved spirally on the tube B, as before. I have here shown the sleeve D as made of perforated metal, so that there are several parallel spiral rows of perforations *d*, any of which may engage with the pinion *e*.

In Fig. 5 of the drawings I have shown the shaft or rod E as longitudinally movable in the slotted tube or guide G. Through the slot in the tube G the teeth *e''* project, as shown in detail in Figs. 6 and 7. These teeth

e'' engage with the rows of perforations or depressions *d* in the wick-sleeve D, as before. It will be understood that a partial withdrawal of the shaft or rod E will act to move
 5 the sleeve D and wick C spirally upward, and that an inward movement of the shaft E will in like manner cause a spirally-downward motion of the sleeve and wick.

It is evident that many mechanical changes
 10 in addition to those indicated may be made without departing from my invention, which I conceive to be the employment of a wick-adjusting sleeve provided with rows of perforations or depressions, in combination with
 15 means, as teeth, adapted to engage therewith, so that a spiral motion may be given to said wick-sleeve and the wick supported thereby in an Argand lamp. This spiral motion is particularly advantageous when the wick has
 20 gummed or adhered to the inner wick-tube through long disuse of the lamp.

Another advantage over a former mode of construction may be noted. Where the wick-adjusting shaft is horizontal, as heretofore
 25 made, it must be either wholly above or wholly below the highest level of oil in the fount. If the former, the distance which oil must be lifted by the capillary action of the wick is increased. If the latter, leakage is unavoidable, as it is found practically impossible to
 30 pack the projecting end of the shaft tightly enough to hold the light hydrocarbons now used in illumination.

When in the claims I use the word "depressions" as applied to the wick-adjusting sleeve,
 35 I desire to be understood as including perforations or equivalent means by which the sleeve is adapted to engage with teeth or the like on the wick-adjusting shaft or rod.

When in the claims I speak of a sleeve having a rack arranged diagonally to its axis it is evident that I intend to include the form of construction, shown in Fig. 3 of the drawings, in which the rack—*i. e.*, the path traveled by the teeth of the pinion in their engagement with the sleeve—is diagonal to the
 45 axis of the sleeve.

What I claim as my invention, and desire to secure by Letters Patent of the United
 50 States, is as follows:

1. In an Argand lamp, a wick-adjusting device consisting of a sleeve adapted to support the wick, a rack on said sleeve arranged diagonally to its axis, an inclined shaft or rod,
 55 and teeth adapted to engage with said rack,

whereby a spiral motion may be communicated to said sleeve, substantially as described.

2. In an Argand lamp, in combination, a wick-adjusting sleeve, depressions in said sleeve, an inclined shaft or rod, and teeth
 60 adapted to engage with said depressions and to communicate a spiral motion to said sleeve, substantially as described.

3. In an Argand lamp, in combination, an inclined shaft, a pinion mounted on said shaft,
 65 and a wick-adjusting sleeve provided with a rack arranged diagonally to its axis and adapted to engage with the teeth of said pinion, by which said sleeve is adapted to receive a spiral motion from the rotation of said pinion, substantially as described.
 70

4. In an Argand lamp, in combination, an inclined shaft, one end of which passes out of the top of the lamp-fount, a pinion mounted on said shaft, and a wick-adjusting sleeve
 75 provided with depressions adapted to engage with the teeth of said pinion, by which said sleeve is adapted to receive a spiral motion from the rotation of said pinion, substantially as described.
 80

5. In an Argand lamp, in combination, an inclined shaft which passes through the lamp-fount, a pinion mounted on said shaft, and a wick-adjusting sleeve provided with depressions adapted to engage with the teeth of said
 85 pinion, by which said sleeve is adapted to receive a spiral motion from the rotation of said pinion, substantially as described.

6. In an Argand lamp, in combination, a removable inclined shaft, a pinion mounted
 90 on said shaft, and a wick-adjusting sleeve provided with depressions adapted to engage with the teeth of said pinion, by which said sleeve is adapted to receive a spiral motion from said pinion, substantially as described.
 95

7. In an Argand lamp, in combination, a lamp body or fount, an inclined tube passing through said fount, a shaft passing through said tube, a sleeve connected with the upper end of said shaft and surrounding said tube,
 100 a pinion on said sleeve, and a wick-adjusting sleeve provided with depressions adapted to engage with the teeth of said pinion, by which said wick-sleeve is adapted to receive a spiral motion from the rotation of said pinion, substantially as described.
 105

FRANK RHIND.

Witnesses:

GEO. L. COOPER,
 S. J. ROBY.