

(No Model.)

W. M. JACKSON.
Lamp.

No. 241,140.

Patented May 10, 1881.

Fig. 1.

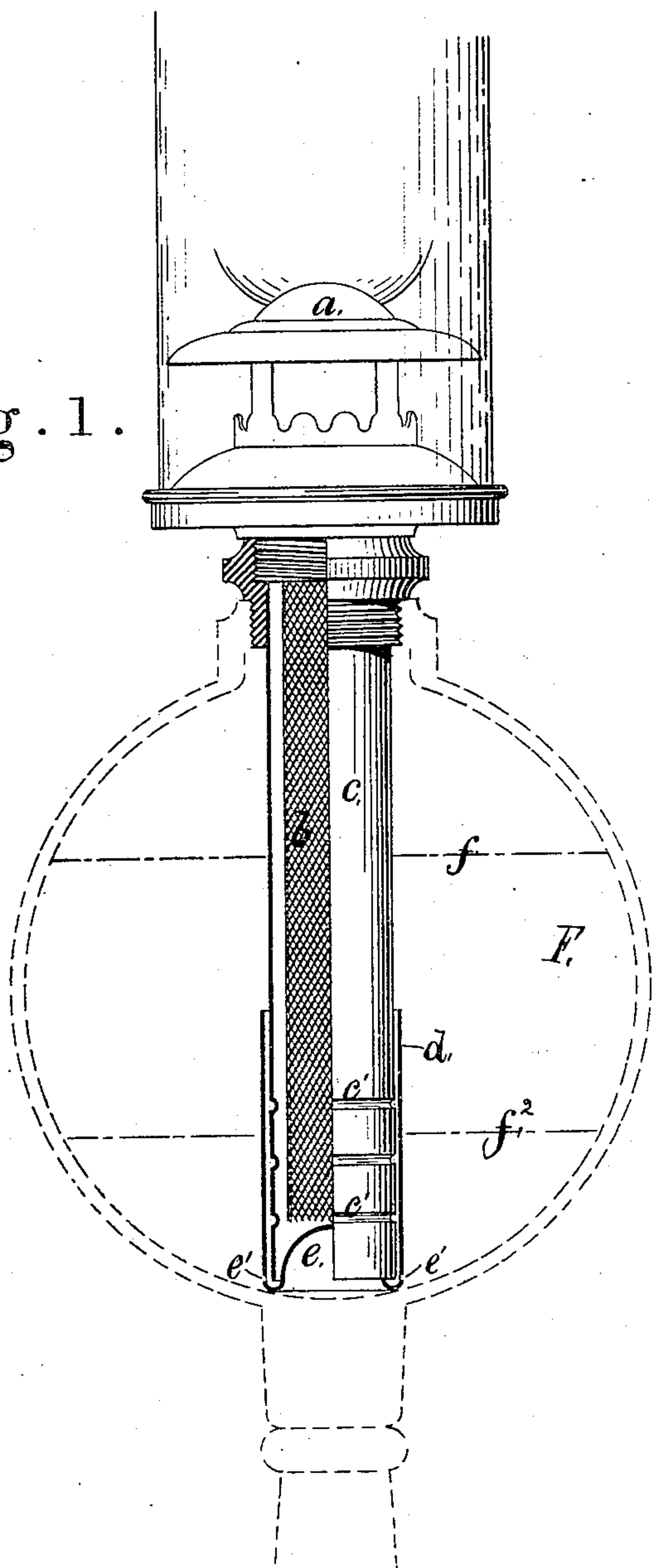
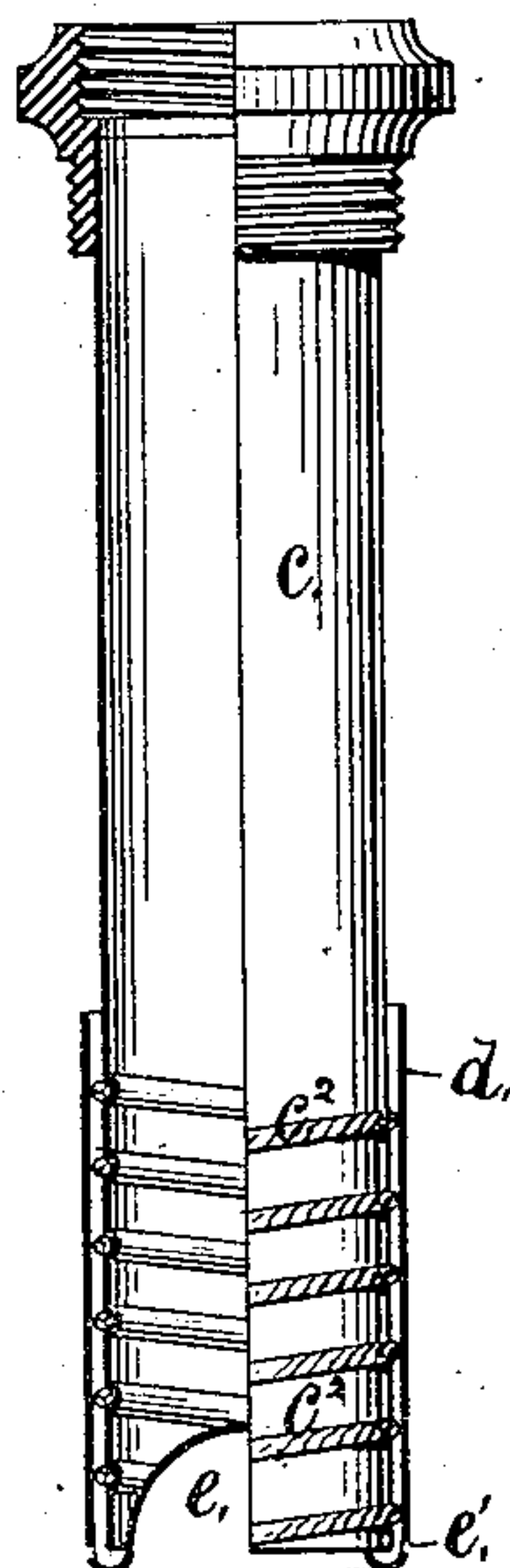


Fig. 2.



WITNESSES:

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INVENTOR:

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att'y

UNITED STATES PATENT OFFICE.

WALTER M. JACKSON, OF PROVIDENCE, RHODE ISLAND.

LAMP.

SPECIFICATION forming part of Letters Patent No. 241,140, dated May 10, 1881.

Application filed September 28, 1880. (No model.)

To all whom it may concern:

Be it known that I, WALTER M. JACKSON, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Lamps; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in lamps for burning coal and other oils, and is also applicable to oil-stoves.

The object of this invention is to prevent the explosion of coal-oil or other light oil in lamps, and thus avoid the danger now incident to the use of coal-oil lamps.

The invention consists in certain details of construction and arrangements of parts, as will hereinafter be described, and pointed out in the claim.

Figure 1 is a view of the improved safety wick-tube, the burner, and the exterior adjustable sleeve, shown partly in view and partly in section. Fig. 2 is a view, partly in section, of the safety wick-tube and sleeve.

When coal-oil or other light volatile oil is burned in a lamp the heat generated at the burner and conducted downward volatilizes some of the oil and generates hydrocarbon gas, which, when mixed with atmospheric air, forms an explosive mixture which is liable to become ignited and shatter the lamp, spreading the oil over a large surface, endangering life and property.

To prevent the entrance of air to the reservoir, and the flame of an explosion, when it does take place, from reaching the oil in the reservoir, I place a safety wick-tube on the burner so as to extend downward toward the bottom of the reservoir, and surround this safety wick-tube at its lower part with a sleeve closed at the bottom and loosely fitting the wick-tube. I provide the safety wick-tube with annular or spiral grooves, and either make the sleeve to fit the safety wick-tube sufficiently close to hold oil by capillary attraction and thus form a seal, or I place wicking or other similar material in the grooves, which will hold the oil so as to make a liquid seal.

In the drawings, *a* represents a burner; *b*, a wick; *c*, the safety wick-tube referred to, provided with the annular grooves *c'* or the spiral grooves *c''*.

d is the outer sleeve, closed at *e*, but provided with one or more small holes, *e'*. The sleeve *d* may be made of any desired length, and the safety wick-tube may be shorter than the depth of the reservoir, and the two can be readily adjusted to the depth of the same by inserting the safety wick-tube partially into the sleeve *d* and then inserting the whole into the reservoir. When the sleeve *d* reaches the bottom the safety wick-tube can be pushed into the same, and these tubes made to serve for lamps or oil-stoves of varying dimensions.

F represents the reservoir.

f' represents the high level of the oil, and *f''* the lower level. When the oil is at *f'* the separation of the oil in the reservoir and the wick is complete, and no air can enter the reservoir through the burner; but the oil will reach the wick both through the annular space between the safety wick-tube and the sleeve and through the small holes *e'*; and when the oil is at *f''* the wick is supplied through the holes *e'* only; but the oil is held by capillary attraction between the safety wick-tube and sleeve, and may be assisted by the packing laid in the grooves. In either case, if the flame, from any cause, should ignite the gas in the safety wick-tube it cannot communicate with the oil in the reservoir, and as this small quantity of gas has a free outlet at the burner no explosion can be produced that will injure the lamp. The lamp is therefore, in the true sense, non-explosive. The oil will remain clearer and burn uniformly, as no air is presented to the same, and it is not liable to oxidize.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with the reservoir *F*, of the burner *a*, the wick *b*, wick-tube *c*, provided with the grooves *c'* or *c''*, and the sleeve *d*, provided with the hole or holes *e'*, as described.

WALTER MARSH JACKSON.

Witnesses:

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