

F. H. SMITH.
LAMPS FOR BURNING HYDROCARBON OILS FOR
RAILWAY-SIGNALS, &c.

No. 194,735.

Patented Aug. 28, 1877.

Fig. X.

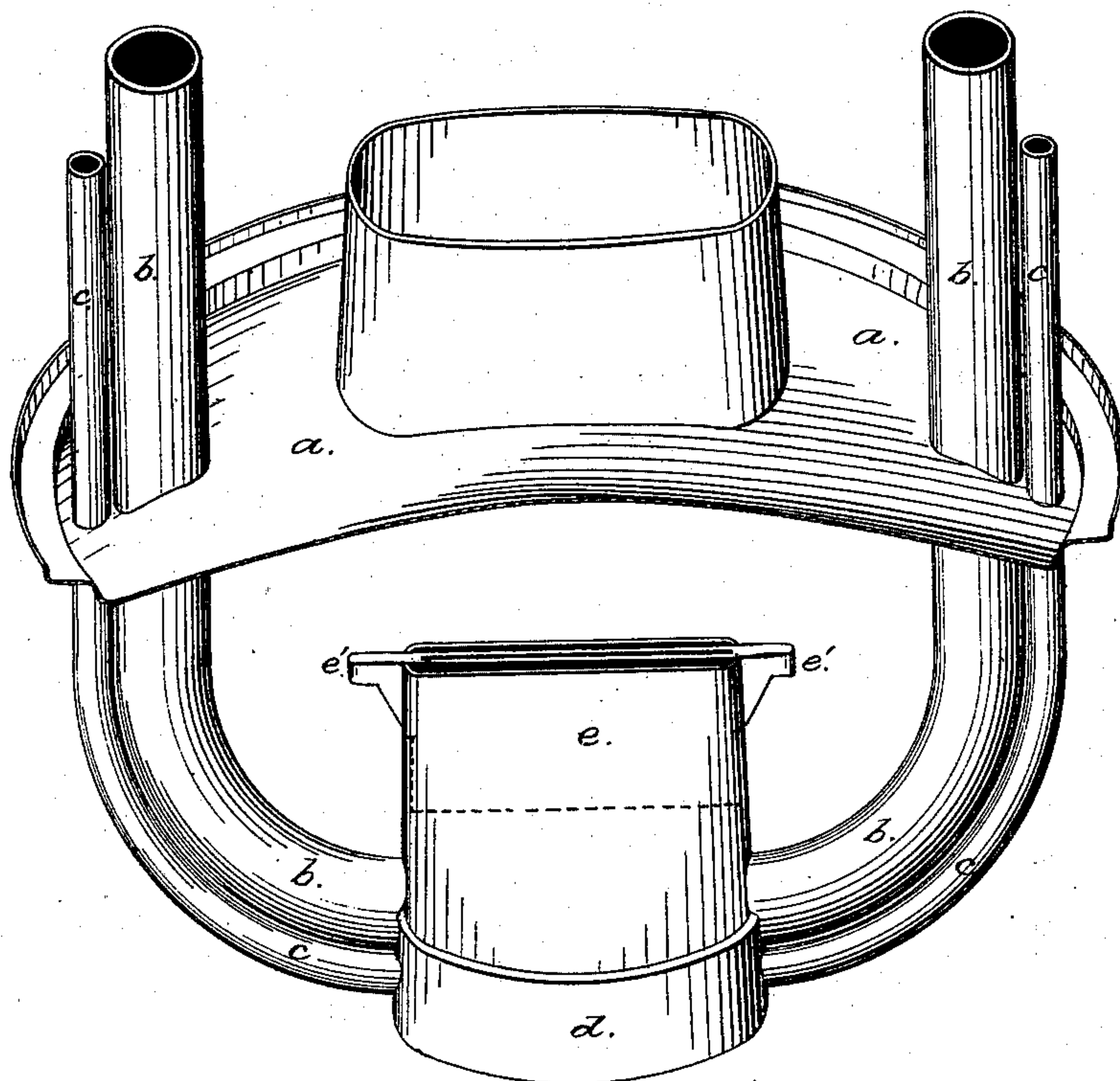


Fig. 2.

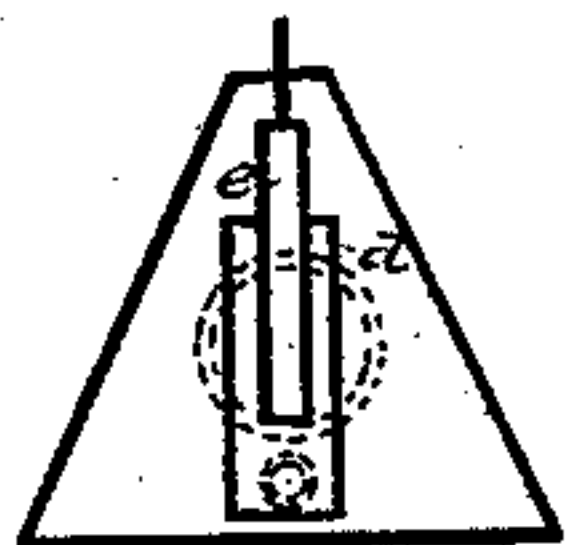


Fig. 1.

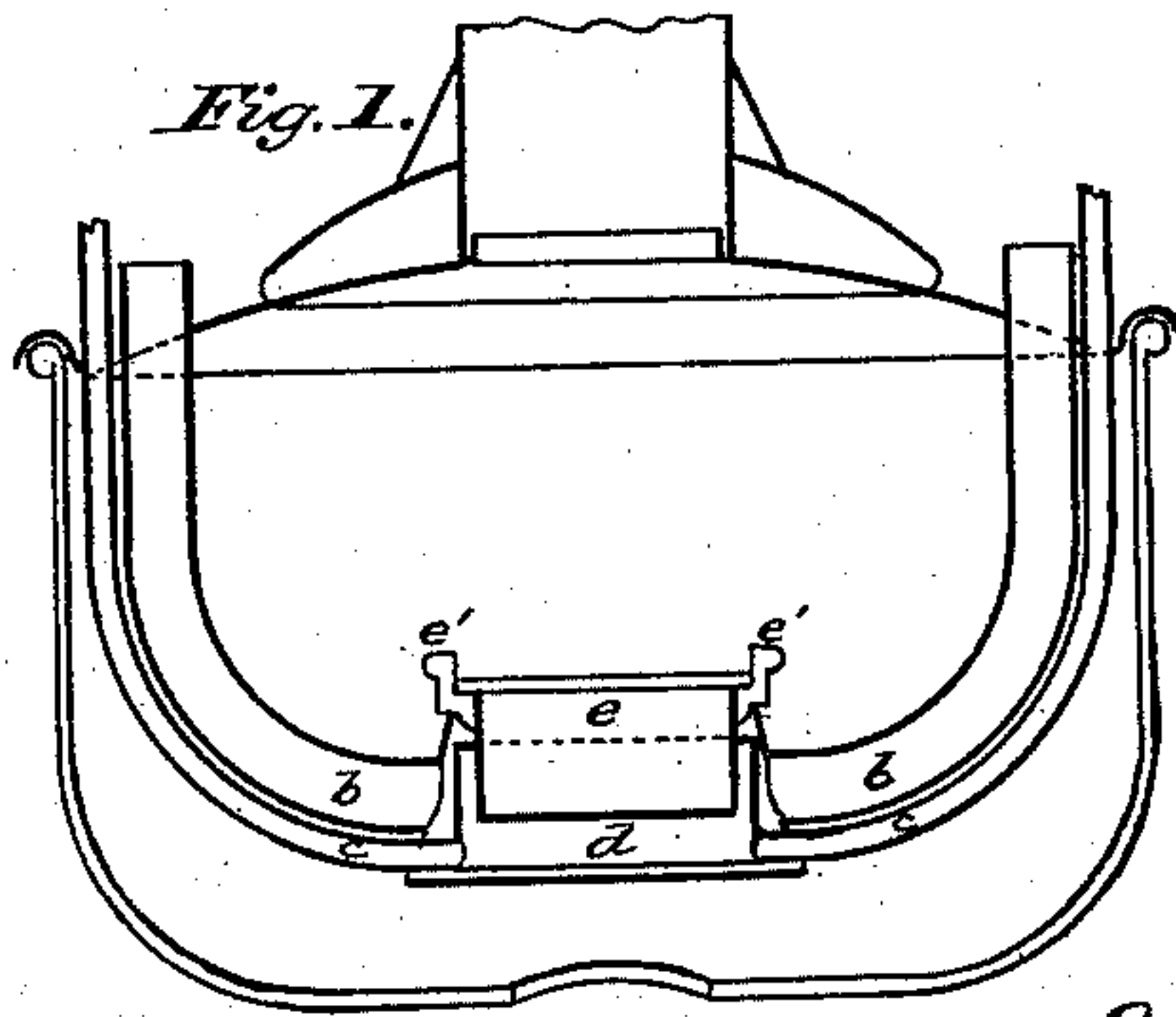


Fig. 5.



Fig. 4.

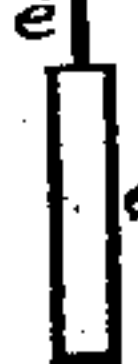
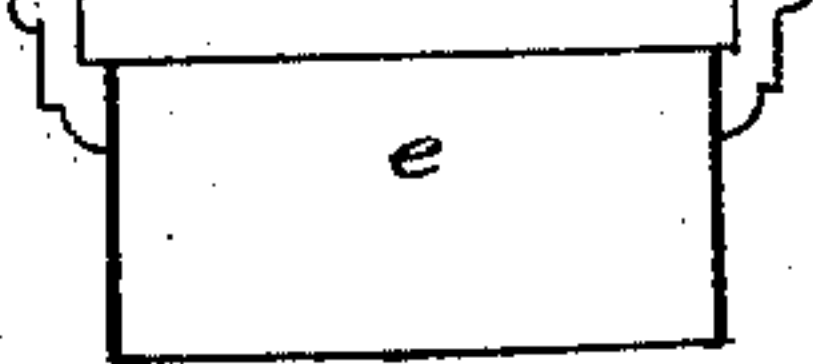


Fig. 3.



Witnesses:

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IMPROVEMENT IN LAMPS FOR BURNING HYDROCARBON OILS FOR RAILWAY-SIGNALS, &c.

Specification forming part of Letters Patent No. **194,735**, dated August 28, 1877; application filed February 3, 1877.

To all whom it may concern:

Be it known that I, FREDERICK HENRY SMITH, of Bayswater, in the county of Middlesex and Kingdom of Great Britain, have invented certain new and useful Improvements in the Construction of Railway-Signal and other Lamps for Burning Hydrocarbon Oils, which improvements are fully set forth in the following specification and accompanying drawing, in which—

Figure X is a perspective view of a car-roof lamp embodying my invention. Fig. 1 is a longitudinal vertical section thereof. Fig. 2 is a transverse section through the burner and dome. Fig. 3 is my movable wick-holder in elevation; Fig. 4, a cross-section of the same; and Fig. 5, a surface or plan view of same.

The object of my invention is to simplify the construction, and reduce the cost of lamps in which hydrocarbon oils, or a mixture of hydrocarbon with fixed oils, is used by substituting a movable wick-holder and reflecting-dome for the burners with fixed wick-holders and wick-elevators now commonly used, and supplying the flame with air by means of tubes attached thereto.

In Fig. 1, *a* is the reflecting-dome of the burner; *b b*, the air-tubes, and *c c* the oil-tubes to which it is permanently attached.

In new lamps of the improved construction, the oil is supplied from a fountain above to a narrow chamber, *d*, inclosed within the dome *a*. The wick-holder *e* is fitted in this chamber, and is supported therein by a shoulder formed on the sides of the wick-holder, or in any other convenient manner.

Fig. 2 is a transverse section through the burner and dome, showing the outlines of the dome *a*, the chamber *d*, and the wick-holder *e*, which last is shown detached, in elevation at Fig. 3, in cross-section at Fig. 4, and in plan at Fig. 5, and consists simply of a flat hollow chamber, open at top and bottom, so that it may receive a short strip of flat cotton or other wick. This wick-holder is provided with shoulders or hooks at the ends, as

shown at *e' e'*, Fig. 3; whereby it can be suspended in the oil-chamber *d*, and may rest either on the edges of the dome or of the oil-chamber, which extends nearly up to the slit in the dome.

By this arrangement the oil is brought much nearer to the point of ignition, the construction of the burner is simplified, and the ordinary wick-elevator is dispensed with.

As a modification of the above, I sometimes detach the dome *a* from the oil-cup by attaching it to the air-tubes *b b* alone, the burner or wick being supplied with the oil in any convenient mode.

The oil-reservoir with the wick-holder *e* is by this arrangement capable of being detached from dome *a* and air-tubes *b b* when the lamp requires trimming.

In adapting my improvements to old railway roof-lamps, I adopt an arrangement very similar to that first described and shown at Fig. 1—that is, I retain the oil-cup with the oil-supply tubes connected therewith, as shown at Fig. X, but I remove the burner, the ordinary wick-holder, and elevator, and I attach the dome permanently to the air-supply tubes *b b*, which communicate with the space or air above the reflector.

In all that class of lamps which do not require to be supplied with air through tubes from without, the tubes are dispensed with, and the dome *a* is made detachable from the other parts.

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

1. The dome *a*, the movable wick-holder *e*, and the air-tubes *b b*, connecting therewith, substantially as shown and described.

2. The combination of the dome *a*, the air-tubes *b b*, the oil-chamber *d*, and the wick-holder *e*, all substantially as shown and described.

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Witnesses:

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