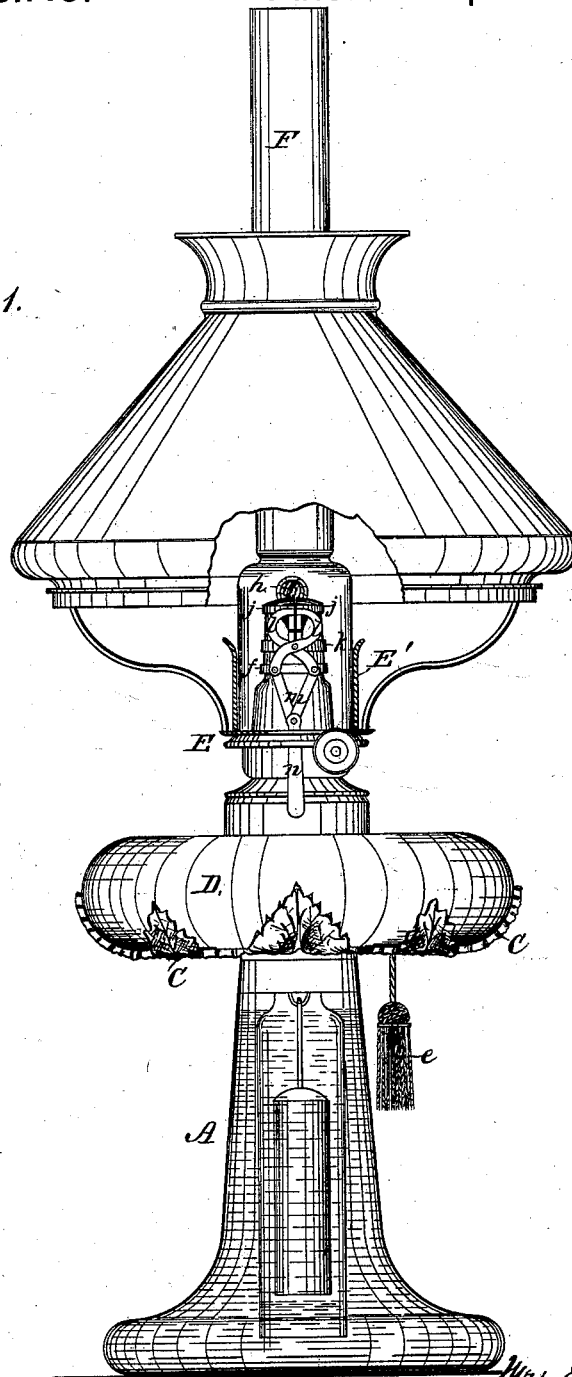


E. G. HALLER.
Self-Lighting Lamp.

No. 203.145.

Patented April 30, 1878.

Fig. 1.



WITNESSES:

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Edw. W. B. Jr.

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Mrs. E. G. Haller

BY

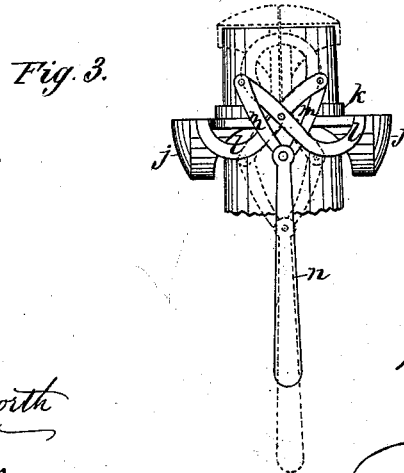
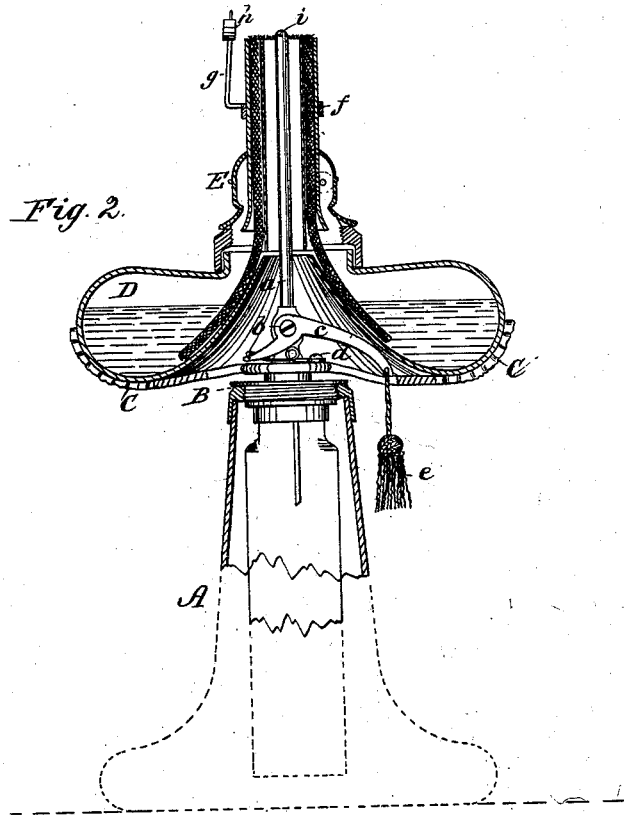
[Signature]

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E. G. HALLER.
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WITNESSES:

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UNITED STATES PATENT OFFICE.

ELLA G. HALLER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SELF-LIGHTING LAMPS.

Specification forming part of Letters Patent No. **203,145**, dated April 30, 1878; application filed December 19, 1877.

To all whom it may concern:

Be it known that I, Mrs. ELLA G. HALLER, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and Improved Self-Lighting Lamp; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation of the completed lamp. Fig. 2 is a vertical sectional view, showing the connection and relation of the lamp-font to the hydrogen-generator. Fig. 3 is an enlarged detail view of the extinguishing devices.

The object of my invention is to provide a simplified form of self-lighting and self-extinguishing lamp, constructed upon the general principle of utilizing a self-regulating hydrogen-gas generating apparatus provided with a stop-cock and vent-tube arranged in the burner, so that the hydrogen flame from the bent tube serves, when the hydrogen is ignited by contact with a piece of platinum sponge, to ignite the wick.

The invention consists in the arrangement of the oil-font with respect to the gas-generating apparatus, whereby the construction of the lamp is simplified and the parts better adapted to each other.

It also consists in the particular construction and arrangement of a basket-support, for receiving and containing the removable oil-font, in the improved means for holding the platinum sponge in its place, and the improved arrangement of the extinguishing devices, all as hereinafter more fully described.

In the drawing, A represents a self-regulating hydrogen-gas generator, consisting of an outer receptacle for the sulphuric acid and water, and an inner inverted bell-jar, containing a quantity of zinc in suspension in said bell-jar, which latter has an outlet for the gas above. This generator is fashioned into a pedestal for the lamp, as has been heretofore done, and embodies in itself no new feature. From the removable top or screw-cap B, Fig. 2, of this generator there rises a vertical tube, *a*, and upon this tube is fastened a basket or ornamental support, C, for the oil-receptacle, made large enough to contain and protect the same,

while in the tube is arranged a cock or plug-valve, *b*, having attached to it a lever, *c*, held up by a spring, *d*, while a tassel and cord, *e*, depend from the end of the lever down past the basket-support to a position within convenient reach for operating said lever, so as to turn the valve at will and allow the gas to escape from the bell-jar into the tube *a*, the lever being restored to its position and the valve closed by the action of the spring.

D is the lamp-font or oil-receptacle, which is blown from glass into a flat shape, with its bottom worked up in a conical form by means of a tool, and perforated to form a central hole, passing entirely through the glass receptacle, but leaving an annular opening between its raised and perforated bottom and the opening in the top portion, in order to give passage to the wick. To this font is applied an ordinary form of Argand or tubular burner, E, the lower end of the inner tube of said burner being arranged to fit above the perforation in the raised bottom of the glass font, so as to continue this opening to the top of the burner. This construction of oil-font allows the same to be placed concentrically above the gas-generating apparatus and be supported by the ornamental basket-work C, while the central opening through the oil font and burner receives the tube *a* of the gas-generator.

E' is a spring-sleeve of the ordinary construction, which is placed upon the lower portion of the burner and holds the chimney F. Just above this sleeve is arranged a detachable collar, *f*, supporting an arm, *g*, which at its top carries a circular frame, in which is arranged a piece of platinum sponge, *h*. This piece of platinum sponge is held at a little distance from the burner, and in such position as to be struck by the jet of hydrogen escaping from the orifice *i* in tube *a* leading from the gas-generator, so that when the lever *c* is depressed by pulling upon the cord and tassel *e* the valve *b* is opened, and the hydrogen passes up the tube through the center of the oil-font, and, escaping at the orifice *i*, strikes the platinum. The peculiar action upon the surface of the platinum sponge, as well known, causes it to become red-hot, igniting the hydrogen jet, and the flame of the latter impinges upon and ignites the wick.

To extinguish the lamp thus ignited without the danger involved in blowing down the chimney, and without permitting the escape of offensive volumes of smoke, I have arranged in connection with the lamp, and adapted to the same, an extinguisher. It consists of two semicircular cap-pieces, *j j*, Figs. 1 and 3, provided with arms *l l*, which are pivoted to a collar, *k*, which collar is applied to the burner just above the collar which supports the platinum sponge. To the arms *l* are pivoted links *m m*, and to the latter a pendent bar, *n*, is fastened, and so arranged that by pulling upon the same the cap-pieces are drawn together above the circular wick, to completely exclude the supply of air from the wick and thus extinguish the flame.

I do not claim, broadly, these pivoted cap-pieces in an extinguisher, as they have been employed before, but only the extension of their arms and the fastening of the same by a single pivot to a detachable collar. This makes a simple and economic construction, while the removability of the collar permits the devices not only to be separated from the lamp to facilitate cleaning, but enables the user to put another one in its place, when necessary, without the services of a skilled mechanic. The same advantages also apply to the removable arrangement of the collar carrying the platinum sponge.

With respect to the construction of the oil-font, also, I am aware that a substantially similar construction has been heretofore employed, and I therefore only claim its arrangement with respect to other parts, with the central tube passing up through the opening. By passing the generator-tube up through the opening all of the parts are concealed from view and protected from dust, while the tube in this position serves to hold the font more firmly in the basket and without danger of being knocked off.

As to the basket C, I am aware that similar constructions have been employed in other relations to sustain an oil-font, and I therefore only claim said basket when combined with and located concentrically upon the vertical tube of the gas-generating apparatus, in which relation it is a necessary feature to cause the weight of the centrally-perforated font to be sustained by the metal cap of the gas-generating apparatus, while still preserving for the font a protective seat.

Having thus described my invention, what I claim as new is—

1. The oil-font constructed with a central opening, and combined with an Argand burner and with gas-generating apparatus, substantially as described, having a vent-tube passing up through said tube and burner, as and for the purpose described.

2. The support or basket C, made of a size sufficient to receive and contain the removable oil-font, and located upon the central vent-tube *a* of the gas-generating apparatus A, in combination with the same and the concentrically-arranged and centrally-perforated oil-font, substantially as described.

3. The combination, with a tapering tubular burner and a hydrogen-gas tube leading up through the same, of the detachable collar *f*, carrying the platinum sponge, and adapted to be removably secured upon the said burner, substantially as described.

4. The combination, with a tapering tubular burner, of the removable collar *k*, adapted to fit upon the tubular burner, and having pivoted thereto the arms *l*, links *m*, and bar *n*, substantially as and for the purpose described.

The above specification of my invention signed by me this 17th day of December, 1877.

MRS. ELLA G. HALLER.

Witnesses:

EWD. W. BYRN,
WM. L. HALLER.