(No Model.)

J. B. MARSAUT.

MINER'S SAFETY LAMP.

No. 309,309. Patented Dec. 16, 1884.

Fig. 1.

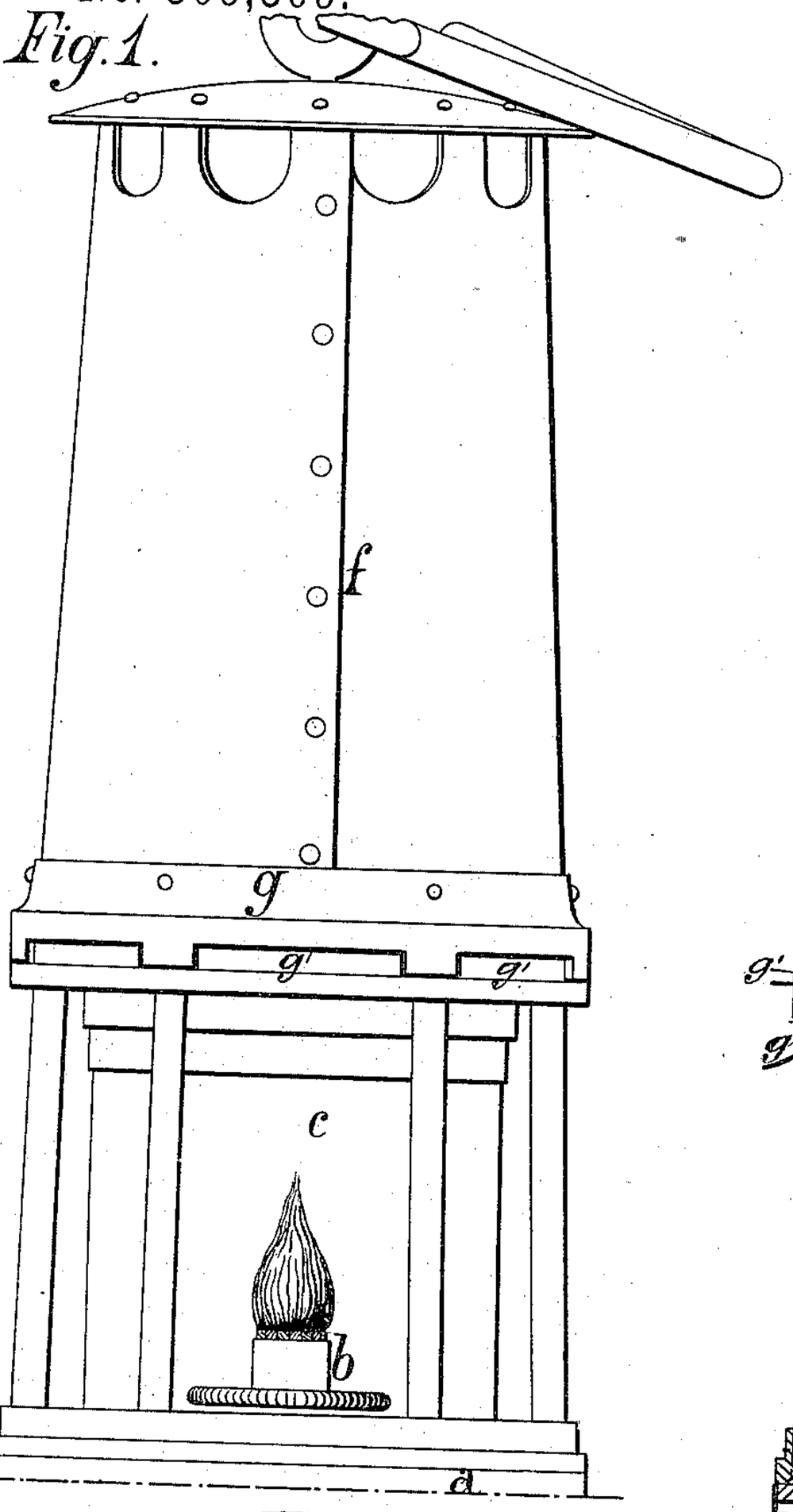

Fig. 2.

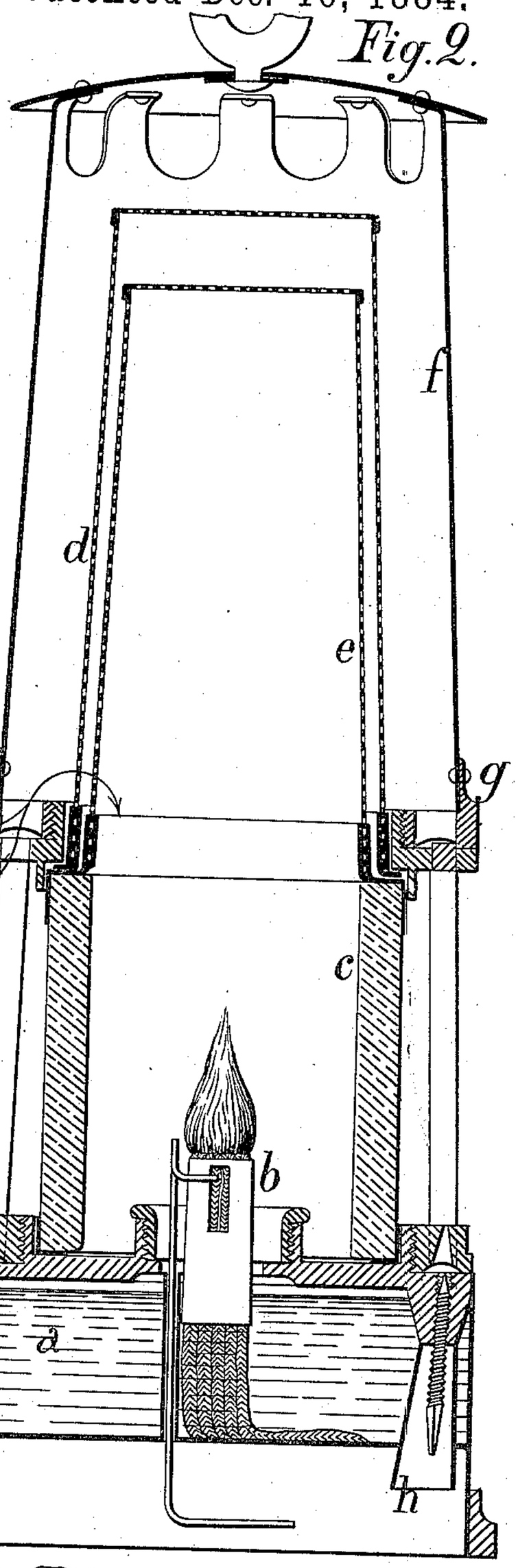

Fig. 3.

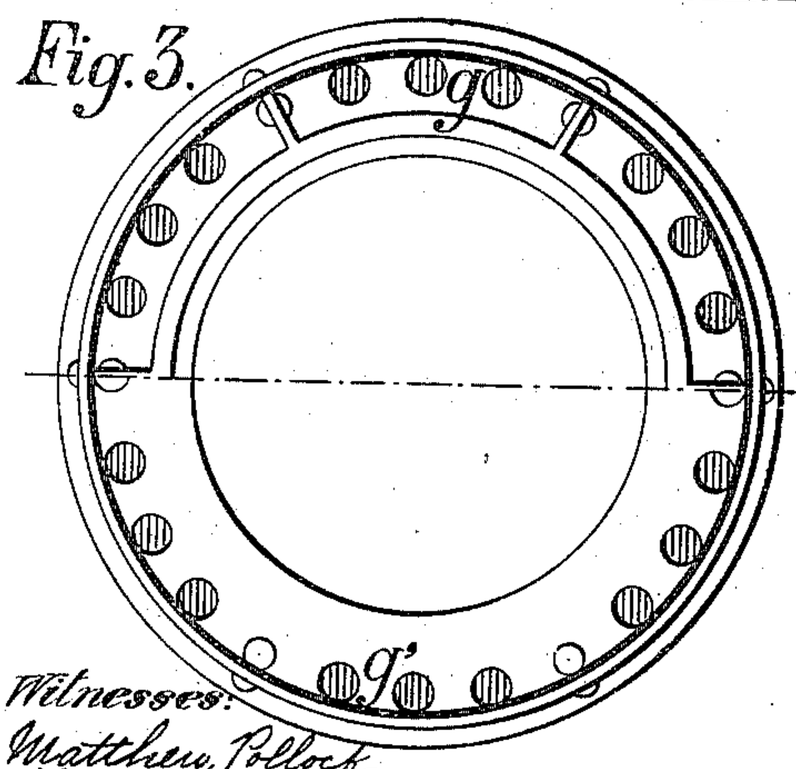

Fig. 4.

Witnesses:
Matthew Pollock
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by his attorneys
Brown & Hall

UNITED STATES PATENT OFFICE.

JEAN BAPTISTE MARSAUT, OF BESSÈGES, ASSIGNOR TO COMPAGNIE HOUILLÈRE DE BESSÈGES, OF NÎMES, FRANCE.

MINER'S SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 309,309, dated December 16, 1884.

Application filed April 7, 1884. (No model.) Patented in France July 22, 1882, No. 150,181; in Belgium July 28, 1882, No. 58,600; in England July 28, 1882, No. 3,588, and in Germany August 1, 1882, No. 21,395.

To all whom it may concern:

Be it known that I, JEAN BAPTISTE MARSAUT, a citizen of the Republic of France, residing at Bessèges, in the Department of Gard, in said Republic, have invented a new and useful Improvement in Miners' Safety-Lamps, (for which I have obtained a brevet d'invention of the Republic of France, No. 150,181, dated July 18, 1882, a brevet d'importation of the Kingdom of Belgium, No. 21,395, dated August 1, 1882, and Letters Patent of the United Kingdom of Great Britain and Ireland, No. 3,588, dated July 28, 1882,) of which the following is a specification, reference being had to the accompanying drawings.

My invention consists in the novel combination, in a lamp, of the glass cylinder which surrounds the burner, two wire-gauze screens arranged one within the other above the said cylinder, and a sheet-metal jacket or cuirass, which is either fixed or removable, surrounding the said screens, and the novel arrangement in relation to the said cylinder, screens, and jacket of the openings for the admission of air to the lamp to support combustion, whereby greater safety is afforded under the different circumstances attending the use of the lamp.

In the accompanying drawings, Figure 1 is an elevation of the lamp, having its jacket or cuirass movable. Fig. 2 is a vertical section of the same. Fig. 3 is a horizontal section of the same, representing in one half the construction of the base with the jacket or cuirass movable, and the other half the construction with a fixed jacket. Fig. 4 is a vertical section of part of the base with fixed jacket.

Similar letters of reference indicate corresponding parts in the several figures.

a is the oil-reservoir.

b is the burner.

c is the transparent cylinder which surrounds the flame of the burner, made of very thick glass, and resting upon the top of the reservoir and supporting the concentric outer and inner wire-gauze envelopes, *d e*, the inner one, *e*, of which is of the same internal size at the bottom as the glass cylinder *c*, so that the currents of air within the lamp may pass between the said cylinder and envelope *e* without meeting with any disturbing obstruction.

f is the sheet-metal jacket or cuirass, which is firmly riveted or otherwise secured permanently to an annular base, *g*. This jacket is covered at the top, but has openings in the sides under the cover for the escape of smoke. The base *g* is so held down by the upright rods which form the guard to the glass cylinder *c* that it holds the wire-gauze envelopes *d e* firmly down to the said cylinder by bearing on flanges provided at the bottom of said envelopes, and at the same time holds the glass cylinder in place. This base has provided in it openings $g' g^2$, for the admission of air to the lamp above the glass cylinder *c*, such air entering through the two wire-gauze envelopes, and passing downward therefrom into the interior of the glass cylinder and to the flame from the wick.

h is the ordinary screw-fastening for preventing the opening of the lamp by the removal of the oil-reservoir from the superjacent parts.

In this lamp the space within the glass cylinder surrounding the flame provides around the flame an air-cushion which moderates the force of the explosion of any gas that may enter and be inflamed within the space above, and so, by providing room for downward expansion of the exploding gases, reduces the tendency of the inflamed gases to spread in a direction to pass through the wire-gauze envelopes. These envelopes, being entirely surrounded by the cuirass or jacket of sheet-metal, are protected against the effects of sunden increase or reduction of pressure of the atmosphere surrounding the lamp, and the consequent tendency of explosive gases to enter the lamp, or of flame to be forced out through the wire-gauze envelopes. The air to support combustion is introduced as close as practicable to but above the flame of the wick, and has a downward circulation unbroken by any projection within the interior of the lamp which would disturb the current.

I do not claim separately either the double wire-gauze envelope, the provision for admit-

ting air above the flame of the wick, or a cuirass or jacket around the wire-gauze envelope; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the reservoir and burner, of the glass cylinder *c*, surrounding the burner, the inner wire-gauze envelope, *e*, resting on the said cylinder and having an internal diameter corresponding with said cylinder at the junction which it forms therewith without internal projection, the outer wire-gauze cylinder, *d*, the cuirass or jacket *f*, and the base-ring *g*, which holds the said cuirass or jacket *f*, and the said envelopes *d e* upon the cylinder *c*, and in which are the openings for the admission of air, substantially as herein described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JEAN BAPTISTE MARSAUT.

Witnesses:
V. T. CHABUETON,
V. RAYMOND.