

J. RATZ.
MINER'S LAMP.

Patented Oct. 14, 1890.

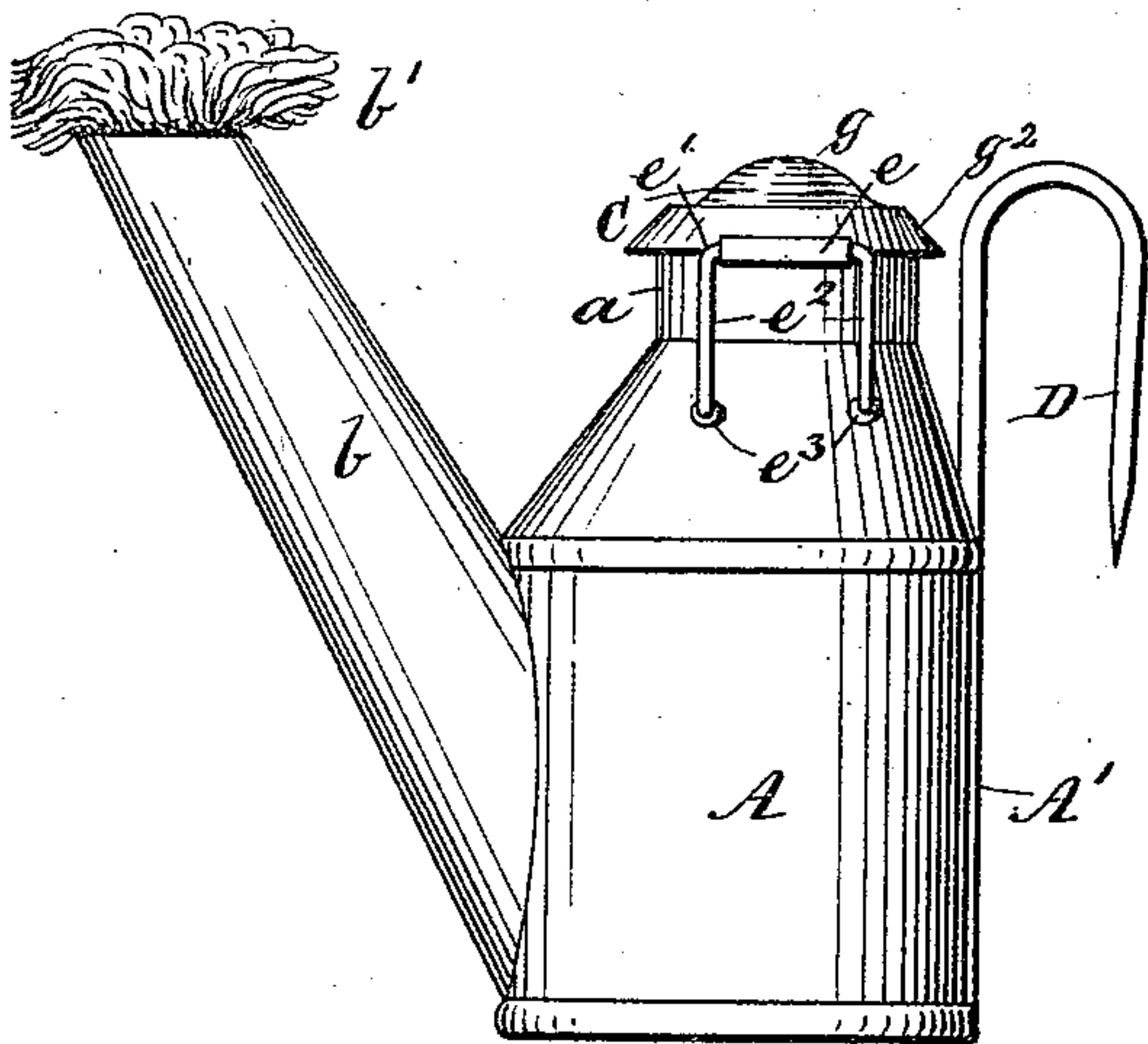


Fig 2

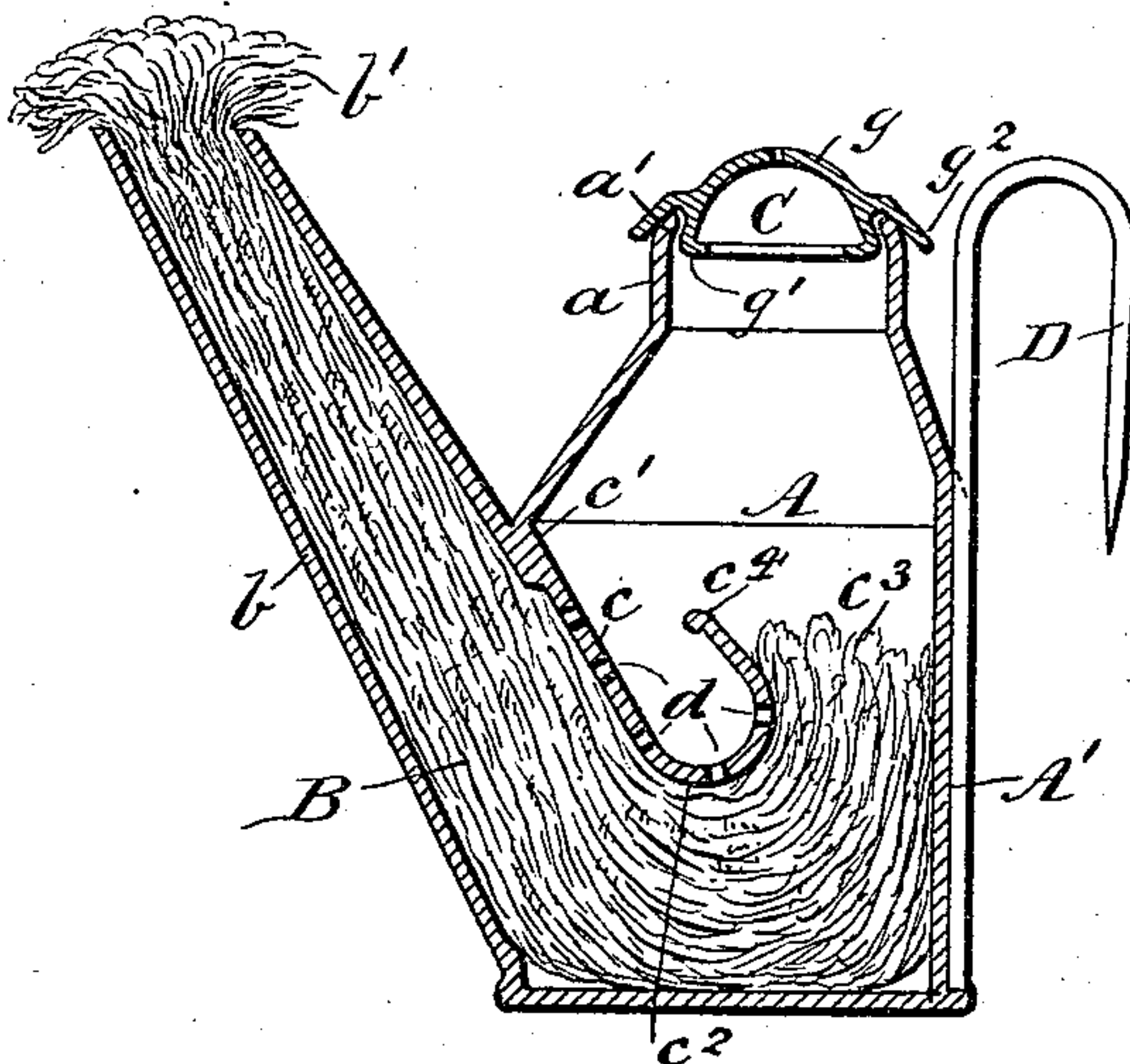
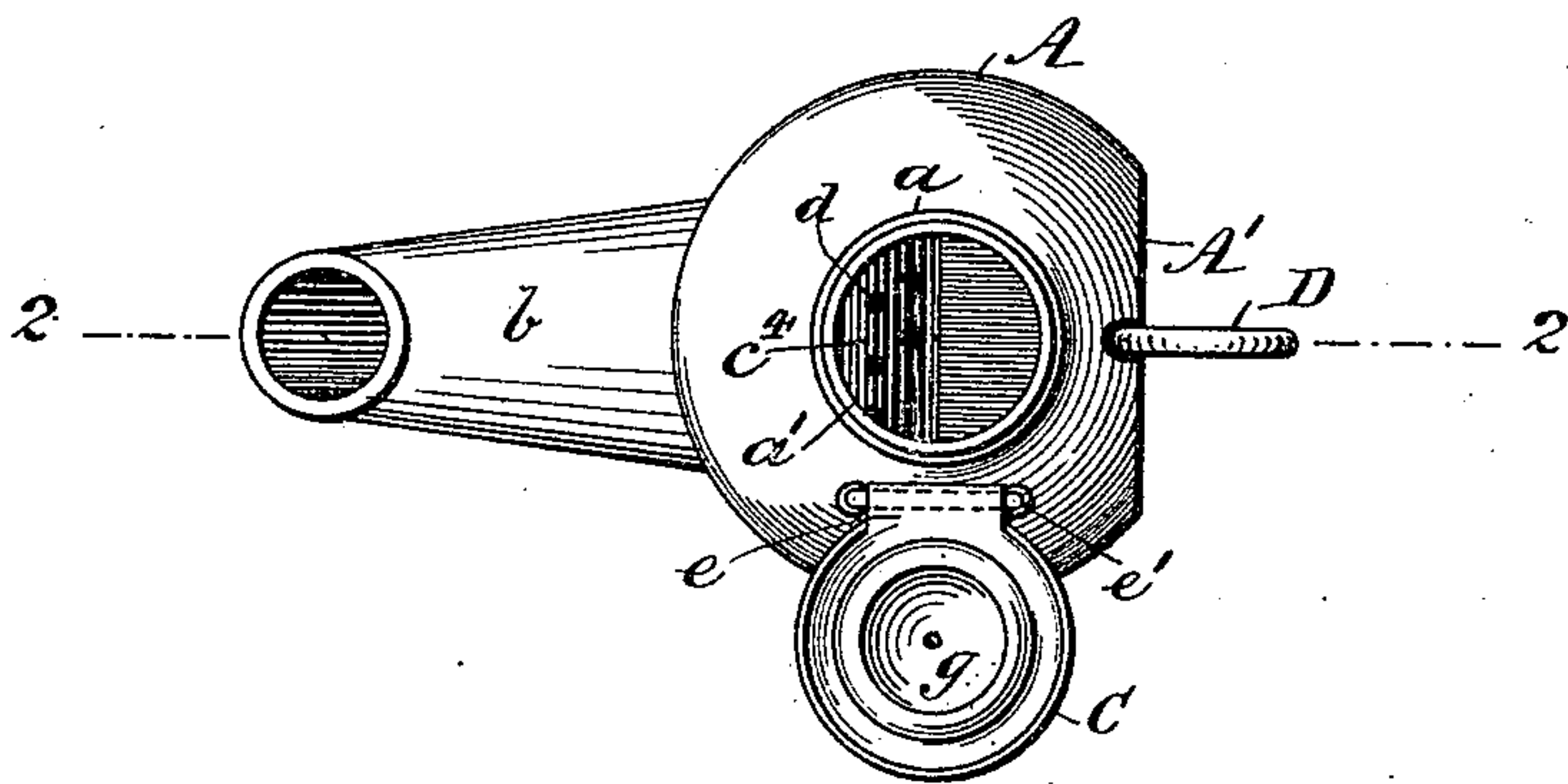


Fig 3



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JOHN RATZ, OF HAZLETON, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND
HENRY LICHTENBERGER, OF SAME PLACE.

MINER'S LAMP.

SPECIFICATION forming part of Letters Patent No. 438,490, dated October 14, 1890.

Application filed December 18, 1889. Serial No. 334,198. (No model.)

To all whom it may concern:

Be it known that I, JOHN RATZ, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Miner's Lamp, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the small lamps usually carried by miners on their hats in a position to throw light upon their work.

As heretofore constructed the ordinary lamps for miners' use are liable to leak oil at the filler-orifice and spill the same on the clothes of the workman carrying the lamp. Owing to the manner in which the cotton wicking is placed in the lamp as commonly made it quickly becomes entangled and matted together in the lamp-chamber, preventing the free adjustment of the wick in its tube and obstructing the capillary action of the same. Furthermore the lamp-body is so shaped ordinarily that it rocks sidewise when attached to the hat and frequently sets fire to the head-covering and clothes of the wearer when in use.

One object of my invention is to provide a small, shapely, and convenient lamp for the use of miners and other workmen which, when attached to the head-covering, will be prevented from rocking laterally, and thus avoid danger of igniting the clothes of the wearer.

A further object is to provide means for preventing the lamp from leaking at its filler-orifice, and also to obviate liability of entanglement and matting together of the cotton wicking used in the lamp.

To these ends my invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and indicated in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation in perspective of the lamp. Fig. 2 is a side elevation in section taken on the line 2 2 in Fig. 3, and Fig. 3 is a top plan view of the lamp with its lid thrown open.

A represents the body of the lamp, which is

preferably made of tin-plate, although copper and other sheet metal may be employed in its construction. The body A is cylindrical, with exception of a flat side formed thereon at A', which will be further alluded to. The upper portion of A is made coniform, terminating at the apex thereof in a ferrule or cylindrical wall *a*, the upper edge *a'* of which is bent slightly inward, as shown in Fig. 2.

Opposite the vertical flat wall A' a spout or wick-tube *b* of the usual form is secured to the cylindrical body of the lamp, said tube projecting above the top of the body A.

Within the lamp-body, which is the oil-chamber, an inclined diaphragm *c* is secured, which extends from the point *c'*, where the upper junction of the wick-tube *b* is effected with the orifice made therefor in the lamp-body A. The inclined diaphragm *c* is given a return curve at *c''*, thereby producing a flaring throat *c'''* between the upper free edge *c''''* of the diaphragm and the vertical flat wall A'. There is a series of perforations *d* made in the diaphragm *c* to permit the free passage of oil through it.

When the wicking B is introduced within the wick-tube *b*, its lower extremity is extended beneath the diaphragm *c* and thence upwardly into the flaring throat *c'''*, where it is spread out, as shown in Fig. 2, so that oil introduced in the lamp-body will be fed by capillary attraction to the point of combustion *b'*. The lid C of the lamp is secured by scrolling the end of the sheet-metal flange *e* around the upper horizontal portion of the vertical wire loop *e'*, that is attached by its parallel limbs *e''* to the conical portion of the lamp-body at *e'''*.

The peculiar construction of the lid C is shown in Figs. 2 and 3. It consists of a convex or cupped cap-piece *g*, to which an annular depending sheet-metal flange *g'* is attached concentric with the drooping peripheral edge *g''* of the cap-piece. Said annular flange has its free lower edge turned inwardly and curved, so that when brought into contact with the free edge of the fixed ferrule *a* there will be a wedging action afforded that will cause the ferrule edge to yield outwardly and then resume its normal condition, whereby the lid C is held closely, producing an oil-tight cover

for the filler-orifice, and in such secured adjustment, by reason of the elasticity of the parts that there can no accidental displacement occur from rough usage. It should be
5 understood that there will be no impediment to the ready opening of the lid C when pressure is applied to its drooping edge opposite to the hinge-joint.

The flat vertical wall A' produced on the
10 body of the lamp is designed to bear on the surface of the head-covering worn by the user of the lamp, the usual hook D being secured at the upper edge of said wall for attachment of the lamp to the hat or cap, and it will be
15 apparent that when a hooked connection of the lamp-body is effected there can be no rock-

ing lateral movement of the same, although swinging of the lamp to adjust its weight-center to a perpendicular line is permitted.

Having thus fully described my invention, 20
I claim as new and desire to secure by Letters Patent—

In a miner's lamp, the combination, with a cylindrical lamp-body having a flat side wall and an inclined wick-tube opposite this flat 25
side, of an internal perforated and inclined diaphragm having its free edge upwardly and laterally bent, substantially as set forth.

JOHN RATZ.

Witnesses:

A. A. RUTH,

E. D. COLLINS.