

(No Model.)

A. J. BECKER.
MINER'S SAFETY LAMP.

No. 353,438.

Patented Nov. 30, 1886.

Fig. 1.

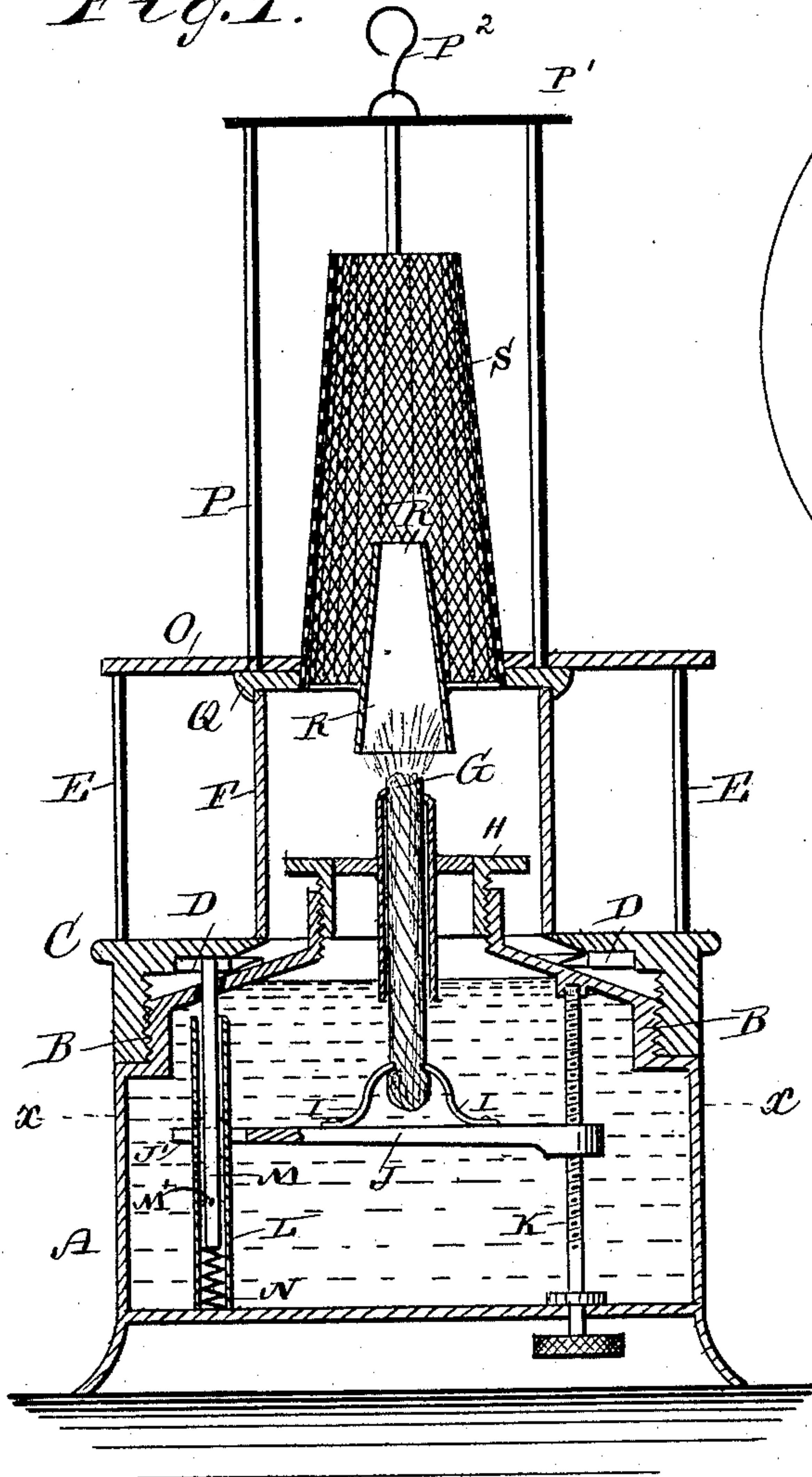


Fig. 2.

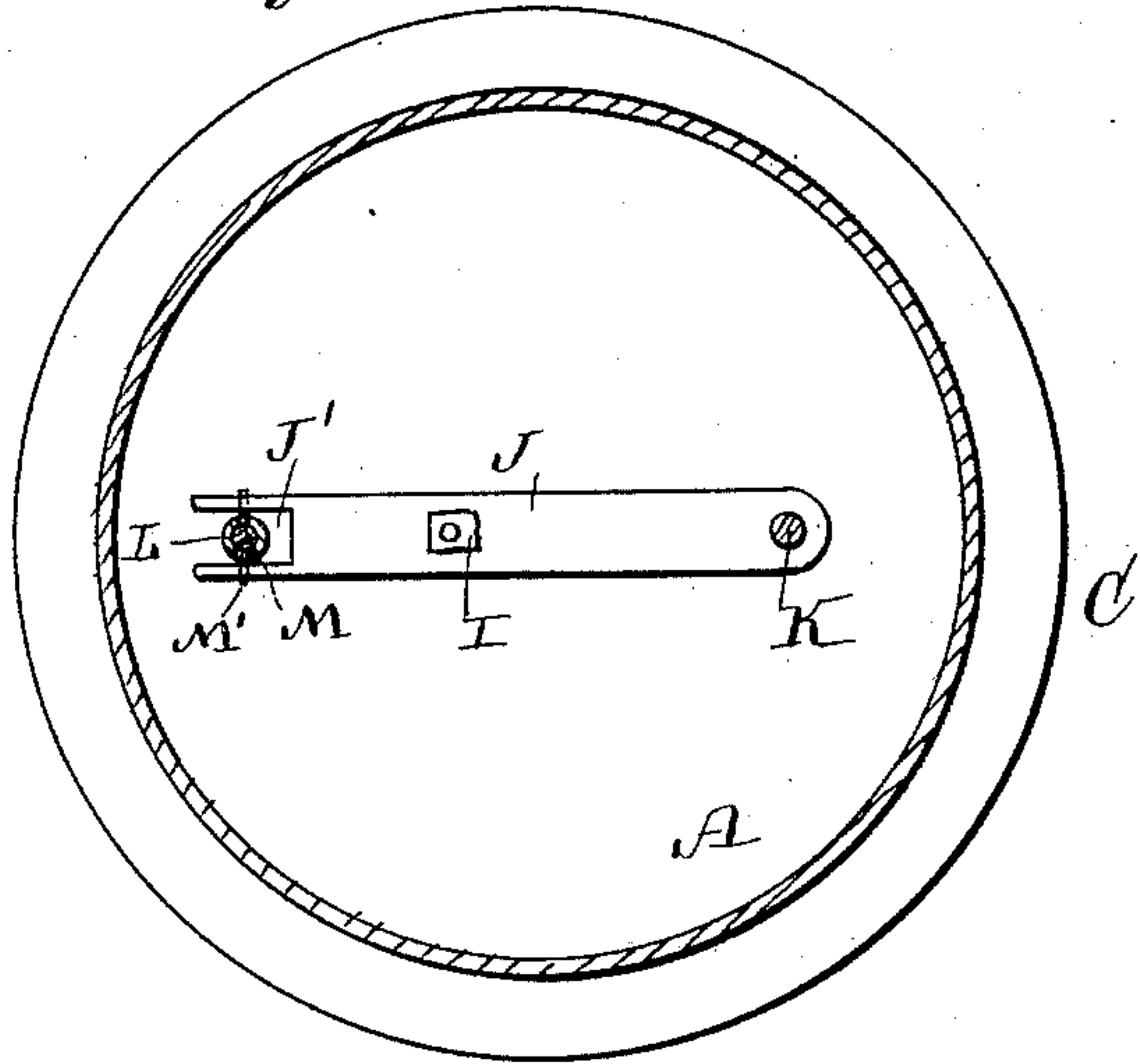
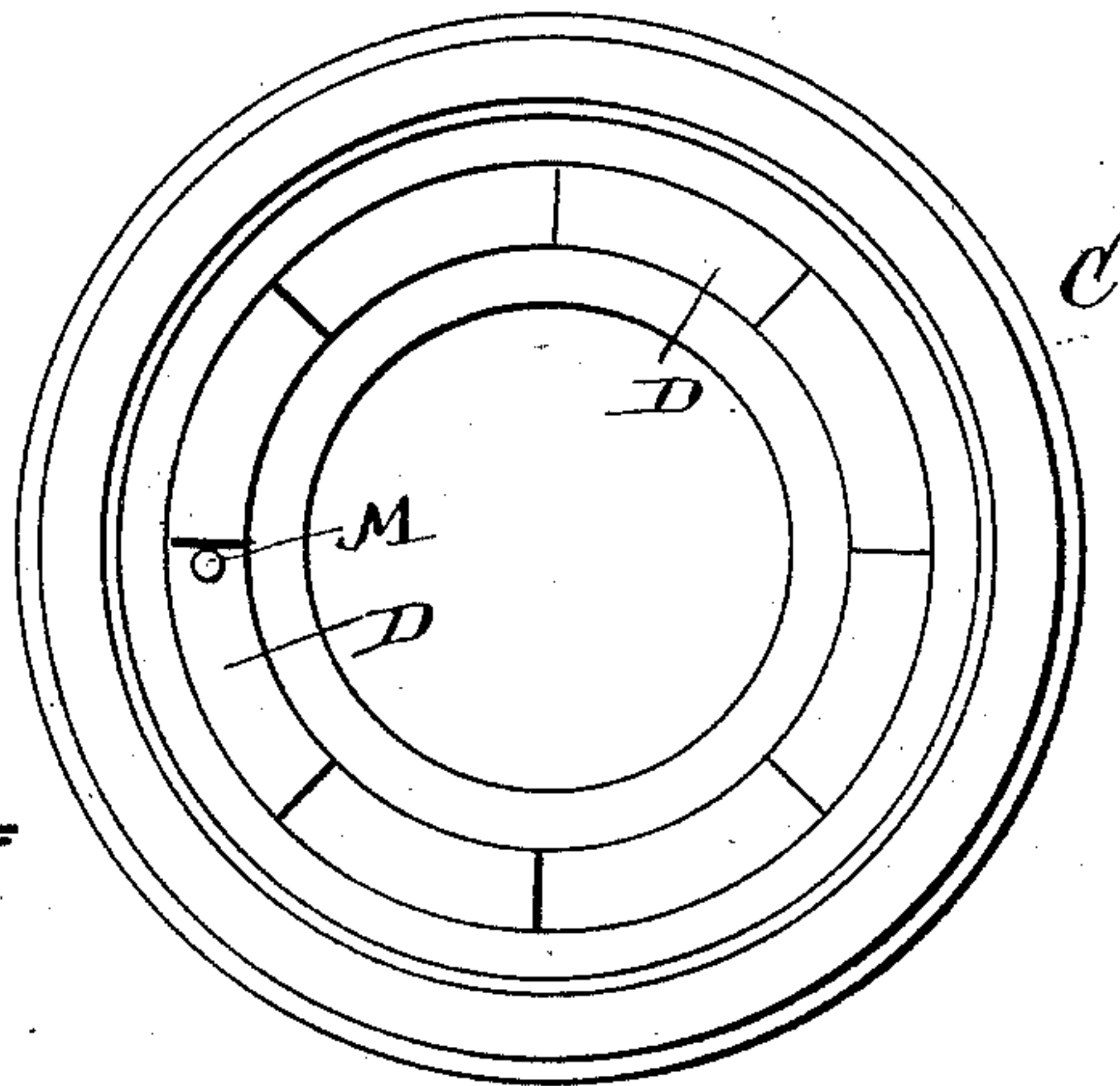


Fig. 3.



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AUGUST JOHANN BECKER, OF MOUNT CARMEL, PENNSYLVANIA.

MINER'S SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 353,438, dated November 30, 1886.

Application filed June 21, 1886. Serial No. 205,786. (No model.)

To all whom it may concern:

Be it known that I, AUGUST JOHANN BECKER, of Mount Carmel, in the county of Northumberland and State of Pennsylvania, have invented a new and Improved Miner's Safety-Lamp, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved miner's safety-lamp, which cannot be opened by the operator without extinguishing the light, and in which the light is also extinguished when brought into contact with the fire-damp.

The invention consists of various parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out 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 central sectional elevation of my improvement. Fig. 2 is a sectional plan view of the same on the line *xx* of Fig. 1, and Fig. 3 is a bottom view of the same.

The oil-receptacle A is provided with the screw-threads B, on which screws the hood C, provided with the ratchet-teeth D in its bottom. On the hood C rests the glass cylinder F, which surrounds the wick G, placed in a burner, H, attached to the upper part of the oil-receptacle A. The lower end of the wick G is secured to the spring-clamps I, attached to a spring-bar, J, which screws at one end on the vertical screw K, having its bearing in the oil-receptacle A, and projecting through the bottom of the same.

Through the forked end J' of the bar J (see Fig. 2) passes the upright tube L, secured in the receptacle A, in which tube L moves, the bolt M having a projecting pin, M', placed below the forked end J' of the bar J, the lower end of the bolt M resting on a coil-spring, N, placed in the tube L. The upper end of the bolt M projects beyond the oil-receptacle A, and engages, when the hood is screwed on the same, with the ratchet-teeth D.

The top plate, O, of the hood C is supported by the stays E, and to it are attached the stays P, carrying the cover P', provided with the hook P², by which the lamp can be attached to a miner's belt, or to any other suitable place.

On the top of the glass cylinder F is placed a cover, Q, secured to the top plate, O, and provided with a conical metal chimney, R, the lower end of which is directly above the upper end of the wick G. A conical perforated cylinder, S, is also secured to the cover Q, and stands midway between the chimney R and the stays P.

The operation is as follows: When the hood and the oil-receptacle A are detached from each other, the part of the wick projecting above the burner H can be ignited, and the hood C can then be screwed on the oil-receptacle A. The upper end of the bolt M engages with the ratchet-teeth D, but permits of screwing the hood C on the oil-receptacle A, as the ratchet-teeth D depress the bolt M when turned in one direction. After the hood has been screwed tightly on the receptacle, the two parts cannot be unscrewed, as the upper end of the bolt M rests against the edge of one of the ratchet-teeth D, unless the bolt M is lowered, which can be accomplished by turning the screw K in either direction.

It will be seen that when the lamp is once lighted the miner has to turn the screw K to withdraw the bolt M from the ratchet-teeth D, which turning of the screw K moves the spring-bar J downward, and when its forked end J' comes in contact with the pin M' on the bolt M it withdraws the latter from contact with the ratchet-teeth D. As soon as the bolt M is withdrawn, the hood can be unscrewed; but the downward movement of the spring-bar J draws the wick G downward also, and the flame is extinguished as soon as the upper part of the wick moves into the burner H, so that when the two parts are now unscrewed the light is already extinguished. It will be seen that when fire-damp penetrates the cylinder S it extinguishes the light, and the flame does not ignite the fire-damp surrounding the cylinder, as the latter and the chimney R form a safeguard, and only a slight explosion can occur in the cylinder S on the upper end of the cylinder R.

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

In a miner's lamp, the combination, with the oil-receptacle A, of the burner, the screw-rod K, the forked bar J, having a screw-threaded aperture at one end, through which the rod K

passes for moving said bar vertically, wick-
holders or clamps on the upper side of said
bar, the tube L, the bolt M, guided therein,
projecting through the top of the receptacle
5 and engaging with the forked end of the bar J,
to be moved downward thereby, a spring press-
ing the bolt upward, and the cap C, having

ratchet-teeth engaging the projecting end of
the bolt, substantially as set forth.

AUGUST JOHANN BECKER.

Witnesses:

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JACOB SCHUSTER.