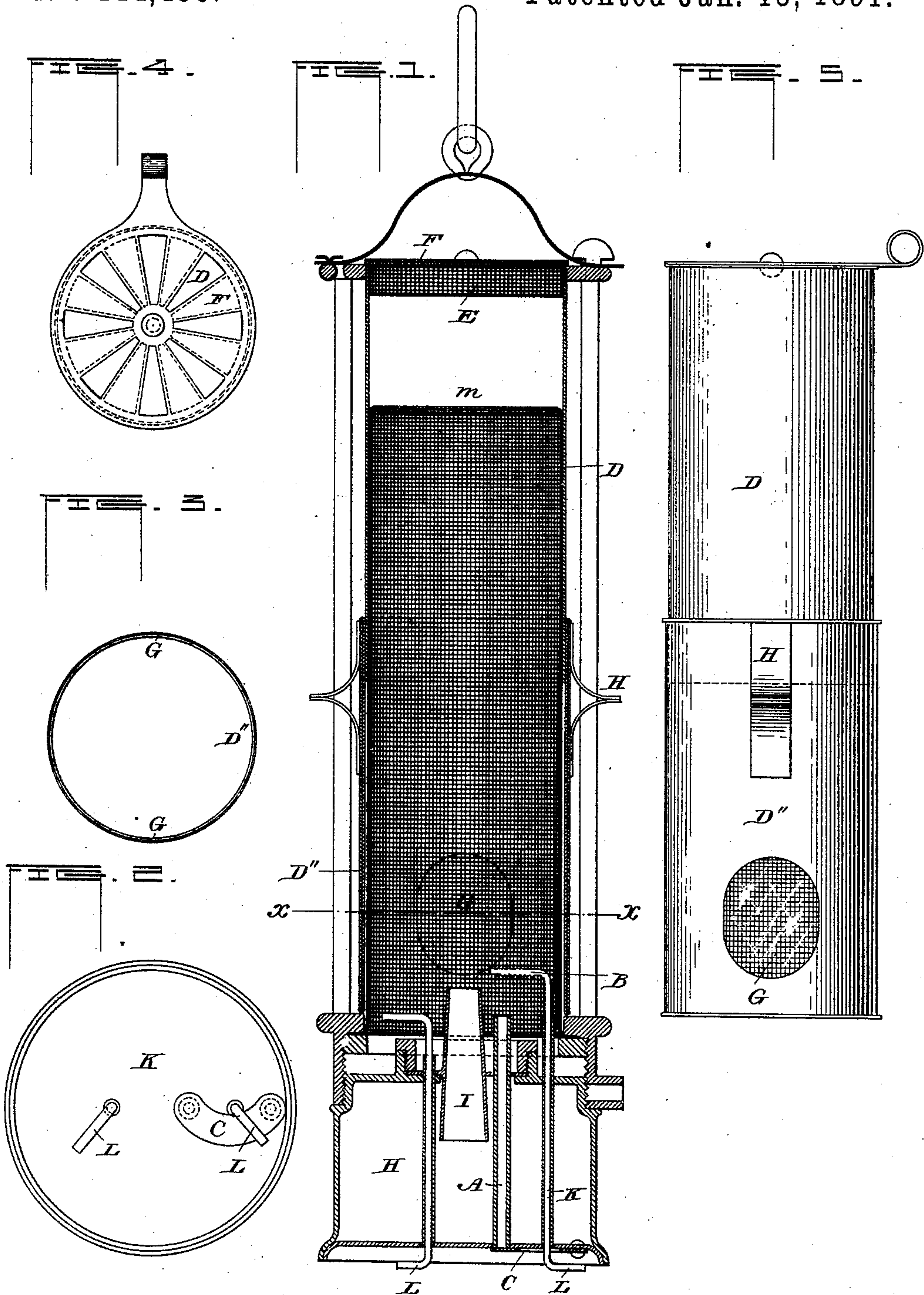


(No Model.)

J. B. HARRIS, J. T. GRIFFITH & T. B. HARRIS.
SAFETY LAMP.

No. 444,435.

Patented Jan. 13, 1891.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN B. HARRIS, JOHN T. GRIFFITH, AND THOMAS B. HARRIS, OF WILKES-BARRÉ, PENNSYLVANIA.

SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 444,435, dated January 13, 1891.

Application filed August 4, 1890. Serial No. 361,029. (No model.)

To all whom it may concern:

Be it known that we, JOHN B. HARRIS, JOHN T. GRIFFITH, and THOMAS B. HARRIS, citizens of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Lamps; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in safety-lamps; and it consists in the arrangement and construction hereinafter described and claimed.

Like letters refer to similar parts in the several figures of the drawings, in which—

Figure 1 is a vertical section of our lamp complete. Fig. 2 is a bottom view of the same. Fig. 3 is a cross-section on the line $x x$ of Fig. 1, the supporting-posts not being shown. Fig. 4 is a plan view of the top of the lamp, showing the damper or ventilator; and Fig. 5 is a side elevation of the outer casing, including the movable section.

An oil reservoir or chamber H constitutes the base of the lamp, and this part is screwed or otherwise removably attached to the upper section of such lamp. In the central portion of the top of the oil-reservoir is arranged a wick-tube I. A tube A, open at both ends, passes entirely through the oil-reservoir and into the vicinity of the top of the wick-tube. This tube A is to contain matches or any other suitable inflammable substance, and the bottom of the same may be closed when desired by a cover C, as shown in the drawings. In proximity to the wick-tube is the tube K, also extending through the oil-reservoir, and swiveled in the same is a rod having the lower bent end serving as a handle and an upper bent end with a roughened or serrated under face. By manipulating this rod with bent ends, which are marked L, the match or other inflammable substance may be ignited without removing the oil-reservoir, or, indeed, without removing any of the parts of the lamp. The upper bent end of this rod L is so formed as to act as a cap for the tube A, and thereby

keep said tube A closed when the cover C is removed from the bottom of said tube for the expulsion of the burned match or other inflammable substance. We preferably make this tube and the bent rod L sliding therein square in shape, so that the roughened or serrated portion of the upper bent end will always be in proper position to ignite the match and cover the tube A.

The usual gauze cylinder M is employed in our lamp; but it is inclosed within a casing D, having a movable section D'', which is provided with isinglass windows G and with handles H H for manipulating the same. On the top of the casing D is mounted a ventilator F, constructed as a revolving damper, and underneath the latter is a short gauze tube E, of and for the usual construction of pipes.

The movable section D'' of the surrounding casing may be lifted to admit sufficient air for the purposes of the lamp, or it may be depressed to cut off such air, and thereby exclude oxygen and prevent combustion, or, in other words, smother the flame. As an aid in this smothering process the damper at the top of the lamp is found advantageous. The isinglass windows, before referred to, permit of an inspection of the interior of the lamp, so as to ascertain whether the flame has been smothered or not after the movable casing has been depressed.

As constructed our lamp constitutes a light efficient safety-lamp, which can be ignited or extinguished with facility and without taking the lamp apart.

It is obvious that variations and modifications may readily be made in the several features herein described without departing from the spirit of our invention.

What we claim, and desire to secure by Letters Patent, is—

1. In a safety-lamp, the combination, with the oil-reservoir having a suitable wick-tube arranged therein, of a tube open at both ends, extending through the oil-reservoir adjacent to the wick-tube, and containing an inflammable substance, a cover for closing the outer end of said tube, a second tube extending through said reservoir into proximity to said open-ended tube, and a device for igniting

the inflammable substance, which consists of a rod extending through said second tube into proximity to an exposed portion of said substance, and which has its ends bent so as to
5 form an exterior handle and an interior frictional igniting device, substantially as described.

2. A safety-lamp comprising an oil-reservoir, a wick-tube, a tube containing an inflammable substance and open at both ends,
10 a cover for closing the outer end of such tube, and an adjustable swiveled rod extending also through the reservoir for effecting the igniting of such substance when it is manipulated from the outside and for closing the
15 upper end of the open-ended tube, substantially as and for the purpose set forth.

3. A safety-lamp comprising a wick-tube, an oil-reservoir, a wire-gauze cylinder, an

outer casing provided with an adjustable or
20 sliding section which can be manipulated to aid or smother the flame, and a ventilator at the top of the casing, substantially as and for the purpose set forth.

4. In a safety-lamp, the combination, with
25 the oil-reservoir having the wick-tube, of the wire-gauze cylinder, the outer inclosing casing provided with a movable section having windows therein, and the ventilator at the top of the casing, substantially as described.
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In testimony whereof we affix our signatures in presence of two witnesses.

JOHN B. HARRIS.

JOHN T. GRIFFITH.

THOMAS B. HARRIS.

Witnesses:

JAS. J. THOMAS,

LEWIS S. JONES.