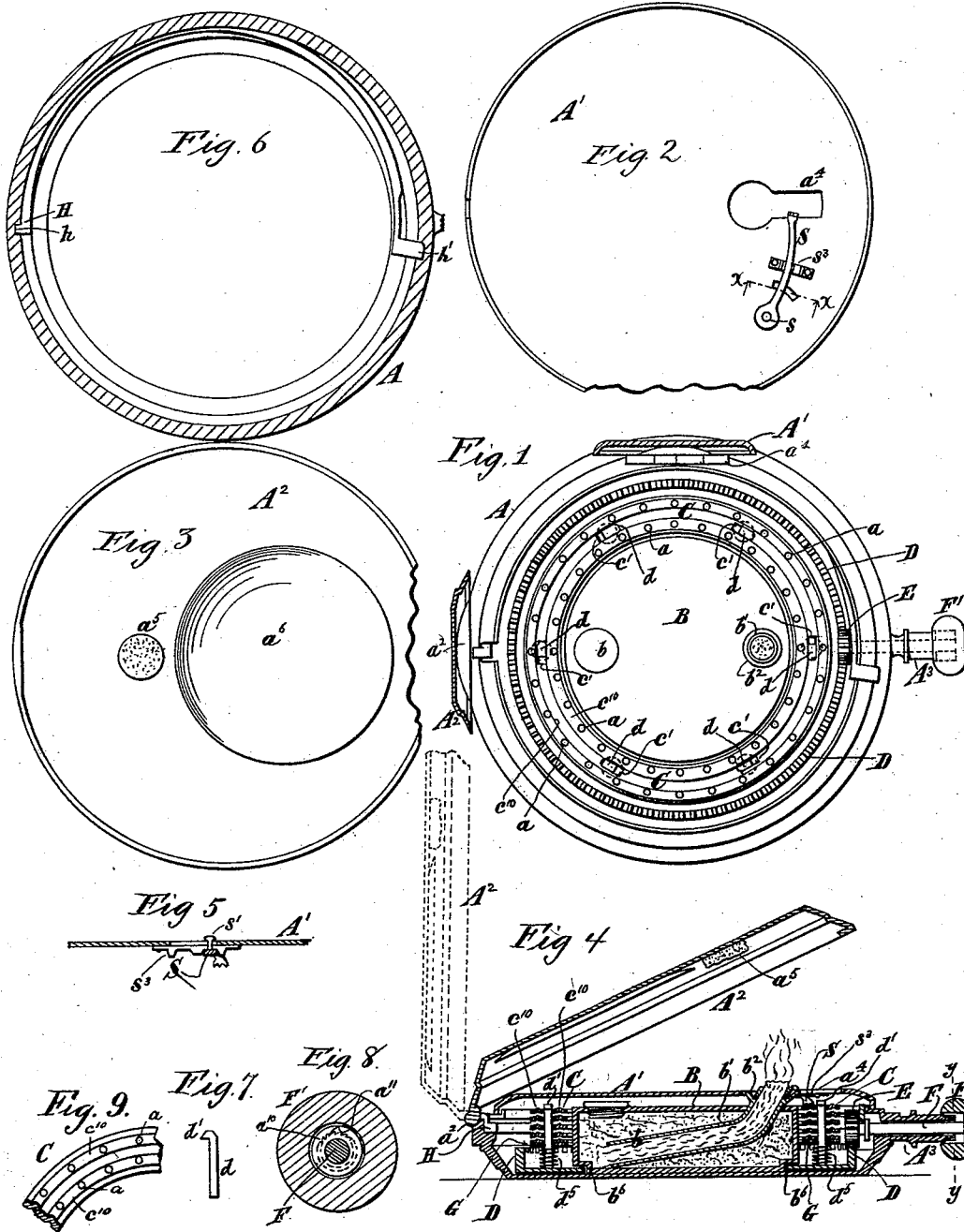


(No Model.)

W. F. FOLMER.
POCKET LAMP.

No. 454,642.

Patented June 23, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM F. FOLMER, OF NEW YORK, N. Y., ASSIGNOR TO THE FOLMER & SCHWING MANUFACTURING COMPANY, OF SAME PLACE.

POCKET-LAMP.

SPECIFICATION forming part of Letters Patent No. 454,642, dated June 23, 1891.

Application filed May 15, 1890. Serial No. 351,856. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. FOLMER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Pocket-Lamps, of which the following is a specification.

The object of my improvement is to provide a lamp which may be conveniently carried in the pocket and readily lighted.

I will describe a lamp embodying my improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a front view of a lamp embodying my improvement with the front lids broken off. Fig. 2 is a view of the inside of the inner front lid. Fig. 3 is a view of the inside of the outer front lid. Fig. 4 is a transverse section of the lamp. Fig. 5 is a transverse section through the inner lid at the plane of the dotted line $x x$, Fig. 2. Fig. 6 is a sectional top view of the body of the case of the lamp. Fig. 7 is a side view of one of a number of hooks employed to secure in place pieces of material provided with an igniting substance. Fig. 8 is a transverse section taken at the plane of the dotted line $y y$, Fig. 4. Fig. 9 is a portion of a ring having embossments and igniting substance thereon.

All the views are made on an enlarged scale.

Similar letters of reference designate corresponding parts in all the figures.

A designates the case of the lamp. It may be made of any desired number of parts. If desired, it may be made in precisely the same manner as an ordinary watch-case—namely, of a body made in the form of a ring with lids hinged to opposite sides. Perhaps it will be preferable to form one side integral with what would be the body portion in a watch-case. I have shown two lids $A' A^2$ at the front of the case, the lid A^2 being adapted to shut over the lid A' . The lid A' is connected with the case by a hinge a' and the lid A^2 by a hinge a^2 . The body of the case is provided with a stem A^3 , which may be secured in place in any desirable manner.

B designates a reservoir for illuminating material. Preferably it will be adapted for

oil and will be filled with cotton or similar material to keep the oil from moving about. It is shown as made of cylindric form and as resting against that side of the case which is opposite the lids $A' A^2$. It may be secured by solder or otherwise. This reservoir may be advantageously made of sheet metal. It has a filling-mouth b , which is shown as made in the form of a screw-plug, so that it may readily be removed and replaced.

A wick-tube b' extends from the reservoir. Preferably this wick-tube consists of a portion extending outside the reservoir obliquely toward the lids $A' A^2$ and another portion extending obliquely into the reservoir. The advantage of extending that portion which is outside of the reservoir obliquely arises from the fact that thus any tendency of the inner lid A' to force the wick down in the wick-tube as said lid closes is obviated. Preferably the wick-tube will extend through that portion of the reservoir which is near the stem A^3 of the lamp-case. Around the outer extremity of the wick-tube I preferably arrange a flaring collar b^2 for the purpose of catching any oil which may run over from the tip of the wick. That portion of the wick-tube which is surrounded by this collar will preferably be perforated, so that any oil caught by the collar may run back into the wick.

The lid A' has an opening a^4 opposite the outer end of the wick-tube. The wick is free to protrude through this opening, and the flash resulting from the explosion of igniting substance which is employed in the lamp may pass through this opening to the wick. Opposite this opening the lid A^2 is preferably provided with a pad or cushion a^5 , made of or faced with asbestos, so that when said lid is closed the flame will be extinguished. The lid A^2 may be formed to constitute a reflector, or may be provided with a reflector or lens for the better utilization of the light produced by the lamp. I have shown a reflector a^6 attached to it. This reflector may be made of any suitable material—as, for instance, polished metal.

Having now given a general description of the parts whereby the light is produced, I

will now describe certain other features which provide for igniting the lamp without the use of a match.

C designates a number of pieces of paper of like material made in the form of rings and provided with pellets or small portions *a* of any suitable igniting substance. Each of the rings preferably has two circular rows of these pellets or portions of igniting substance. It will be advantageous to provide circular embossments concentric with the edges of the rings and to arrange the pellets or portions of igniting substance upon the same. These rings are arranged one against another, so that the lamp may be supplied with a number of them at one time, and as each becomes used up it may be readily removed.

In the lamp-case is a scratcher for effecting the ignition of the igniting material. In the present example of my improvement the scratcher is stationary, excepting only that it is capable of a certain adjustment, which will be more fully explained hereinafter, and the rings are rotated to subject the pellets or portions of igniting substance to the action of the scratcher. The rings C are carried by a rotary wheel D, which in the present instance is a crown-wheel. This wheel may be made of sheet metal. It will be made of as large a size as possible to be contained by the watch-case, and the rings C will be accommodated between it and the circumference of the reservoir. A convenient way of securing this wheel in position will be to form a rabbet *b*⁶ in the bottom or back of the reservoir and to extend the inner edge of the disk-like portion of the crown-wheel into this rabbet. Provision is afforded for imparting a rotary movement to this crown-wheel by means of a gear-wheel E, mounted on a spindle F, extending through the stem A³ and provided at the outer extremity with a hand-piece F'. In order that there may be a longitudinal movement of this spindle for the purpose of unfastening the outer cover A² in a manner common in watch-cases, the gear-wheel E is somewhat elongated, so that, notwithstanding such movement of the spindle, it will remain in gear with the crown-wheel.

The rings C are provided at intervals with slots *c'*, and through these extend rods *d*, which at one end are fastened to the disk-like portion of the crown-wheel and at the outer end are provided with hook-like projections *d'*. The slots *c'* of the rings C and their elongation is in the direction of the circumference of the rings. The hook-like projections at the outer extremities of the rods *d* extend in the same direction as the slots *c'* are elongated. Owing to this the rings may be readily slipped over the rods, and then, if rotated slightly, they will at one end of their slots engage with the under side of the hook-like projections of the rods.

Behind the rings C there will preferably be springs for forcing them upward against the hook-like projections of the rods *d*. Springs

*d*⁵ may advantageously be coiled around the rods *d* for this purpose to bear at one end against the disk-like portion of the crown-wheel and at the other end to push the rings C outward. Preferably a ring-shaped platform G will be used beneath the rings C, and in such case the springs *d*⁵ will bear against the back of this platform.

It will be readily understood that after the pellets or portions of igniting substance of the outer ring shall have been used this ring may be readily detached by giving it a slight rotary movement to disengage it from the hook-like projections of the rods *d*, and that thereupon the next ring will be pressed forward into the place previously occupied by the one removed. As the crown-wheel is rotated the rings C will of course be similarly rotated, inasmuch as they are carried by it. This rotary movement brings the pellets or portions of igniting substance of the outer ring into contact with the scratcher, which is affixed to the lid A'. S designates this scratcher. In the present instance it is made of a rod of thin metal, pivotally connected to the inner side of the lid A' by means of a screw or rivet *s*. At its free extremity it is provided with a number of prongs, which will act upon the pellets or portions of igniting substance on the outer ring C. This scratcher is pivoted in place so that it may oscillate into a position to act upon either of the two circular rows of pellets or portions of igniting substance. A handle *s'*, which projects through the slot in the lid A', affords provision for adjusting the scratcher into either of the two positions which it is intended to assume for this purpose. When adjusted into either of its positions, it will fall into one of two notches which are provided in a retaining-piece *s*³, that is fastened to the inner side of the lid A'. The scratcher being resilient is free to yield to pass from one of these notches into the other.

The lid A² will preferably be opened by a spring. I have shown a spring H extending around the interior of the body of the watch-case and having at one end a projection *h* for bearing against the lid A², and at the other end a projection *h'* for engaging an opposite portion of the lid A² to fasten it. The end portion which has the projection *h'* formed upon it is intended to engage with a circumferential groove in the spindle F or with a shell otherwise provided on said spindle, so that when said spindle is pressed inward the projection *h'* will be disengaged from the lid A², and the spring H will then open the lid. The spring H may be simply held in place by its own resilience, pressing against the interior of the body of the case.

Preferably I combine with the stem A³ and spindle F a ratchet and pawl for precluding the turning of the spindle in the wrong direction. I have shown a ratchet *a*¹⁰ as formed by notching the outer end of the stem and a pawl *a*¹¹, consisting of a piece of spring metal,

fastened to the inner side of the hand-piece F' of the spindle and bearing against the ratchet of the stem. It might be very objectionable to have the spindle turn the wrong way, because it would be liable to disarrange the scratcher and also to cause a disengagement of the rings C from the rods.

To ignite the lamp the outer lid A² is opened and the spindle is rotated to produce a relative movement between the outermost ring C and the scratcher for the purpose of causing an ignition of one of the pellets with which the ring is provided. The flash of fire produced by the lighting of this igniting substance will set fire to the wick. The lamp may then be burned as long as may be desired. To extinguish it, it is only necessary to shut the outer lid. Obviously the proper action of the scratcher would be insured by projecting the pellets of igniting substance upward, and because of this I preferably provide each of the rings C with circular embossments c¹⁰, and arrange the pellets of igniting substance upon such embossments.

It will be seen that by my improvement I provide a very simple and compact lamp of convenient form for the pocket and of very attractive appearance.

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

1. A lamp having in combination a case, a circular reservoir within the case, a lid above the reservoir, a scratcher on said lid, and a ring of material surrounding the reservoir and having igniting substance thereon arranged to contact with the scratcher, substantially as specified.

2. A lamp having in combination a circular case, a circular reservoir from which a wick extends, a scratcher arranged adjacent to the extended portion of the wick, rings of material surrounding the reservoir and having igniting material thereon, and a platform movable to impel said rings outward, substantially as specified.

3. A lamp having in combination a circular case, a circular reservoir provided with a wick-tube protruding from it eccentric to the center of the reservoir, a scratcher arranged adjacent to the wick-tube, a ring or rings of material surrounding the reservoir and having igniting substance thereon, and means for rotating said ring or rings around the reservoir, substantially as specified.

4. A lamp having in combination a circular case, a circular reservoir, an inner lid provided with a hole through which the wick may burn, an outer lid constructed to cover said inner lid and close the lamp-case, an adjustable scratcher, and a piece of material provided with concentric circles of igniting substance, the scratcher being attached to the inner lid and the circles of material to the body, and mechanism whereby a relative

movement may be produced between them for effecting the ignition of the wick, substantially as specified.

5. A lamp having in combination a circular case, a circular reservoir, a lid provided with a hole through which the wick may burn, a scratcher attached to this lid, a wheel rotating within the case, and a number of pieces of material arranged one upon another and each provided with igniting substance and carried by said wheel, substantially as specified.

6. A lamp having in combination a circular case, a circular reservoir, a lid provided with a hole through which the wick may burn, a scratcher attached to this lid, a wheel rotating within the case, a piece of material provided with igniting substance and carried by said wheel, and another wheel engaging with the first said wheel and having a spindle protruding through the case, substantially as specified.

7. A lamp having in combination a circular case, a circular reservoir, a lid provided with a hole through which the wick may burn, a scratcher attached to the inner side of said lid, a rotary wheel within the case, rods attached to said wheel for holding rings of material, one upon another, provided with igniting substance, and springs for pressing said material forward, substantially as specified.

8. A lamp having in combination a circular case, a circular reservoir, a lid provided with a hole through which the wick may burn, a scratcher attached to the inner side of said lid, a rotary wheel within the case, rods attached to said wheel for holding rings of material provided with igniting substance, springs for pressing said material forward, and a platform forward of the springs, substantially as specified.

9. In a lamp, the combination of a reservoir, an adjustable scratcher attached to a portion of the case, a rotary wheel within the case, rods d, attached to said wheel and having hooked outer extremities, and rings C, provided with concentric circles of igniting substance and having slots whereby they may be engaged with said rods, substantially as specified.

10. In a lamp, the combination of a circular case, a scratcher, and a ring of material having circular embossments and pellets of igniting substance arranged upon the same, substantially as specified.

11. In a lamp, the combination of a circular case, a scratcher, a ring of material provided with igniting substance, a spindle for rotating said ring, and a ratchet and pawl for preventing the rotation of said ring in the wrong direction, substantially as specified.

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Witnesses:

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