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ELECTRIC POCKET LAMP WITH MECHANICAL ELECTRIC GENERATOR.

APPLICATION FILED MAY 7, 1918.

1,429,601. Patented Sept. 19, 1922.

Fig. 1.

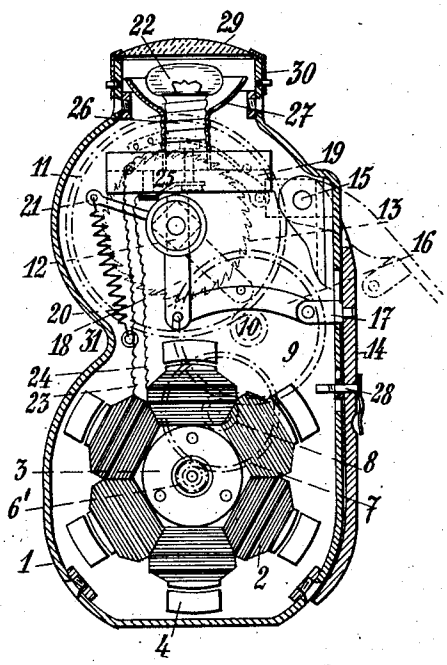


Fig. 2

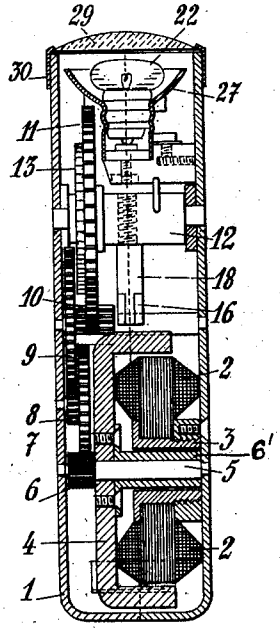
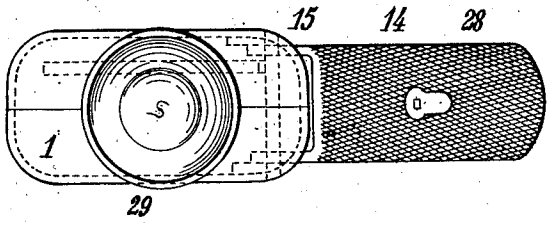


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC POCKET LAMP WITH MECHANICAL ELECTRIC GENERATOR.

Application filed May 7, 1918. Serial No. 233,138.

To all whom it may concern:

Be it known that I, ANTOINE LUZY, a citizen of the French Republic, residing in Paris, have invented certain new and useful Improvements in Electric Pocket Lamps with Mechanical Electric Generators, of which the following is a specification.

This invention relates to a construction of an electric pocket lamp intended for intermittent lighting of short duration or of continuous and prolonged lighting, in which construction are combined: 1, an electric generator of the magneto type, but with a rotating or multipolar permanent magnet: and 2, a driving gear operated either by a push lever for lighting of short duration, or by a spring or weight for prolonged lighting.

A construction of the said pocket lamp is illustrated by way of example in the accompanying drawing, in which,

Figure 1 is an elevation.

Figure 2 a vertical cross-section, and

Figure 3 a plan of the upper part.

In a metal box or casing 1 made in two parts are mounted an electric generator and a driving gear. The electric generator consists of a fixed armature 2 having a star shaped core secured to the wall of the casing by means of a sleeve 3 and arranged between the poles of a rotating permanent magnet 4 secured to a spindle 5 provided with a toothed pinion 6. A ferrule 6′ has its flanged end secured to the magnet 4 and is arranged about the spindle to form a guide block. This pinion 6 is driven by a toothed wheel 7 secured to a toothed pinion 8 which in its turn is driven by a toothed wheel 9 carrying on its spindle a pinion 10 driven by a toothed wheel 11. The wheel 11 rotates loosely on a spindle 12 which carries a ratchet wheel 13.

Rotation of the magnet by means of the multiplying gear of toothed wheels is obtained by exercising a pressure by hand on a lever 14 pivoted to a spindle 15. This lever is shown dotted in Figure 1 in the starting position; it transmits its movement to the wheel 11 by means of a connecting rod 16 pivoted to a shackle 17 and to the end of a lever 18 secured to the spindle 12 and driving the ratchet wheel 13 which rotates the wheel 11 by pushing the pawl 19 mounted in turn on the wheel 11.

Whenever the lever 14 is pressed by hand, it is pushed towards the casing, and the magnet 4 is given sufficient speed to rotate automatically for say, about one minute. The raising of the lever 14 is effected automatically by a spring 20 acting on a lever 21 secured to the spindle 12.

The electric current generated in the fixed armature 2 is conveyed to the lamp 22 through wires 23 and 24 terminating at binding screws 25, 26 connected to the two electrodes of the lamp. The light of the latter is reflected by a reflector 27.

In the position of rest, the lever 14 is brought against the casing and held by the bolt 28 engaging with a mortise provided in the casing.

The upper part of the casing is closed by a lens 29 set in a bezel or fitting 30 secured to the casing by means of a screw or a bayonet joint.

On one of the vertical faces of the casing is provided a recess 31 with which engages the thumb of the hand which holds the lamp, so that its manipulation is facilitated.

The mechanism herein described could also be applied to small lighting installations with fixed electric lamps and in such cases it might be arranged on a fixed support and operated by a weight.

The mechanism could further be applied to portable table or desk lamps, to miner's lamps, to various lanterns; it could be driven then by a spring which would be periodically wound.

The advantages of the present invention clearly appear if it is considered that primary or secondary batteries employed in electric pocket lamps constitute comparatively expensive and not very reliable generators which have to be frequently replaced or recharged and which are often run down when they are wanted; the apparatus hereinbefore described is free from their drawbacks, and its working is always ensured. Apart from the advantages just enumerated, the electric pocket lamp according to this invention, is characterized by its shape designed with a view to taking up the least possible space and to facilitating manipulation.

What I claim is:

1. In an electric pocket lamp having an electric generator, a multipolar permanent magnet in the form of a cup the edge of which forms the alternate poles, a stationary armature having a star shaped core arranged co-axially with said magnet, and means to cause the multipolar magnet to

rotate relatively to said stationary armature.

2. In an electric pocket lamp having an electric generator, a permanent multipolar magnet in the form of a cup the indented edge of which forms the alternate poles, a stationary armature arranged co-axially with said magnet, a shaft supporting said magnet and carried by the lamp casing, a ferrule fixed on said magnet and forming a guide block on said shaft and means to cause the multipolar magnet to rotate relatively to the stationary armature.

3. In an electric pocket lamp having an electric generator, a casing, a shaft journalled in the casing, a hollow sleeve fixed on said casing coaxially with the shaft, a stationary armature mounted on the sleeve, a permanent multipolar magnet mounted on the shaft and being in the form of a cup, the indented edge of which forms the alternate poles, a ferrule fixed on said magnet and forming a guide block on said shaft, a pinion keyed to said shaft and means meshing with the pinion for imparting rotation to the shaft to cause the magnet to rotate relatively to the stationary armature.

4. In an electric pocket lamp having an electric generator, a casing, a shaft journalled in the casing, a washer fixed on the casing coaxially with the shaft, a hollow sleeve provided with a threaded edge for engagement with the washer, a metallic armature in the shape of a star mounted on the sleeve and having an even number of windings, a permanent multipolar magnet mounted on the shaft and being in the form of a cup the edge of which is indented to form alternate poles of the number corresponding to the number of windings of the armature, a ferrule fixed on the said magnet and forming a guide block on said shaft and means for rotating the shaft to effect rotation of the magnet relatively to the stationary armature.

5. In an electric pocket lamp, a casing provided with a thumb engaging notch and having two compartments, an electromagnetic generator mounted in one compartment and consisting of a multipolar permanent magnet in the form of a cup the edge of which forms the alternate poles and a stationary armature having a star shaped core arranged coaxially with said magnet, motion transmitting means in the other compartment and associated with the electromagnetic generator to cause the multipolar magnet to rotate relative to said stationary armature, and an external finger engaging lever pivoted to the casing for operating the motion transmitting means.

In testimony whereof I have signed my name to this specification.

ANTOINE LUZY.

Witnesses:

VICTOR DESPARD,

CHAS. P. PRESSLY.