

1,333,119.

Patented Mar. 9, 1920.

Fig. 1.

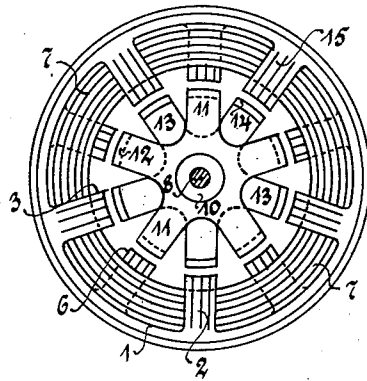


Fig. 2.

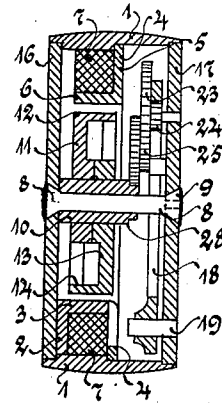
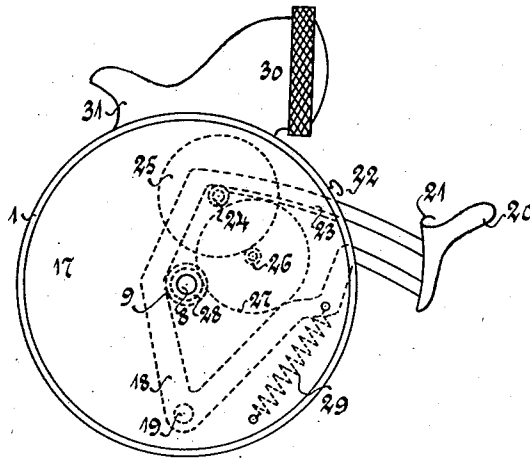


Fig. 3.



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UNITED STATES PATENT OFFICE.

KARL KRISTIAN KRAG-MÖLLER, OF FREDERIKSBERG, DENMARK.

HAND-GENERATOR.

1,333,119.

Specification of Letters Patent.

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Application filed June 5, 1918. Serial No. 238,354.

To all whom it may concern:

Be it known that I, KARL KRISTIAN KRAG-MÖLLER, of Frederiksberg, in the Kingdom of Denmark, have invented certain new and useful Improvements in or Relating to Hand-Generators, of which the following is a specification.

The present invention relates to an electro-mechanical pocket-lamp driven by hand and consists of a suitably constructed and shaped generator of alternating current, which in connection with an also especially constructed hand-motor has the effect that the light is produced with a quite small consumption of power and that the whole apparatus may have a flat, substantially cylindrical shape, making it especially adapted to be disposed and kept in pockets, pouches and the like.

A device embodying my invention is illustrated in the drawing.

Figure 1 shows a side-view of the device embodying my invention, the side-wall being removed.

Fig. 2 shows an axial cross-section through the said device.

Fig. 3 shows a side-view of the said device.

The cylindrical part of the said device consists of a ring 1 provided at one side with a number of radial extensions 2, the ends of which have shoes 3, the said shoes being concentric with the ring 1. Within the said ring 1 is arranged a projection which supports another ring 4 having radial extensions 5, which at the ends are provided with shoes 6, the latter being concentric with the outer ring. The shoes 6 penetrate into spaces between the shoes 3 and form together with the latter an inward cylindrical surface, without the shoes 3 and 6 touching each other. The inward extensions or inwardly extending members 2 and 5 with their terminal pole face providing shoes 3 and 6 support the winding, and hold it in place.

The rings 1 and 4, the extensions 2 and 5 and the shoes 3 and 6 form together an annular chamber, which is filled by an annular wire-spool 7, and all the said parts form an electromagnetic system, so that, when an electric current passes through the spool 7, magnetic poles with contrary magnetism will be developed in the shoes 3 and 6.

In the center of the ring 1 is arranged a shaft 8, one end of which is fastened in a cover 16, while the other end carries a nut

9 which serves to keep a cover 17 in place. On the shaft 8 is arranged a revolving box 10, carrying two contiguous steel disks of which one is provided with arms 11 having shoes 12 in the ends, while the other is provided with arms 13 the ends of which have shoes 14. These parts form together a permanent magnet with the shoes 12 and 14 as opposite poles. The said two disks with their arms and shoes aforesaid constitute a sleeve, which has at each end a claw foot member, the projections of said members being disposed alternately in a cylindrical surface and constituting alternate north and south poles.

The shoes 12 and 14, without touching each other, form a cylindrical surface, which is located concentrically within the cylinder formed by the magnetic poles 3 and 6 and will when rotating produce an electric current in the winding 7. The magnetic poles 3 and 6 together with the extensions 2 and 5 are provided with incisions 15—Fig. 1—to prevent injurious currents.

The permanent magnetic poles 12 and 14 are rotated by means of a hand-motor arranged in the ring, the said hand-motor consisting of an arm 18, the latter being essentially formed as an oblique triangle, revolving around a journal 19 in the cover 17 and passing outside the ring 1, the said arm being here provided with a presser-shoe 20 and a hook 21, which in the closed position is retained by a hook or ring 22.

In the triangle is arranged around the pivot 19 as center a rack 23, which engages with a pinion 24, which, by means of a pawl and pawl-wheel or similar arrangements not shown in the drawing, is connected with a cog-wheel 25, which, by means of the gear-wheels 26 and 27, makes the box 10 rotate, the said box 10 being provided with a pinion 28 and carrying the permanent magnets. The triangles 18 is returned to its extreme position by means of a spring 29. At the outside of the cylinder 1 is arranged an electric lamp 30 and behind the latter is found a projection 31.

The device embodying my invention is carried in the position shown in Fig. 3 with the thumb around the projection 31 and the fore-finger around the presser-shoe 20. By approaching the said two fingers to each other the presser-shoe 20 is pushed inward and the rack 23 will then through the wheel work make the permanent magnets 12 and 14

rotate swiftly, whereby an electric current is generated in the winding 7 and as the circuit is closed through the lamp 30, the latter will be made to shine.

- 5 When the fingers again are removed the spring 29 leads the triangle 18 together with the presser-shoe 20 back to its extreme position, while the magnets by means of a gearing between the pinion 24 and the cog-wheel
10 25 will continue to rotate and to generate current for the use of the lamp.

The gearing of the wheel work and the bulk of the permanent magnets are adjusted in such a manner that a steady and strong
15 light may be produced by a suitable number of pressures—for instance—one or two pressures in the second.

If a steady light is to be produced by a considerably lesser number of pressures, or
20 if the lamp is only to shine a certain time after the motive power has ceased, a spring possessing a suitable accumulative power is inserted between the presser-shoe 20 and the rotating box 10.

25 It is not necessary that the ring 1 shall have perfectly cylindric shape, it can also be four or many sided; nor is it necessary that the ring be constructed exactly as shown on the drawing. The ring 4 can for instance be
30 made in one piece with the ring 1 or with the part of the ring which forms the edge around the machinery.

An especial advantage by the invention consists therein that the spring 29 together
35 with the wheels 24, 25, 26 and 27 are arranged on pivots which are fastened on the lateral cover 17, which is kept in its place by means of a nut 9 on the end of the shaft 8, the latter being fastened to the opposite
40 cover 16. When the nut 9 is removed, the cover 17 and the whole machinery can be taken out and inserted collectively.

Having now particularly described and ascertained the nature of my said invention

45 I declare that what I claim is:

1. In a generator, the combination of a rotatable magnet comprising alternate north and south poles placed in a cylindrical surface, hand operated means for giving an impulse to the magnet, spring-operated means
50 for returning said means to its initial position, an annular generating winding and a flat casing inclosing said winding and said magnet, said casing comprising a ring of magnetic material provided with spaced inwardly projecting members terminating in pole faces disposed in a cylindrical surface, said pole faces forming with the projecting members supports for the generating winding.
60 ing.

2. In a generator, the combination of a permanent magnet which consists of a sleeve mounted on a shaft, a claw foot member mounted on each end of the sleeve, the projections of said members being disposed alternately in a cylindrical surface and constituting alternate north and south poles, hand
65 operated means for rotating said magnet, a casing supporting and inclosing said magnet and comprising a ring provided with spaced inwardly extending members terminating in pole faces disposed in a cylindrical surface coaxial with said magnet.

3. In a generator, the combination of a rotatable magnet comprising alternate poles of opposite polarity placed in a cylindrical surface, hand operated means for giving an impulse to the magnet, mechanical means for returning said means to its initial position, an annular generating winding, and a flat
75 casing inclosing said winding and said magnet, said casing comprising a ring of magnetic material provided with inwardly projecting members terminating in pole faces arranged in a cylindrical surface, the said members supporting said winding.

4. In a generator, the combination of a rotatable magnet comprising alternate north and south poles placed in a cylindrical surface, hand operated means for giving an impulse to said magnet, an annular generating winding and a flat casing inclosing said winding and said magnet, said casing comprising a ring of magnetic material provided with spaced inwardly projecting members
80 terminating in pole faces disposed in a cylindrical surface, said pole faces forming with the projecting members supports for the generating winding.

5. In a generator a permanent magnet
100 which consists of two parts in contact with each other and collectively comprising a sleeve mounted on a shaft each of said parts being provided with a claw-foot member, the projections of said members being disposed in a cylindrical surface and constituting alternate north and south poles, in combination with hand operated means for rotating said magnet and a casing supporting and inclosing said magnet and provided with
105 spaced inwardly extending members terminating in pole faces disposed in a cylindrical surface coaxial with said magnet.

In testimony whereof, I have signed my name to this specification in the presence of
115 two subscribing witnesses.

KARL KRISTIAN KRAG-MÖLLER.

Witnesses:

JACQUES JENSEN,
AGNES HERDAM.