

July 29, 1947.

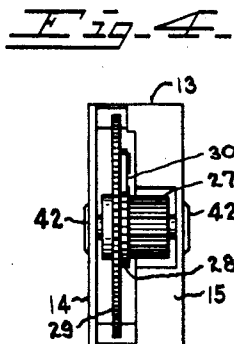
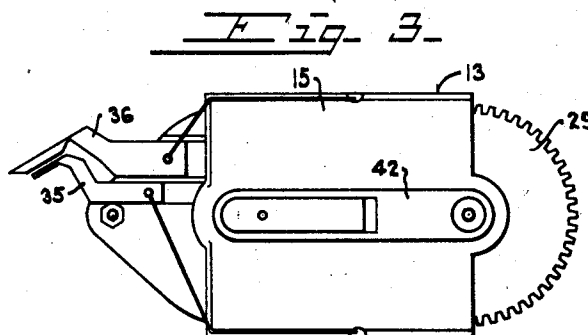
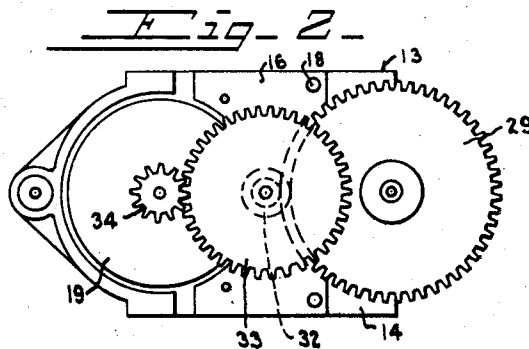
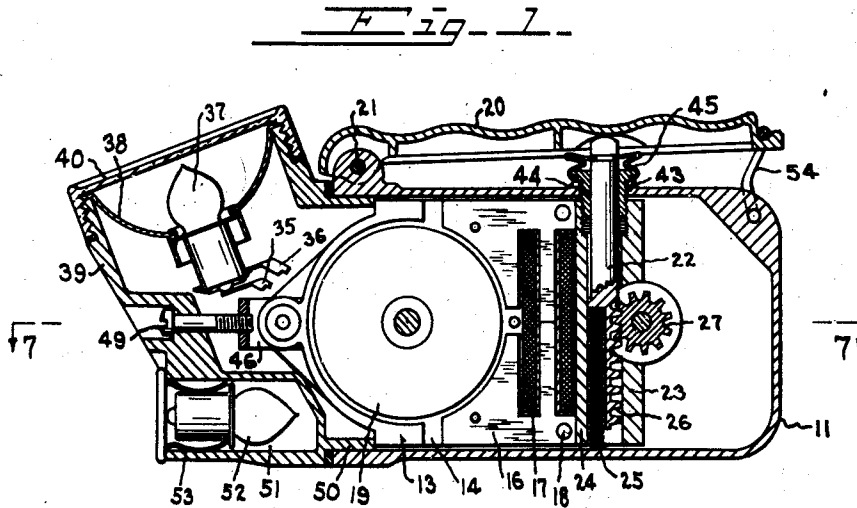
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2,424,700

GENERATOR LIGHT

Filed Nov. 11, 1944

2 Sheets-Sheet 1



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Fig. 5.

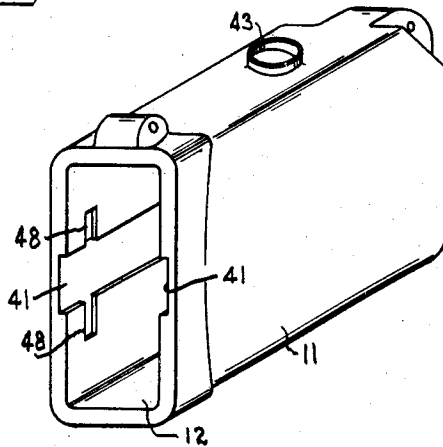


Fig. 6.

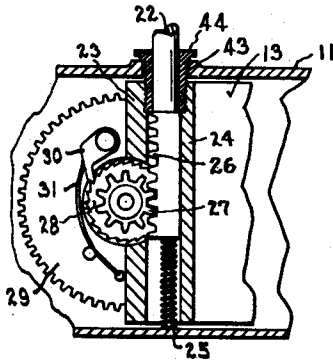


Fig. 8.

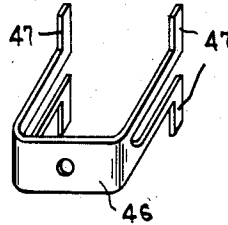
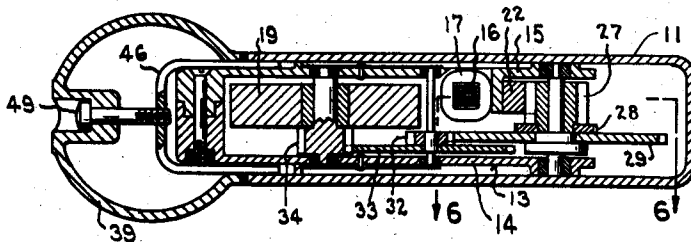


Fig. 7.



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UNITED STATES PATENT OFFICE

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GENERATOR LIGHT

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Application November 11, 1944, Serial No. 562,952

3 Claims. (Cl. 240—10.5)

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This invention relates to a new and improved generator light wherein the propelling force is created by a hand pumping action to rotate a train of gears for driving the magnetic rotor to impart a changing flux to an armature having an external load circuit connected thereto.

The object of my invention is to provide a unit carrying all the rotating parts and insertable into a case.

A further object is to provide improved means for assembling the component parts of the light.

A further object is to provide means of assembly whereby the entire light is waterproof.

My invention will be further readily understood from the following description and claims, and from the drawings, in which latter:

Fig. 1 is a longitudinal section of my improved light.

Fig. 2 is a side view of the insert with one section removed.

Fig. 3 is a side view of the insert with the retaining section in place.

Fig. 4 is an end view of the insert.

Fig. 5 is a perspective view of the case.

Fig. 6 is a detail section, taken in the plane of the line 6—6 of Fig. 7.

Fig. 7 is a detail section, taken in the plane of the line 7—7 of Fig. 1; and,

Fig. 8 is a perspective view of the head holding clip.

My improved light comprises a casing 11 having an opening 12 arranged to receive an insert 13. The insert comprises a two part shell 14 and 15 having suitable bearings in inserts to support the shafts of the respective gears and magnetic rotor. A two part armature 16 having a coil 17 thereon is secured to one of the shells as by rivets 18 and encompasses a permanent magnetic rotor 19 journaled in bearings in the insert.

The force to rotate the rotor 19 is applied by a handle 20 pivoted to the case as at 21 and contacting a rack bar 22 reciprocating in slides 23 and 24 in one of the shells and urged upwardly by a spring 25. The rack bar is provided with teeth 26 engaging a pinion gear 27 secured to a ratchet wheel 28. A gear 29 rotates freely on the pinion gear shaft and has a pawl 30 pivoted thereon and held in engagement with the ratchet wheel by a spring 31. Thus as the rack is reciprocated continual rotary motion is imparted to the gear 29, which meshes with a pinion gear 32 secured to a gear 33 meshing with a pinion gear 34 secured to the rotor 19. The two mating shells of the insert are provided with metallic bearing inserts to journal the shafts of the re-

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spective gears. A pair of contact members 35 and 36 are riveted to one shell and the respective ends of the coil 17 are attached thereto to form an electrical circuit to a light bulb 37 secured in a reflector 38 held in the lamp head 39 by the lens 40 which has threaded connection with the head.

The casing 11 is provided with internal grooves 41 to receive side extrusions 42 of the insert to position the insert in the casing. An aperture 43 in the casing receives a threaded plug 44 which guides the rack rod 22 and is threaded into the insert 13. This plug positions the insert lengthwise of the casing. A rubber bellows 45 is received about the rod 22 and connects to the plug 44 to prevent water or moisture to enter the mechanism.

A spring clip 46 has extending legs 47 which snap into recesses 48 to form attaching means for the lamp head. A screw 49 is threaded into the clip to hold the head in place. The head has a flange 50 received in the casing. An aperture 51 is provided in the base of the head to receive a spare lamp bulb 52 held in a clip 53 which serves the dual purpose of holding the lamp and engaging the inner wall of the aperture.

A clip 54 is so shaped to hold the handle in closed position and when it is desired to use the flashlight, squeezing the handle pushes the clip away for free-working of the handle.

To operate the light, the handle is squeezed toward the casing allowing the spring 25 to push it out. Thus, successive movements of the handle causes the gears to impart rotation to the magnetic rotor, the changing flux of which energizes the coil for imparting electrical current to the light.

It will be apparent from the foregoing that I have devised a practical, durable hand-powered generator light, which is readily assembled and wherein the working mechanism is contained in a unit insertable in a case.

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

1. A hand powered generator light comprising a frame, a plurality of gears in said frame, a magnetic generator in said frame driven by said gears, an armature in association with said rotor, an open-ended one-piece casing, said frame provided with extrusions, said casing provided with grooves to receive said extrusions for positioning said frame in said casing, a head structure including a light, means for securing said head structure to said casing comprising a clip

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extending from said casing and engaged by a screw extending through said head structure, and means for locating said frame endwise in said casing.

2. A hand powered generator light comprising a frame, a plurality of gears in said frame, a magnetic rotor in said frame driven by said gears, an armature in association with said rotor, an open-ended one-piece casing received over said frame, a head structure including a light, means for securing said head structure to said casing comprising a clip received in grooves adjacent to the open end of said casing and extending forwardly to be engaged by a screw received through said head structure, a plug for locating said frame in said casing, a gear rack extending through said plug and a handle for actuating said rack.

3. A hand powered generator light comprising a magnetic generator, a train of gears for actuating said generator, a two-part frame supporting said generator and gears, a casing, an opening at one end of said casing, said frame insertable in said casing and being guided therein, means extending through said casing and

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frame for actuating said gears, a guide for said means positioning said frame in said casing, a pair of contacts extending from said frame having electrical connection with said generator, a head structure attachable to the open end of said casing, and a lamp assembly in said head structure forming an electrical connection with said contacts.

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