W. W. ANDERSON.

FLASHLIGHT GENERATOR.

APPLICATION FILED MAR. 1, 1921.

1,399,598.

Patented Dec. 6, 1921.

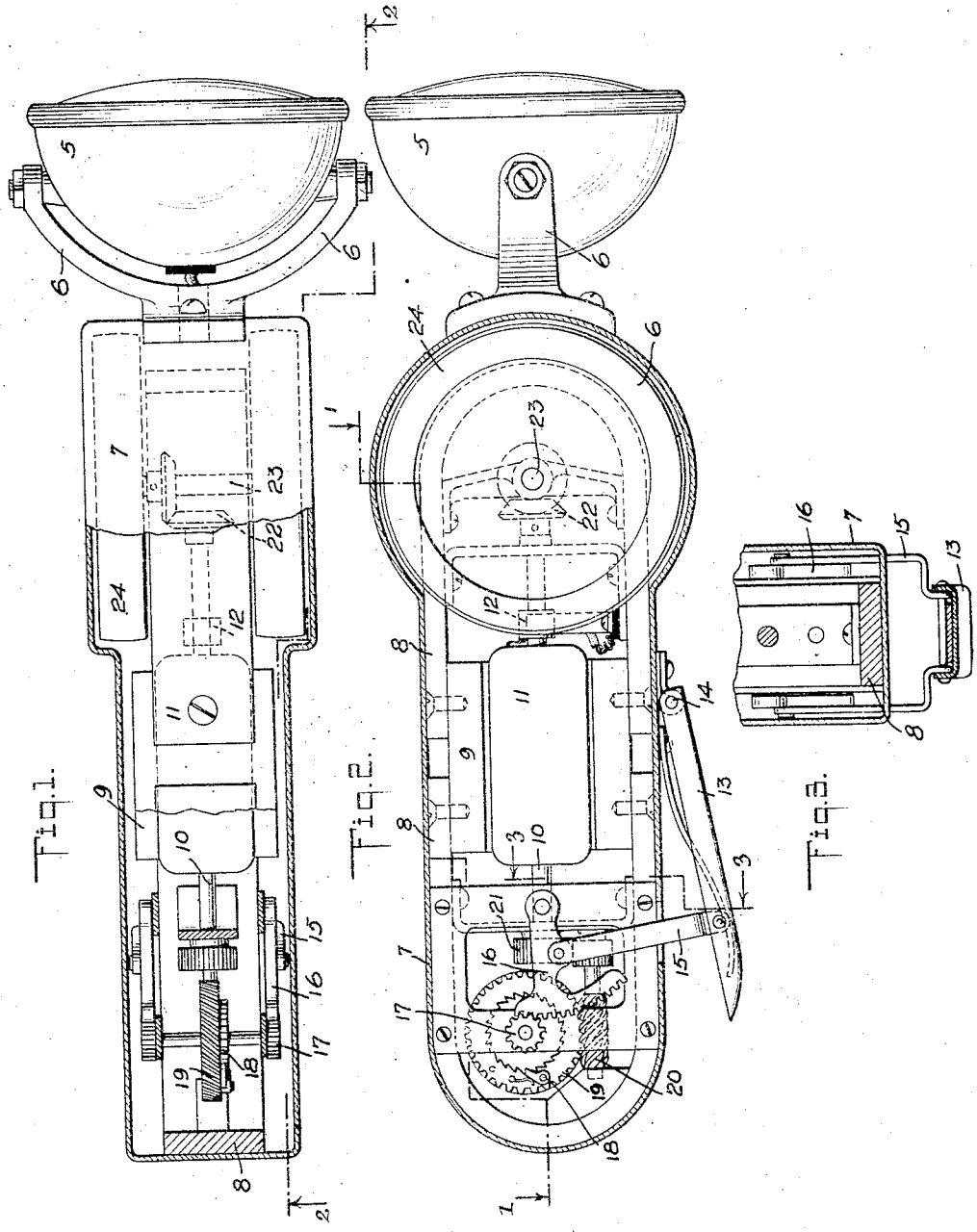


Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES

Frederick Diehl.

J. H. Thorpe

INVENTOR

W. W. ANDERSON

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM WALFRED ANDERSON, OF MICHIGAMME, MICHIGAN.

FLASHLIGHT-GENERATOR.

1,399,598. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed March 1, 1921. Serial No. 448,793.

To all whom it may concern:

Be it known that I, WILLIAM WALFRED ANDERSON, a citizen of the United States, and resident of Michigamme, in the county of Marquette and State of Michigan, have invented a new and Improved Flashlight-Generator, of which the following is a full, clear, and exact description.

My invention relates to a flashlight, and aims to more particularly provide a device of this character in which the source of electrical energy is derived by a hand-driven generator.

It is a well appreciated fact that it has often been proposed to provide as one compact unit, a casing inclosing a small type of generator, together with means extending beyond the casing to permit of a manual actuation of the generator, to produce sufficient current to cause the filament of a bulb to glow with sufficient intensity to serve a useful purpose.

For the most part, these devices have offered numerous objections in that primarily, they have been expensive in manufacture, and secondly, in that it has been necessary to constantly operate the actuating mechanism to produce sufficient current to cause a proper operation of the lamp.

With this in view, I have constructed a flashlight of the type specified, but which shall primarily embody such a simple construction as to be practically free from mechanical defects, aside from the fact that it may be manufactured at a relatively small figure.

A further object of my invention is the construction of a device of the character stated in which a continuous operation of the operating mechanism will not be necessary to produce a steady stream of light.

Further objects of my invention will appear in the annexed specification, taken in connection with the drawings, which latter present one practical embodiment of my invention, and in which:

Figure 1 is a partly sectional plan view taken along the line 1—1 of Fig. 2.

Fig. 2 is a sectional side view taken along the line 2—2 of Fig. 1, and

Fig. 3 is a fragmentary sectional view taken along the line 3—3 in the direction of the arrows indicated in Fig. 2.

In these views the reference numeral 5 indicates a reflector casing, accommodating any desirable type of bulb, said reflector casing being preferably swiveled within brackets 6, so as to be capable of movement with respect to the main casing 7.

According to my improved construction, I preferably utilize a pair of permanent segments 8, arranged within the casing 7, and having their poles in opposed relationship with each other, these magnets being retained in this position by means of bridge pieces 9 forming fields.

Rotatably mounted within the casing 7 and extending longitudinal of the same, is a shaft 10 mounting an armature 11, which armature is connected to a collector ring 12, also secured to the shaft 10.

Now with a view of providing means serving to effect a rotation of the armature 11, I may preferably employ a spring pressed lever 13 which is pivotally secured as at 14 to the casing 7, said lever being connected by means of a link 15 to a pivotally mounted segmental rack 16, which it serves to oscillate upon the lever 13 being rocked.

The rack 16 engages with a gear 17, which latter is associated with a pawl and ratchet mechanism 18, serving to effect a rotation of a worm wheel 19. This latter element cooperates with a worm 20, and by means of gears 21, it will be seen that the rotation imparted to the worm is transmitted to the shaft 10.

With regards to the overcoming of the objection noted in connection with the necessary constant operation of the actuating mechanisms hereofore proposed, it will be noted that I have extended the shaft 10 and provided gears 22 serving to effect a rotation of a shaft 23 mounting fly wheels 24.

Thus it will be noted that by virtue of the multiplying mechanism provided by the rack 16, gears 17 and worm wheel and worm 19 and 20 respectively, that a high rate of speed rotation will be imparted to the shaft 10 and that once that this shaft has obtained sufficient speed to generate current, that it will not be necessary to resort to a constant operation of the actuating mechanism, incident to the fact that the fly wheels 24 will serve to maintain this speed substantially constant within certain limits.

Thus it will be appreciated that I have provided a flashlight generator which is extremely easy to operate, aside from the fact that it is so simple in construction as to permit of its being manufactured at a low figure, it being also seen that the construction

is of such simplicity as to reduce the danger of breakage or faulty operation to a minimum.

Obviously numerous modifications of structure might readily be resorted to without in the least departing from the spirit of my invention, which I claim as;

A dynamo operated flash-light including an armature, a lamp, means to conduct the current generated by said armature to said lamp, a plurality of fly wheels associated with said armature to provide the latter with an even speed when operated, a plurality of magnets arranged end to end, a plurality of field poles secured to the ends of said magnets, a gear train secured on a shaft transversal to the longitudinal axis of the armature, a worm gear associated with said gear train, a worm meshing with said worm gear to impart to the armature a high speed ratio, a segmental rack, a hand operated lever, a link connecting the lever with the said rack.

WILLIAM WALFRED ANDERSON.