Dec. 5, 1933. C. ARNOLD 1,938,129

TOY WITH DRIVING MECHANISM

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Fig. 1

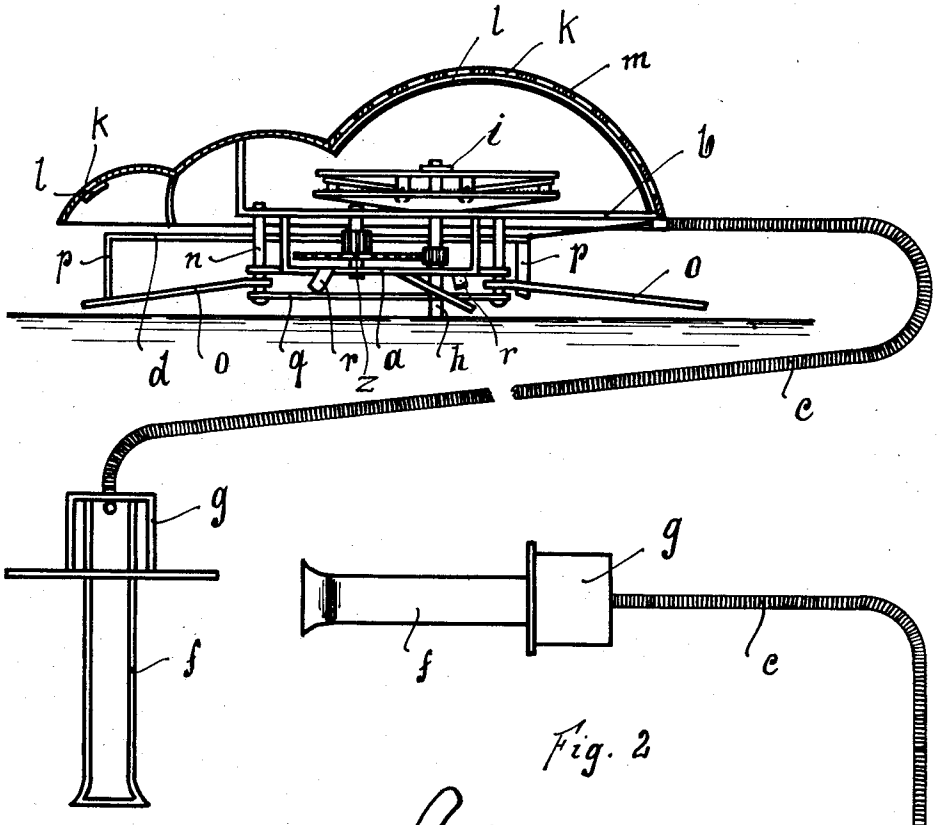
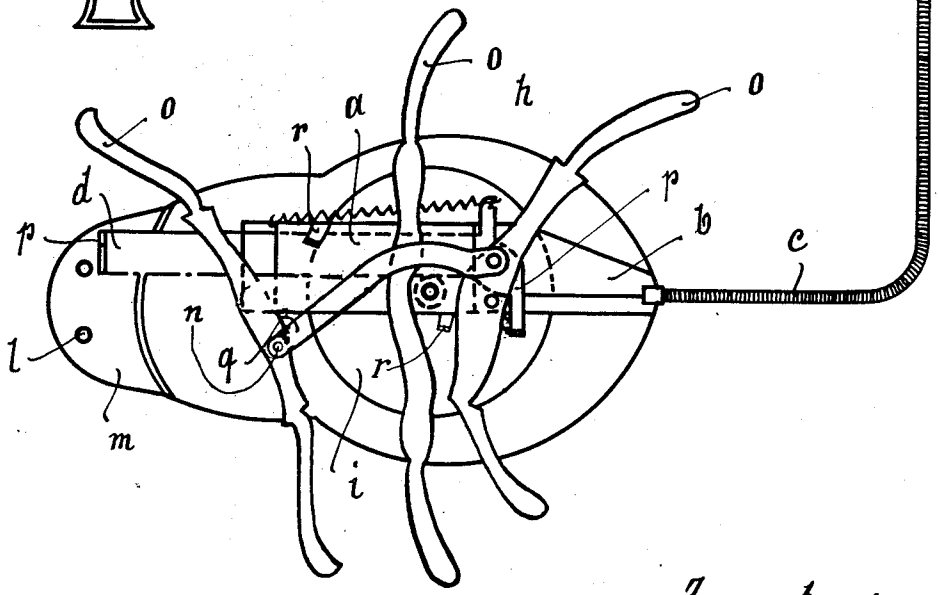


Fig. 2



Inventor:
Carl Arnold
by Fischer
Attorney

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TOY WITH DRIVING MECHANISM

Carl Arnold, Nuremberg, Germany

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2 Claims. (Cl. 46—40)

This invention relates to a driving mechanism for creeping toys having a hand operated rack drive with return spring and a spark producing device. The rack drive is operated by hand by means of a Bowden cable. The front and rear legs of the toy figure, mounted in pairs on axles so that they can oscillate and connected by a bridge, are moved forward and backward by the rack, the ends of which are bent at an angle, the movement of the legs being effected by these bent-up ends of the rack bearing alternately against and oscillating the front and rear pairs of legs around the respective pivots.

A glowworm comprising a driving mechanism of any desired construction is illustrated by way of example in the accompanying drawing in which:—

Fig. 1 shows a longitudinal section, partly in elevation and

Fig. 2 a bottom plan view.

In the toy, imitating for instance a glowworm, a gear casing *a* is fixed on the lower surface of a plate *b*. In this casing *a* a rack *d* is arranged one end of which is attached to a Bowden cable *c* which has a handle at its other end, consisting of slides *f* and *g* adapted to be relatively shifted, the core (wire) of the Bowden cable being attached to the slide *f*. In the plate *b* a vertical axle *h* of the driving gearing is journalled, which projects downwards from the casing and rests on the ground. The axle is connected to a pinion *z* in mesh with the rack *d*. A known spark producing device *i* is rotatably mounted on the top end of this axle *h*.

On the Bowden cable being pushed, the rack is shifted and rotates the axle *h* through the intermediary of the pinion *z* so that the spark producing device also mounted on that axle *h* is operated so that beams of sparks are thus produced. The light of the sparks becomes visible through transparent coloured panes *l* in apertures *k* of a casing *m* imitating a beetle, fixed above the plate *b*. During the shifting of the rack by the Bowden cable, the sparking device is actuated besides the effecting of the progressive movement of the beetle, which is obtained by the extended rotating driving axle *h* of the sparking device resting upon the floor. Besides these movements the legs *o* of the beetle are also moved. For this purpose the legs *o* are pivotally mounted in pairs on the under side of the gear casing *a* and the rack has downwardly bent ends *p* which engage alternately the front and rear pairs of legs on one side of their pivot point each time causing the particular pair of legs to oscillate around its pivot. As the front and rear pairs of legs are connected by a bridge *g* hingedly mounted at one end to the leg of the front pair of legs on one side the pivot point and to the leg of the rear pair of legs on the other side of its pivot point, the front and rear pairs of legs are oscillated in opposite directions each time one of these pairs of legs is oscillated by the co-ordinate bent end of the rack. Stops *r* are provided on the casing *a* for limiting the amplitude of oscillation of the legs.

I claim:

1. A driving mechanism for creeping toys, comprising in combination a body simulating the body of a creeping insect and provided with apertures, a casing in said body, a periodically operating rack drive with spring return mounted in said casing, a spark producing device mounted on said casing, legs pivotally mounted in pairs on the under side of said casing adapted to be actuated by said rack drive and projecting from said casing, a gearing connecting said rack drive to said spark producing device and having a vertical axle adapted to support said casing on the ground, and a Bowden cable connected to said rack drive adapted to actuate said rack drive to move said legs simulating a crawling movement of the insect and operate said spark producing device to produce sparks visible through the apertures in said casing.

2. A driving device as claimed in claim 1, comprising in combination with the rack drive and the legs, downwardly directed ends one on each end of the rack of said rack drive adapted to come into contact with and oscillate the rear pair of legs during its outward movement and the front pair of legs during its return movement, and a bridge connecting said front and rear pairs of legs on opposite sides of their pivot points adapted to transmit the movements imparted by said rack from one pair of legs to the other pair of legs to cause said pairs of legs to move each time in opposite directions.

CARL ARNOLD.