No. 873,307. PATENTED DEC. 10, 1907.

G. J. GALBRAITH.

ELECTRICAL DROP.

APPLICATION FILED NOV. 19, 1906.

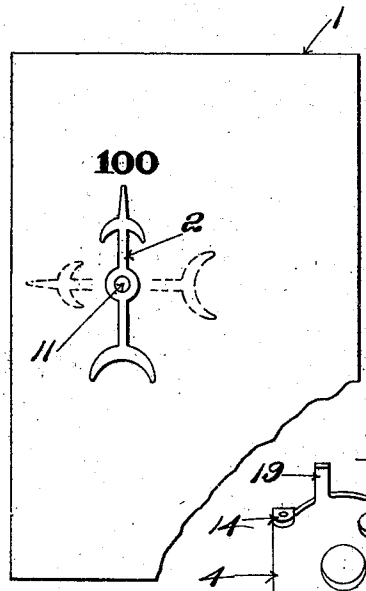


Fig. 1.

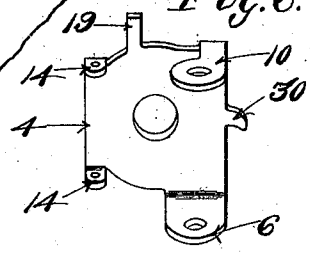


Fig. 6.

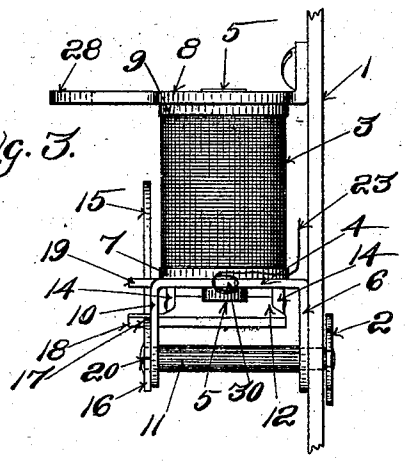


Fig. 3.

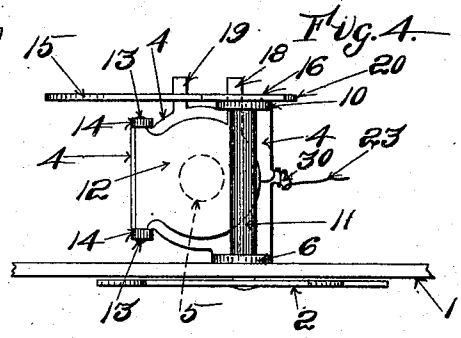


Fig. 4.

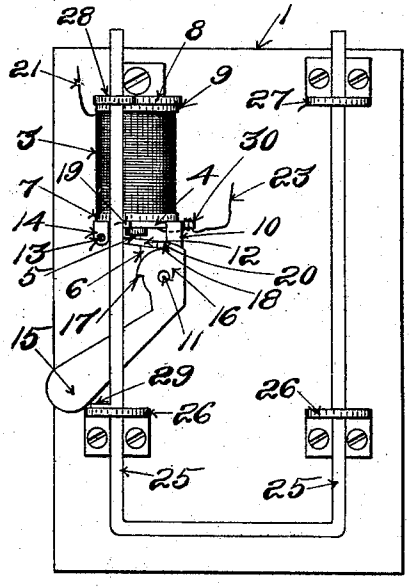


Fig. 2.

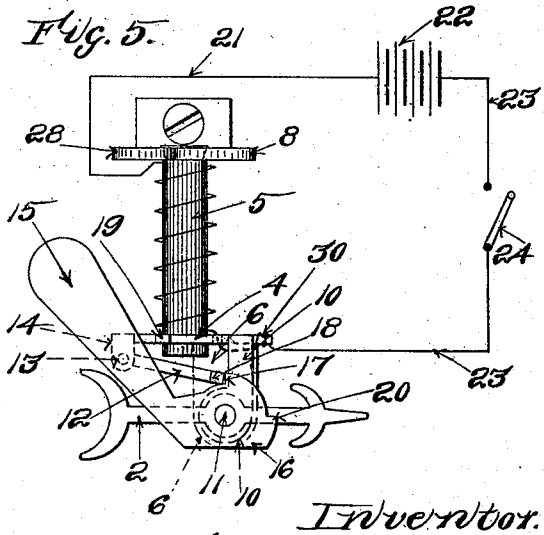


Fig. 5.

Witnesses:
John A. Parker
Alma Farr

Inventor.
George J. Galbraith
by Macleod, Calver, Copeland & Dike
Attorneys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE J. GALBRAITH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO COUCH & SEELEY COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ELECTRICAL DROP.

No. 873,307. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed November 19, 1906. Serial No. 344,001.

To all whom it may concern:

Be it known that I, GEORGE J. GALBRAITH, citizen of the United States, residing at Boston, county of Suffolk, and State of Massachusetts, have invented a certain new and useful Improvement in Electrical Drops, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of the invention is to provide an electrical drop in which the trip lever is engaged and released by an armature and so constructed that the armature will always move a fixed distance to engage the trip lever and release it.

The invention will be fully understood from the following description taken in connection with the accompanying drawings, and the novel features are pointed out and clearly defined in the claims at the close of the specification.

The invention is shown as applied to an annunciator.

In the drawings,—Figure 1 is a front elevation of an annunciator embodying the invention in which for simplicity only one indicator and connected apparatus is used, as other indicators would be simply duplication, the full lines showing the indicator in the position that it will occupy after the catch-lever has been tripped. Fig. 2 is a rear elevation showing the parts in position after the lever has been tripped as in Fig. 1. Fig. 3 is a side elevation showing the device after the catch-lever and indicator have been reset. Fig. 4 is a plan view of the under side of the bracket which supports the magnet. Fig. 5 is a rear elevation showing the parts in same position as Fig. 3 and showing in diagram the electrical connections. Fig. 6 is a perspective view of the lower supporting bracket.

Referring to the drawings,—1 indicates an annunciator plate.

2 represents the indicator-finger and 3 the magnet. The disk 7, which forms the lower end of the spool of the magnet 3, rests upon a bracket 4. The core 5 is fixed with relation to the magnet and the projecting lower end extends through a perforation in the bracket 4. The bracket 4 is formed with an angle arm 6 which is preferably made fast to the plate 1, so that the bracket will form an immovable support for the magnet. Secured also to the plate 1 above the magnet is another bracket 8. The upper end of the core 5 extends through the disk 9 of the upper end of the spool of the magnet and is riveted or otherwise secured to said bracket 8. The rear end of the bracket 4 is formed with a downwardly turned arm 10 in which is journaled the rear end of the arbor 11 which carries the indicator 2, the other end of the said arbor being journaled in the angle arm 6 and plate 1.

An armature 12 is provided with pivot pins 13 on opposite corners of one side by which it is pivoted to downwardly hanging ears 14 on the bracket 4, the free end of the armature extending beneath the core of the magnet. The pivot pins 13 are in line with each other and the axis thereof is at right angles with the axis of the arbor 11.

Fixedly mounted on the rear end of the arbor 11 is a catch-lever 15. The catch-lever is provided with a toothed projection 17 which is adapted to be engaged by a finger 18 projecting from one side of the armature 12, and when thus engaged, the armature will hold the catch-lever in the position shown in Figs. 3 and 5, thereby holding the indicator arbor in the position where the indicator is turned down out of position for denoting a call.

The weight of the arm 15 of the catch-lever and of the butt end of the indicator are sufficient so that when the armature is released from engagement with the tooth 17, the arm 15 will drop into the position shown in Fig. 2, thereby turning the arbor 11 and the indicator 2 so as to bring the indicator into a vertical position pointing upward, the preferable range of movement being through ninety degrees, so that when the arm 15 is in engagement with the catch-plate, the indicator will lie in horizontal position as shown in Fig. 5 and as shown in dotted lines in Fig. 1.

The bracket 4 is provided with a finger 19 which forms a stop to limit the upward movement of the arm 15 and the catch-lever is provided with a shoulder 20 which, when the lever is tripped, engages the finger 18 of the armature to limit the downward movement of the arm 15 of the catch-lever.

One pole of the magnet is connected by a wire 21 with the battery or other source of electrical energy 22 and the other pole of the magnet is connected by a wire 23 with the battery. The ground wire 23 is preferably connected with a lug 30 on the bracket 4

which is in electrical connection with one pole of the magnet but may be connected in any suitable way. A circuit closer 24 of any well known form is employed to make and break electrical connection so as to energize the magnet 3.

When the magnet is energized, the armature 12 will be turned up on its pivot and released from engagement with the tooth 17 of the catch-lever, thereby allowing the arm 15 to drop and turn the arbor and indicator in the manner already described. The bell boy or other operator at the annunciator will then reset the device which may be done in well known ways. The means shown consists of a bent slide rod 25 which slides in bearings in brackets 26 attached to the lower part of the face plate and through bearings in the bracket 27 at the upper end of the face plate and through an arm 28 projecting from the bracket 8 which rests upon the upper end of the magnet, the rod being provided with a finger 29 which when the slide rod is pushed up engages the arm 15 and turns the catch lever and arbor 11.

In the construction shown and above described, the bracket to which one end of the armature is pivoted also supports the magnet and holds the arbor which carries the catch-lever, thus making a fixed and unvariable distance for the armature to drop to engage the catch-lever.

I claim as my invention:

1. In an electrical drop, an electro magnet provided with a core which is fixed therein and projects below the lower end of the magnet, a bracket having a base on which said magnet is vertically mounted, the lower end of the magnet resting on said base, said base being formed with a hole through which said projecting lower end of the core extends, said base having two downwardly extending short ears at opposite ends of one edge of said base, and two downwardly extending longer ears at the ends of the opposite edge of said base, a swinging armature pivoted on one edge to said short ears, the swinging side of said armature extending beneath said base and beneath the said downwardly projecting end of said core, said base being between the magnet and the armature, an arbor pivoted in said longer ears, the axis of the arbor being parallel with the axis of the armature pivots, an indicator carried on one end of said arbor, a catch lever fixedly mounted on said arbor and normally engaged by said armature, thereby holding said lever and arbor in a position to retain the indicator out of call position, means for energizing said magnet which when energized will attract said armature and disengage it from said catch lever the catch lever being over-balanced at one end whereby when the said armature is disengaged from the catch lever the catch lever will swing down and turn the indicator into call position.

2. In an electrical drop, an electro magnet provided with a core which is fixed therein and projects below the lower end of the magnet, a bracket having a base on which said magnet is vertically mounted, the lower end of the magnet resting on said base, said base being formed with a hole through which said projecting lower end of the core extends, said base having two downwardly extending short ears at opposite ends of one edge of said base, and two downwardly extending longer ears at the ends of the opposite edge of said base, a swinging armature pivoted on one edge to said short ears, the swinging side of said armature extending beneath said base and beneath the said downwardly projecting end of said core, said base being between the magnet and the armature, an arbor pivoted in said longer ears, the axis of the arbor being parallel with the axis of the armature pivots, an indicator carried on one end of said arbor, a catch lever fixedly mounted on said arbor and normally engaged by said armature, thereby holding said lever and arbor in a position to retain the indicator out of call position, means for energizing said magnet which when energized will attract said armature and disengage it from said catch lever the catch lever being over-balanced at one end whereby when the said armature is disengaged from the catch lever the catch lever will swing down and turn the indicator into call position, a projection on said bracket which limits the upward swinging of said catch lever and a projection on said armature which is engaged by said catch lever to limit the downward movement thereof.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE J. GALBRAITH.

Witnesses:
WILLIAM A. COPELAND,
ALICE H. MORRISON.