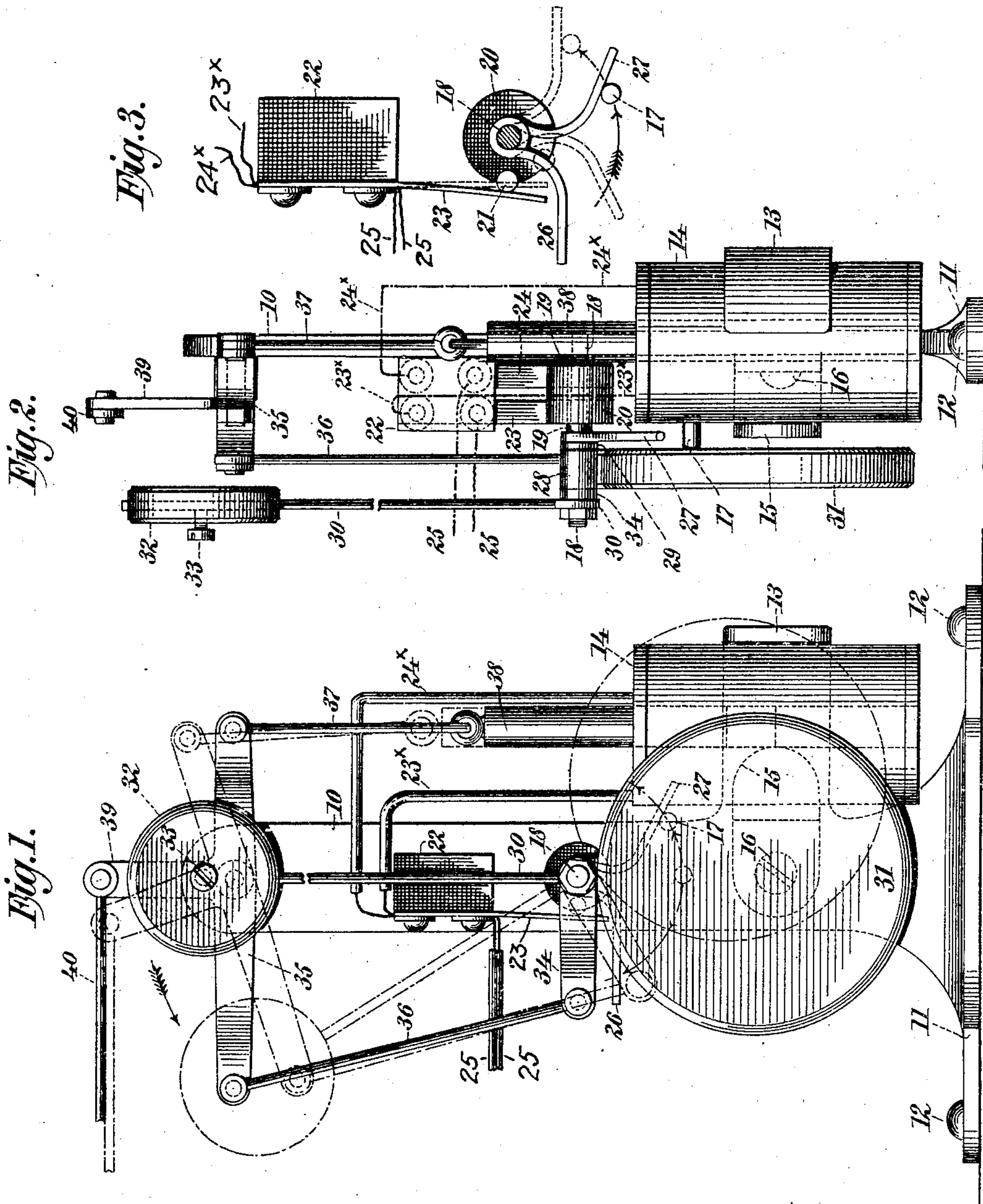


S. H. HOGGSON.
ELECTROMAGNETIC APPARATUS FOR ACTUATING MECHANISMS.
APPLICATION FILED JUNE 29, 1906.

929,763.

Patented Aug. 3, 1909.



WITNESSES:

Gustave Dietrich
Edwin H. Dietrich

INVENTOR

Samuel H. Hoggson

BY *Conrad Augustus D. Alend*
his ATTORNEY

UNITED STATES PATENT OFFICE.

SAMUEL H. HOGGSON, OF NEW YORK, N. Y.

ELECTROMAGNETIC APPARATUS FOR ACTUATING MECHANISMS.

No. 929,763.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed June 29, 1906. Serial No. 323,993.

To all whom it may concern:

Be it known that I, SAMUEL H. HOGGSON, a citizen of the United States, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Electromagnetic Apparatus for Actuating Mechanisms, of which the following is a full, clear, and exact specification.

My invention relates to improvements in motors, and the same has for its object to provide a simple, efficient and reliable electro-mechanical apparatus for economically and positively actuating apparatus or mechanisms of different types or forms.

Further said invention has for its object to provide an apparatus wherein the speed with which the same operates may be readily and conveniently changed.

Further said invention has for its object to provide an apparatus which may be operated at a minimum cost of motive power; as, for example, in combination with an incandescent electric lamp, and without appreciably affecting the operating of said lamp.

To the attainment of the aforesaid objects and ends my invention consists in the novel details of construction and in the combination, connection and arrangement of parts hereinafter more fully described, and then pointed out in the claims.

In the accompanying drawings forming part of this specification, wherein like numerals of reference indicate like parts, Figure 1 is a front view showing one form of apparatus constructed according to, and embodying my said invention; Fig. 2 is a side view of the same, and Fig. 3 is an enlarged detail front view of the commutator or circuit closer of the apparatus.

In said drawing 10 designates a vertical standard or support having a base 11, and secured to a suitable horizontal support by screws 12, 12. From one side of the standard 10, near its base, extends a curved, horizontal member 13 in which is secured a solenoid 14 by means of a clamp 15 secured at one end to the front of the standard 10 by a screw 16. The solenoid 14 is contained within a metal casing.

18 denotes a short shaft which is secured at one end to the standard 10, upon which is mounted a sleeve 19 having a cylindrical section of insulating material 20 fixed thereon and adapted to rotate partially with said sleeve 19 upon the shaft 18.

21 denotes a short metal rod embedded longitudinally in the side of the cylindrical section 20 and arranged parallel with the sleeve 19. Above said shaft 18 is arranged a block of insulating material 22 which is secured upon the front of the standard 10 and carries two contact fingers or brushes 23, 24, which are secured to said block 22 at their upper ends and to the terminals 23^x 24^x respectively of the solenoid 14 and the conductors 25 25 connected to a suitable source of electric energy, while the lower or free ends of said contact fingers or brushes are adapted for contact with the rod 21 of the cylindrical section 20. To the forward end of said sleeve 19 are secured arms 26, 27 which extend downward and outward in opposite directions therefrom. Upon the shaft 18 in front of the sleeve 19 is disposed a second sleeve 28 which is maintained duly separated from the sleeve 18 by a collar 29.

30 denotes an arm which may be of any desired length and secured at its lower end to the forward end of the sleeve 28. To the underside of the sleeve 28 is secured a flat, circular weight 31 which technically forms a continuation of the lower end of the arm 30 and has a rearwardly extending pin 17, and 32 denotes a small, flat weight which is adjustably disposed upon the upper end of the arm 30, and adapted to be secured to its adjusted position by a screw 33 passing partly through said weight 32 and contacting at its inner end with the portion of the arm 30 within said weight. To the forward end of the sleeve 28 is secured an arm 34 which is arranged substantially at right angles to the arm 30.

At the upper end of the standard 10 is pivotally mounted intermediate its ends a lever 35 which is pivotally secured at one end to the upper end of a link 36 pivotally secured at its lower end to the outer end of the arm 34 on the sleeve 28, and the opposite end of said lever 35 is pivotally secured to the upper end of a rod 37 carrying at its lower end the armature 38 working within the solenoid 14.

39 denotes an arm or member extending upwardly from the lever 35 in a direction substantially at right angles to the longitudinal axis of said lever, and has pivotally secured to its end one end of a rod or link 40 by means of which a reciprocating or rotary motion may be imparted to the apparatus connected to or acted upon by its other end. It

will be readily obvious that where a plurality of movements are to be imparted to an apparatus or number of apparatus it merely becomes necessary to connect a corresponding
 5 number of links as 39 to appropriate points on the lever 35.

The operation of the apparatus is as follows: Assuming the parts to be in the positions shown in full lines at Figs. 1 and 2 as
 10 soon as the current is applied to the apparatus through the conductors 25, 25 the solenoid 14 will be energized and draw down the armature or core 38 and draw down the right-hand end of the lever 35 by means of the link
 15 37 and at the same time the left-hand end of the lever 35 will be raised through the medium of the link 36 and arm 34 and cause the upper end of the pivoted arm 30 to swing toward the right to a position substantially at
 20 right angles to the standard 10. Just before the arm 30 reaches its horizontal position the pin 17 projecting from its rear surface will contact with the end of the arm 26 and partially rotate the commutator cylinder 20 and
 25 break the solenoid circuit. Hereupon the arm 30 will be caused to swing toward the left and assume the position indicated in broken lines at Fig. 1, but just before it assumes said position the pin 17 on the weight
 30 31 will contact with the arm 27 of the commutator cylinder 20 and again close the solenoid circuit, and cause the apparatus to repeat the operation just described.

In the operation of the apparatus as the
 35 upper end of the arm 30 swings to the right the weight 31 will move to the left and vice versa, and its oscillation controlled or rendered uniform by means of the counter poise 32 at the upper end of said arm 30.

40 To vary the speed of the apparatus it simply becomes necessary to vary the number of oscillations per minute of the arm 30, and this may be readily accomplished by moving the counter poise 32 upon the arm 30 toward
 45 or from the weight 31 thereon.

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

1. In an apparatus of the character described, the combination with a frame, of a
 50 weighted oscillating member pivotally mounted thereon, a lever pivotally mounted upon said frame having one end pivotally secured to said oscillating member, and
 55 another end connected to an armature, a solenoid secured to said frame, a circuit closing device, and means carried by said weighted arm for actuating said circuit closing device near the end of the oscillations of

said oscillating member, substantially as specified.

2. In an apparatus of the character described, the combination with a frame, of an oscillating member pivotally mounted thereon, a weight fixed at the lower end of said
 65 member, a counter poise adjustably arranged upon the upper end of said member, an arm on said member, a lever pivotally secured upon said frame, a link connecting one end of said lever with said arm, a link pivotally
 70 secured at one end to another end of said lever, an armature secured to the other end of said link, a solenoid arranged upon said frame, a circuit closing device comprising a fixed and a movable member, and means
 75 arranged upon said oscillating member adapted to engage said movable member of said circuit closing device in the course of the oscillations of said oscillating member in both directions, substantially as specified. 80

3. In an apparatus of the character described, comprising a frame, an oscillating member pivotally mounted thereon, a weight
 85 secured to the lower end of said member, a pin extending from said weight, a counter-poise adjustably disposed upon the upper end of said oscillating member, a screw for securing said counter-poise, an arm arranged at an angle to said oscillating member, a
 90 lever pivotally mounted upon said frame, above said oscillating member, having a plurality of ends, a link connecting one of said ends with the arm on said oscillating member, a solenoid secured to said frame having
 95 an armature therein, a link connecting said armature with another end of the lever aforesaid, a block of insulating material secured upon said frame, a pair of contact fingers thereon connected to the terminals of the
 100 solenoid, and the conductors leading from a source of electric energy, a rotary circuit closer adapted for contact with said contact fingers, and arms secured upon said rotary circuit closer adapted for engagement with
 105 the pin on the oscillating member whereby to actuate said circuit closer to control the operation of the solenoid in the course of the oscillations of the oscillating member in both directions, substantially as specified.

Signed at the city of New York, in the
 county and State of New York, this twenty-seventh day of June, nineteen hundred and six. 110

SAMUEL H. HOGGSON.

Witnesses:

CONRAD A. DIETERICH,
 EARLE H. HOUGHTOLING.