J. E. LEWIS.

COIN CONTROLLED CIRCUIT CLOSING APPARATUS.

APPLICATION FILED MAR. 5, 1912.

1,028,232. **Patented June 4, 1912.**

2 SHEETS—SHEET 1.

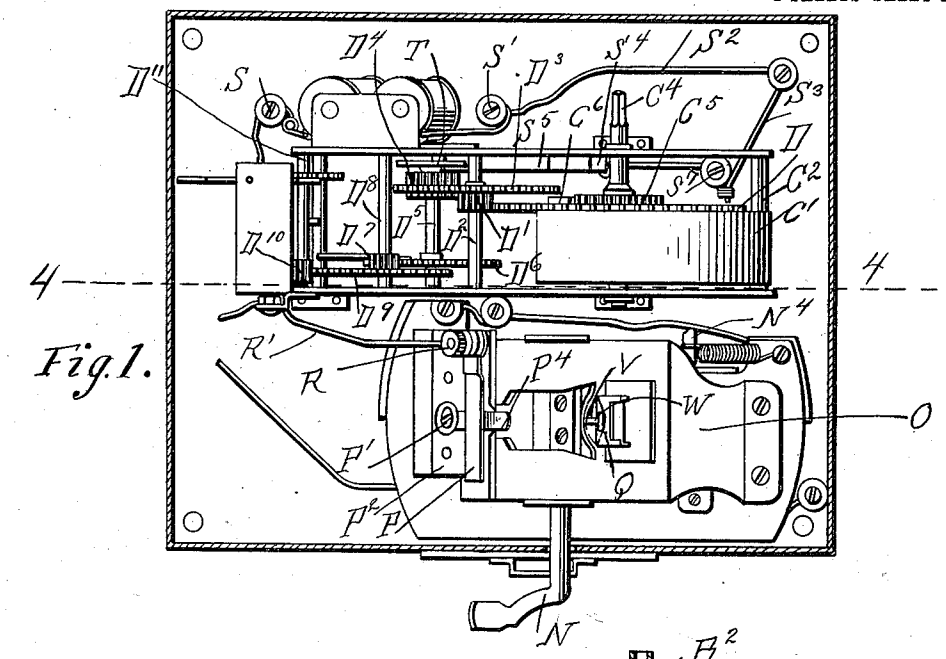


Fig. 1.

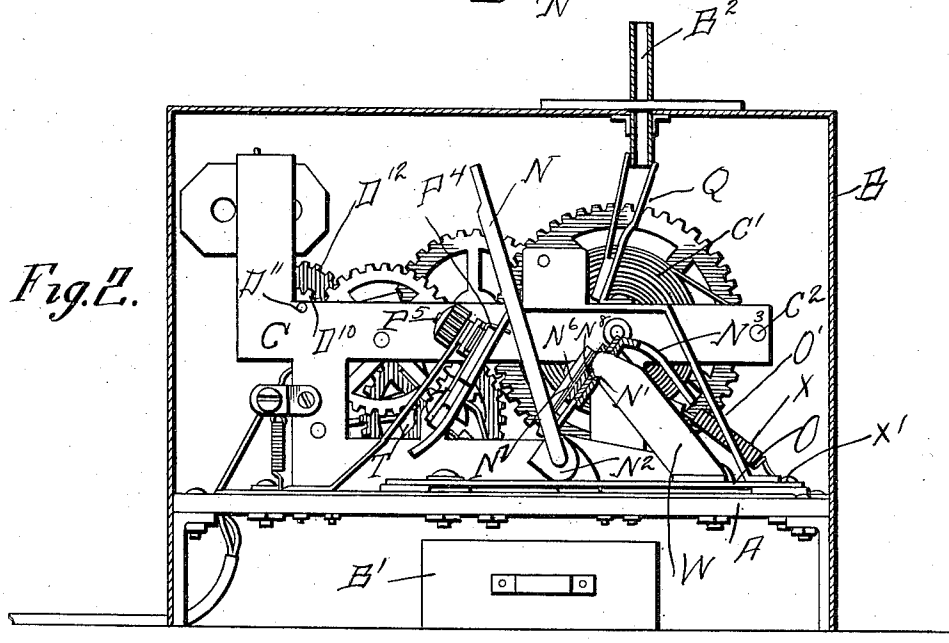


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

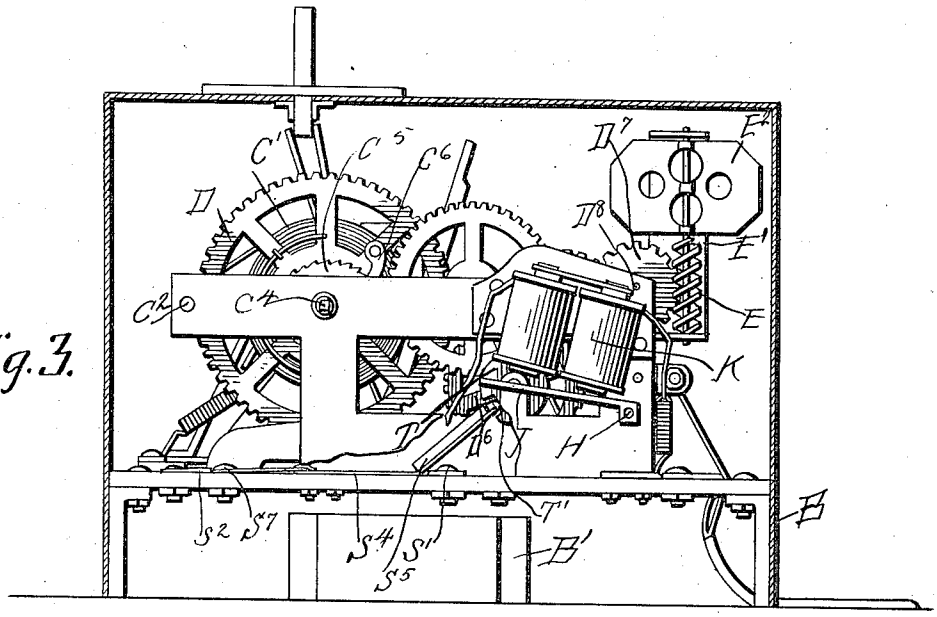
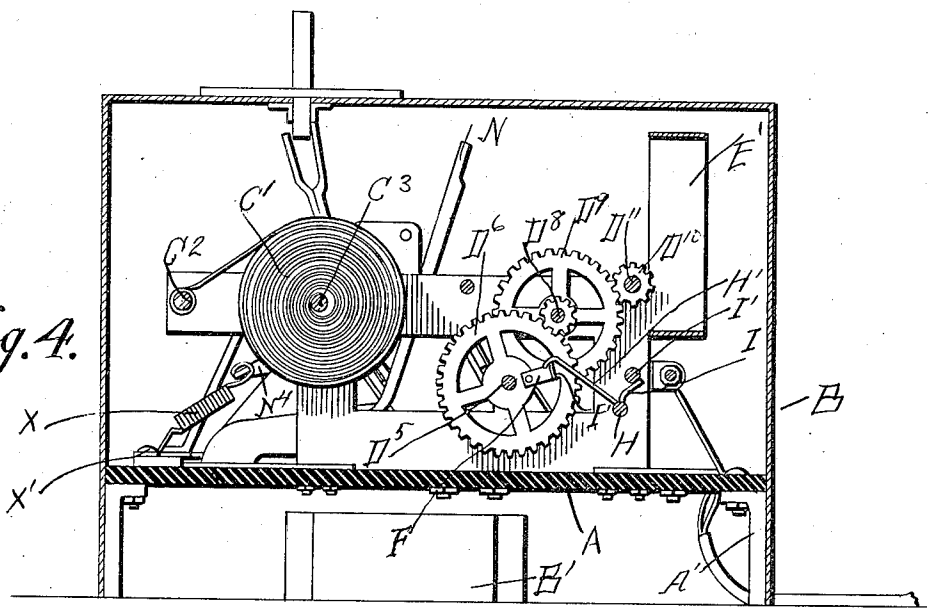


Fig. 4.



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED CIRCUIT-CLOSING APPARATUS.

1,028,232. Specification of Letters Patent. Patented June 4, 1912.

Application filed March 5, 1912. Serial No. 681,728.

To all whom it may concern:

Be it known that I, JASPER E. LEWIS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Coin-Controlled Circuit-Closing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in coin-in-the-slot, circuit controlling devices for motors adapted to drive fans, etc., and comprises a simple and efficient apparatus of this nature so constructed that a motor may be started and which is allowed to run for a predetermined length of time, then automatically stopped.

The invention comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described, shown in the accompanying drawings and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a sectional view transversely through a casing containing the operative parts of the apparatus which are shown in top plan view. Fig. 2 is a view vertically through the casing, showing in side elevation the apparatus. Fig. 3 is a similar section looking at the opposite side of the apparatus, and Fig. 4 is a sectional view taken on line 4—4 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates a platform, preferably of insulated material, mounted upon the standards A′, and B is a casing containing the operative parts of the apparatus and provided with a drawer B′ adapted to receive the coins as they are dropped from the slot B^2. Resting upon the platform A is a frame C containing the operative parts of the motor which in the present instance is of the usual clock-work mechanism, consisting of a spring C′, one end of which is fastened to a shaft C^2 and its other end secured to a winding shaft C^3 to the squared end C^4 of which, shown in Fig. 3 of the drawings, a key may be applied for the purpose of winding the spring, a suitable pawl and ratchet C^5 and C^6 being provided for holding the spring under tension. Fixed to the shaft carrying the spring is a gear wheel D which is in mesh with the pinion D′ upon the shaft D^2 and a gear wheel D^3 also fastened to the shaft D^2 is in mesh with a pinion D^4 fixed to the shaft D^5 which has keyed thereto a gear wheel D^6 in mesh with a pinion D^7 upon the shaft D^8. A gear wheel D^9 upon the shaft D^8 is in mesh with a pinion D^{10} which rotates with the shaft D^{11}. The gear wheel D^7 is in mesh with a worm gear E, shown clearly in Fig. 3 of the drawings, and which is journaled in the bracket member E′ secured to the frame of the apparatus. The shaft upon which said worm gear is mounted is provided with a fan E^2.

Referring to Fig. 4 of the drawings there will be noted an angled lug F fastened at one end to the gear wheel D^6, the end F′ of which projects at right angles from the gear wheel to which it is fastened. A rock shaft, designated by letter H, is mounted in the opposite walls of the frame and has a hook H′ fixed thereto, the end of which hook is adapted to be positioned in the path of the lug F, forming means whereby, when the wheel D^6 and the shaft carrying the same make one revolution, said hook will engage the lug and stop the motor. A wire, designated by letter I, projects from the shaft H and is adapted to contact with the shaft I′ mounted in the frame of the apparatus, thus tending to limit the rotary movement of the shaft H in one direction.

Upon reference to Fig. 3 of the drawings, it will be noted that an armature J is fastened at one end to the shaft H and, when the electro-magnet K is energized, said armature will be drawn in contact therewith and cause the shaft H to rock sufficiently to throw the hook which is fastened to the shaft H out of the path of the lug F, thus allowing the gear wheel D^6 to rotate under the influence of the spring which has gear connections with the shaft to which the spring is attached.

Referring to Fig. 2 of the drawings there will be noted an angled operating lever N, the horizontal portion of which is journaled in openings in the frame of the motor, and N′ designates a plate which is provided with

lugs N^2 which are keyed to the horizontally disposed portion of the lever N. Said plate has a laterally projecting guard wing N^3, shown in edge elevation in Fig. 2, and which is curved. Mounted upon the normally inclined face of the plate N is a curved block N^6, preferably of insulated material, adapted to hold a coin as it is dropped through the chute Q. A metallic strip N^7 is interposed between the block N^5 and the plate and a second insulation block N^8 against which the coin is adapted to contact. A metallic plate O is supported parallel to the partition, as shown in Fig. 2 of the drawings, and fixed to the plate O is an angle plate O′ which carries the chute Q through which the coins are dropped and fastened upon an inclined portion of the plate O′ is a metallic plate P, of suitable conducting material, and which is held in place by means of a screw P′ and is mounted upon the insulating block P^2. A binding post, designated by letter R, is fastened to each end of said plate P and to which an electric wire R′ is connected and which wire is also connected with the binding post S with one pole of the electro-magnet, the other pole being connected with the binding post S′ to which the wire S^2 is connected and which in turn is connected, through the medium of the wire S^3 and binding post S^7 with the longitudinally-movable, sliding contact plate S^4 which is fastened to an insulating block S^5.

A disk, designated by letter T, is fastened to one end of the shaft D^5 and has a recess T′ in the circumference thereof, against the circumference of which the metallic conductor strip S^4 rides, thus forming a closed circuit which is broken when the recess in said disk comes in alinement with the strip S^5 at a predetermined moment coincident with the stopping of the motor, thus shutting off the current.

Referring to Fig. 2 of the drawings, a standard W rises from the plate O and is positioned opposite an opening V and serves to kick the coin off the support after the coin has been thrown forward by the rocking of the handle N, thence falling by gravity through an opening and into the drawer beneath. A spring X is fastened at X′ to the plate O and its other end to an arm N^4 which is fixed to the horizontally-disposed portion of the operating handle N, the spring serving to return the handle to its normal position after having been thrown forward in the act of causing the coin to contact with the laterally projecting end P^4 of the plate P.

The operation of my invention will be readily understood and is as follows:—Assuming the parts to be normally in the positions shown in Figs. 1 and 2 of the drawings, a coin is dropped through the chute into the slot B^2 and falling will be caught by the block N^6 and, as the handle N is thrown forward, its horizontal portion will rock and cause the plate N′ to be thrown forward, carrying the coin with it. When the coin comes in contact with the end P^4 of the plate P, the circuit will be closed and the electro-magnet energized, drawing the armature in contact therewith, which act will cause the shaft upon which the armature is fixed to rock and the hook H′ will be thrown out of the path of the lug F, allowing the spring motor to cause the gear wheel D^6 to make a complete revolution. The speed at which said wheel D^6 will rotate is determined by the size of the intermeshing wheels and, when the wheel D^6 shall have made a complete revolution, the recess in the disk will have come opposite and in alinement with the metallic strip S^4 and out of contact with the disk which will close the circuit, allowing the armature to drop down from the magnet and the hook will be again positioned in the path of the lug F and, as it contacts therewith, the motor will stop. After the operating handle has been swung forward in the act of bringing the coin in contact to close the circuit and after pressure is released from the handle, the spring attached to the arm thereon will return the handle to its normal position and, as the coin comes in contact with the end of the member W, the coin will be kicked from off the block holding the same and fall by gravity into the box below.

By the provision of an apparatus as shown and described, it will be noted that a simple and efficient mechanism is afforded whereby a fan, for which the apparatus is especially adapted, may be caused to be operated for a predetermined length of time, after which the motor will be automatically stopped.

What I claim to be new is:

1. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a movable coin-holding member in the circuit affording means for throwing the coin against said contact plate to close the circuit, thereby causing the electro-magnet to be energized to attract the armature and cause the shaft carrying the same to throw the hook out of the path of said projection, allowing the motor to operate, and means for automatically stopping the motor, as set forth.

2. A coin-in-the-circuit apparatus for

starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a movable coin-holding member in the circuit affording means for throwing the coin against said contact plate to close the circuit, thereby causing the electro-magnet to be energized to attract the armature and cause the shaft carrying the same to throw the hook out of the path of said projection, allowing the motor to operate, a metallic strip in the circuit, a rotatable disk actuated by the motor and against which said strip contacts, said disk having a recess in its circumference adapted to receive the end of the strip at each revolution of the disk to cause the circuit to close to throw the hook out of the path of said projection, as set forth.

3. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a movable handle, a coin-holding member upon the latter adapted to throw the coin against said contact plate, means for returning the handle to its normal position, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

4. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a movable handle, a coin-holding member upon the latter adapted to throw the coin against said contact plate, means for kicking the coin from the handle as it returns to its normal position, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

5. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a movable handle, a coin-holding member upon the latter adapted to throw the coin against said contact plate, a stationary member against which the coin is adapted to contact as the handle is returned to its normal position, causing the coin to be released from the handle, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

6. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a handle having an angled portion which is journaled in the frame, a plate fastened to said angled portion and provided with a laterally extending guard wing, a coin chute above said guard wing, said plate upon the handle adapted to hold a coin and cause the latter to move against said contact plate to close the circuit, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

7. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a handle having an angled portion which is journaled in the frame, an apertured plate fixed to the handle, a coin-holder upon said plate upon the handle, a stationary member fastened to the frame and projecting through said opening in the plate and against which a coin is adapted to contact to throw the same from its holder, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

8. A coin-in-the-circuit apparatus for starting motors comprising a spring-pressed motor, a gear wheel actuated thereby, a projection upon the latter, a rock shaft, a hook thereon normally in the path of said projection, an electro-magnet, an armature fixed to the rock shaft, a conductor plate against which the coin is adapted to contact, an electrical circuit connected to said plate and electro-magnet, a handle having an angled portion which is journaled in the frame, a plate having lugs which are fastened to the handle, a guard projecting from the plate, a coin chute over said guard, an arm fastened to said handle, a spring fastened at one end to the arm and at its other end to the frame, means for kicking a coin from the plate as the handle returns to its normal position, a rotatable disk geared to the motor and having a recess in its circumference, a metallic strip in the circuit adapted to ride upon the circumference of said disk and, when in alinement with the recess, to break the circuit, as set forth.

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

JASPER E. LEWIS.

Witnesses:
A. L. HOUGH,
J. W. SHERWOOD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."