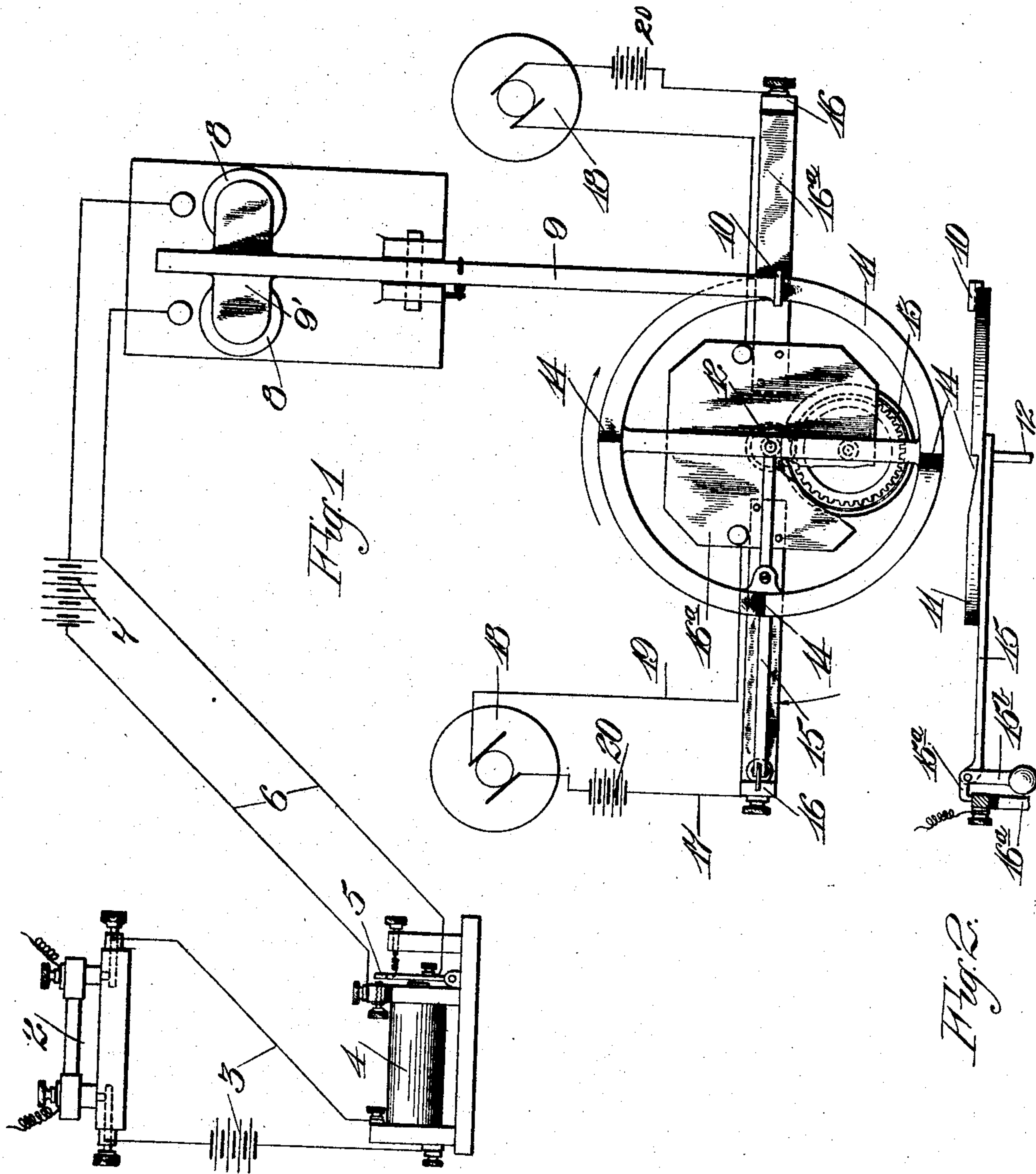


C. L. COLEMAN.
WIRELESS CONTROLLING DEVICE.
APPLICATION FILED JAN. 25, 1909.

951,524.

Patented Mar. 8, 1910.



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UNITED STATES PATENT OFFICE.

CHARLES L. COLEMAN, OF SAN LEANDRO, CALIFORNIA.

WIRELESS CONTROLLING DEVICE.

951,524.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES L. COLEMAN, citizen of the United States, residing at San Leandro, in the county of Alameda and State of California, have invented new and useful Improvements in Wireless Controlling Devices, of which the following is a specification.

This invention relates to electrically operated controlling devices, or governors.

It is the purpose of my invention to devise a means whereby a plurality of electric motors, or other electric circuits, or other mechanisms, may be controlled by an operator from a central station, by means of wireless transmission mechanisms.

I purpose to provide a combination of mechanically operated means in combination with the electrically operated means which will enable the operator to govern either the starting or stopping of suitable motors, or for instance, the guiding of submarine torpedoes, or similar vessels, or perhaps to discharge submarine mines.

The invention consists of the elements, and the construction and combination of elements, or their equivalents, as set forth in the following specification, and shown in the accompanying drawings, in which—

Figure 1 is a diagrammatic plan of the apparatus. Fig. 2 is a detail view of the contact mechanisms.

In the embodiment of my invention as shown, I employ the usual form of a coherer 2, which is mounted in a relay battery circuit 3 so as to complete the circuit and energize the electromagnets 4 when a current has been discharged from a sending station, which it is not necessary here to show as this sending mechanism may be of the usual well known character. Upon the energizing of the relay magnets 4, the armature 5 will be attracted and close the circuit 6, which here includes a battery 7, and an electromagnet 8 which controls a release lever 9.

The outer end of the release lever 9 is provided with a projecting lug 10 which is adapted to normally bear upon the surface of a notched turnable ring 11, which is securely fastened to the pintle 12, of a suitable clock-work, or other mechanism, which would be under constant tension from its driving spring 13, or its equivalent. As shown by the arrow in Fig. 1, the ring 11 revolves to the right, and has upon its upper

surface, at suitable intervals, notches or shoulders 14 adapted to encounter the downwardly projecting lug 10 of the arm 9; the tension of the spring 13 holding the ring 60 against the lug 10 until the arm 9 is raised from engagement with the notches 14 by means of the electromagnet 8 when the circuit 6 is closed. The ring upon being released will rotate as indicated until the lug 65 10 engages the next successive notch 14. The ring has secured to it a contact lever 15, and when the lever 9 is actuated to release the ring 11, the contact member 15 will be carried around with the ring, and is 70 adapted to engage at suitable intervals around its course, with contacts 16 insulatably secured upon the frame 16^a of the clock-work. One electric conductor 17 is led from the contact member 16 to a suitable motor; 75 the return circuit from the motor being carried over conductor 19 back to a suitable binding-post electrically connected to the frame-work 16^a of the mechanism. A battery 20, or other suitable source of electrical 80 energy may be interposed in this local circuit so as to energize the motor.

As many of the contacts 16 may be provided around the course over which the contact lever 15 travels as is required. In the 85 present instance I have shown two of these members 16, each controlling its own circuit and included motors.

As an example of the utility of a mechanism of this character, it may be assumed that 90 the two motors 18, may each be connected up to drive the propeller of a submarine boat or other vessel; one of the motors controlling the forward drive of the vessel, and the other motor controlling the rearward 95 drive; consequently, if one of the motors is energized, the vessel will be driven forward as long as desired, and then this circuit may be interrupted by means of release lever 9, and the other motor 18 be energized to re- 100 verse the motion of the vessel; or again these several motors may be connected to operate the rudder to steer a vessel; one motor being effective to turn the vessel's head in one direction, and the other the op- 105 posite.

The invention is particularly well adapted as a controlling device for submarine mines, in which case each of the contacts 16, and its respective circuit, may be made effective to 110 cause the explosion of any desirable torpedo or mine.

Obviously, the coherer 2 will be energized by the operator from the main station, and when the coherer completes its circuit 3, the relay will, in turn, close the circuit 6, and energize the magnet 8 which will attract the armature 9' of the lever 9 so as to release the ring 14. Manifestly, the ring may be caused to have an almost continuous motion if the operator so desires, by simply energizing magnet 8 as rapidly as the notches 14 of the ring come into engagement with the lug 10. Consequently, while there may be any number of the contacts 16, with their respective circuits, only that particular circuit which the operator wishes to energize, would be permitted to be closed by the contact lever 15, which will remain in engagement with the contact 16 so long as the operator desires. The several notches 14 are so disposed upon the ring 11 that the contact lever 15 may be brought to a neutral position between the contact members 16, and held in its idle position without energizing any of the circuits. The lever 15 may be extended a suitable distance, and carry a pivoted or otherwise movably mounted contact member 15^a which is adapted to be held in such position, while the ring 11 is revolving, that no contact with the stationary members 16, will be made, but the contact 15^a will immediately assume a position to make or close the circuit through the member 16 over which it may be stopped. The contact 15^a is here shown as being a bell crank, the lower arm 15^b of which is weighted, and when the ring 11 is rotated, the arm is thrown outward by centrifugal force, thus keeping contact 15^a lifted.

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

1. In an electrical controlling apparatus, the combination of a means to be actuated, contacts suitably located with relation to said means, electrical connections from said contacts to the means to be operated, a revoluble member having successively operating projections on its surface by which said contacts are made and broken, said contacts being arranged at equal distances upon each side of the axis of the revoluble member, said revoluble member having a pivotally mounted member with an extended contact to successively engage the first-named contacts, a stop device including a pivotally mounted lever having one portion engaging the revoluble member to control the movement thereof, a coherer, electromagnets and electrical connections whereby the lever may be released from its engagement with the revoluble member.

2. In an apparatus of the character described, the combination of a means to be

actuated, contacts and electrical connections with said means, a revoluble member by which said contacts are alternately completed and broken, said member having spaced shoulders and said contacts being arranged at equal distances upon each side of the axis of said revoluble member and at greater distances from the axis of said member than the circumference thereof, a pivoted lever carrying at one end a stop by which the revoluble member may be arrested, a member secured to and projecting from the revoluble member having a contact to successively engage the first-named contacts, an electromagnet and armature at the opposite end of the lever, a coherer, and intermediate electrical connections whereby the electromagnet may be energized and the lever moved to release the revoluble member.

3. In an apparatus of the character described, the combination of means to be actuated, a revoluble member having shoulders arranged at equal distances apart on its surface, contact members arranged at equal distances from the axis of the revoluble member, electrical connections between said contacts and the connections to be actuated, an arm carried by the revoluble member and extending therefrom having its outer end provided with a pivotally mounted contact adapted to make electrical connections with the first-named contacts to complete a circuit with either of the latter, a spring-pressed lever and a stop device carried at one end thereof adapted to engage the shoulders on the revoluble member to arrest the movement of said member, an armature carried by the lever, an electromagnet, a coherer, batteries and electrical connections whereby the action of the coherer energizes the magnet to move the lever and release the revoluble member through which the means to be actuated is effected.

4. In an apparatus of the character described, stationary contact members, a revoluble member intermediate of the contact members, co-acting contact members carried thereby to pass the stationary members, and a suspension device including a pivotally mounted counterweighted lever having an extended contact member whereby the contact carried by the revoluble part will be removed from the plane of contact while in motion, and will resume a position to make contact when at rest.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES L. COLEMAN.

Witnesses:

C. W. McLAUGHLIN,
O. J. LYNCH.