

S. HOLLAND.  
CIRCUIT CONTROLLER.  
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913,383.

Patented Feb. 23, 1909.

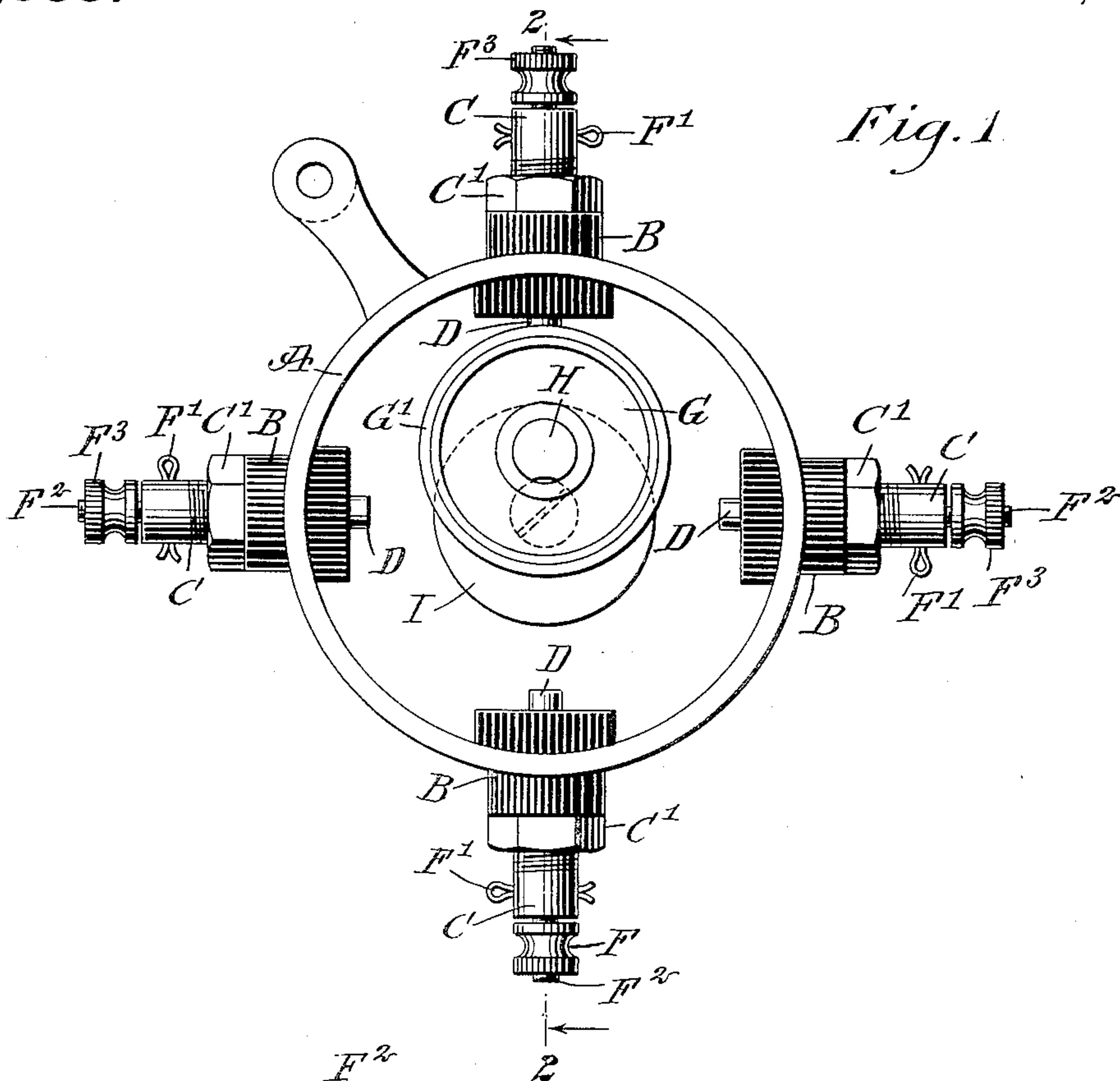


Fig. 1.

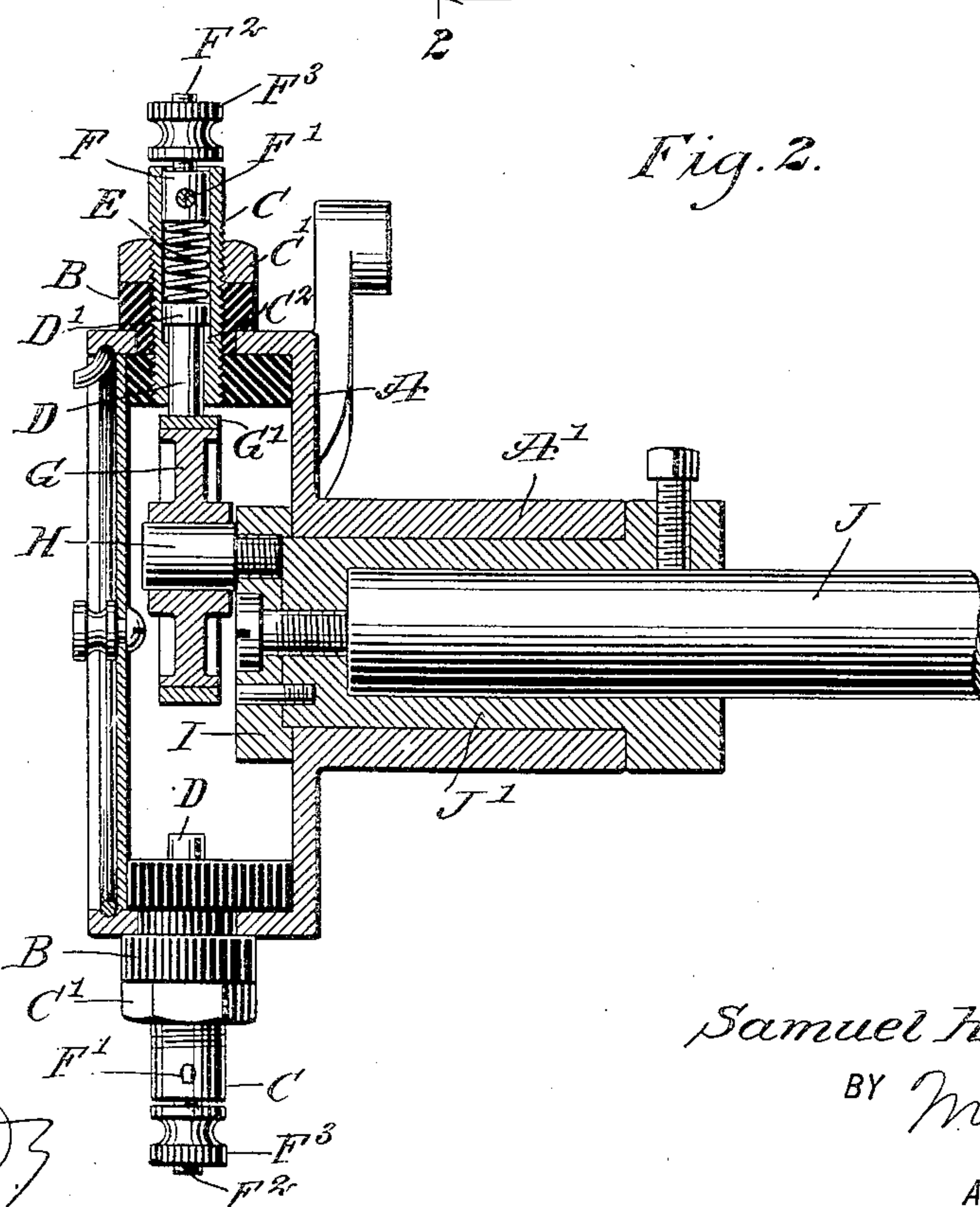


Fig. 2.

WITNESSES

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# UNITED STATES PATENT OFFICE.

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## CIRCUIT-CONTROLLER.

No. 913,383.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed December 11, 1907. Serial No. 405,984.

*To all whom it may concern:*

Be it known that I, SAMUEL HOLLAND, a citizen of the United States, and a resident of Park River, in the county of Walsh and State of North Dakota, have invented a new and Improved Circuit-Controller, of which the following is a full, clear, and exact description.

The invention relates to ignition devices for multiple cylinder explosion engines, and its object is to provide a new and improved circuit controller, arranged to permit of varying the time of the contact, to take up wear and reduce the wear to a minimum, and to prevent oxidation of the contacting parts, thus insuring at all times perfect ignition of the explosive charge.

The invention consists of novel features and parts and combinations of the same, which will be more fully described herein-after and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a face view of the improvement, the cover of the casing being removed, and Fig. 2 is a transverse section of the same on the line 2—2 of Fig. 1.

In the rim of a circular casing A, which has a tubular extension A', are arranged the insulations B, spaced equidistant apart and threaded to receive screw plugs C, adapted to be screwed in or out of the insulations and fastened in place by jam nuts C', as plainly indicated in the drawings. The screw plugs C are made hollow and are radially disposed, and in each of the said screw plugs is mounted to slide radially a contact pin D, projecting with its inner end into the interior of the casing A a distance from the inner face of the rim of the casing. Each of the pins D is provided at its outer end with a head D', adapted to rest on a shoulder C<sup>2</sup> formed on the inside of the corresponding screw plug C, to limit the inward movement of the contact pin D. Each of the contact pins D is pressed on by a spring E abutting with its upper end against the under side of a binding post F, secured in place in the outer end of the screw plug C by a cotter pin F', the binding post F being provided with the usual screw rod F<sup>2</sup>, on which screws

the nut F<sup>3</sup> for clamping the circuit wire in place on the binding post.

The inner ends of the contact pins D are adapted to contact successively with the peripheral face G' of a contact roller or wheel G, mounted to rotate loosely on a wrist pin H held on a crank I, secured to the sleeve J' of a crank shaft J, connected with a suitable part of the engine, to rotate the crank shaft J, with a view to carry the contact wheel G around within the casing A, to bring the peripheral surface G' of the contact wheel G successively in contact with the contact pins D. The peripheral surface G' of the contact wheel G is in the form of a ring or band made of silver, to prevent oxidation and consequently to insure a perfect electric contact between the contact wheel G and the pins D. Now when the engine is running and the wheel G is carried around within the casing A, then the peripheral surface G' of the wheel G comes in contact with a pin D and forces the same outward against the stress of the spring E, thus insuring a firm contact between the pin D and the peripheral surface G' of the contact wheel G. As the contact wheel G moves onward, it finally leaves the pin D, and after it is completely clear of this pin it makes contact with the next following pin, and so on, so that the circuit is closed for the sparking plugs in the different cylinders of the engine, to ignite the explosive mixtures in the said cylinders in the proper rotation. It is understood that a pin D is pressed outward in its screw plug C at the time the pin stands radially to the contact wheel G, and as the latter advances the pin D is forced back in an inward direction by the action of the corresponding spring E. It will be noticed that the pin D moves in contact with the contact wheel G previous to the pin reaching a radial position relative to the contact wheel G, and remains in contact with the contact wheel until after the radial position is passed. Now in order to increase or decrease the length of time the pin D is in contact with the contact wheel G, the screw plug C is moved inward or outward correspondingly, to bring the pin D sooner or later in contact with the contact wheel G. After the desired adjustment is made the screw plugs C are locked in position by the jam nuts C'.



From the foregoing it will be seen that the screw plugs C are adjustably held on the casing and the contact pins D are yieldingly mounted within the screw plugs, so that all wear is reduced to a minimum, and the wear can be taken up by making proper adjustment of the screw plug C, and the length of time of the contact between a pin D and the wheel G can be regulated to a nicety by correspondingly adjusting the screw plugs C.

It is understood that by mounting the contact wheel G loosely on the wrist pin H, the said contact wheel is gradually turned around on its axis by the successive contacts with the contact pins D, and hence the entire peripheral face of the contact wheel is subjected to uniform wear, and long life of the device is assured.

It is expressly understood that the length of time a contact pin D contacts with the contact wheel G is regulated by adjusting the corresponding screw plug C in its bearing B, that is, by screwing the screw plug C outward the time the contact pin D is in contact with the periphery of the contact wheel G is less than when the screw plug C is screwed inward.

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

1. A circuit controller comprising a casing having a tubular extension at one side thereof, contact pins yieldingly and adjustably mounted in the rim of said casing and having their inner ends projecting inwardly from the inner surface of the casing, a sleeve mounted to turn in the said tubular extension of the casing and closed at its inner end, a shaft mounted at one end in the said sleeve and secured thereto, a crank disk rigidly secured on the inner end of said sleeve, the said crank disk being of greater diameter than the inner end of said sleeve and bearing against the wall of the casing, a wrist pin held on the crank disk, and a contact roller journaled loosely on the said wrist pin and having its peripheral face in the form of a silver band, arranged to successively contact with the said contact pins.

2. A circuit controller comprising a cylindrical casing provided in its rim with a plurality of insulating bearings, a crank shaft journaled centrally in the said casing and having a crank disk provided with a wrist pin, the crank disk being arranged to turn around within the opening in the casing, and bearing against the wall of said casing, a contact roller journaled on the wrist pin of the said crank disk, a plurality of hollow

screw plugs screwing in the said insulating bearings in the rim of the casing, and arranged radially thereon, contact pins slidable in the said plugs and projecting at their inner ends within the casing, binding posts fitting in the outer ends of the hollow screw plugs, pins extending through apertures in the hollow plugs and the binding posts to secure the latter in position, springs in the plugs for pressing the said contact pins, the said springs engaging the inner ends of the binding posts, and means for fastening the screw plugs in adjusted position in the insulating bearings.

3. A circuit controller comprising a cylindrical casing provided in its rim with insulating spaced bearings extending within the casing, hollow screw plugs screwing in the said bearings and extending radially relative to the said casing, each screw plug having an interior shoulder, binding posts secured in the outer ends of the screw plugs, contact pins slidable in the inner ends of the said screw plugs and having heads adapted to be seated on the said shoulders, springs pressing at one end on the heads of the said contact pins, and at the other end on the inner ends of the binding posts, a crank shaft journaled centrally in the said casing and having its crank provided with a wrist pin, and a contact wheel journaled loosely on the wrist pin, the peripheral face of the said contact wheel being adapted to successively contact with the inner ends of the said contact pins.

4. In a circuit controller, a circular casing having a tubular extension at one side, and provided in its rim with insulating spaced bearings, contact pins yieldingly and adjustably mounted in the said insulating bearings and having their inner ends projecting inwardly from the inner surface of the bearings, a sleeve mounted to turn in the said tubular extension of the casing, and closed at its inner end, a shaft secured in the said sleeve, a crank disk rigidly secured on the closed end of the sleeve within the casing and bearing against the inner wall of the casing around the opening in the tubular extension, a wrist pin secured to the crank disk, and a contact roller journaled on the wrist pin and adapted to successively contact with the said contact pins when the shaft is rotated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL HOLLAND.

Witnesses:

A. M. BIRMINGHAM,  
B. A. BARLOW.