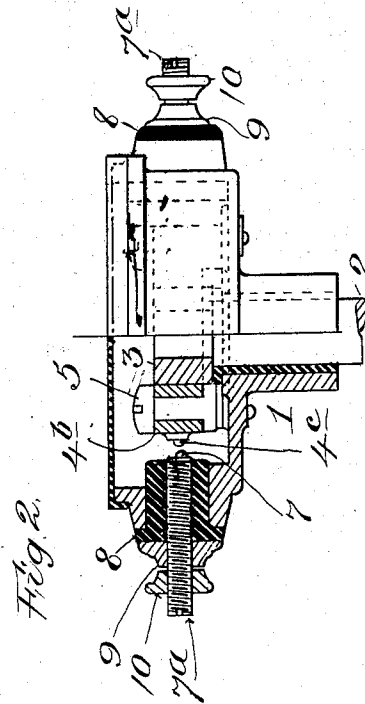
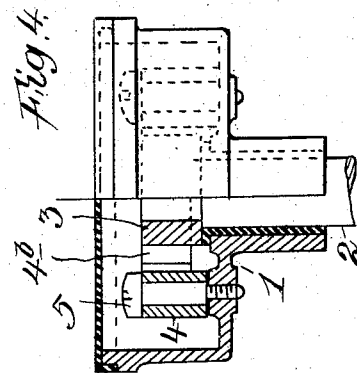
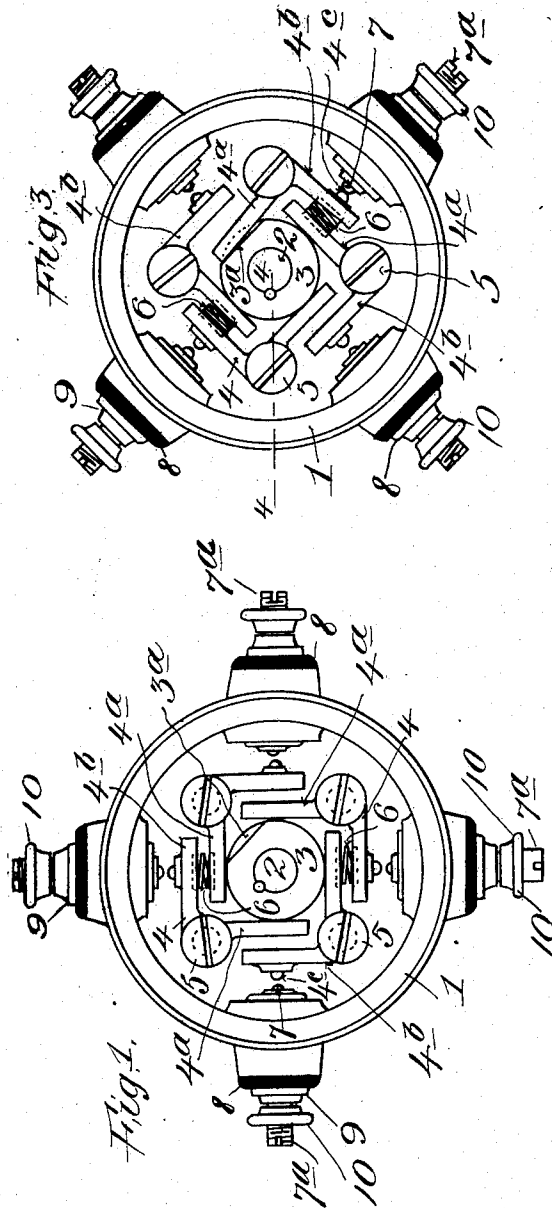


W. D. HEATH.
ELECTRIC CIRCUIT CONTROLLER.
APPLICATION FILED NOV. 23, 1911.

1,046,463.

Patented Dec. 10, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER D. HEATH, OF LAKEPORT, NEW HAMPSHIRE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO A. V. MANUFACTURING CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ELECTRIC-CIRCUIT CONTROLLER.

1,046,463.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed November 23, 1911. Serial No. 661,970.

To all whom it may concern:

Be it known that I, WALTER D. HEATH, a citizen of the United States, and resident of Lakeport, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Electric-Circuit Controllers, of which the following is a specification.

The object of my invention is to provide simple and efficient means for causing the make and break in electric circuits in the desired sequence or order, my invention being applicable as a timer or distributor in ignition systems for internal combustion engines, and it may be used as a unisparker in connection with battery, dynamo or low or high tension coil or magneto circuits.

My invention comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein

Figure 1 is a face view of my improved controller, the cover being removed, showing the various circuits broken at the make and break contacts; Fig. 2 is a side elevation partly in section; Fig. 3 is a view similar to Fig. 1 showing one of the circuits closed, and Fig. 4 is a side elevation partly in section on the line 4, 4, in Fig. 3.

Similar numerals of reference indicate corresponding parts in the several views.

In the accompanying drawings the numeral 1 indicates a suitable casing provided with a shaft 2, carrying at its end within the casing a rotary member 3 to actuate the rocker arms 4. The member 3 is shown in the form of a cam having a flat or reduced part 3^a to coact with the arms 4^a of the rockers 4, the remainder of the cam 3 being shown in cylindrical form. The rockers 4 are shown pivotally carried by studs 5 secured within casing 1. In the example shown I have illustrated four rockers and four studs carrying the rockers spaced equidistantly apart around member 3. The arm 4^b of one rocker 4 overlies the arm 4^a of an adjacent rocker and between two of such arms a spring 6 is interposed tending to press the corresponding arm 4^a toward member 3 and the adjacent arm 4^b away from member 3, while at the same time the arm 4^b that is connected with said rocker is main-

tained under tension for immediate outward movement by such spring when the reduced part 3^a of member 3 aligns with the corresponding arm 4^a. The arms 4^b are shown provided with contacts 4^c adapted to engage corresponding contacts 7 carried by casing 1. Contacts 7 are shown upon screws 7^a supported in insulation 8 fitted in the wall of casing 1. A nut 9 upon screw 7^a serves to lock the said screw firmly to insulation 8 in adjusted position, and a nut 10 upon screw 7^a serves to secure a conductor to such screw.

In the arrangement illustrated the four rockers are so disposed around member 3 that the cylindrical part of said member may bear upon all of the arms 4^a of the rockers simultaneously to thus and thereby break all of the circuits at the corresponding pairs of contacts 4^c and 7, and when the flat or reduced part 3^a of member 3 properly aligns with an arm 4^a of a rocker, the corresponding spring 6 will press arm 4^b of the corresponding rocker outwardly and the corresponding arm 4^a inwardly toward member 3, thereby closing the circuit at the corresponding make and break contacts 4^c, 7, while the cylindrical part of member 3 at such time engages the arms 4^a of the other rockers and maintains their circuits broken, as illustrated in Fig. 3. Thus, as member 3 rotates, the circuits will be made and broken successively by the movement of the corresponding arm 4^a toward the reduced part of member 3 and the subsequent contact of the cylindrical portion of member 3 with such arm. As member 3 and shaft 2 may be grounded in the circuit, and the conductors connected with the several screws 7^a may be in the circuits of the ignition devices of an internal combustion engine, it will be obvious that as member 3 rotates the various circuits will be made and broken successively.

It will be understood that my invention may be used as a timer for the ignition system of a multi-cylinder internal combustion engine, or as a distributor for a similar system, and that the same may be used to control a circuit having any desired generator such as a battery, a dynamo, or low or high tension coil or magneto circuits, and that by the coaction of member 3 with the various rockers 4 a single spark at each pair of make and break contacts may be produced

each time a rocker is operated, so that my improvements may be used in ignition systems commonly called "unisparkers."

While I have shown my improved circuit controller as provided with four rockers and corresponding contacts, it will be understood that the same may be provided with any desired number of such rockers and contacts by suitably locating them around a member 3, in the manner set forth with respect to the controller illustrated in the accompanying drawings as adapted for a four cylinder internal combustion engine.

Having now described my invention what I claim is:—

1. The combination of a casing and a rotative cam member, with a plurality of rockers each having an arm to coact with said member, and each having an arm to make and break a circuit, and a contact to coact with each of the last named arms, an arm of one rocker being outside of an arm of another rocker.

2. The combination of a casing and a rotative cam member, with a plurality of rockers each having an arm to coact with said member, and each having an arm to make and break a circuit, a contact to coact with each of the last named arms, an arm of one rocker overlying an arm of another rocker, and spring means to operate said rockers.

3. The combination of a casing and a rotative cam member, with a plurality of rockers disposed around said member and each having an arm to coact with said member, and each having an arm to make and break a circuit, and a contact to coact with each of the last named arms, an arm of one rocker being alined with an arm of another rocker, and a spring interposed between such two arms.

4. The combination of a casing and a rotative cam member, with a plurality of rockers disposed around said member, and each having an arm to coact with said mem-

ber, and each having an arm to make and break a circuit, the make and break arm of one rocker being outside of and alined with the operating arm of an adjacent member. 50

5. The combination of a casing and a rotative cam member, with a plurality of rockers disposed around said member, and each having an arm to coact with said member, and each having an arm to make and break a circuit, the make and break arm of one rocker being outside of and alined with the operating arm of an adjacent member, and a spring interposed between said arms. 55

6. The combination of a casing and a rotative cam member, with a plurality of rockers disposed around said member and each having an arm to coact with said member, and each having an arm to make and break a circuit, and a contact to coact with each of the last named arms, the contact arm of one rocker and the operating arm of another rocker being disposed in line in the direction of a radius of the cam member, one of said arms being outside of the other said arm. 60

7. The combination of a casing and a rotative cam member, with a plurality of rockers disposed around said member and each having an arm to coact with said member, and each having an arm to make and break a circuit, and a contact to coact with each of the last named arms, the contact arm of one rocker and the operating arm of another rocker being disposed in line in the direction of a radius of the cam member, one of said arms being outside of the other said arm, and spring means to operate said arms. 65

Signed at Lakeport, in the county of Belknap and State of New Hampshire, this 17th day of November, A. D. 1911. 80

WALTER D. HEATH.

Witnesses:

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J. J. COLLINS.