B. H. PARKER.

CURRENT CONTROLLER.

APPLICATION FILED JULY 8, 1909.

957,516. Patented May 10, 1910.

Fig. 1.

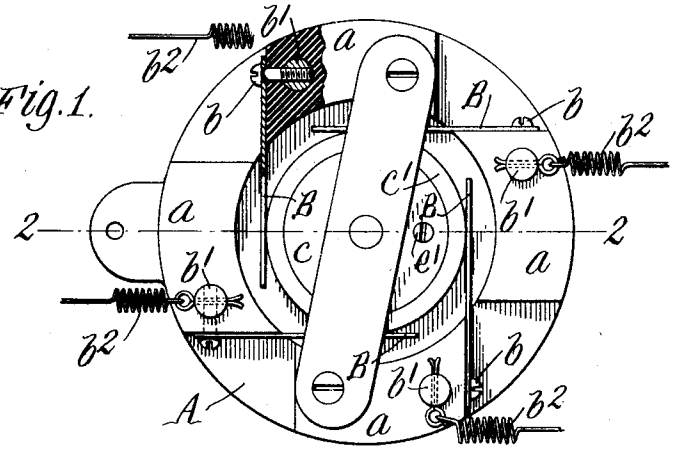


Fig. 2.

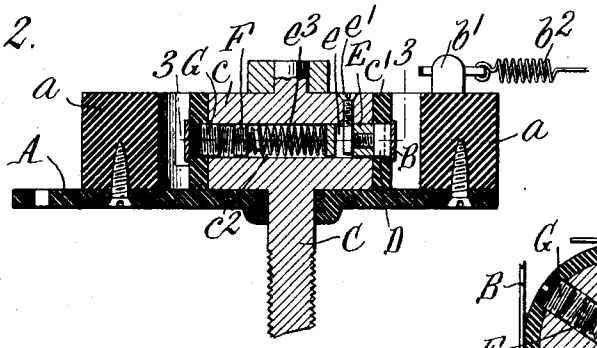


Fig. 4.

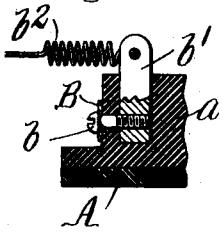


Fig. 5

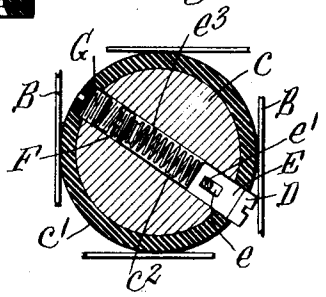
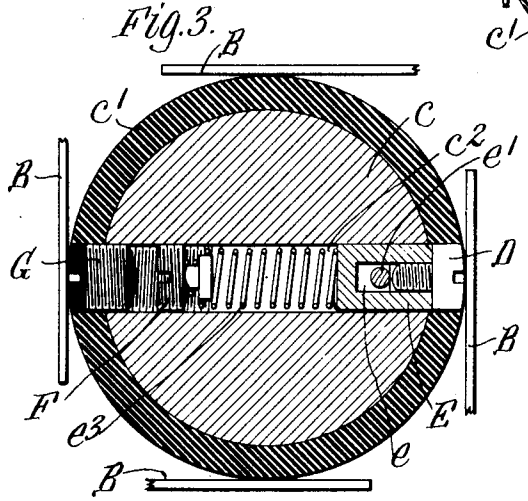


Fig. 3.



Witnesses:

E. A. Volk.

A. G. Dimond.

Inventor:

Burton H. Parker,

by Wilhelm, Parker & Hand

Attorneys.

UNITED STATES PATENT OFFICE.

BURTON H. PARKER, OF PORT COLBURN, ONTARIO, CANADA.

CURRENT-CONTROLLER.

957,516. Specification of Letters Patent. Patented May 10, 1910.

Application filed July 8, 1909. Serial No. 506,501.

To all whom it may concern:

Be it known that I, BURTON H. PARKER, a citizen of the United States, residing at Port Colburn, in the Province of Ontario, in the Dominion of Canada, have invented a new and useful Improvement in Current-Controllers, of which the following is a specification.

This invention relates to improvements in current controllers for the electric igniters of internal combustion engines, and is particularly intended for use in engines which are subject to various and sudden changes of speed, such as automobile engines.

The object of the invention is to provide a simple and efficient device which will automatically advance or accelerate the spark as the speed of the engine increases, while at the same time the time of contact for producing the spark will remain substantially uniform at all speeds, thus greatly increasing the efficiency of the engine.

In the accompanying drawings: Figure 1 is an end view, partly in section, of a current controller embodying the invention. Fig. 2 is a transverse section thereof on line 2—2, Fig. 1. Fig. 3 is a fragmentary longitudinal section, on an enlarged scale, on line 3—3, Fig. 2. Fig. 4 is a fragmentary sectional elevation of one of the contact arms and its connections. Fig. 5 is a longitudinal section showing the contact member in its extended position.

Like reference characters refer to like parts in the several figures.

A represents a circular base plate of fiber or some suitable insulating material which is secured to a suitable support (not shown), and is provided on its upper face with blocks a of insulating material which are arranged at equal distances apart about the circumference thereof.

B B represent flat spring contact arms or plates which are secured to the sides of the blocks a by screws b, or other suitable means, which connect at their inner ends with vertical binding posts or pieces b' which are partially embedded in the blocks a and project from the outer end thereof for the connection therewith of the wires b^2 which lead to the igniters of the several cylinders of the engine.

In the construction shown, the device is intended for use upon a four-cylinder engine and is accordingly provided with four insulating blocks a carrying four spring contact plates B, each one of which is connected with one of the four cylinders. The number of blocks and contact plates can of course be varied in accordance with the number of cylinders in the engine used.

C represents a rotary shaft which is connected by any suitable means (not shown) with the engine for driving the same. This shaft extends through a central opening in the base plate A and is provided with an enlarged cylindrical head c which is adapted to rotate between the contact plates B. A collar c' of fiber or other insulating material surrounds the periphery of the head c and through the head and its collar extends a radial opening c^2 in one end of which is movably mounted a contact member D which is adapted to successively engage the contact plates B when the head c is rotated, for making and breaking the spark circuit for the different cylinders.

The contact member D is secured within the opening c^2 in such a manner that when the engine is at rest or moving slowly, it will normally be flush with the periphery of the insulating collar c', but as the speed of the engine increases and the shaft C revolves more rapidly, the contact member will be moved outwardly beyond the periphery of the collar by the action of centrifugal force. In the construction shown, the following means are employed for thus movably securing the contact member in the head of the shaft: The contact member D is preferably screwed in the end of a sleeve E to permit adjustment, and the sleeve is movably mounted in the opening c^2, having an elongated slot e through which passes a screw pin e' which is secured in the head c. The sleeve E is thus held from rotary movement but is permitted a limited endwise movement in the opening c^2. In the opposite end of the opening c^2, which is threaded, is secured a screw F which is connected with the sleeve E by a coiled spring e^3 which serves to hold the latter normally in its inward or retracted position, as shown in Figs. 2 and 3, but is sufficiently light to allow the sleeve and its contact member to move outwardly under centrifugal action to the projected position shown in Fig. 5. By adjusting the screw F the tension of the spring on the sleeve may be regulated as desired.

G represents a plug of fiber or other insulating material which is screwed into the end of the opening c^2 outside of the screw E,

thus closing the end of the opening and insulating the screw E from the contact arms B.

The increase in the speed of the engine produces a corresponding increase in the speed of the rotation of the shaft C and this causes the contact member D to move outwardly so that it projects beyond the periphery of the collar c' of the shaft head and engages the arms B at a point in advance of the point where it normally engages them when the engine is running slowly. The circuit for the spark is thus completed earlier relative to the rotation of the shaft than it otherwise would be and the spark is advanced or accelerated accordingly. The contact member also engages the contact arms for a greater distance, but as it is traveling at increased speed the time of the contact is substantially the same as when the engine is moving slowly. This preserves the effectiveness of the spark and maintains the same substantially uniform irrespective of the speed of the engine.

I claim as my invention:

1. In an electric current controller, the combination of a driven rotary device, a contact member carried by said device and movable outwardly relative thereto under the action of centrifugal force to different positions beyond the periphery thereof in accordance with the speed of rotation of said device, and a yieldable contact member which is arranged opposite to the periphery of said rotary device and is engaged by said movable contact member, substantially as set forth.

2. In an electric current controller, the combination of a driven rotary circular device having a periphery of insulating material, a contact member carried by said device and movable outwardly relative thereto under the action of centrifugal force to different positions beyond the periphery thereof in accordance with the speed of rotation of said device, and a contact member which bears yieldingly against the periphery of said rotary device and is engaged by said movable contact member, substantially as set forth.

3. In an electric current controller, the combination of a driven rotary circular device having a periphery of insulating material and an opening for a contact member, a contact member in said opening which is movable outwardly relative to said device under the action of centrifugal force, a spring which tends to hold said member inwardly in said opening, and a contact member which bears yieldingly against the periphery of said rotary device and is engaged by said movable contact member, substantially as set forth.

4. In an electric current controller, the combination of a driven rotary circular device having a periphery of insulating material and an opening for a contact member, a contact member in said opening which is movable outwardly relative to said device under the action of centrifugal force, a spring which tends to hold said member inwardly in said opening, means for adjusting the tension of said spring, and a contact member which bears yieldingly against the periphery of said rotary device and is engaged by said movable contact member, substantially as set forth.

Witness my hand, this 1st day of July, 1909.

BURTON H. PARKER.

Witnesses:
C. B. HORNBECK,
E. C. HARD.