

F. B. COREY.
 LOW SPEED CIRCUIT CONTROLLER.
 APPLICATION FILED MAY 20, 1909.

967,171.

Patented Aug. 16, 1910.

Fig. 1

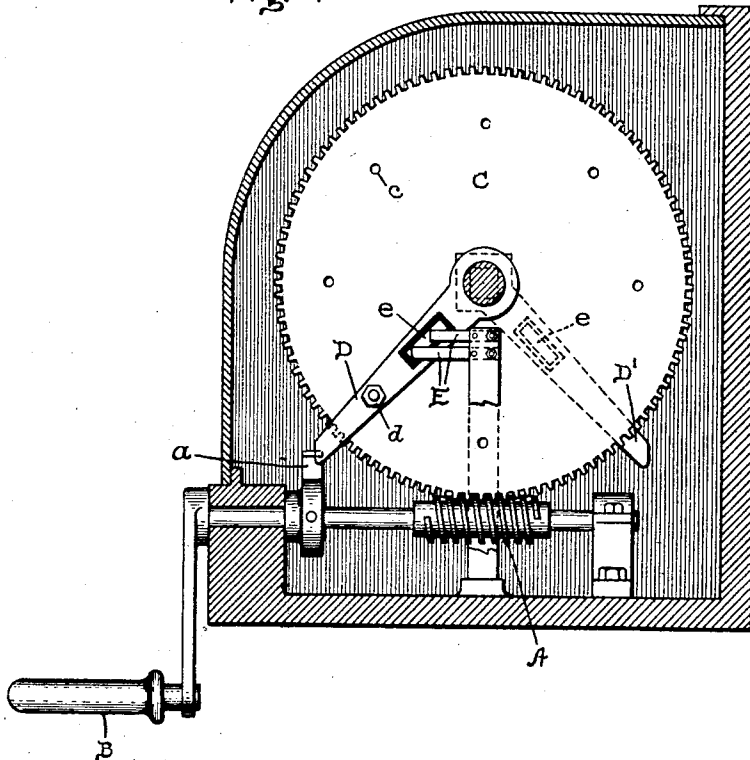
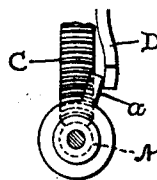


Fig. 2



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRED B. COREY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

LOW-SPEED CIRCUIT-CONTROLLER.

967,171.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed May 20, 1909. Serial No. 497,153.

To all whom it may concern:

Be it known that I, FRED B. COREY, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Low-Speed Circuit-Controllers, of which the following is a specification.

My invention relates to low speed circuit controllers of the type which is in common use for controlling the circuits of lock magnets for levers controlling railway switches and signals. These controllers, which are employed for the purpose of insuring a time interval between the operation of two different pieces of apparatus, have been sometimes arranged heretofore in the shape of a worm wheel driven through a worm and actuating two sets of contacts in different positions of the worm wheel, the time interval being obtained by the time required for moving the worm wheel from one position to the other.

I employ a construction of this general type and the novel features comprised in my invention are specifically pointed out in the appended claims.

My invention will best be understood by reference to the accompanying drawings, in which—

Figure 1 shows a side elevation, in cross-section, of a low speed circuit controller arranged in accordance with my invention, Fig. 2 is a detail.

In the drawings, A represents a worm which is driven by a handle B and which engages and drives the worm wheel C. D and D' are two members carried on opposite sides of the worm wheel. Each of these members carries a contact *e* which, when the member is in the position occupied by member D in Fig. 1, bridges a pair of stationary contacts E. The ends of the members D and D' extend beyond the gear wheel into the path of a stop *a* carried by the worm A and cooperate with this stop to limit the range of movement of the worm wheel. For instance, in the position shown in Fig. 1, the member D prevents the worm from turning in one direction. If the worm is turned in the other direction the worm wheel C is driven in a counter clockwise direction. After it has moved through 270° the member D' will be brought into the path of the stop *a* and further movement of the worm

wheel in that direction will be prevented. At this time the contact carried by the member D' will engage the stationary contacts. In order to bring contact *e* on member D again in engagement with contacts E it is necessary to move worm-wheel back in the opposite direction. Thus, it will be seen, that between the engagements of the two sets of stationary contacts by the contacts carried by the members D and D', respectively, a time interval must elapse sufficient to permit the movement of worm wheel C through 270°, if the relative positions of the members D and D' are as shown in Fig. 1. The worm wheel C is provided with a series of holes *c* which are adapted to receive the bolt *d* that secures the member D to the worm wheel. The position of the member D may thus be adjusted with respect to the worm wheel and to the member D' which may be fast to the wheel, so as to vary the time interval between the closing of the two sets of contacts.

The spacing between adjacent holes *c* preferably corresponds to an even number of gear teeth on the worm wheel so that the relative positions of stop *a* and member D when in contact will be the same regardless of the adjustment of member D on the worm wheel. Since the stop *a* is placed on the worm, the parts may be made smaller and lighter than would be possible if the range of movement of the worm wheel were limited by stops on the wheel itself, as in the usual construction.

I do not desire to limit myself to the particular construction and arrangement of parts shown and described, but aim in the appended claims to cover all modifications which are within the scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. A low speed circuit controller comprising a worm, a worm wheel adapted to be driven in either direction by said worm, two sets of stationary contacts, and two members carried by the wheel serving as stops to limit the movement of the wheel in opposite directions and to engage the two sets of contacts respectively when the wheel reaches the two limits of its range of movement, said two members being relatively adjustable to vary the range of movement of said wheel.

2. A low speed circuit controller compris-

ing a worm, a worm wheel adapted to be driven in either direction by said worm, means acting directly on the worm to limit the range of movement of the wheel and
5 two sets of contacts arranged to be closed respectively when said wheel reaches the two limits of its range of movement.

3. A low speed circuit controller comprising a worm, a worm wheel adapted to be driven in either direction by said worm,
10 means acting directly on the worm to limit the range of movement of the wheel and adjustable to vary said range, and two sets of contacts arranged to be closed respectively
15 when said wheel reaches the two limits of its range of movement.

4. A low speed circuit controller comprising a worm, a worm wheel adapted to be driven in either direction by said worm, a
20 stop carried by said worm, two members carried by said wheel arranged to move into the path of said stop in different positions of the wheel to limit the range of movement

of the wheel, and two sets of contacts arranged to be closed respectively when said
25 wheel reaches the two limits of its range of movement.

5. A low speed circuit controller comprising a worm, a worm wheel adapted to be driven in either direction by said worm, a
30 stop carried by said worm, two members carried by said wheel arranged to move into the path of movement of said stop in different positions of the wheel to limit the range of movement of the wheel, said members being
35 relatively adjustable to vary said range, and two sets of contacts arranged to be closed respectively when said wheel reaches the two limits of its range of movement.

In witness whereof, I have hereunto set my
40 hand this 19th day of May, 1909.

FRED B. COREY.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.