

No. 890,607.

PATENTED JUNE 16, 1908.

A. G. CLARK.
RAILWAY SIGNAL.
APPLICATION FILED OCT. 14, 1907.

Fig.1.

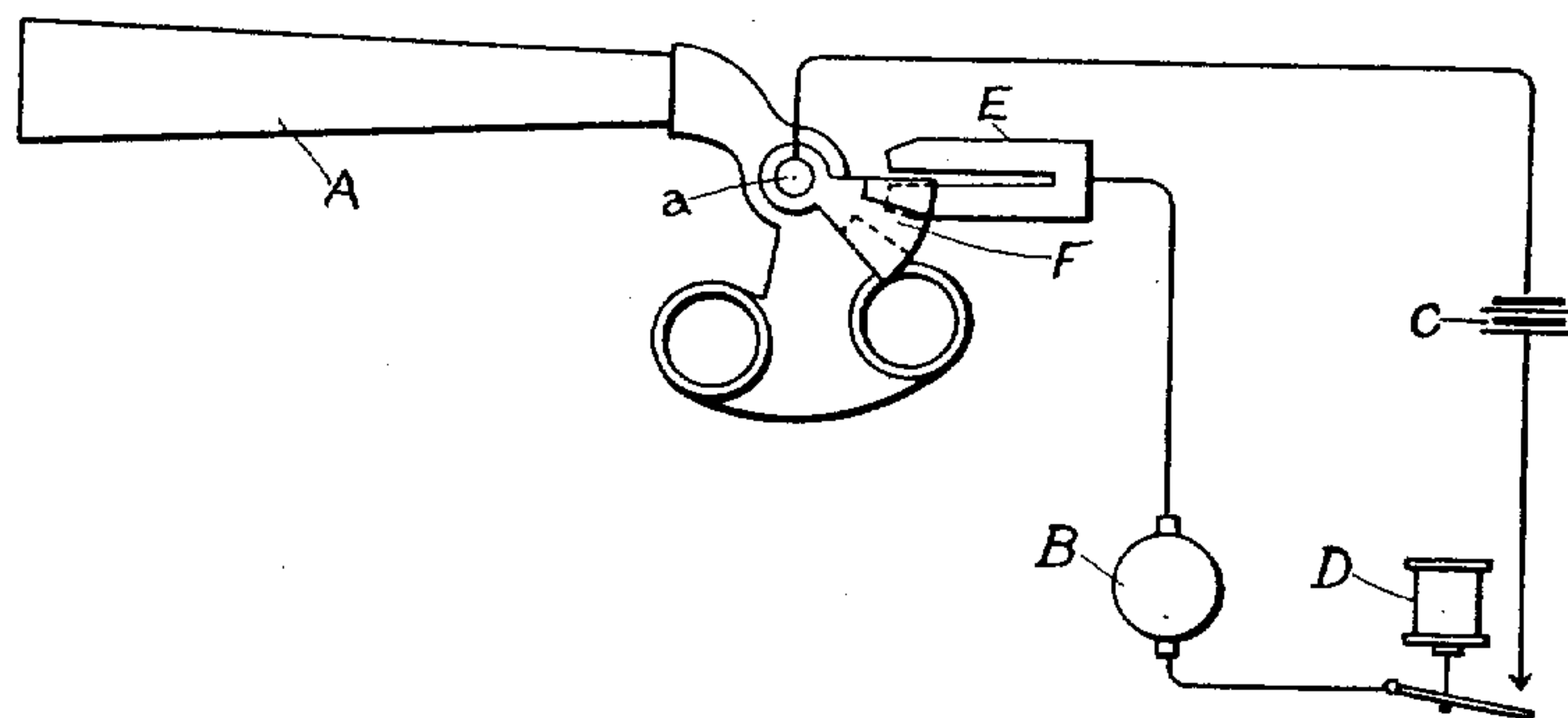


Fig.2.

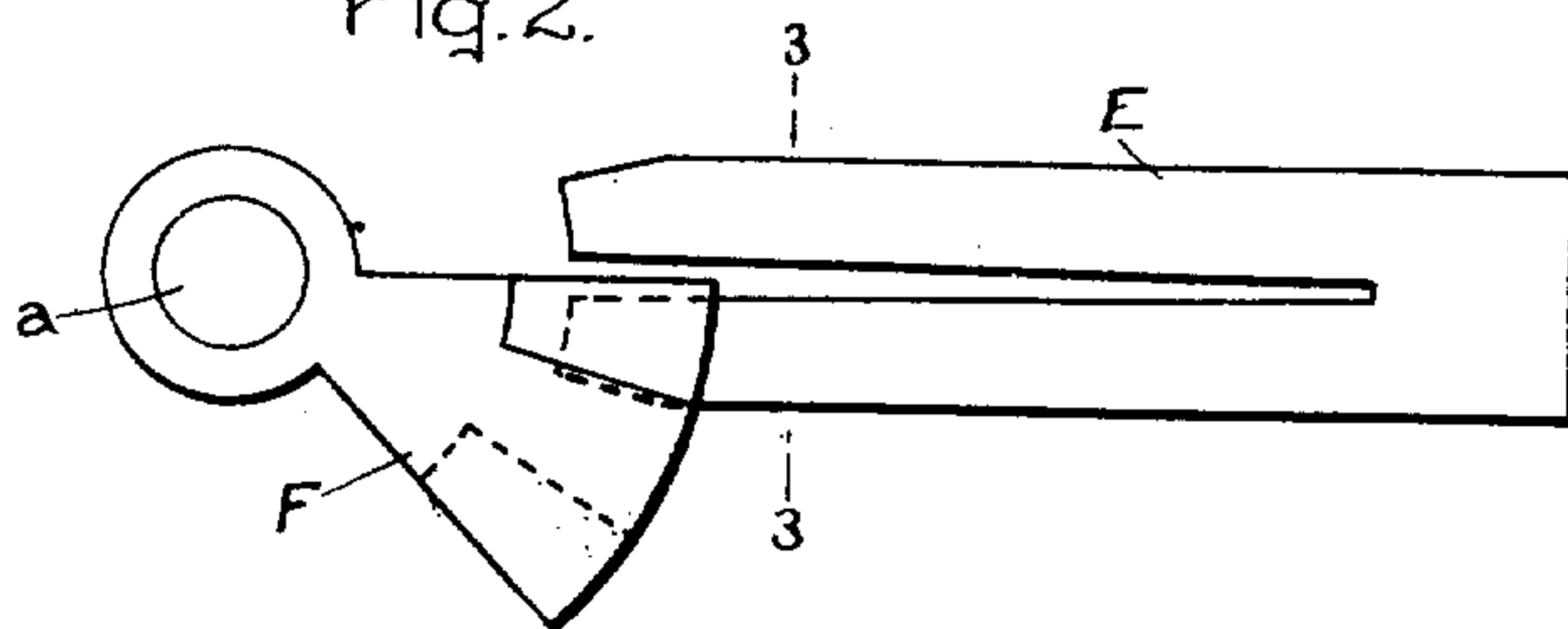


Fig.3.

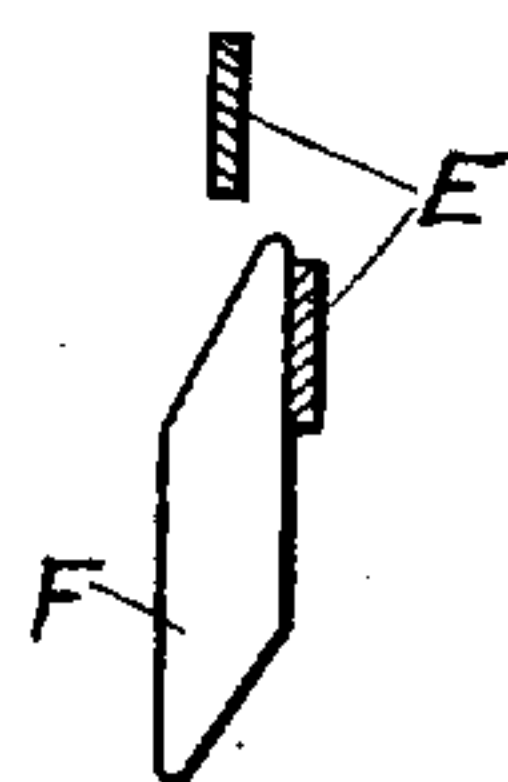


Fig.4.

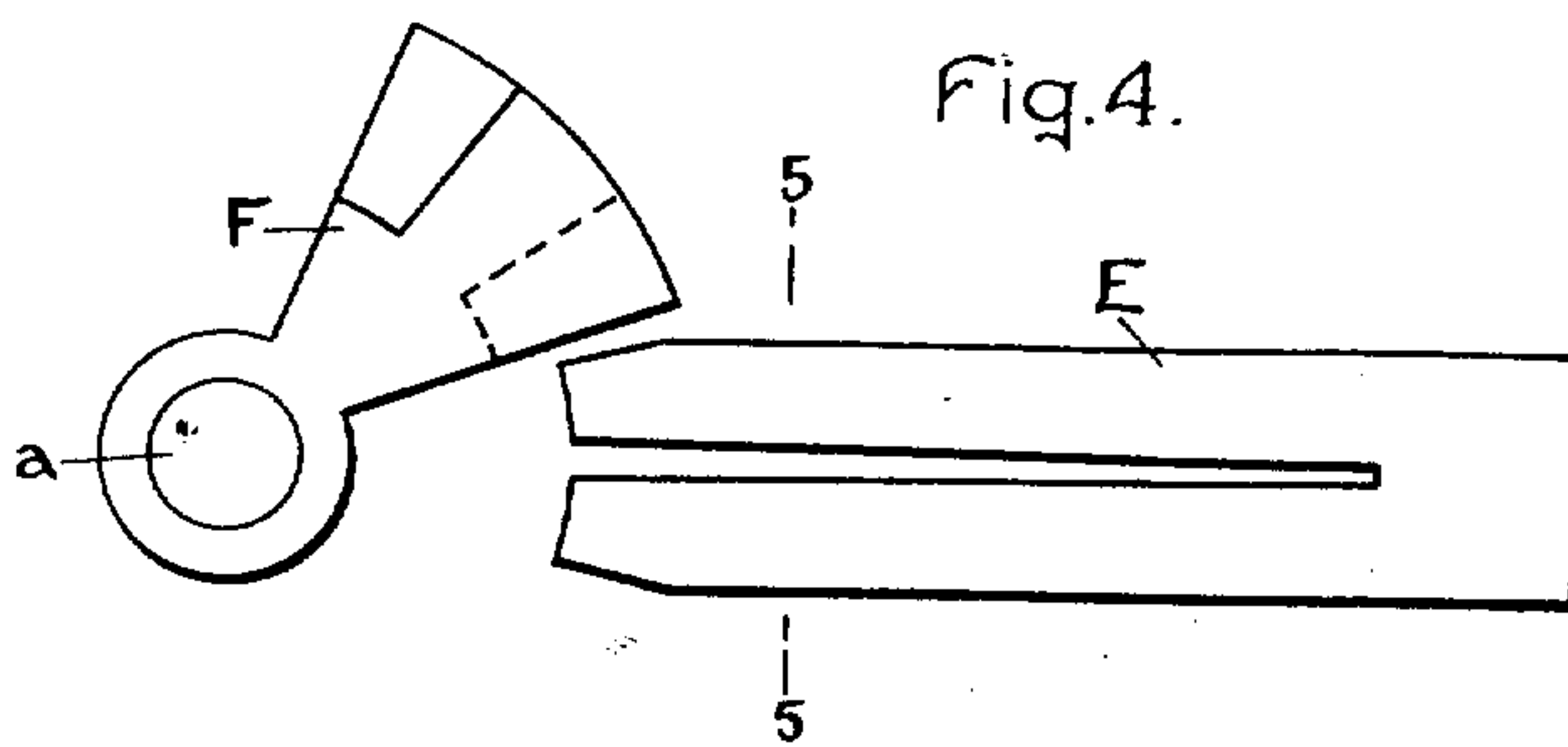
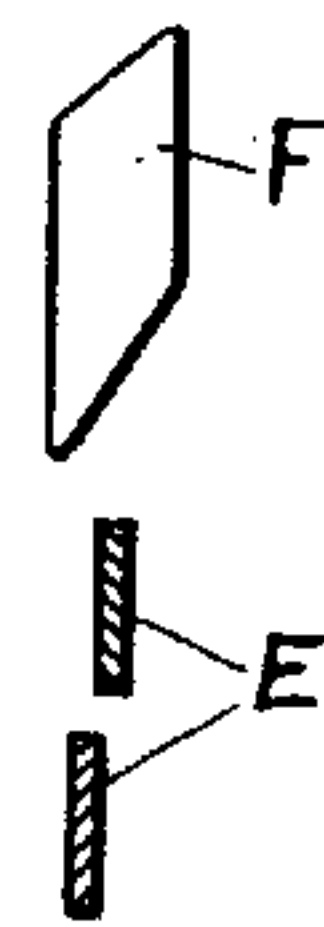


Fig.5.



Witnesses
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UNITED STATES PATENT OFFICE.

ARBA G. CLARK, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
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RAILWAY-SIGNAL.

No. 890,607.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed October 14, 1907. Serial No. 397,274.

To all whom it may concern:

Be it known that I, ARBA G. CLARK, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Railway-Signals, of which the following is a specification.

My invention relates to electrically-operated signals, and its object is to provide a simple and reliable quick-break switch for controlling the driving motor of the signal.

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

Figure 1 shows diagrammatically a signal provided with a controlling switch arranged in accordance with my invention; Fig. 2 shows an enlarged view of the switch in the position corresponding to the danger position of the signal; Fig. 3 shows a partial cross-sectional view on the line 3—3 of Fig. 2; Fig. 4 shows a view of the switch in the position corresponding to clear position of the signal; and Fig. 5 is a partial cross-sectional view on the line 5—5 of Fig. 4.

In the drawings, A represents a semaphore arm carried on the shaft *a* and suitably counter-weighted in the usual manner.

B represents an electric motor for driving the signal from danger to clear position.

C represents a source of current for the motor, and D a relay for controlling the motor circuit. In addition to its control by the relay D, the motor B is controlled by a switch operated by the semaphore arm comprising a stationary contact E, and a contact F carried on the shaft *a*. The stationary contact E is split so as to form two spring contact fingers. The contact F has its sides parallel to, and on opposite sides of, the plane occupied by these fingers, and its edges are beveled so as to deflect the fingers in one direction or the other. With the signal at danger, as shown in Fig. 1, the switch contacts occupy the positions shown in Figs. 2 and 3. When the relay D is energized and closes the motor circuit, the movement of the shaft *a* causes the contact F to move upward, as viewed in Figs. 2 and 3, so as to bring its upper beveled edge against the upper finger of contact E, and to deflect this finger toward the left, so that the contact F passes between the two fingers of contact E. As contact F continues its movement, it first passes out of engagement with the lower finger and then

with the upper finger of contact E. As it leaves the upper finger, this finger snaps quickly into the position shown in Fig. 5; thereby introducing a quick-break into the motor circuit and stopping the signal at clear position. When the signal is released by its slot or lock-magnet (not shown) so as to be returned to danger position by its counter-weight, the contact F travels downward, as viewed in Figs. 4 and 5, until its lower edge engages the fingers of contact E successively, and deflects them both to the right, as viewed in Fig. 5, so that contact F passes to the left of both fingers. When danger position is reached, the upper finger of contact E has snapped off from the upper tip of contact F, as shown in Fig. 3, so as to be deflected to the left on the next movement of the signal to clear position. The lower finger remains in engagement with the right-hand side of contact F to complete the motor circuit as soon as the contacts of relay D, or other controlling switch in the circuit of motor B, is closed.

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

1. In a signal, a movable arm, a driving motor therefor, and a quick-break switch for said motor comprising a stationary contact and a contact carried by said arm, one of said contacts comprising a pair of spring fingers and the other being adapted to deflect and pass on the same side of both fingers during movement in one direction and to deflect and pass between said fingers during movement in the other direction.

2. In a signal, a movable arm, a driving motor therefor, and a quick-break switch for said motor comprising a stationary contact and a contact carried by said arm, one of said contacts comprising a pair of spring fingers lying substantially parallel to the direction of movement and the other having its sides substantially parallel to, and on opposite sides of the plane of said fingers and its edges beveled so as to deflect one of said fingers to one side or the other according to the direction of movement.

3. In a signal, a movable arm, a driving motor therefor, and a quick-break switch for said motor comprising a stationary contact and a contact carried by said arm, one of said contacts comprising a pair of spring-fingers lying substantially parallel to the direction of movement and the other having its sides

substantially parallel to, and on opposite sides of the plane of said fingers and its edges beveled at an acute angle to said plane, the relative movement of said contacts being
5 sufficient to carry the latter contact beyond both fingers in one direction and beyond one finger only in the other direction.

4. In a signal, a movable arm, a driving motor therefor, and a quick-break switch for
10 said motor comprising a stationary contact and a contact carried by said arm, one of said contacts having a spring-finger and the other being adapted to deflect and pass on opposite sides of said finger for different direc-
15 tions of movement.

5. In a signal, a movable arm, a driving

motor therefor, and a quick-break switch for said motor comprising a stationary contact and a contact carried by said arm, one of said contacts comprising two spring-fingers and
20 the second being adapted to deflect and pass on opposite sides of one finger for different directions of movement, the other finger remaining in engagement with said second contact at one extreme of the range of move-
25 ment.

In witness whereof, I have hereunto set my hand this 12th day of October, 1907.

ARBA G. CLARK.

Witnesses:

MARGARET E. WOOLLEY,

HELEN ORFORD.