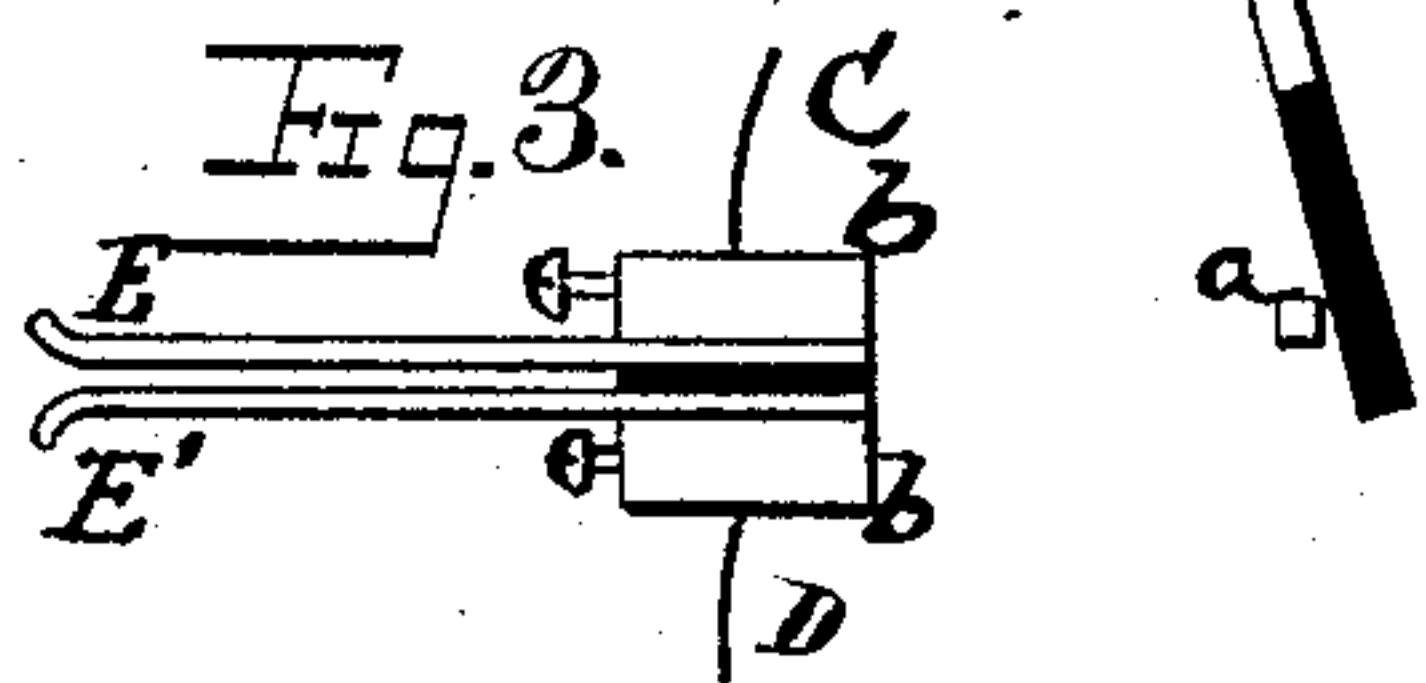
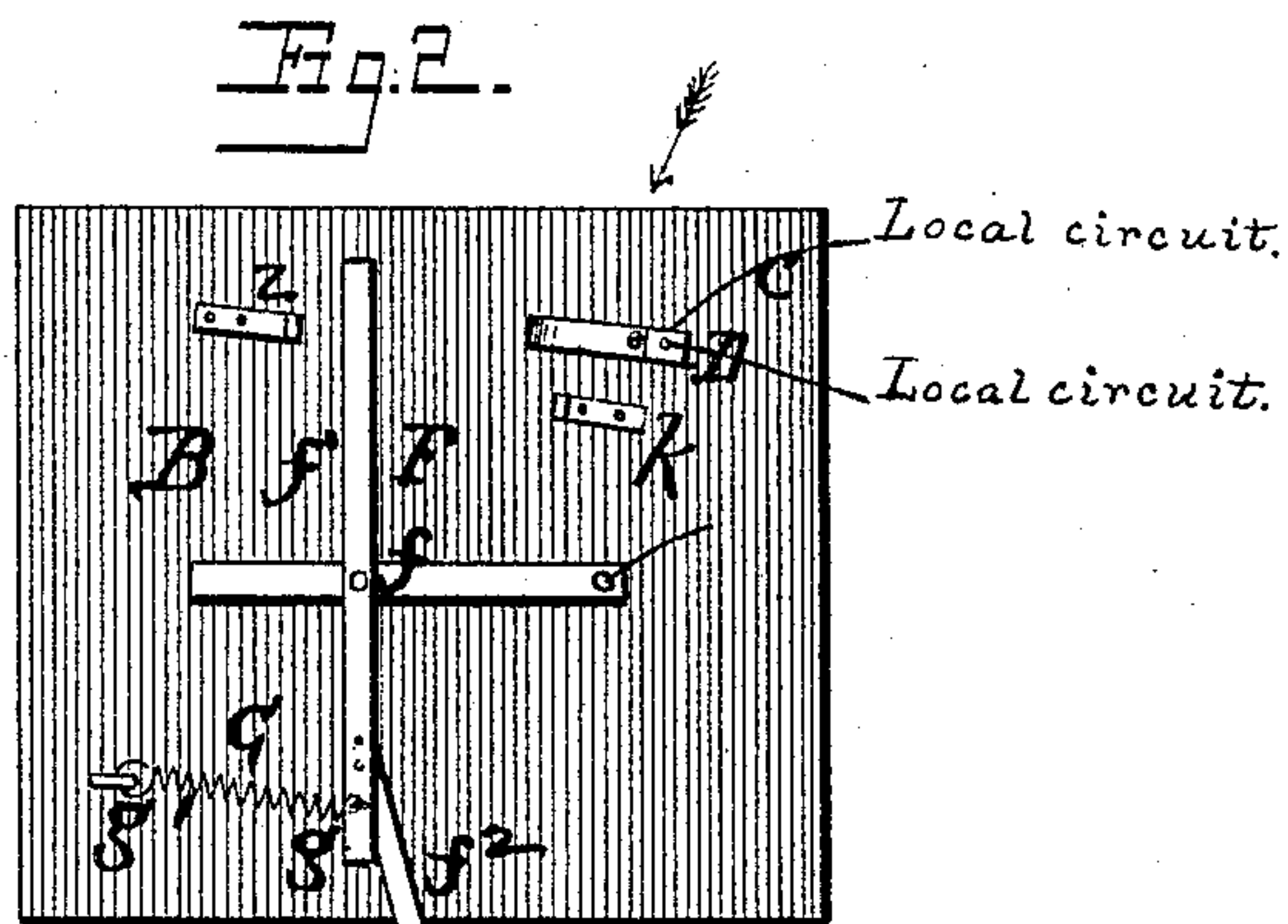
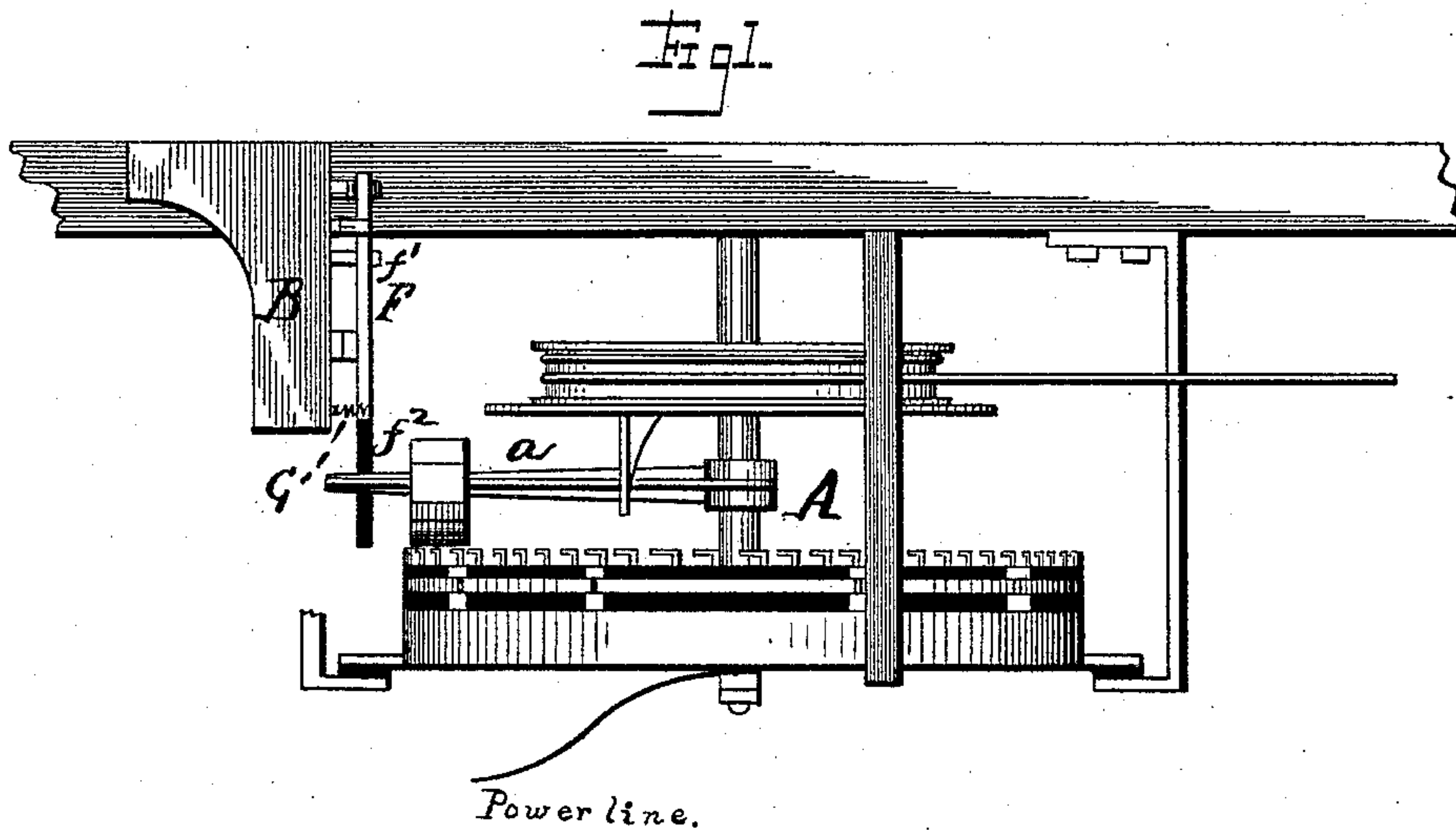


(No Model.)

M. WHELESS.
ELECTRIC RAILWAY SYSTEM.

No. 441,217.

Patented Nov. 25, 1890.



Witnesses
J. M. Fowler Jr.
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UNITED STATES PATENT OFFICE.

MALONE WHELESS, OF NASHVILLE, TENNESSEE, ASSIGNOR TO THE WHELESS ELECTRIC RAILWAY COMPANY, OF ALEXANDRIA, VIRGINIA.

ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 441,217, dated November 25, 1890.

Application filed August 27, 1890. Serial No. 363,204. (No model.)

To all whom it may concern:

Be it known that I, MALONE WHELESS, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Electric-Railway Systems; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of the rheostat and edge view of the switch-lever. Fig. 2 is a side view of the switch-lever. Fig. 3 is a detail view in the direction of the arrow, Fig. 2.

This invention relates to an improvement in appliances for use in electric-railway systems.

It relates more especially to a system devised by me wherein a local circuit having the source of electricity on the car operates an electro-magnetic switch and turns the prime current from a prime conductor into a section of a working-conductor. In such system a switch is used to close the local circuit and there is the usual rheostat for the power-line.

The object of the present invention is to produce such a device that by one movement both the local is closed and the rheostat operated.

To this end the invention consists in combining the switch and rheostat levers so that one moves the other.

In the annexed drawings, the letter A indicates the ordinary rheostat, the lever *a* of which projects, as shown. Secured close thereto is the local switch-board B. On this are fastened the binding-posts *b b'*, to which are

secured the wires C D of the local circuit. To these posts are fastened the spring-blades E E', with the insulator *e* between them. Pivoted at *f* to the switch-board is the local switch-lever F. This lever has the arm *f'* extending upwardly and the arm *f²* extending downwardly. To this lever F below its point is secured a spring G at one end *g*, the other end *g'* being secured to the switch-board. The upper arm *f'* of the lever F is in line between the two blades E E' and is held between them by the spring G. Two stops *k* and *l* are placed in front of and back of the arm *f'*. The lower arm *f²* is made of insulating material where it is in the path of the rheostat-lever. As soon as the rheostat is operated to turn on the main current, the lever *a* is withdrawn from against the arm *f²*. The spring G then throws the upper arm *f'* between the blades E E', closing the local circuit at that point as the main current is turned on, thus one movement closing both circuits.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In an electric-railway system in which a local circuit operates an electro-magnetic switch in the main circuit, such local circuit having a break, in combination with a switch-lever at such break, provided with a spring which normally holds the lever in the break and the rheostat in the main circuit, the lever of which crosses the switch-lever, and thereby moves the switch-lever against the spring, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MALONE WHELESS.

Witnesses:

GRAHAM L. GORDON,
S. C. HILL.