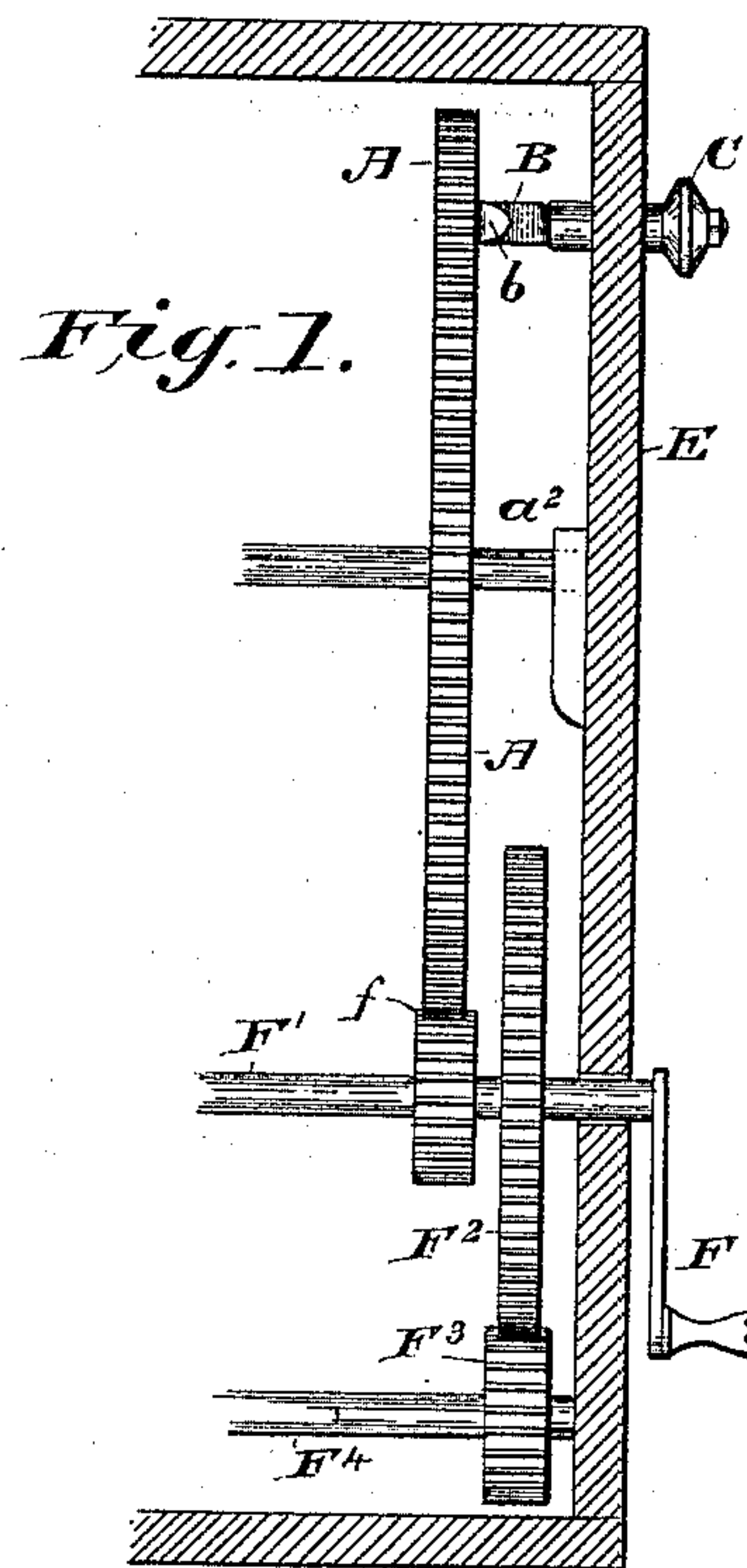
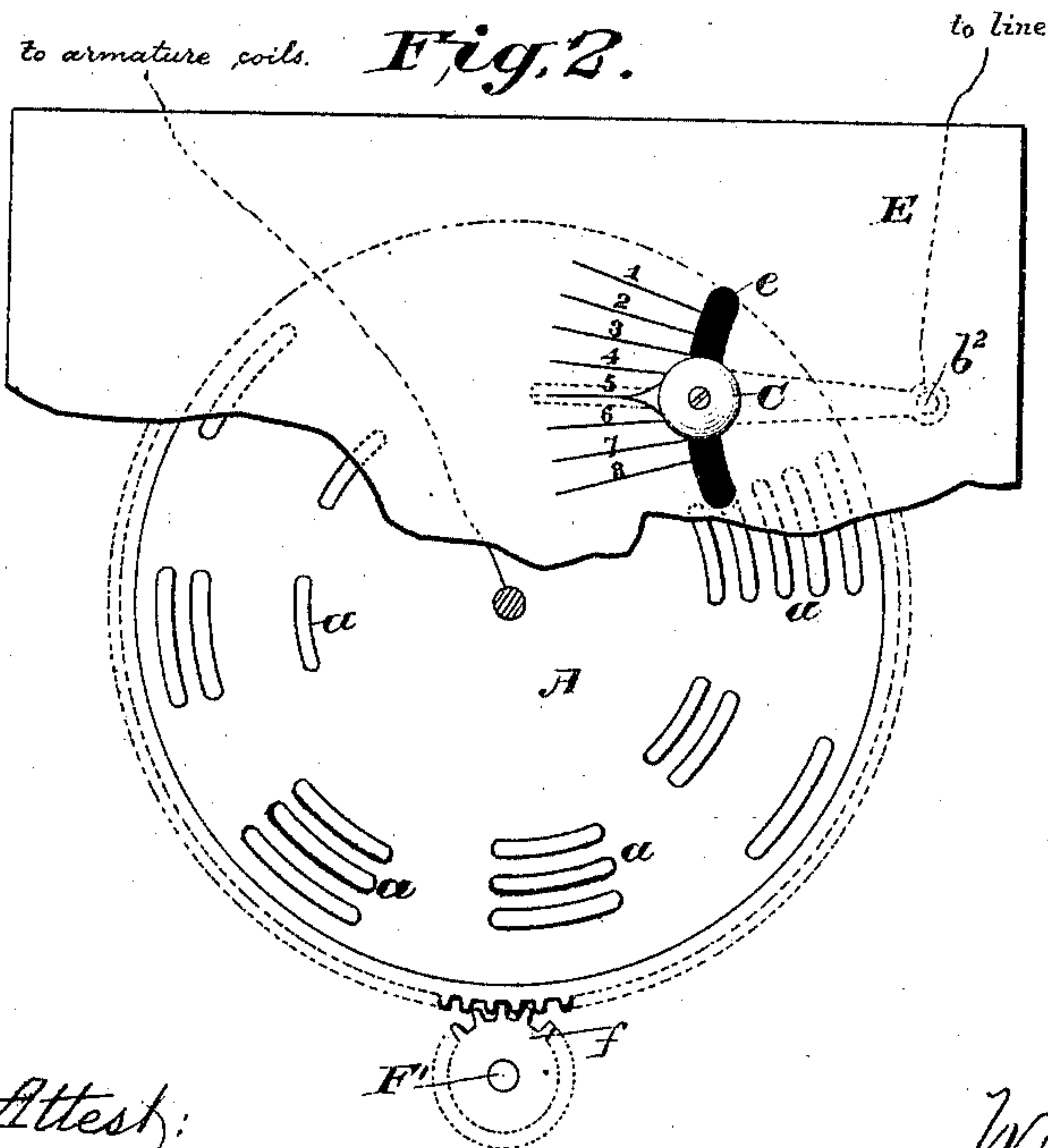


(No Model.)

W. S. JOHNSON.
ELECTRICAL SIGNALING DEVICE.

No. 283,736.

Patented Aug. 21, 1883.



Attest:
Geo. T. Smallwood,
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UNITED STATES PATENT OFFICE.

WILLIAM SCHUYLER JOHNSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

ELECTRICAL SIGNALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 283,736, dated August 21, 1883.

Application filed May 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. JOHNSON, of Washington, in the District of Columbia, have invented a new and useful Improvement in Electrical Signaling Devices, which improvement is fully set forth in the following specification.

This invention has more particular reference to devices for producing an audible signal upon a bell or other acoustic device, or for operating an annunciator or other visible signaling device by the interruption of the electric current, and is designed for use in systems and under conditions where a code of signals is employed to denote a variety of wants of the person calling. Such conditions exist in hotels, district-messenger service, private telephone-lines, and elsewhere. In such systems the signals are commonly produced by the use of the ordinary push-button, making and breaking the circuit the proper number of times and for the proper intervals to give the desired signal. With the employment of a push-button for this purpose it is a well-recognized difficulty that the liability to mistakes and confusion, arising from inattention or carelessness on the part of the person calling, is very great.

It is the object of this invention to supply a convenient device to take the place of the push-button and other circuit-breakers, and which, after one adjustment of a contact, will give the proper signal upon the bell or other device, and continue to repeat that signal, and none other, until the call is heard and answered.

The invention consists in the combination, with a rotary disk or wheel having on its face a number of different sets or series of contact-surfaces arranged in concentric rings, of a circuit-closing device adapted to make contact with any of said sets or series; in the combination, as hereinafter specified, of a circuit-breaker having two or more sets or series of contacts, as above explained, with a magneto-generator, and in certain minor combinations of parts, as hereinafter fully set forth.

In the codes of signals employed in hotels, district-messenger service, and the like, each signal will have a definite meaning appropriated to it, and the respective signals that make up the code differ from one another, either in

the number of impulses sent over the line, and the consequent number of successive sounds produced on the bell or other audible signaling-instrument, or in the intervals of time that separate the impulses from each other. In the present invention the movable circuit-breaker has arranged upon its surface a number of sets or series of contact-points, each set differing from every other set, either in the number of contact-points that it comprises, or in the intervals of space that separate the several contact-points from each other. In connection with such a circuit-breaker is employed a contact device, (which may be a spring to insure firm contact,) the office of which is to make contact with the several points making up any set or series, so that each of said contact-points will in turn, during the movement of the circuit-breaker, close the circuit through said contact device. The contact device is adjustable, so that it can be set at will in the line of movement of any of said sets or series. For greater convenience and certainty a graduated scale or indicator is arranged on the box or case containing the apparatus, the several divisions corresponding to the lines of movement of the series of contact-points, and the adjustable spring or pin is provided with an index finger or pointer.

Having thus given a general indication of the nature of the said invention, I will now describe the manner in which the same is or may be carried into effect, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section, and Fig. 2 a side view, of a portion of an ordinary magneto-generator having the invention applied thereto.

F is the crank-handle; F', the crank-shaft, and F² a gear-wheel thereon for transmitting motion through pinion F³ to the armature-shaft F⁴. These parts are of ordinary construction, and the armature-magnets and other parts of the generator being well known are omitted from the drawings.

A is the rotary circuit-breaker, being a wheel or disk having the contact-points *a* on one face. The different sets or series form concentric rings, and each set differs from the others, as shown in Fig. 2, in which the side of the box E is partly broken away. The wheel or disk A is mounted on a spindle, *a*²,

having bearings in the box or case E, and the rotary movement is imparted to it from the shaft F' through a pinion, *f*. Thus the same movement which excites the operating-current in the coils of the generator also rotates the wheel A, whereby the entire operation of signaling can be done with one hand. The contact-surfaces *a* may be formed by raising them above the surface of the wheel A, by constructing the wheel of conducting material and covering its face, except at the contacts *a*, with an insulating paint or varnish, or with a thin sheet of suitable insulating material; or any other suitable construction may be adopted.

B is a contact spring or finger, one end, *b*, of which bears against the surface of wheel A. The spring is pivoted at its other end, *b*², to the box or case E, and it can be turned on its pivot by means of the button or knob C, working in the curved slot *e*, so as to bring the end *b* into the line of rotation of any set or series of contacts *a*. Along the edge of said slot is formed a graduated scale, as seen in Fig. 2, each division being distinguished by a number or other mark indicating the meaning of the signal which will be given when the pointer *c* or knob C is placed at that point. One end or the main line is led to the spring B, while the other, after passing through the armature-coils, makes connection with wheel A. The circuit, when complete, passes, therefore, through wheel A to spring *b*, by way of the contact-surface *a*, which is at the time in contact with said spring.

The operation of the device will be readily understood. The knob C being properly set to make the signal desired the crank-handle F is turned, which both produces the operating-current and rotates wheel A. As the several contacts of the series necessarily come opposite spring B, they will close the circuit, producing a determinate signal. When wheel A has made one rotation, the circuit will be broken until the first contact *a* of the particular series again comes opposite the spring B.

The signal will then be repeated as long as the handle F is turned.

The details of construction may obviously be varied within wide limits without departing from the spirit of the invention; and the use of the apparatus is not limited to the applications named, but it will be found available for a variety of purposes.

Having now fully described my said invention and the manner of carrying the same into effect, what I claim is—

1. The combination, with a magneto-generator, of the rotary circuit-breaker having two or more series of contact-surfaces, and receiving motion from the crank-shaft of said generator, and the adjustable pin, spring, or finger, substantially as described.

2. The combination, with a rotary disk or wheel having on its face different sets or series of contact-surfaces arranged in concentric rings, of an adjustable contact finger or device for closing the circuit through any of said sets or series, substantially as described.

3. The combination, with a magneto-generator, of the toothed wheel geared to a pinion on the crank-shaft of said generator, and having on its face series of contact-surfaces, and the contact spring or finger for closing the circuit through any series of the contact-surfaces of said toothed wheel, substantially as described.

4. The combination, with a magneto-generator, of the disk or wheel provided with sets or series of contact-surfaces, and receiving motion from the crank-shaft, the adjustable spring, and the graduated scale, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WM. SCHUYLER JOHNSON.

Witnesses:

JOHN GOLDBERG,
L. J. O'REILLY.