

(No Model.)

2 Sheets—Sheet 1.

J. F. GILLILAND.
TELEPHONE SIGNAL GENERATOR.

No. 253,597.

Patented Feb. 14, 1882.

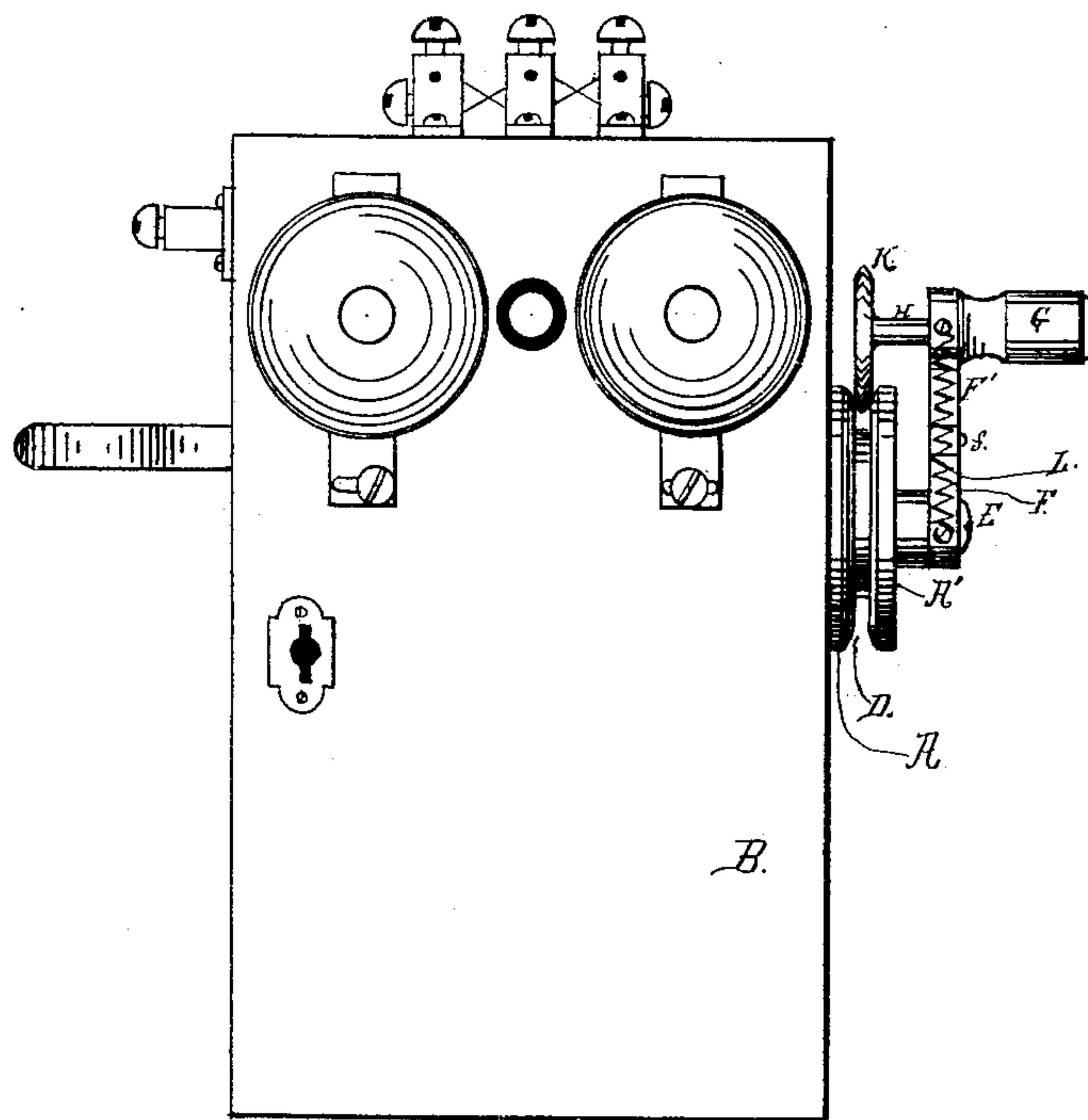


FIG. 1.

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A. E. Brown

INVENTOR:
James F. Gilliland
by Munday Evans & Adcock
his attys

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FIG. 2.

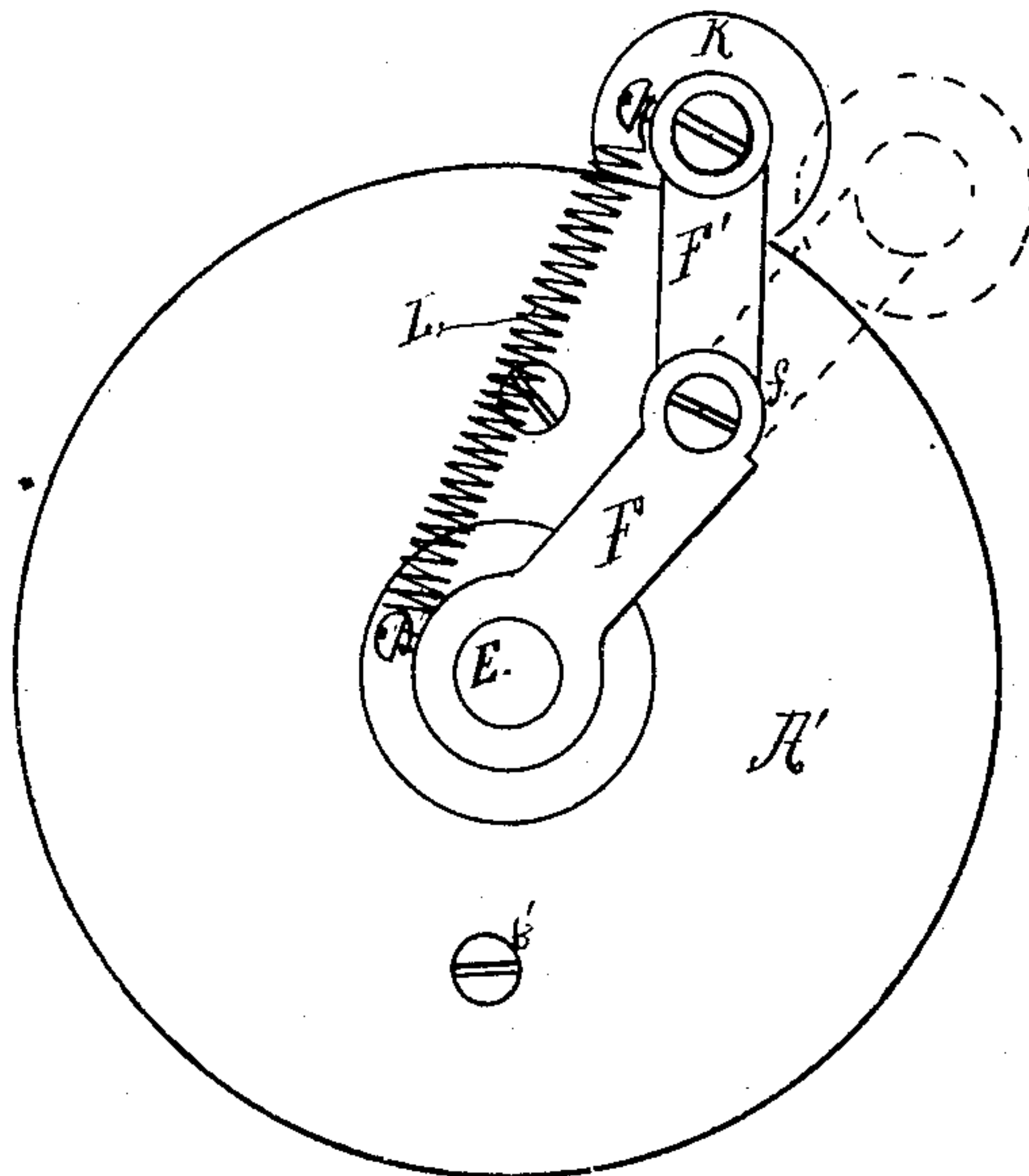
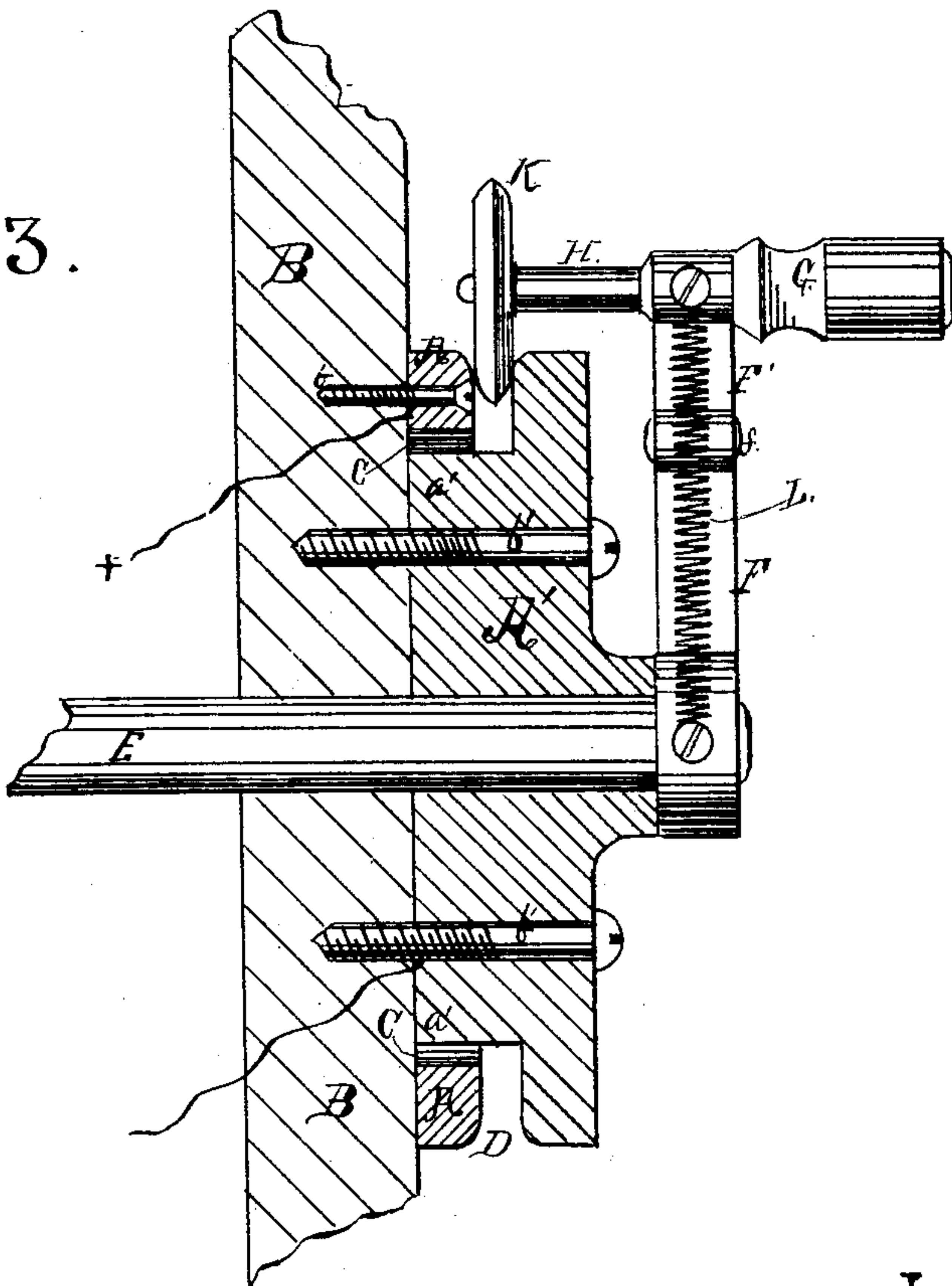


FIG. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES F. GILLILAND, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE GILLILAND ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

TELEPHONE-SIGNAL GENERATOR.

SPECIFICATION forming part of Letters Patent No. 253,597, dated February 14, 1882.

Application filed January 3, 1881. Renewed September 19, 1881. (No model.)

To all whom it may concern :

Be it known that I, JAMES F. GILLILAND, of Indianapolis, in the county of Marion and State of Indiana, have invented certain Improvements in Telephone-Signal Generators, of which the following is a specification.

It has been customary to supply as a part of the ordinary apparatus of a telephone-station a magneto-electric machine or generator for the purpose of sending signals over the line to attract attention to the telephone when a communication is to be made. The employment of a generator for this purpose has been preferred for the reason, among other reasons, that it saves battery-power and gives a sharp continuous signal.

In the use of this apparatus in connection with the telephone it is necessary to provide means for putting it in and out of circuit.

Prior to my invention an automatic device was used for opening and closing the shunt-circuit around the armature.

The present invention relates to a means for automatically shunting such a generator; and it consists in attaching to the crank that operates the generator a plug device which, so long as the crank has no power applied to it, serves to close a contact in such manner as to shunt the generator from the circuit, but which contact is destroyed by the application of power to the crank whenever an attempt is made to turn the same to operate the generator.

I employ two metal disks insulated from each other and connected, one to one and the other to the other pole of a shunt-circuit. These disks are circular in form, and are brought together close enough to form a peripheral groove which is concentric with the shaft to which the crank is attached, by the turning of which the generator is operated. A plug made of metal is attached to the crank-arm and rests in this groove normally, forming contact between the two disks, and thus completing the shunt-circuit. The crank-arm itself is made in such manner that when power is applied to it to turn the shaft the crank-arm is caused to lengthen its radius, lifting the plug out of contact and away from the peripheral groove, thus causing a break of the shunt-circuit during the revolution of the crank, and a closing of

the same at the moment power is removed from the crank-arm by the shortening of the same. Several ways have occurred to me of constructing the crank-arm so that it will lengthen and shorten when power is applied and removed. For instance, said arm may be made in two parts, one sliding upon the other, with a retracting-spring for holding the parts together in the shortest position; or the crank-arm may be made in one piece, with a slot either at the end attached to the shaft or at the outer end, to which the handle is attached, so that in either case power applied to the handle will cause the plug to be lifted out of contact; or, again, the handle of the crank may be given a slight rotary movement, which will turn a plug away from the contact-place; or, again, the crank-arm may be made so that it will pivot on an axis in the direction of its length, so that pressure applied to the handle will turn the plug away from the contact-point to be returned by a spring to its normal position; but I prefer, as the simplest and best construction, to joint the crank-arm, as hereinafter more fully described, and provide the same with a simple retractile spring.

In the accompanying drawings, which form a part of this specification, Figure 1 is a front view of a telephone apparatus with my device applied thereto. Fig. 2 is a face view of the extensible crank and disks, enlarged from Fig. 1. Fig. 3 is a vertical central section of Fig. 2.

In said drawings, A is the inner disk, which in this case is made annular in form, and is screwed directly to the wood B of the telephone-box by screws b. A' is the outer disk, furnished with a central hub, a', which sets through the aperture of the inner disk against the wood of the telephone-box, and is held in place by the screws b'. These disks are insulated from each other by the open space C and the peripheral groove D.

E is the shaft which operates the magneto-electrical generator, which is not shown in the drawings. The disk A' may form a bearing for this shaft, if desired. To the outer end of this shaft is attached the crank-arm, which in my preferred construction I make in two parts, F F', hinged together by a rule-joint, f.

G is the handle of the crank.

H is an arm extending in toward the telephone-box from the handle and carrying the plug K. The latter I prefer to make in the form of a disk, so that it will be free to rotate
5 to insure better contact.

L is a common spiral spring, which serves to hold the crank-arm normally in the bent position, as shown at Fig. 2 in full lines, but will, when power is applied to the handle, yield,
10 allowing the handle to assume the position shown in dotted lines in the same figure. When crank-arm is bent or shortened at rest the plug sets into the peripheral groove between the disk and closes circuit between them. The
15 application of power straightens the crank-arm against the resistance of the spring and lifts the plug out of contact.

By the combination with the two insulated contact-disks of an extensible plug carrying
20 spring-retracted crank-arm I am able to make an automatic generator shunt, and at the same time avoid employing the gearing of the generator as any part of the shunt-circuit, obtaining by this means simplicity of construction and
25 certainty of operation.

I claim—

1. The combination of two insulated contact-plates, A A', with an extensible spring-retracted crank carrying a contact-plug, substantially as specified. 30

2. The combination, in a magneto-electric machine, of a crank consisting of arms pivoted together, a contact-piece carried by the outer arm, and a retractile spring, whereby the shunt-circuit is closed when the crank is at rest, 35 and opened and held open automatically when power is applied to turn the crank.

3. The combination of an extensible spring-retracted crank with metallic disk K, and insulated contact-plates so placed as to form a 40 groove in which said disk is held by the spring when the crank is at rest, so as to close the shunt-circuit around the armature, said disk when power is applied to the crank, being lifted from the groove, so as to open and hold 45 open the shunt.

JAMES F. GILLILAND.

Witnesses:

EDMUND ADCOCK,

T. E. BROWN.