No. 671,311. Patented Apr. 2, 1901.

# W. DECKER.

## TELEPHONE CALL BOX.

(No Model.) (Application filed Apr. 20, 1898.)

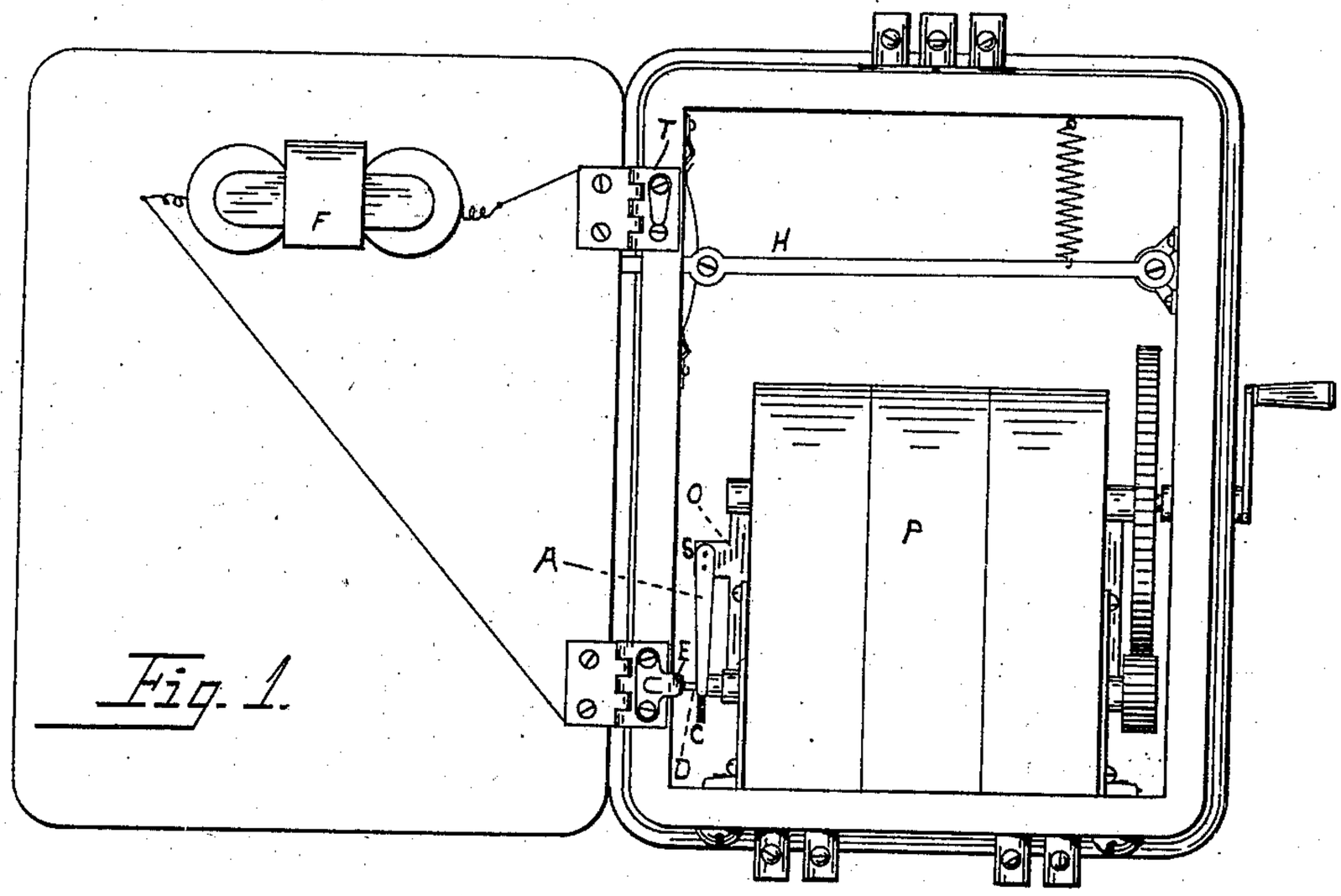



Fig. 1.

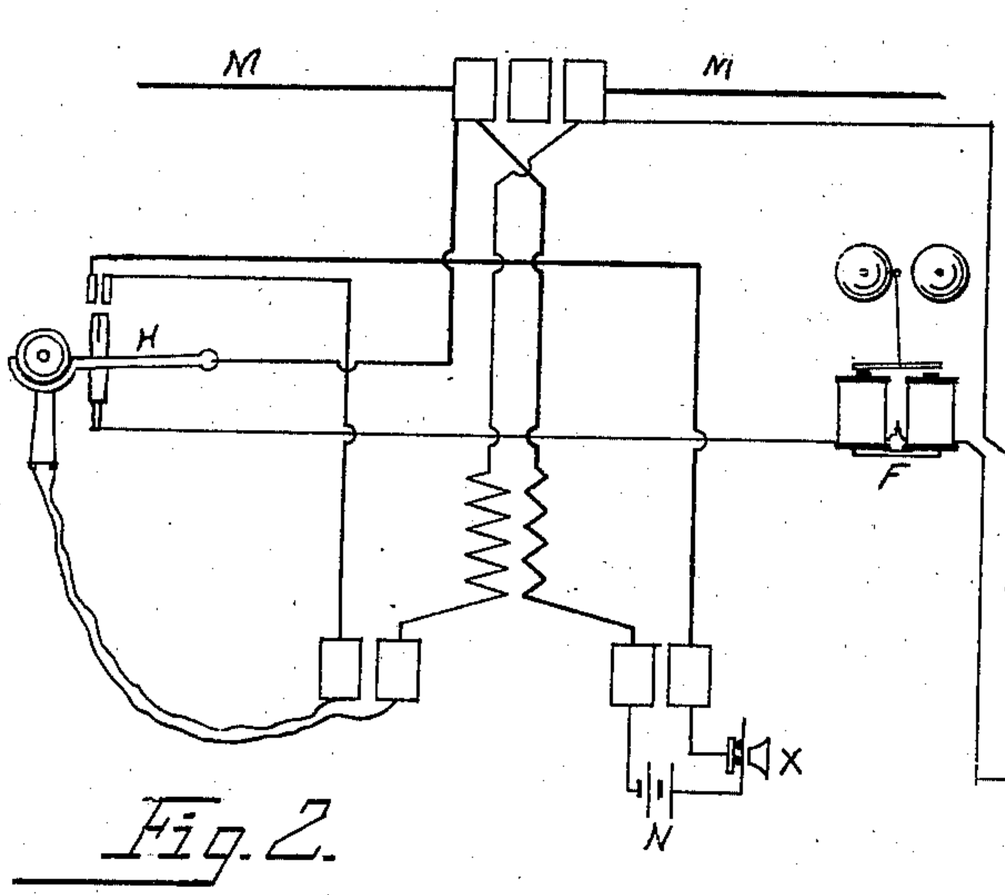



Fig. 2.

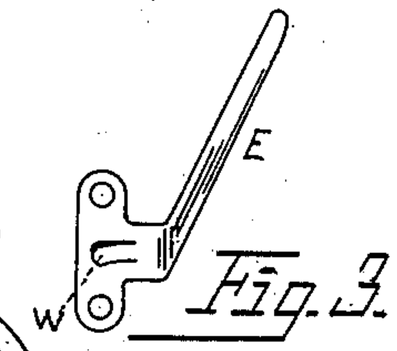
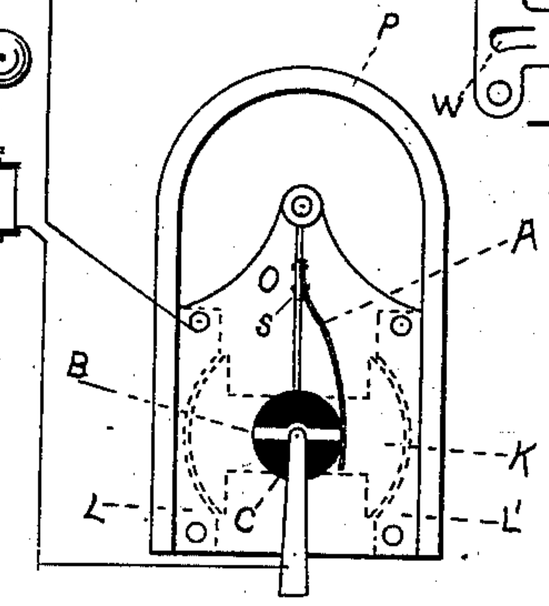



Fig. 3.

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# UNITED STATES PATENT OFFICE.

WARD DECKER, OF OWEGO, NEW YORK.

## TELEPHONE CALL-BOX.

SPECIFICATION forming part of Letters Patent No. 671,311, dated April 2, 1901.

Application filed April 20, 1898. Serial No. 678,262. (No model.)

*To all whom it may concern:*

Be it known that I, WARD DECKER, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented a new and useful Telephone Call-Box, of which the following is a specification.

My invention relates to that class of telephone call-boxes in which the signaling is accomplished by a magneto-electric generator in conjunction with polarized electromagnetic bell apparatus.

The objects of my invention are to simplify the circuits and do away with some of the joints therein and to construct an exceedingly simple and reliable cut-out for the generator, requiring no wiring to connect it with the proper circuit. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of the call-box open, showing the mechanism; Fig. 2, a side elevation of the generator, together with a diagram of the circuits; and Fig. 3, the hinge and generator connector.

Similar letters refer to similar parts throughout the several views.

In Fig. 1, P represents the permanent magnets of a magneto-electric generator, one terminal of the armature being connected to the frame and the other carried out through a hollow shaft in the ordinary manner. To the part of the armature-shaft through which the armature-coil terminal D projects a disk of fiber or other insulating material C is firmly attached. Riveted or otherwise suitably attached to this disk is a narrow strip of brass B, Fig. 2, through which a small hole is pierced. This hole is just large enough to let the conducting-wire from the armature-coil through. To this wire the strip is securely fastened, preferably by solder. Attached to and in electric connection with a lug S on the generator end piece O is a spring A, leading down to the disk C. The magnetism of the pole-pieces L L′, Fig. 2, generally holds the armature in the position shown by the dotted lines, with its larger mass nearest the pole-pieces. In this position the spring A and strip B are in contact, thereby short-circuiting the generator through the strip, spring, and generator-frame. When actuating the generator to produce a current, the armature of course is short-circuited twice in each revolution; but as this takes place when the armature is at the "dead" point, furnishing no current, the short-circuiting does not affect the action of the generator.

It was mentioned that when at rest the magnetism generally holds the armature in the position to short-circuit itself. If for any ordinary cause, such as bearings sticking or dirt getting in the gearing, the magnetism fails to cut out the armature, the latter remains in the main circuit until some other generator in that circuit is operated. When this occurs, the first impulse from the distant generator operates the first generator cut in as a motor in a powerful manner and immediately throws the armature around and out of circuit. It is safe to say that circumstances powerful enough to prevent this action will prevent any automatic cut-out from working.

At E, Figs. 1 and 3, is shown another distinguishing feature of my invention. Before it has been necessary to fasten a contact-spring bearing against the armature-terminal either to the generator-frame with insulating bushings, washers, &c., or by screws or other similar means to the woodwork of the box. In either case if the spring got weak or bent the entire box almost had to be taken apart in order to get to the spring, and not only this, but the spring had to be fastened by two screws to prevent turning and a wire had to be fastened to the spring, then carried to the hinge, and then fastened there, making considerable labor in setting up a number of instruments. At the same time it is customary to add for safety and efficiency to each hinge a clip like that shown on hinge T, Fig. 1. By my invention this one spring E, Fig. 3, with the lip W projecting upward, takes the current from the armature, conveys it to the hinge, and connects itself, and all with no more trouble than fastening the old kind of clip to the hinge, practically requiring nothing to take the place of the bushings, washers, wires, and soldered connections formerly used. By this invention the removal of the hinge-screws on the face of the box permits the easy removal and return of the spring at any time. The spring E, as shown in Fig. 1, is held by the hinge-screws on the face of the

hinge and is bent over into contact with the armature-terminal D, the lip W contacting when the box is closed with the other leaf of the hinge.

In Fig. 2 the diagram of connections are those usually employed and need no detailed explanation, M M′ being the main line, H the receiver-hook and switch, F the polarized bell, N the battery, and X the transmitter.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a magneto signal-box of a main line including the armature-coils, shaft, and generator-frame; an insulating-disk on the shaft, a strip of conducting material on the disk and connected to the free end of the armature-coil; all in combination with a spring connected to said frame and adapted to bear on one end of said conducting-strip when the magnets are holding the generator-armature nearest to their poles, whereby the armature is normally short-circuited.

2. In a telephone call-box a magneto-generator armature a metallic spring attached to one of the leaves of the lid-hinge of a box and arranged to strike against the revoluble contact of the magneto-generator armature, the box containing said generator and other electrical apparatus in part attached to the lid and in part attached to the body of the box, and electric connection between the two parts of the apparatus being made by the hinges, whereby the generator is directly connected to the hinge without intermediate connections.

3. In a telephone call-box a revolving armature a metallic spring attached to one of the leaves of the lid-hinge of a box, and arranged to strike against the revolving armature-terminal and also against the other leaf of the hinge when the box is closed, the box containing telephone or other electrical apparatus, in part attached to the lid and in part attached to the body of the box, and electrical connection between the two parts of the apparatus being made by the hinges.

WARD DECKER.

Witnesses:
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