

R. A. WILHITE.
ELECTRIC SIGNALING APPARATUS.
APPLICATION FILED JAN. 6, 1910.

980,380.

Patented Jan. 3, 1911.

2 SHEETS—SHEET 1.

Fig - 1 -

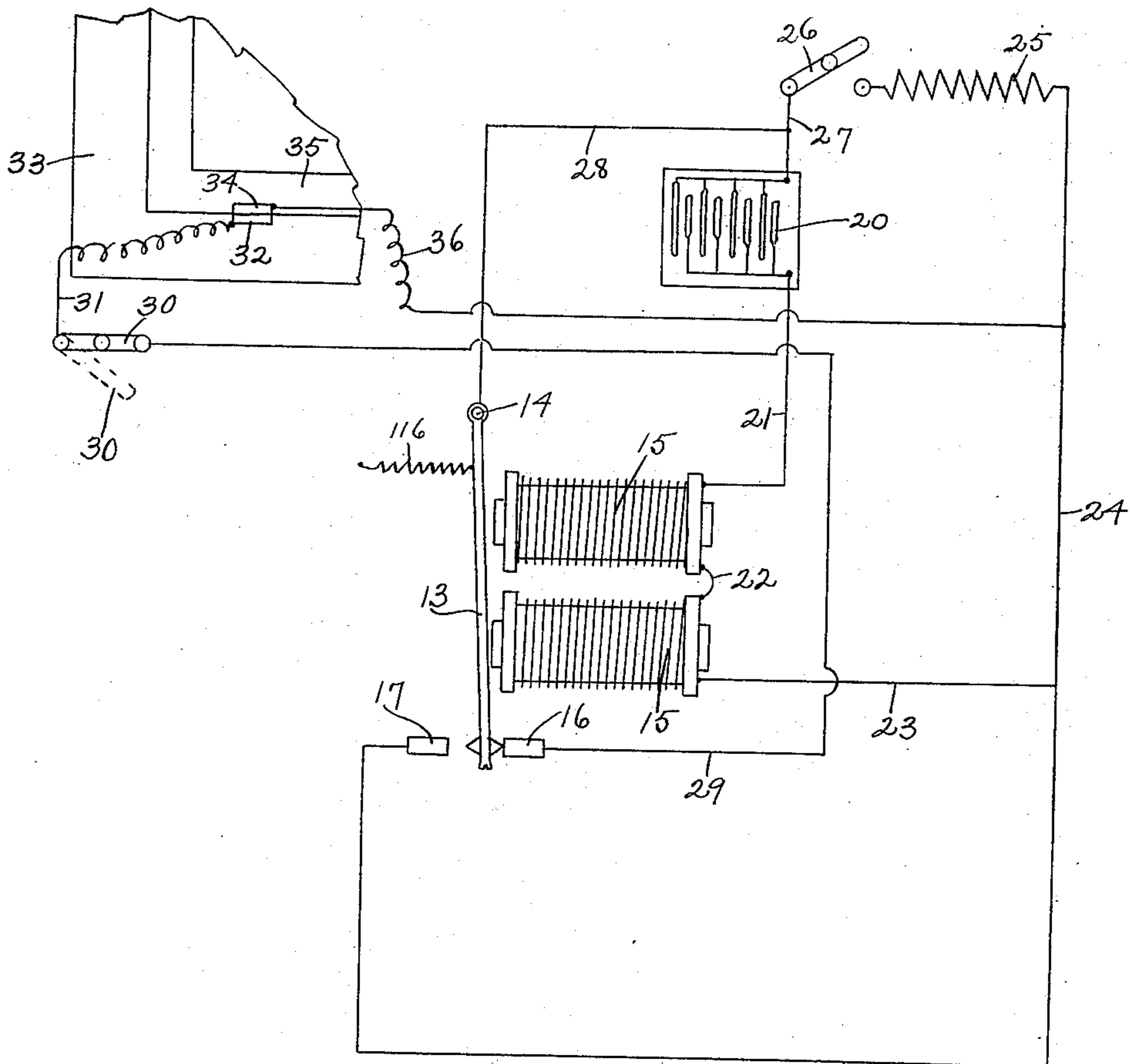
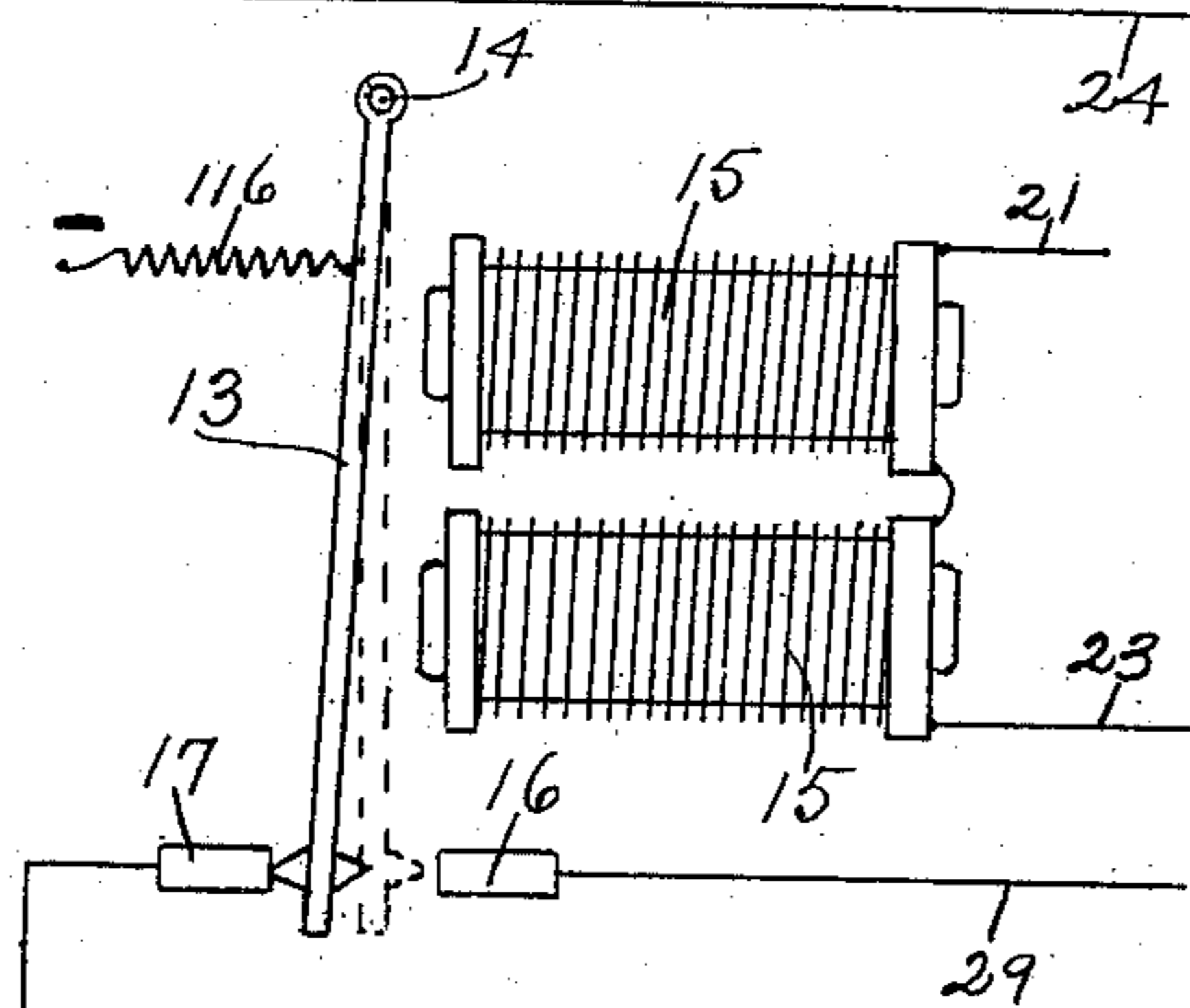


Fig - 2 -



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2 SHEETS—SHEET 2.

Fig. 3 -

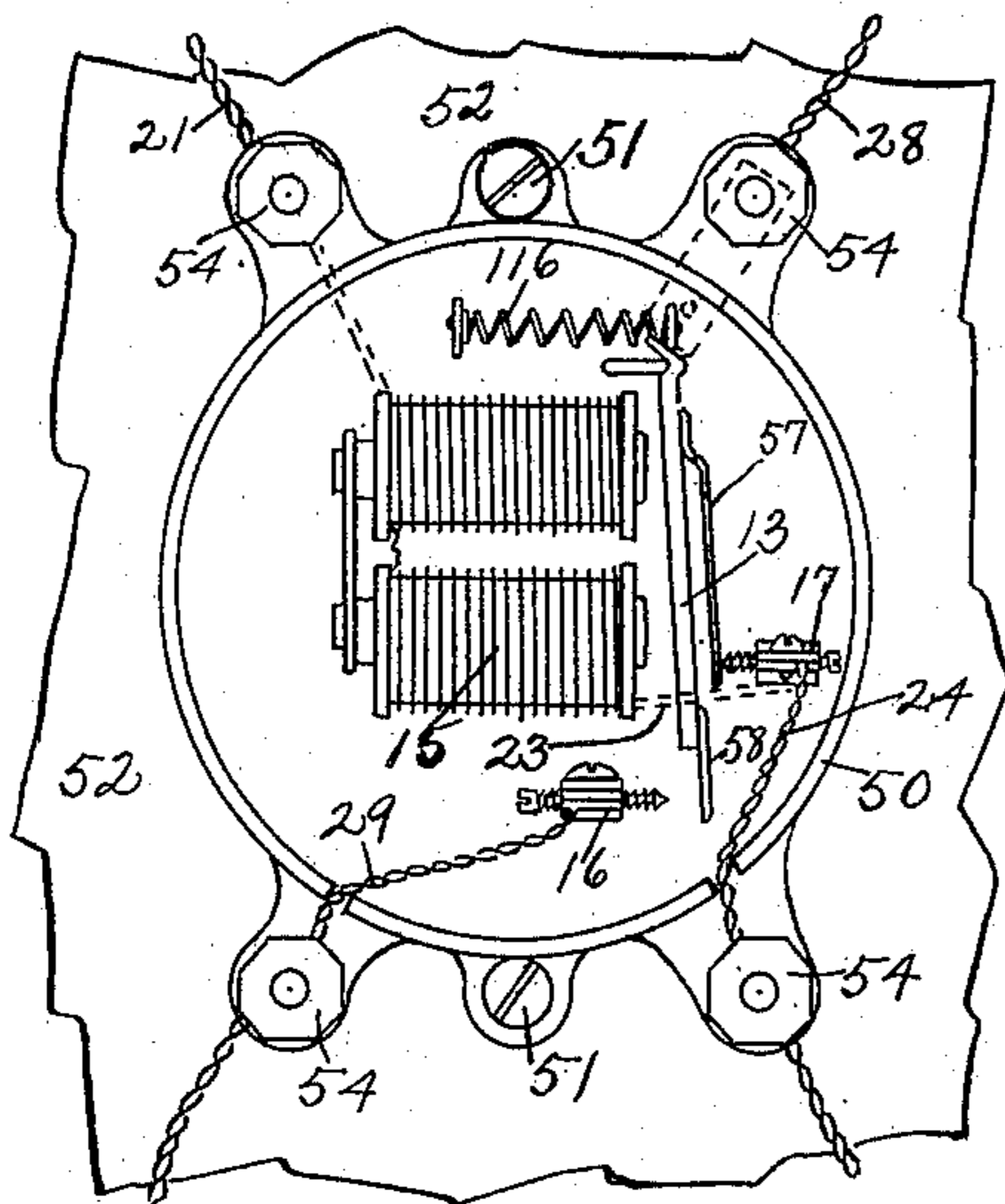


Fig. 4 -

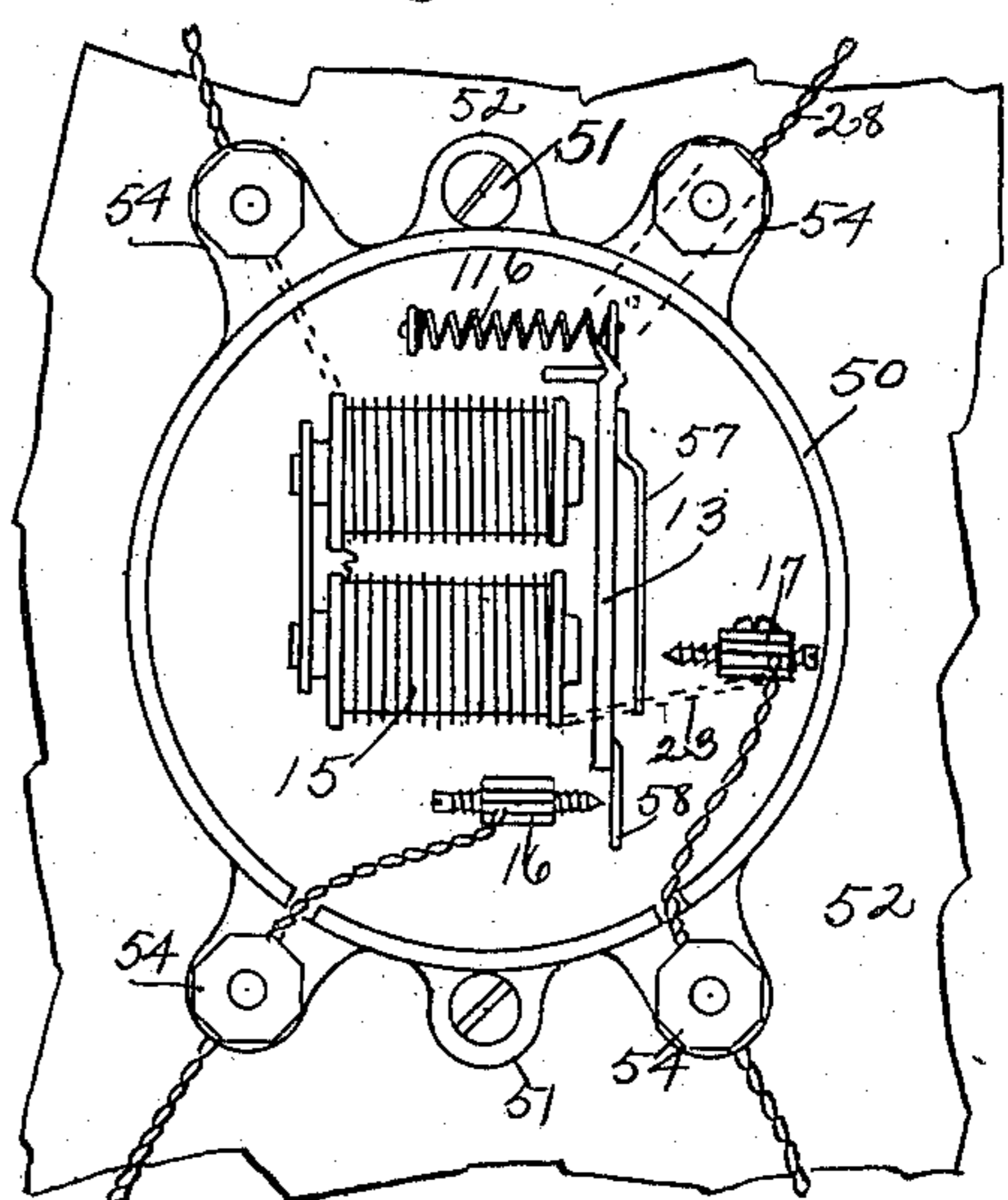
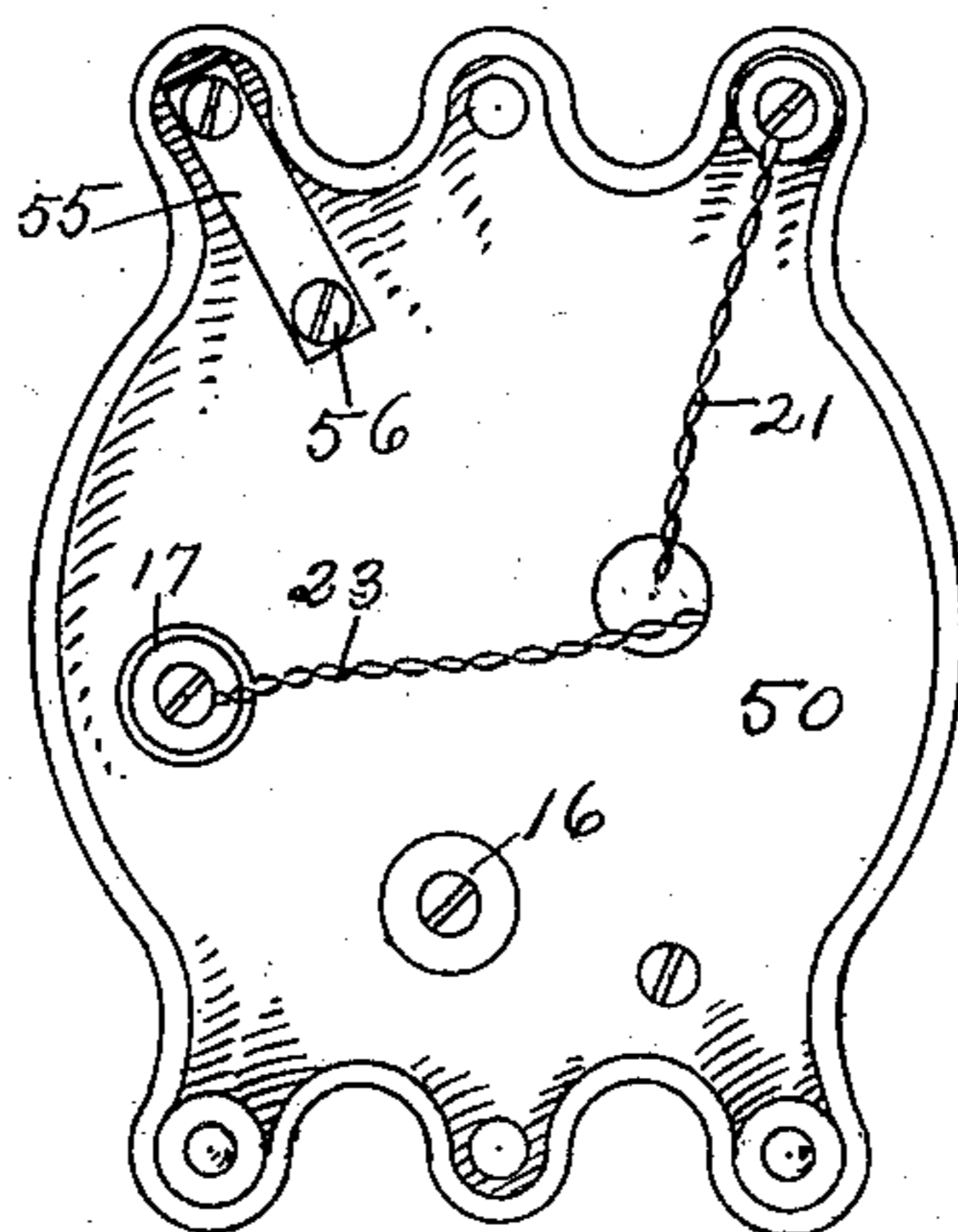


Fig. 5 -



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UNITED STATES PATENT OFFICE.

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ELECTRIC SIGNALING APPARATUS.

980,380.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed January 6, 1910. Serial No. 536,621.

To all whom it may concern:

Be it known that I, ROY A. WILHITE, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Electric Signaling Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide electric signaling apparatus of improved character and characterized by the fact that it will continue ringing until intentionally stopped. It has a normally closed circuit and when said circuit is opened the signaling will begin and continue although that circuit may be closed immediately afterward. Thus, if used as a burglar alarm and connected up with a window and a burglar opens the window and starts the signal, he cannot stop the signal by closing the window, but it will continue to signal until stopped intentionally by some one else through means located out of reach of the burglar.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a diagram illustrating the apparatus in set condition. Fig. 2 is a part of Fig. 1 with parts in signaling condition. Fig. 3 is a plan view of a part of the signaling device with the cap removed and the armature in the position shown in Fig. 2. Fig. 4 is the same with the armature in an intermediate position. Fig. 5 is a rear view of the attachment shown in Fig. 3.

As shown in the drawings, a buzzer signal is shown, although a lamp, bell or other signal may be used and operated by the armature 13 fulcrumed at 14 adjacent a pair of electromagnets 15 so as to be attracted thereby. There is a spring 116 which tends to draw the armature from the magnets and is weaker than the magnets, and will not draw the armature away from the magnets while they are energized, but only when they are deenergized. A fixed contact 16 is arranged on one side of the free end of the armature, and another fixed contact 17 is arranged on the other side thereof, and the armature vibrates in the space between these contacts. The contact 16 is located so that it will engage the armature when the armature is against the magnets or wholly moved to the

limit in the direction toward the magnets. When the magnets are deenergized, the spring will draw the free end of the armature against the contact 17, and upon the subsequent frequent and extremely brief energizations of the magnets the armature will be, with the cooperation of the spring, vibrated, and cause the signal to start, but the energization of the magnets will not continue long enough to draw the armature over against the contact 16 until the mechanism is reset.

There is a battery 20 from which the line 21 runs to one of the magnets 15. The magnets are bridged by the wire 22 and from the second magnet a wire 23 extends to a wire 24 that runs from the contact 17 at one end to a resistance 25 at the other end. A switch 26 connects said resistance to a wire 27 going to the battery. The wire 28 runs from the battery also to the fulcrumed end 14 of the armature 13. A wire 29 runs from the contact 16 through the switch 30 and wire 31 to a terminal 32 in the sill 33 of a window. A terminal 34 in the window sash 35 is in position to engage the terminal 32 when the window is closed and disengage it when the window is open. The window construction is used here merely for the purpose of illustration, as the wiring may run to any other relatively fixed and movable means capable of making and breaking the circuit. A wire 36 runs from the terminal 34 to the wire 24.

The operation of the device is as follows: Assuming the parts are in the position shown, with the switch 26 open, which is the set position of the parts, the window terminals are in the following circuit: from terminal 34 through wires 36, 24 and 23, magnets, wire 21, battery, wire 28, armature, contact 16, wire 29, switch 30, wire 31 and the terminal 32. That is a normally closed circuit through the magnets and contact 16, so that they will hold the armature in the position shown against contact 16. When the window is elevated, said circuit is broken which deenergizes the magnets 15 so that the spring 12 draws the armature 13 over against the contact 17, and thus the signal circuit is established as follows: from the battery 20 it goes through the wire 28, armature 13, contact 17, a part of wire 24, wire 23, the magnets and wire 21 to the battery. As soon as a current flows through this signal circuit it will instantly energize the mag-

nets which will exert a sufficient pull on the armature to disengage it from the contact 17. That instantly breaks the circuit and deenergizes the magnets before the armature gets across to the contact 16, and thus the spring immediately returns the armature to contact 17 and the circuit is again closed. This causes a rapid vibration of the armature, which acts as a buzzer, and it will continue until stopped. Suppose the burglar, upon hearing the signal, might close the window. The signal would not stop, for the circuit through the window must pass through armature 13 and contact 16, and since during the ringing these two parts are never in contact, the circuit through the window remains broken and the signal continues. During the day time, when it may be desired to have the window elevated, the switch 26 is closed and there is a circuit through the resistance 25 as follows: from the battery the current passes through wire 21, the magnets 22, wires 23 and 24 through the resistance 25, wire 27 and back to the battery. This will hold the armature in the position shown in Fig. 1, that is, against the magnets and ready to be set. The device is set by closing the window and establishing the window circuit and afterward opening the switch 26. As soon as the switch 26 is closed the device will not signal however the window may be operated, but when switch 26 is open, then the armature will be held as shown, which will close the window circuit, and the operation thereafter will be as heretofore explained.

The switch 30 is merely a test switch. When at evening the window is closed and one wishes to see whether the device is in operative condition, he can open said switch instead of opening the window, and that will start the signal and he will then have to close the switch 26 to stop the signal and then close switch 30 to restore the window circuit. Therefore, the switch 26 is used for stopping the signal after it has been started, and, as has been stated, the signal cannot be stopped from the window by closing the window circuit, and the window circuit, in setting the device, must always be closed after the switch 26 has been closed, and then the switch 26 must be opened before the device will be operative.

There is shown in Figs. 3, 4 and 5 a detail construction of the buzzer or signaling device in condition for use. The casing 50 with the removable cap, not shown, is secured by the screws 51 to a board 52 or other support. Within said casing there are magnets 15 and armature 13, and the contacts 16 and 17 are formed by stationary portions through which screws extend so as to render such contacts adjustable. The wires run from the binding posts 54, some of them extending through the base of the casing, as

shown in Fig. 5. The wire 28 which sends current to the armature, passes through the strap 55 on the bottom of the casing and screw 56 extends up through the casing to the armature. The wire 23 in the machine as built runs from the contact 17 to the magnet instead of from the middle portion of the wire 24, as shown in Fig. 1. It is immaterial at what point of wire 24 the wire 23 leads, whether it be as shown in Fig. 1 or at the end of wire 24, namely, contact 17. The armature is provided with a pair of contact springs 57 and 58 to engage with the adjustable contacts 16 and 17 in order to get better contact and insure a more sensitive device.

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

1. An electric signaling apparatus including an electromagnet, a fixed contact, an armature between the magnet and contact arranged to move to said contact when not attracted by the magnet, an electric circuit adapted to send current through said magnet, contact and armature when said armature engages the contact, a second fixed contact in position to be engaged by the armature when drawn to the magnet, and a normally closed circuit adapted to send current through the magnet, armature and said second contact when said second contact is engaged by the armature, whereby when the last circuit is broken the current through said first circuit will cause the vibration of the armature.

2. An electric signaling apparatus including an electromagnet, a fixed contact, an armature between the magnet and contact, a spring to move the armature to said contact when not attracted by the magnet, an electric circuit adapted to send current through said magnet, contact and armature when said armature engages the contact, a second fixed contact in position to be engaged by the armature when drawn to the magnet, a second and normally closed circuit adapted to send current through the magnet, armature and second contact when said armature engages the second contact and the magnet, a third circuit adapted when closed to send current constantly through said magnet, and a switch for closing said third circuit whereby the signaling can be stopped by said third circuit and enable the second circuit to be closed and when said third circuit is opened the apparatus will be set ready for use.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

ROY A. WILHITE.

Witnesses:

G. H. BOINK,

O. M. McLAUGHLIN.