

(No Model.)

S. S. BOGART.
ELECTRICAL SIGNALING APPARATUS.

No. 563,442.

Patented July 7, 1896.

Fig. 1.

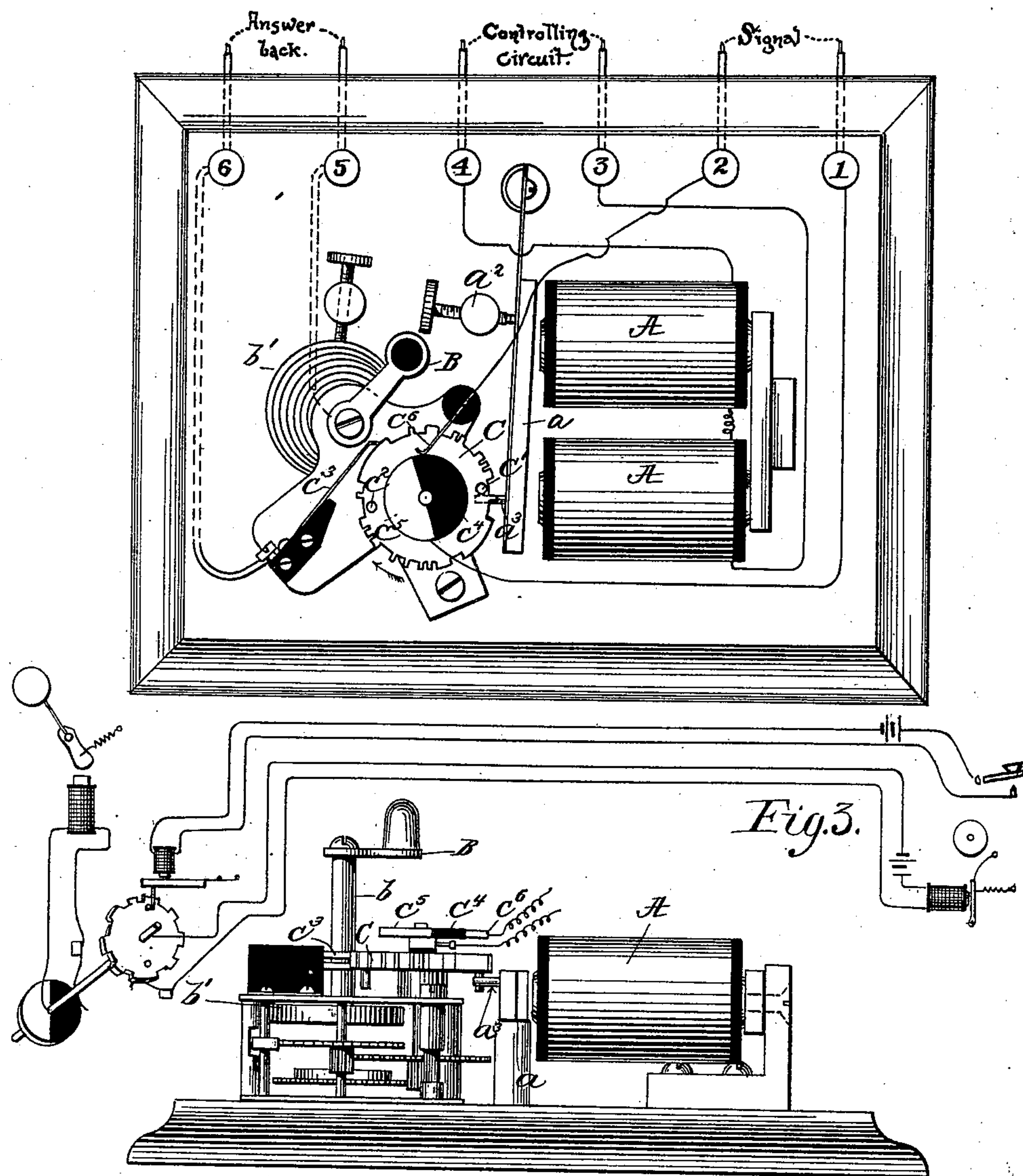


Fig. 2.

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SAMUEL S. BOGART, OF SCHRAALENBURG, NEW JERSEY, ASSIGNOR TO THE
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ELECTRICAL SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 563,442, dated July 7, 1896.

Application filed October 16, 1894. Serial No. 526,018. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL S. BOGART, of Schraalenburg, Bergen county, State of New Jersey, have invented certain new and useful Improvements in Electrical Signaling Apparatus and its Connections, of which the following is a full description.

The accompanying drawings illustrate the invention, of which—

10 Figure 1 is a plan view of an answer-back device with its attachments for closing circuit to a signal; Fig. 2, a side view of the same. Fig. 3 is a diagram of the circuits, showing conventional forms of apparatus.

15 The general construction of an answer-back needs no description, but in the present device the electromagnet A is provided with an armature a , which in normal position rests against the stop a^2 , and is drawn away from
20 said stop to the core of the magnet A when an electrical current or impulse is transmitted through its coils, and remains there until the current or impulse ceases, when it again returns to its normal position. This armature
25 is provided with a projection a^3 .

The handle B is turned by hand against the tension of a spring b' , which operates a suitable train. One of the wheels of the train is provided with a pawl which acts upon a shaft
30 carrying the wheel C, to turn it in response to the spring b' . Upon this wheel are the pins c' c^2 , at opposite sides, and these pins are caught and held by the projection a^3 on the armature, when in normal position, and are
35 released when the armature is drawn to the magnet, each time allowing the wheel to give one-half revolution. Upon the periphery of wheel C are cut or otherwise arranged two series of teeth occupying each one-half of its
40 periphery, and these teeth form the combinations which through the brush c^3 transmit to the calling-station the message that the signal is set either at "danger" or "safety." On the same shaft with the wheel C is secured a
45 disk which in connection with its brush c^6 is arranged to close a signal-circuit. This disk turns with the shaft and wheel and is constructed as shown in Fig. 1, one half of insulating and the other of conducting material, as shown at c^4 c^5 . The brush c^6 rides upon the
50 edge of this wheel. When on the conductor,

it closes the signal-circuit, and when on the insulator opens the circuit.

On the frame are shown six binding-posts. Nos. 5 and 6 are connected to the answer-back
55 circuit; 3 and 4 to the circuit controlling the magnets A A. The binding-posts 1 and 2 are the terminals of the signal-circuit. From post 1 a wire leads to the shaft of the wheel C and disk, and the current runs from a local
60 battery (not shown in the drawings) through this wire to the disk, thence to brush c^6 , thence to binding-post 2, and thence to the other side of the battery. Thus the binding-posts 1 and
65 2 represent the signal-circuit, 3 and 4 the answer-back circuit, 5 and 6 the line-circuit.

The operation of the device is as follows: Suppose the answer-back is wound up and held by the pin c' and projection a^3 on the
70 armature in the position shown in Fig. 1, with the brush c^6 resting on the insulating part of the disk. This is its normal position and the signal (not shown in the drawings) is at "danger." To take it out of this position and throw it to "safety," it is necessary that
75 the brush c^6 should be transferred to the conducting part of the wheel, to close the signal-circuit through binding-posts 1 and 2. This is done by an electrical impulse through the coil of answer-back magnet A, which closes
80 the circuit therethrough, drawing away the armature a , and the wheel and disk begin to revolve. It will be noticed that on the wheel C there is a long surface upon which brush
85 c^3 rests, and the wheel beyond this long surface is provided with the teeth which transmit the answer-back message. Before it has reached these teeth, the conducting part of the disk has reached the brush c^6 , closing the
90 signal-circuit and throwing the signal to "safety" before the answer-back message begins. The impulse which has released the projection on armature a from the pin c' having ceased, the armature returns to normal
95 position with its projection ready to catch pin c^2 , and when that pin is caught, the brush c^6 resting on the conducting part of the wheel, the signal is held in "safety" position until another impulse through the magnet A releases the wheel and allows it to return to its
100 "danger" or normal position. Thus at each half-revolution of the wheel the signal is set

at either "danger" or "safety" and remains there until changed, as described. The train of this device may be arranged so that when wound any number of revolutions of the wheel and disk may be given.

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

1. In an electrical apparatus an answer-back provided with a winding and checking mechanism, in combination with circuit-closing devices connected therewith and actuated thereby when released, means actuated by the movement of the answer-back mechanism when released to first close a circuit and thereby actuate a signal or other device, and then send a return message to line.

2. In an electrical apparatus an answer-

back provided with a spring for actuating its mechanism and winding and checking devices, in combination with a shaft turned by the spring when released, a wheel carried by said shaft provided with means for actuating return-message devices with each half-turn thereof, and devices actuated also by each half-turn to set a signal or other device, substantially as described.

Signed at New York, in the county of New York and State of New York, this 10th day of May, A. D. 1894.

SAMUEL S. BOGART.

Witnesses:

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