(No Model.)

J. P. BUCHANAN.

ELECTRIC SIGNALING SYSTEM.

No. 571,507. Patented Nov. 17, 1896.

Fig. 1,

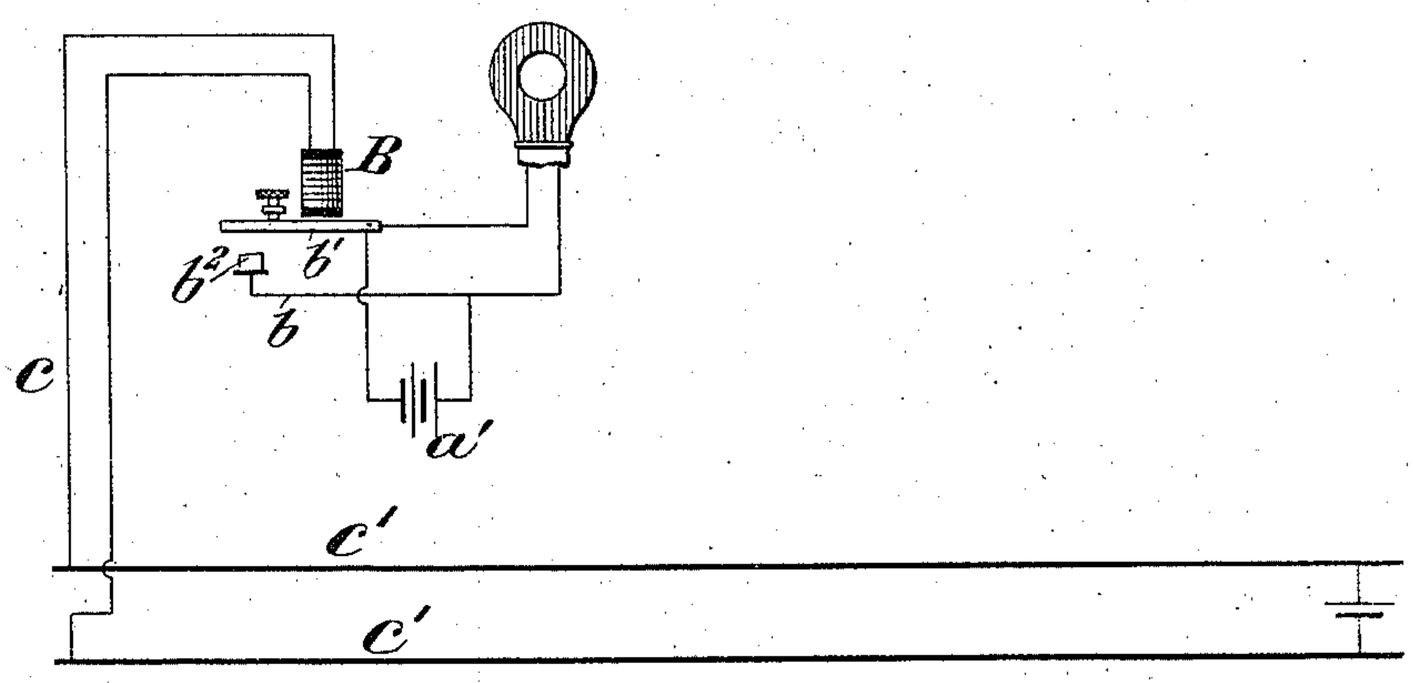
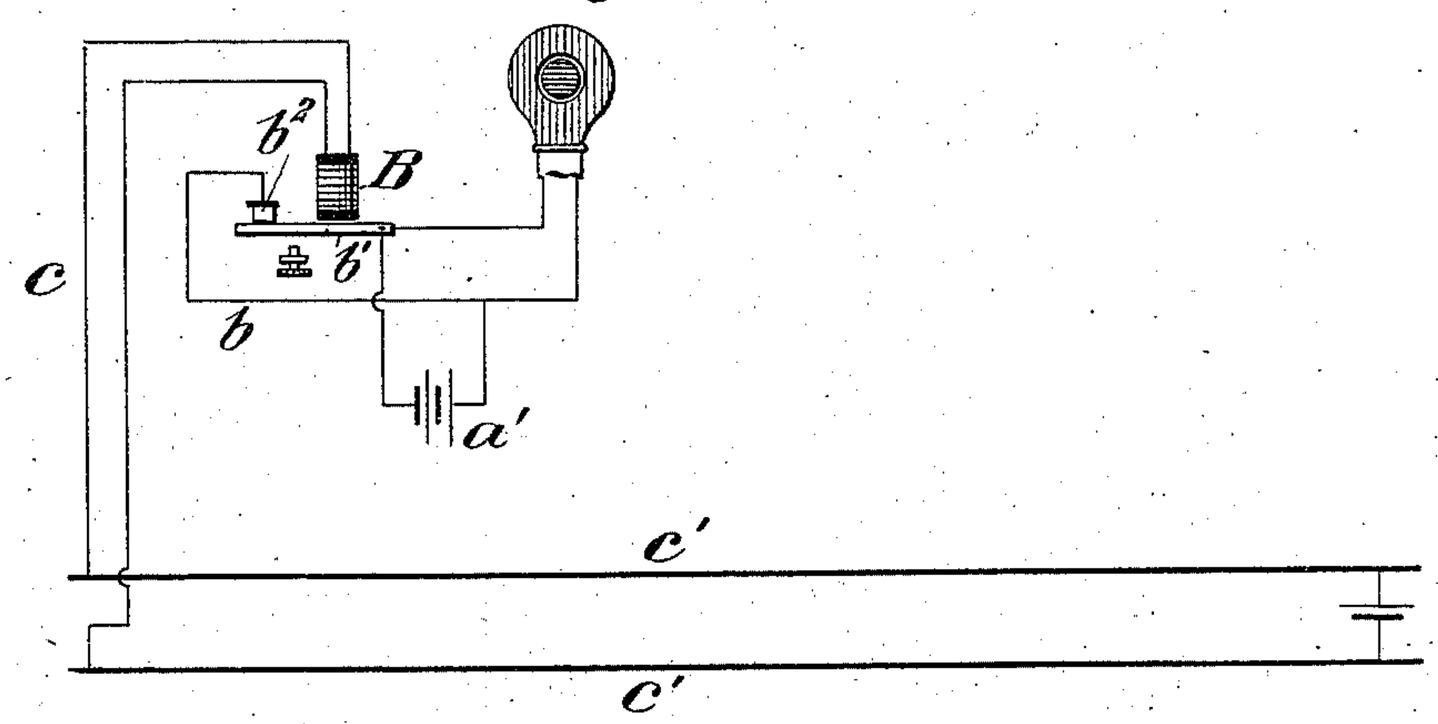


Fig. 2



Witnesses:-
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UNITED STATES PATENT OFFICE.

JOHN P. BUCHANAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE HALL SIGNAL COMPANY, OF MAINE.

ELECTRIC SIGNALING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 571,507, dated November 17, 1896.

Application filed February 5, 1894. Serial No. 499,056. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. BUCHANAN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Electric Signaling Systems, of which the following is a specification.

My invention relates to electric railway signaling systems; and it has for its object to provide a simple and efficient circuit-controlling device with the least possible number of contact-points and which when used in its preferred form in a circuit exposed to lightning or other foreign currents will not be liable to have its contact-points fused or otherwise impaired by such currents.

Referring now to the drawings, in which like letters designate corresponding parts in both views, Figure 1 is a diagrammatic view of a portion of a signaling system embodying my invention, in which the signal-circuit is normally energized. Fig. 2 is a similar view showing the signal-circuit normally deënergized.

The signal A has its operating instrument permanently connected to the circuit a, which is permanently connected with battery a'. The circuit a is bridged by a shunt branch b, including the armature-contact b' and the contact-point b^2. The armature-contact b' is controlled by a magnet B, operated by any convenient circuit, which may be the normally-closed circuit c, which includes the rails c' of a track.

In Fig. 1 the shunt branch b is shown normally open, the circuit a being energized and the signal A at "safety." In this case when the magnet B is deënergized, as by a train passing onto the rails c', the armature b' closes with the contact-point b^2, closing the shunt b and deënergizing the circuit a. The signal A then goes to "danger." When the magnet B is again energized, the shunt b is opened, the circuit a is energized, and the signal is returned to "safety."

In Fig. 2 the shunt b is shown normally closed, the circuit a being thereby deënergized and the signal A at "danger." In this case when the magnet B is deënergized the shunt is opened, the circuit a is energized, and the signal A is put to "safety." When the magnet is again energized, the shunt is closed, the circuit a deënergized, and the signal returned to "danger." It is to be noted that the battery a' is permanently connected both to the shunt b and the circuit a, which also includes the signal-operating instrument or other translating device intended to control the signal. The signal A is controlled solely by the operation of the shunt b, whose contacts b' and b^2 are the only contacts in the several circuits. If lightning or other foreign current should strike the circuit a, (shown in Fig. 1,) as might sometimes happen if this were an exposed circuit, the contacts b' and b^2 being normally open would not be fused or otherwise impaired by these foreign currents.

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

In an electric signaling system, the combination of an electric signal falling by gravity into "danger" position, an electromagnet arranged to operate said signal to put it to "safety," a battery having its poles permanently connected to the operating-magnet, a shunt-circuit around the battery containing a pair of contacts controlled by a track-circuit, said shunt-circuit operating when closed to permit the signal to go to "danger" by gravity and when open to put the signal to "safety" by the power of the magnet, substantially as set forth.

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

JOHN P. BUCHANAN.

Witnesses:
JOHN PERRINS, Jr.,
FRANK R. ROGERS.