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Patented Aug. 29, 1899.

R. EINBIGLER.
VISUAL SIGNAL APPARATUS.

(Application filed Mar. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 2.

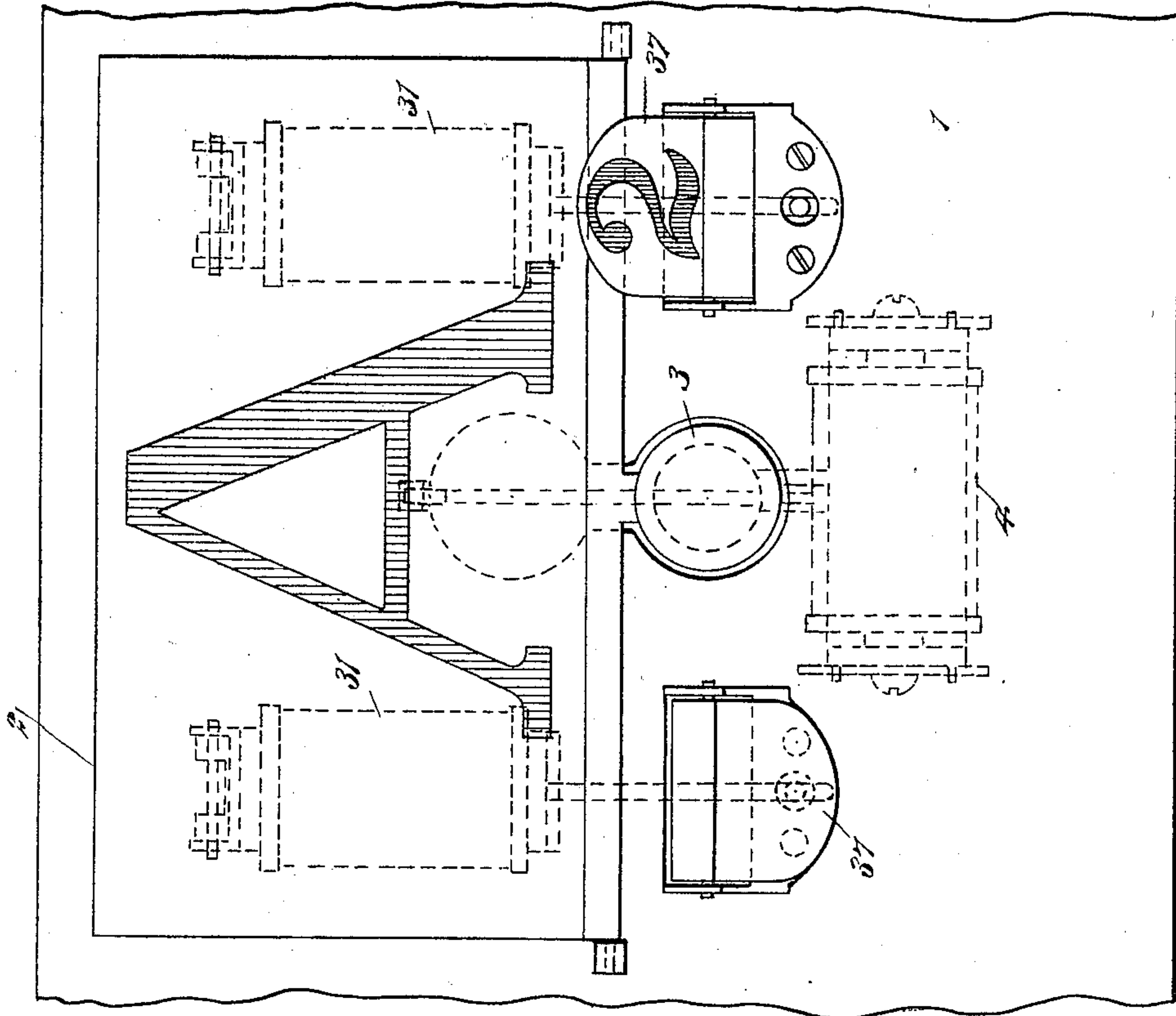


FIG. 1.

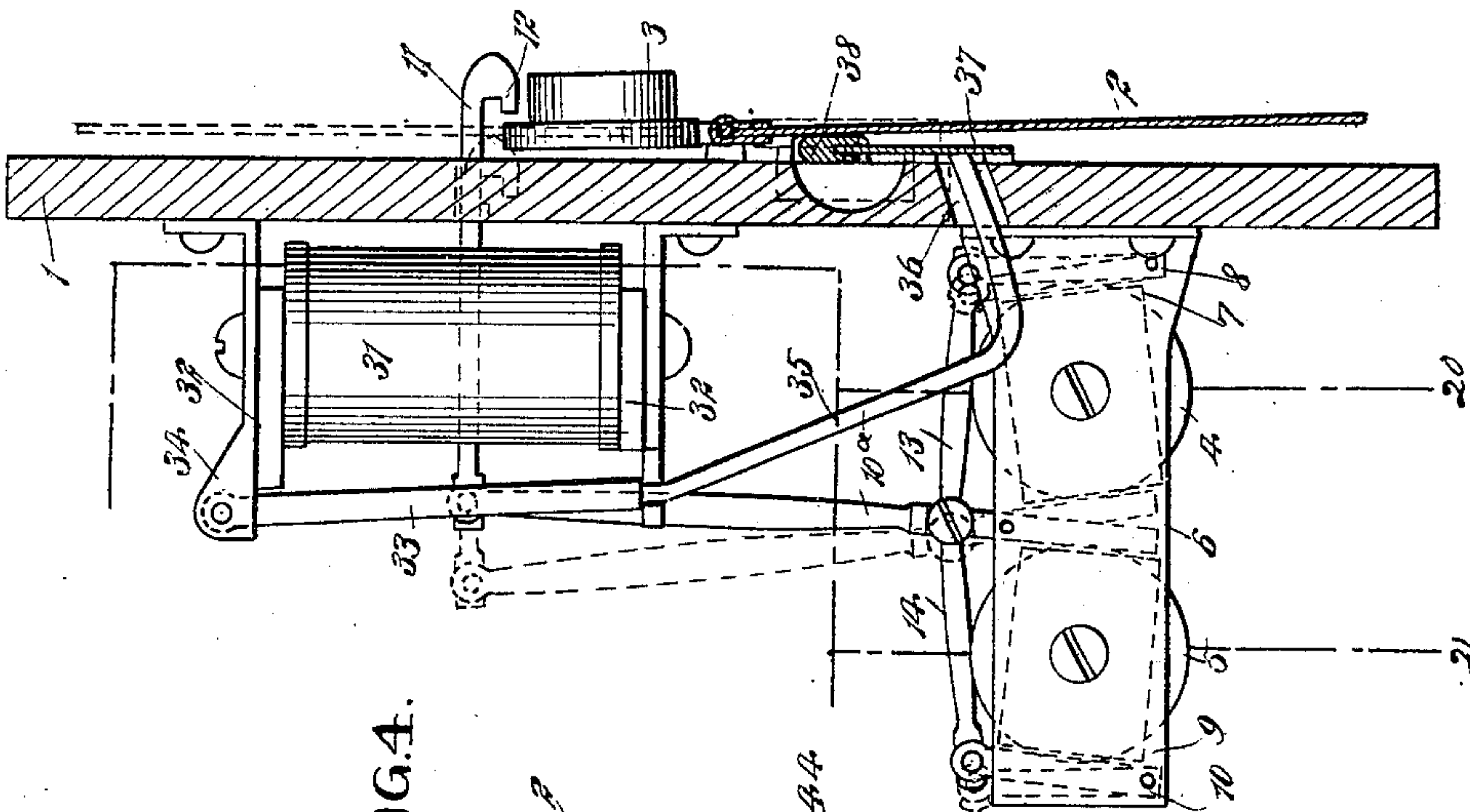
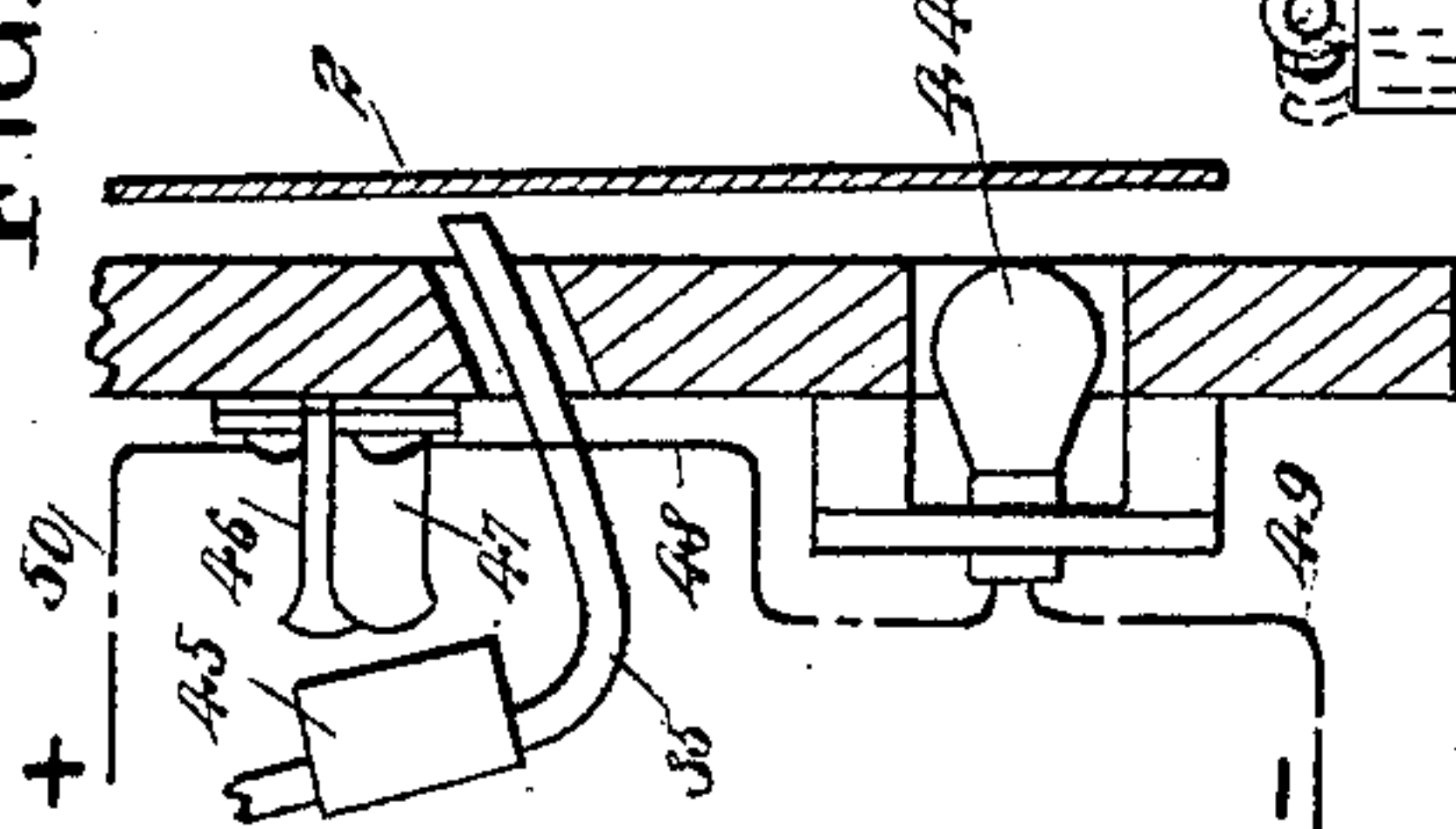


FIG. 4.



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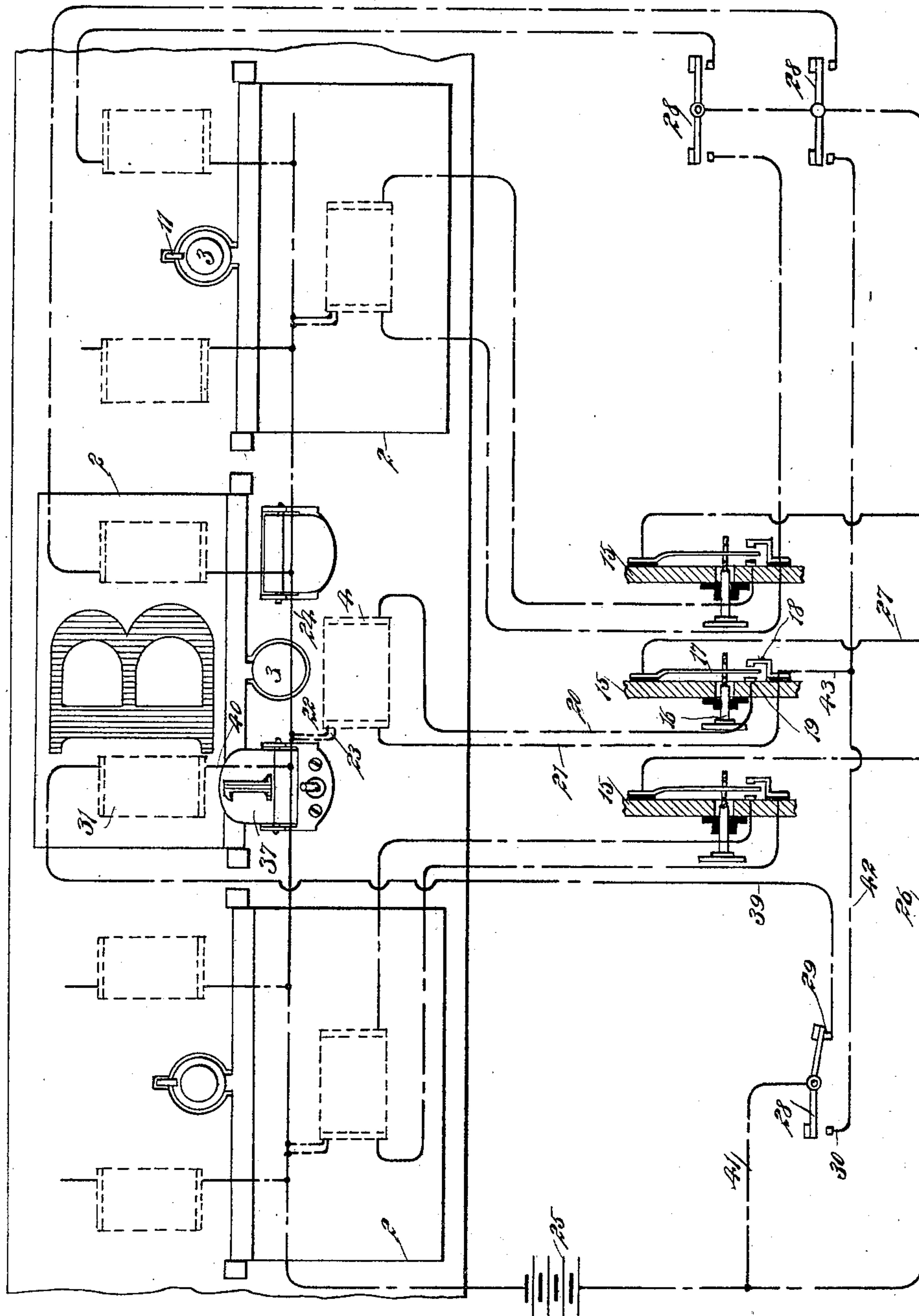
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FIG. 3.



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UNITED STATES PATENT OFFICE.

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VISUAL-SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 632,106, dated August 29, 1899.

Application filed March 29, 1899. Serial No. 710,924. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF EINBIGLER, of the city of New York, borough of Manhattan, in the county of New York and State of New York, have invented a new and Improved Visual-Signal Apparatus, of which the following is a full, clear, and exact description.

This invention relates to electrical signal devices particularly adapted for use in offices or buildings, and comprises a series of main annunciators placed in a suitable position and upon the inner or normally-hidden side of each one of which is placed a numeral or other suitable matter designating a person to be called; and the object is to provide in connection with each one of the main annunciators an auxiliary or a series of auxiliary annunciators or signal devices, which are to be electrically operated and controlled from various points of a building or the like remote from the main board, so as to indicate the calling party to the party called.

I will describe a visual-signal apparatus embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partial section and partial elevation of a visual-signal device embodying my invention. Fig. 2 is a face view thereof. Fig. 3 is a diagrammatic view showing a system of wiring, and Fig. 4 is a detail sectional view of a modification.

Referring to the drawings, 1 designates an annunciator-board upon which is arranged any desired number of swinging annunciator-plates 2. Each annunciator-plate has placed upon it a single insignia, which is here shown as a letter. When the annunciator-plate is turned upward, this letter will be brought in sight and is designed to indicate to a party that he is requested to present himself at some part of the office or building.

Secured to the top or pivoted edge of the plate 2 is a weight 3, designed to swing the plate to its open position after it shall have once been started, as hereinafter described.

As a means for operating the plate 2 from a main key I employ on the rear side of the board 1 electromagnets 4 5, one of which, 4,

is designed to start the plate in its downward or closing swinging movement, and the other of which, 5, is designed to start the plate in its opening position to disclose the signal. The two electromagnets are mounted in a suitable frame. The electromagnet 4 has pole-pieces 7 for coacting with an armature 8, and the electromagnet 5 has pole-pieces 9, coacting with an armature 10, pivoted in the frame 6.

Having swinging connection relatively to the frame 6 is an upwardly-extended lever 10^a, which at its upper end has a forwardly-extended operating-rod 11, which passes through an opening in the board 1 and is provided with a hook portion 12 at its outer end. The lever 10^a has a link connection 13 with the armature 8 and a link connection 14 with the armature 10.

The annunciator-plate 2 may be operated from a main keyboard 15, in which is a circuit-closer comprising a pin 16 and a spring-plate 17, designed to be pushed into engagement with a contact-point 18 or to be drawn into connection with a contact-point 19. From the contact-point 19 a wire 20 extends to a connection with the electromagnet 4, and from the contact-point 18 a wire 21 extends to a connection with the electromagnet 5, and both the electromagnets 4 and 5 have connections 22 23 with a wire 24, leading to a battery 25, and from the other pole of this battery leads a main wire 26, which has shunt connection 27 with the spring-plate 17.

In the operation of this part of my invention it is to be understood that all the plates 2 hang downward to conceal the signaling character. Should it be desired to swing a plate upward from the switchboard 15, the key 16 is operated to move the spring-plate 17 into engagement with the contact 19. This will cause the circuit to pass through the wire 20, the electromagnet 4, the wire 22, the wire 24, battery 25, the wire 26, and back to the spring-contact 17 by way of the wire 27. When the circuit is thus closed, the electromagnet 4 will be energized to attract its armature 8. This will throw the rod 11 rearward of the board 1, causing the hook end 12 to engage with the upper portion of the weight 3, drawing the rod 11 to the position indicated in dotted lines in Fig. 1. When thus started, the weight 3

will cause the plate 2 to continue movement to its open position, and at this time, or when said plate is in its open position, the end of the rod 11 will be against the rear side, or
 5 against the side adjacent to the board 1. When it is desired to move the plate 2 to its normal position, the spring-plate 17 is to be pushed into engagement with the contact 18. Then the current will pass through the wire
 10 21, the electromagnet 5, the wire 23, the wire 24, to the battery 25, thence by the wires 26 and 27 to the contact-plate 17, and thus the energized electromagnet 5 will attract the armature 10, causing the parts 10^a and 11 to
 15 move to start the plate 2 on its downward-swinging movement.

I will now describe a means for operating the signal device from different parts of the room or building. It is to be understood that
 20 the circuit closers or keys 28 will be placed at various parts of said room or building to be most convenient to the parties desiring to open a signal, and as these connections are alike with all the circuit-closers 28, a description of that in connection with the circuit
 25 portion shown will be sufficient for all. The circuit-closer 28, designed for connection or for the operation of a second signal, or that shown as having the numeral 1 in Fig. 3, is designed for contact with either a contact-
 30 point 29 or 30.

Arranged on the rear side of the board 1 and above the electromagnets 4 5 is an electromagnet 31, having pole-pieces 32, coacting
 35 with an armature 33, pivotally connected to the upper bracket 34, supporting the electromagnet 31. From the lower end of the armature 33 a push-rod 35 extends downward, then forward through an opening 36 in the
 40 board 1, and is normally engaged with a small annunciator-plate 37, pivoted to the board 1 and counterbalanced, as at 38, at its pivoted edge. When the person designated by the
 45 numeral 1 desires to signal the party designated by the letter B, he will close the circuit through the parts 28 and 29. The current will then flow through the wire 39, which is in electrical connection with the contact-point
 50 29, through the electromagnet 31 and the wire 40, the wire 24 to the battery 25, and thence by the wires 26 and 41 back to the circuit-closer 28. This will energize the electromagnet 31, causing it to attract the armature 33, and this movement of the armature
 55 33 will cause the rod 35 to push outward upon the signal-plate 37, which will engage with the signal-plate 2, and when the two plates are thus started they will be continued on their movement by means, respectively, of the counterweights 38 and 3. The parts will now be
 60 in the position indicated in Fig. 3, which shows that the call comes from the party designated 1 to the party designated by B. When the plate 2 swings upward, it will engage the end of the rod 11 and push it rearward to the position indicated in dotted lines in Fig. 1. When the party designated as 1

desires to close the signal, the circuit-closer 28 must be moved into connection with the contact-point 30, which has a connection 42
 70 and 43 with the contact-point 18 or with the wire 21, connected to said contact-point. This will close the circuit through the wires 42 43, the wire 21, the electromagnet 5, the wire 23, the wire 24, and through the battery 25 and
 75 wire 41 back to the circuit-closer 28. Of course at this time the electromagnet 5 will be energized and will operate to move the plate 2 downward in the manner before described, and the downward movement of this
 80 plate 2 will of course move the plate 37 to its closed position.

In dark places or when the board or signal device is to be operated at night, instead of the calling signal-plates 37, I may employ
 85 signal devices consisting of lamps 44, which are placed in openings rearward of the main plate 2. Of course the several incandescent lamps will be variously colored, so that a calling party may be designated by a color
 90 instead of a numeral or similar character. The operation of this modification is substantially the same as before described; but in this case the rod 35 is designed to engage directly with the plate 2, and it carries a circuit-closer plate 45, adapted to close a circuit
 95 through the spring-fingers 46 47. The spring-fingers 47 are in connection with the lamp 44 through the wire 48, and this lamp has its other connection with the battery-wire
 100 through the wire 49, while the other pole of the battery is in connection with the spring 46 through the wire 50. Obviously when the electromagnet 31 is energized the rod 35 will be moved to start the plate 2 upon its upward
 105 movement, and when the rod is so moved it will close the fingers 46 and 47, causing the lamp to burn.

Having thus fully described my invention, I claim as new and desire to secure by Letters
 110 Patent—

1. In a visual signal, a main signal-plate mounted to swing, an electromagnet for operating said plate in one direction, an electromagnet for operating said plate in the opposite direction, an electric circuit in which the magnets are located, a main circuit-closing device for controlling said magnets, an auxiliary signal normally hidden or covered by the main signal-plate, and an electric circuit in which the auxiliary signal is arranged, the said circuit being manually controlled from a point remote from the controller of the main signal-circuit, substantially as specified.
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2. In a visual signal, a main signal-plate mounted to swing, an electric circuit, an electromagnet in the circuit for starting the plate to its opening position, an electromagnet in the circuit for starting the plate to its closing position, an auxiliary signaling-plate mounted to swing and adapted for engagement with the first-named plate, an electromagnet for starting the auxiliary plate to its
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open position, and means arranged in auxiliary circuit to actuate the last-named electromagnet, substantially as specified.

3. In a visual signal, a main swinging signal-plate, electromagnets for controlling the movements of said plate, an electric circuit in which the magnets are located, a main circuit-closing device for controlling said magnets, an auxiliary-signal device, an electromagnet for controlling said auxiliary signal, a shunt-circuit in which said electromagnet is located, and means in said shunt-circuit for closing it to display both the signal devices and also for closing the circuit to place the two signal devices in inoperative position, substantially as specified.

4. A visual signal, comprising a main annunciator-plate, an auxiliary annunciator-plate adapted for engagement with the first-named plate, an electric circuit having connection with contact-closers on the main key-

board, an electromagnet in the circuit for operating the first-named signal-plate to its signal position, an electromagnet in the circuit for operating the plate in its opposite direction, an auxiliary or shunt circuit connecting with the first-named circuit, an electromagnet in said shunt-circuit, means for closing the shunt-circuit to cause the last-named electromagnet to move the auxiliary signal to its signal position and also through the auxiliary plate to move the main signal-plate to its signal position, and means in said shunt-circuit for closing the first-named circuit to cause one of the first-named electromagnets to operate the signal devices to their non-signaling position, substantially as specified.

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Witnesses:

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