

No. 607,343.

Patented July 12, 1898.

J. P. CONWAY.

SWITCHBOARD AND ALARM MECHANISM.

(Application filed May 5, 1897.)

(No Model.)

3 Sheets—Sheet 1.

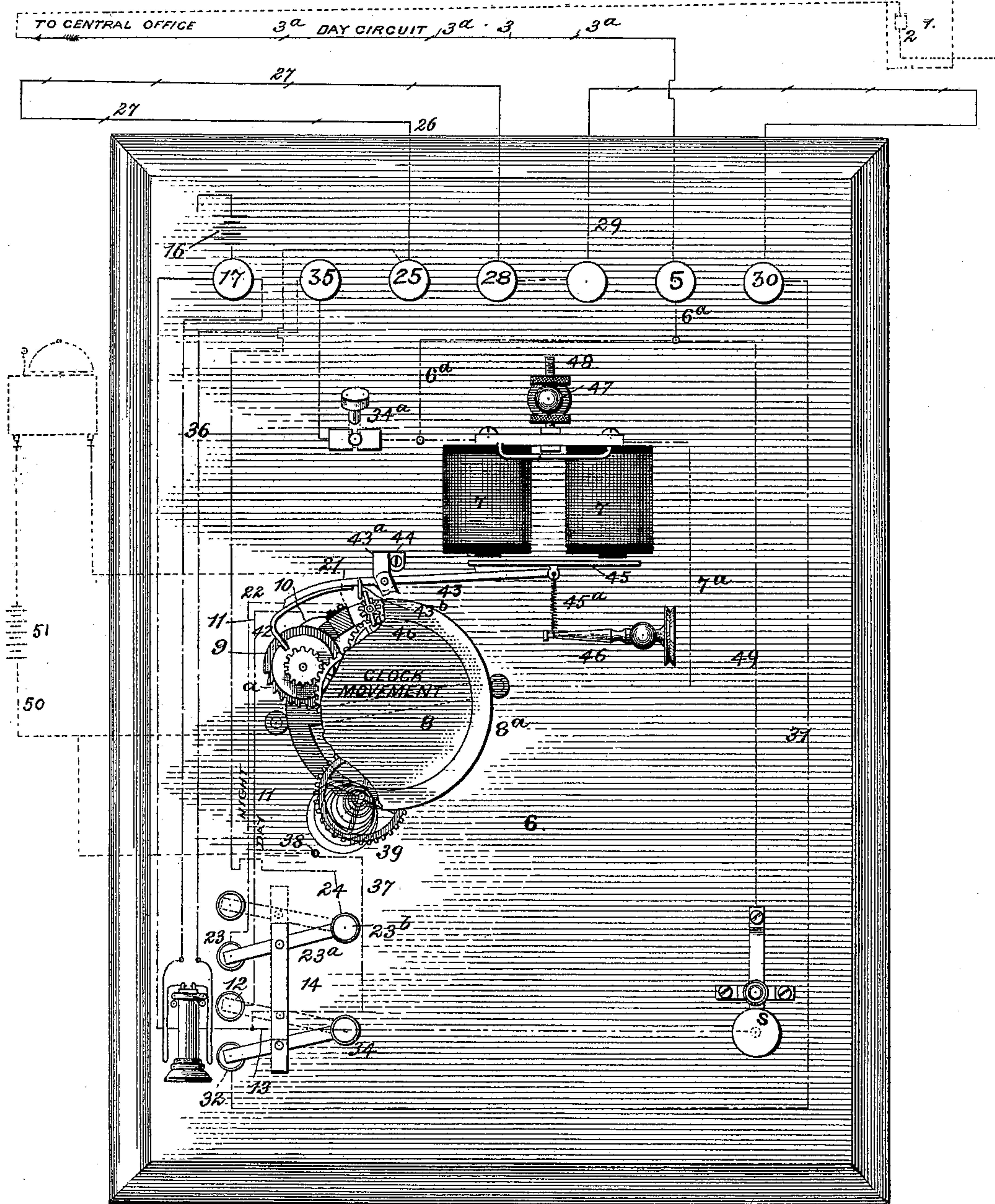


Fig. 1.

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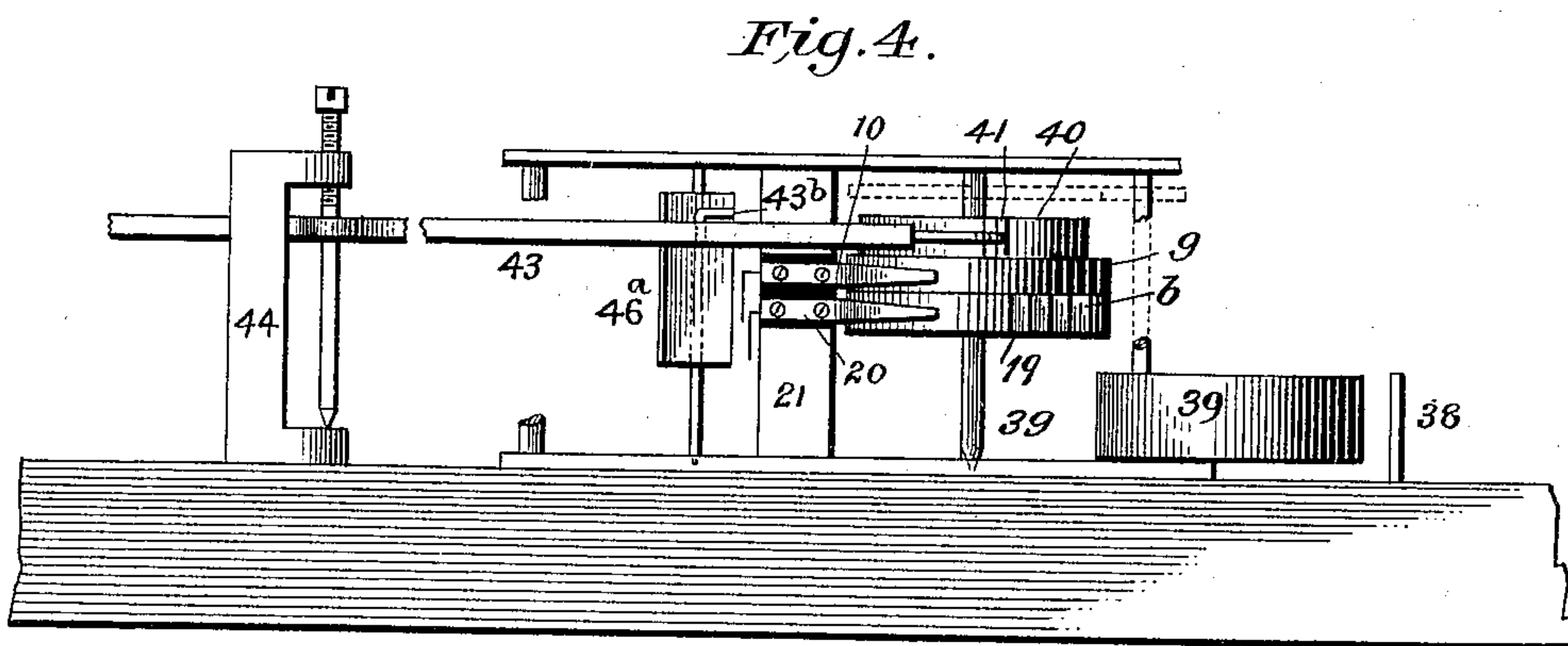
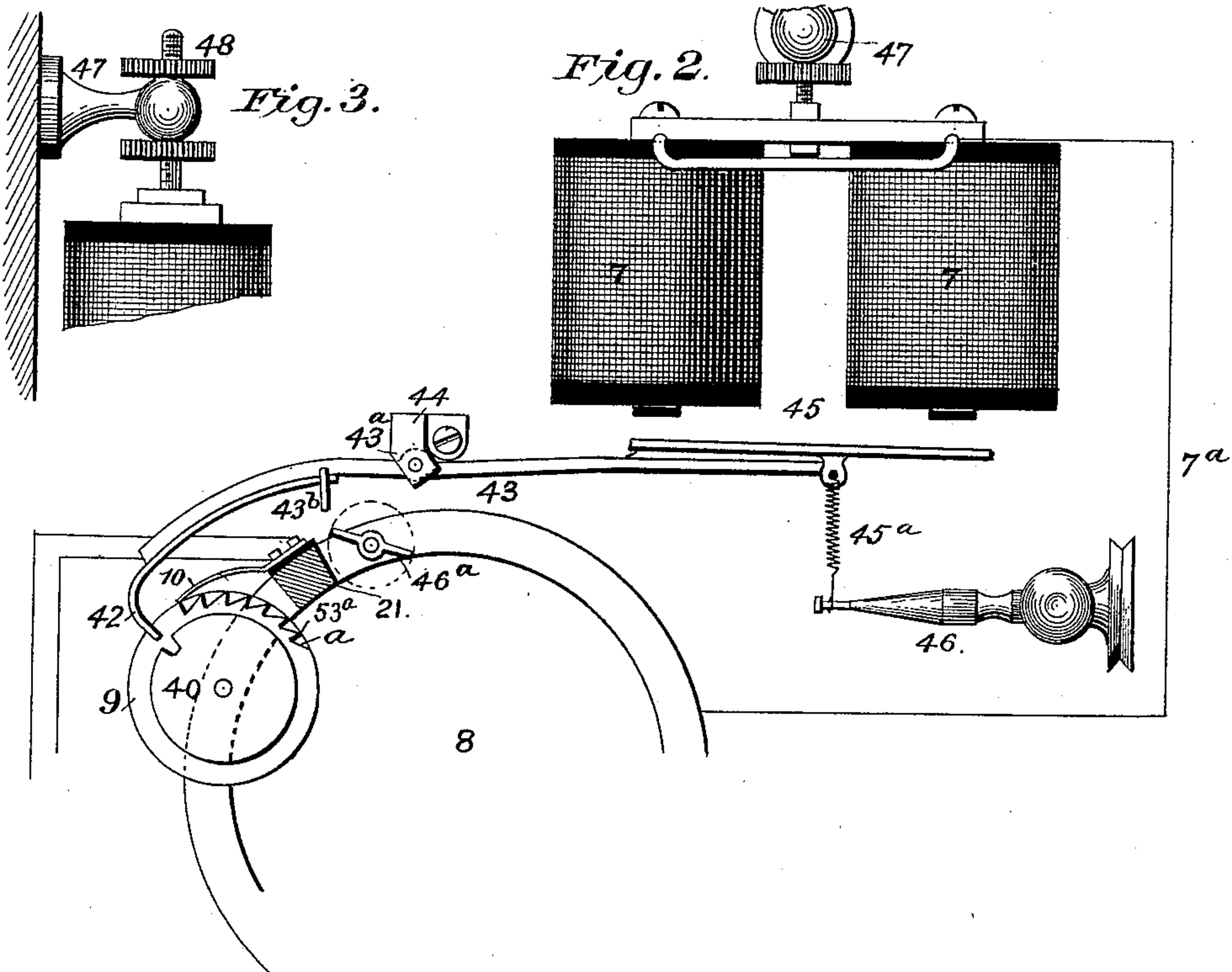
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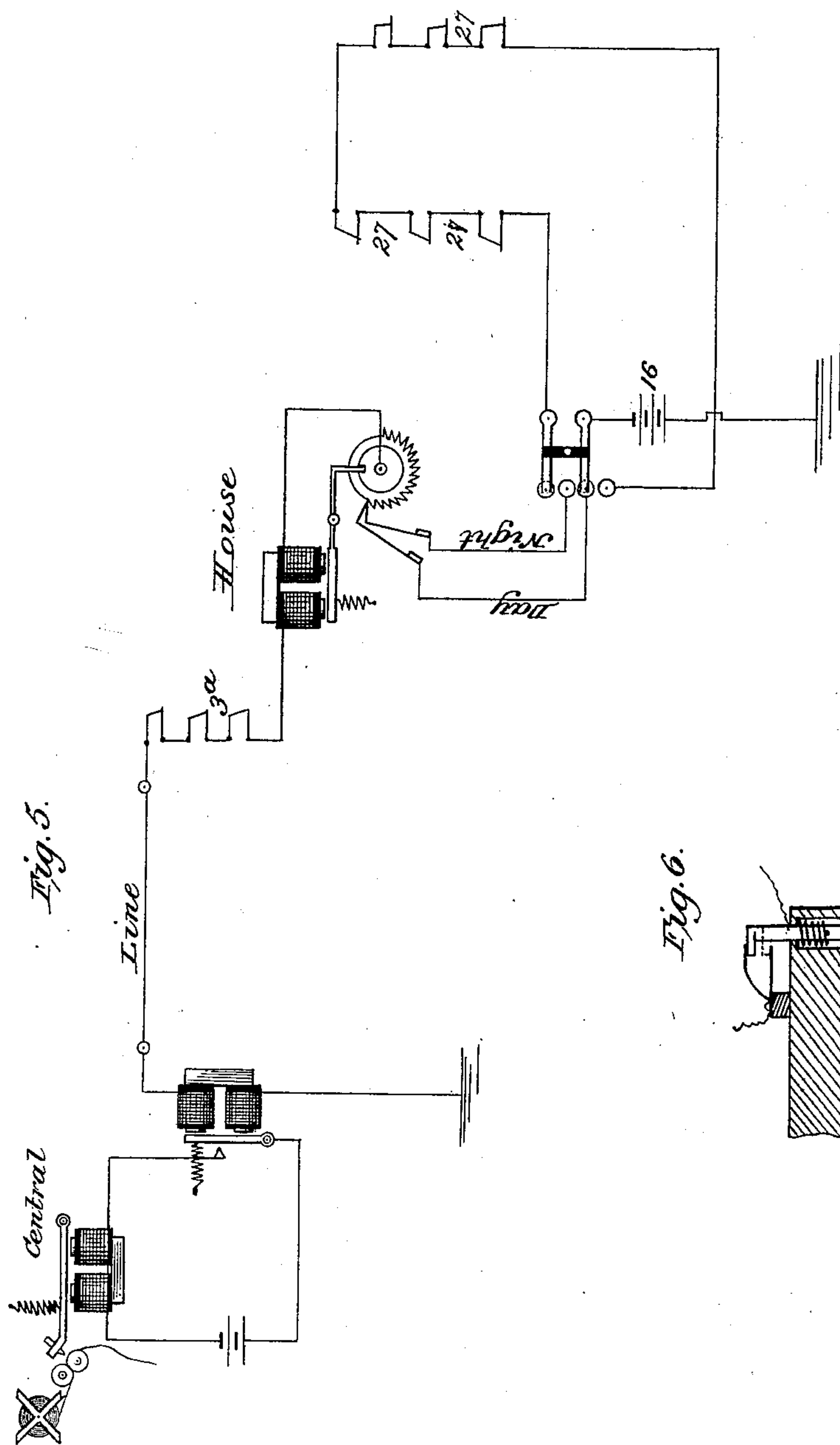
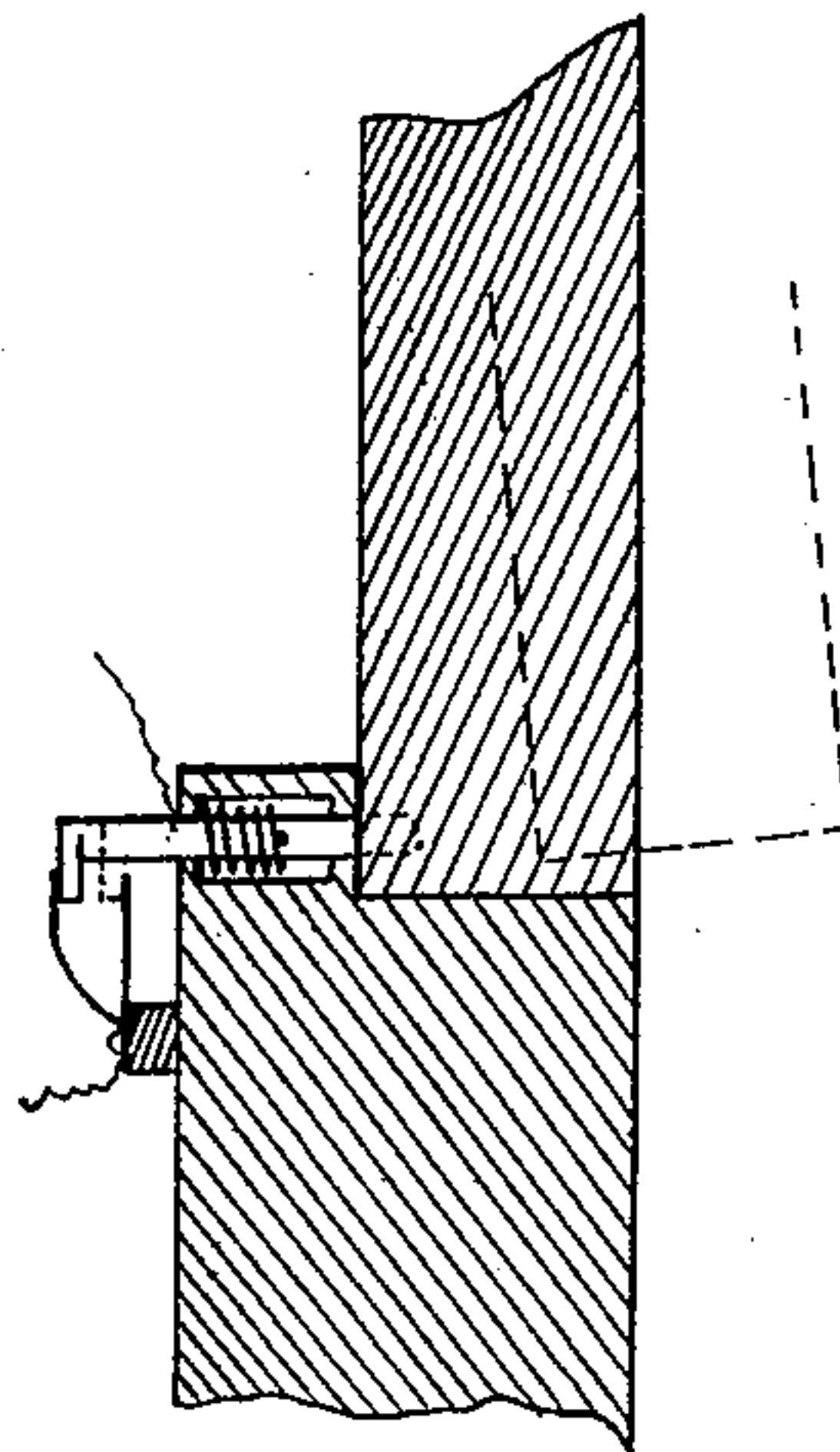


Fig. 6.



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SWITCHBOARD AND ALARM MECHANISM.

SPECIFICATION forming part of Letters Patent No. 607,343, dated July 12, 1898.

Application filed May 5, 1897. Serial No. 635,155. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. CONWAY, residing in the city of New York, county of New York, State of New York, have invented a new and Improved Switchboard and Alarm Mechanism, of which the following is a specification.

My invention has for its object to provide a simple, inexpensive, and easily-manipulated switchboard and alarm or indicator mechanism adapted to be placed on premises to be protected from burglars and which has connection with suitable indicator or alarm devices located at the central office or station where watchmen are kept.

My invention also seeks to provide a mechanism of this character in which the several circuits are so arranged that telephonic and signal communication can be had with the said central office or station when such circuits are in an operative condition.

With other objects in view, which will be hereinafter particularly referred to, the invention consists in a mechanism for the purposes stated embodying the peculiar combination and novel arrangement of parts, such as will be first described in detail, and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of my improved switchboard, the central office, indicator devices, and the supplemental alarm or indicator circuit for the house being shown in dotted lines, the switches being adjusted to cut out the day-circuit, the magnet-lever devices being shown in their normal position. Fig. 2 is a detail view illustrating the magnet-operated lever devices in position when the magnet-energizing circuit is broken. Fig. 3 is a detail view of the magnet-adjusting devices. Fig. 4 is a detail view of the annunciator devices hereinafter referred to. Fig. 5 is a diagrammatic view illustrating the circuits of my improved electric alarm mechanism. Fig. 6 is a detail view of one of the contact devices hereinafter referred to.

Referring to the accompanying drawings, in which like letters and numerals indicate like parts in all the figures, 1 indicates the central office or station, and 2 alarm or indi-

cator mechanisms, which may be of any approved construction, which are normally held to an inoperative position by the main-line circuit from central office or station, which extends to the premises in which my improved switchboard devices are located. One of the circuits on the switchboard I term the "day-circuit" and the other the "night-circuit."

The main line from central office or station as it enters the house passes through a series of contacts located on all frames or parts that are kept closed in the daytime before it connects with binding-post 5 on the switchboard 6, as clearly shown in Fig. 1.

The binding-post 5 is electrically connected by the wire 6^a with magnets 7 7, which magnets are joined by the wire 7^a with the metal frame 8^a of a clock-movement 8, the circuit passing through such frame to a circuit maker or breaker wheel 9, mounted on a suitable post and geared with the locked gearing, so that when such lock-gearing is released in the manner hereinafter described it will rotate and impart a series of successive impulses through a contact-finger 10, through the circuit 11, to a heel-post 12, from which the circuit passes into another circuit 13, when the switch devices 14 are adjusted to set the day-circuit in an operative position, as indicated in dotted lines in Fig. 1, such circuit 13 passing off to the post 17 and then to the battery and the ground, such arrangement completing the day-circuit.

The night-circuit and day-circuit are one and the same line from the central office or station until reaching clock 8, where the night-circuit starts from disk 19, which engages a contact-finger 20, which, as also the day-circuit contact, is secured to and insulated from the clock-frame post 21, as clearly shown in Fig. 4.

The day and night circuits are made by moving the switches on the switchboard. The night-circuit passes from the contact-finger 20, through the line 22, down to the heel-post 23. From it through the switch-arm 23^a and head 23^b it passes to the line 24, which extends up and connects with a binding-post, from which it passes through the line 26, having series of contacts 27 located in doors, windows, &c., kept closed at night,

and then to another binding-post 28, from which a second line 29, having contacts 29^a, also located at such points, normally closed at night, to a third binding-post 30, from which it passes through the wire 31 to the heel-post 32, from which the circuit passes through lever 33 and head 34 to the ground or battery line, with which the day-circuit connects when the switches are adjusted to close the day-circuit.

34^a indicates a plug-switch which has one terminal connected with the magnet-circuit and the other terminal with a binding-post 35, with which connects one terminal of a sub-circuit 36, the other terminal of which connects with the ground or battery post, such circuit 36 having a telephone-receiver, whereby when either the day or night circuit is on telephonic communication can be had with the central office or watchman's station.

37 indicates a second subcircuit, one terminal of which connects with the post 38, arranged adjacent the mainspring 39 of the clock-movement, while the other terminal connects with the ground or battery circuit, as shown, the object of such subcircuit 37 being to cut out the alarm or indicator devices presently described after they have sent in a number of signals, it being obvious that after the said spring expands to a point when it engages the post 38 the current would be short-circuited from the magnets through clock-frame to the ground or battery wires and cut out the indicator devices until the clock mechanism has again been wound up.

By referring now more particularly to Fig. 4, it will be seen that the indicator-wheels each have a series of indentations or notches *a b*, and such wheels or disks lie one above the other, they both being fixedly mounted on a shaft 39, which also carries a check-disk 40, provided with a single peripheral notch 41, with which the hook end 42 of a vibrating armature-lever 43 is adapted to engage, and when engaged therewith it will hold the indicator wheels or disks from turning. The lever 43 is fulcrumed at 43^a to a bridge-piece 44 and has one end extended and connected to the magnet armature-plate 45, which when the magnets are deenergized is positively drawn down by means of the spring 45^a, secured to the adjusting member 46. The lever 43 has a stop-piece 43^b, which when the circuit is closed and the magnet-plate is drawn up and the hook end of the lever moved down into engagement with the notched check-disk stands in the path of the fan or fly wheel 46^a and in consequence stops the clock-movement.

47 indicates a bracket secured to the switch-board, through which passes the adjusting-screw 48, whereby the magnets can be raised or lowered, as desired.

49 indicates a subcircuit which connects with the magnet-circuit and with the ground-circuit, in which is located a signal-key S,

normally held in an open circuit. This key can be operated to signal to the central office or station when either the day or night circuit is on.

The contacts of the day and night circuits are of that kind which are held normally to their closed position by the closure of the door or other movable part and adapted as the said door or movable part is released therefrom to momentarily break the circuit and then automatically again move to a circuit-closing position, as will be readily understood by reference to Fig. 6, which shows one form of such automatic contact-making devices.

While I have not specially illustrated the same, it is obvious that any suitable annunciator or signal device may be located at the central office or watchman's station, held normally inoperative when either the day or night circuit is on.

In operation, when the parts are in the position shown in Fig. 1, (the night-circuit being on,) should any of the contacts in such circuit be broken the main line would be momentarily opened to the central office, and in consequence the local circuit controlling the annunciator and the alarm devices at the central office, normally held open by the closed main line, would in turn be momentarily closed to give an initial signal and sound to indicate that a break has occurred in the main line. As the contact broken immediately automatically again closes the main line, it follows that the signal-train, which is also started by the momentary break in the main line, will impart a series of breaks in the main line and in consequence, through the local circuit at central office, indicate the premises on which the break occurs. At the same time the magnets on the switchboard would become deenergized, and in consequence the armature-lever would be drawn down and the hook end of lever 43 disengaged from the check or wheel, thereby permitting the clock-movement to rotate the indicator-wheels, and as only one (the night-disk) at this time is in operation the contact engaging it will click as the notches of such disk pass under it. It is manifest that any suitable alarm or indicator devices having a subcircuit connected with the click or contact-makers may be employed. For example, I have shown in dotted lines in Fig. 1 a subcircuit 50, having a local battery 51 connected with the contact-makers and the clock-frame, in which circuit is disposed an alarm or annunciator which will disclose the number signifying the night-circuit break, it being understood that to distinguish the circuits the two indicator-wheels have a different number of notches. To render the making and breaking of the alarm-circuit the more positive, the notches may have insulated blocks at their base. To prevent a too great a repetition of the alarm, the alarm-circuit may also be connected with a cut-out circuit energized by contact with the mainspring.

The day-circuit operates in a similar manner when the switches are properly adjusted.

From the foregoing description, taken in connection with the accompanying drawings, the complete operation and advantages of my invention, it is thought, will be clearly understood.

It will be observed that a simple and inexpensive means is provided for simultaneously operating an alarm at the house and at the central office in case of a break in the day or night circuit. Furthermore, provision is also made for telephonic or signal communication between the house and central office.

Modifications in the details of construction and arrangement of parts may be made without departing from my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an electric alarm mechanism as described, the combination with the day and night circuits, and the main line having connection with the central-office indicator and signaling mechanism, of signaling devices consisting of a pair of signal-wheels, magnets in the main circuit, having the armature formed with a detent to engage the signal-wheels, said signal-wheels having independent circuits, a return or ground circuit and switch devices for connecting either of the said independent circuits with the return or

ground circuit, whereby to close either the day or night circuit as specified.

2. The combination of the magnets, the signaling-train in the main circuit, a detent forming the armature for the magnets for holding the signaling-train from operation, a day and night circuit in connection with the signaling-train, a return or ground circuit, a switch mechanism for placing either the day or night circuit in the return-circuit, said signaling-train having separate contacts and 20 for the day and night circuit, a main circuit connected with the magnet and the clock-movement to a sub return-circuit having a contact adapted to short-circuit the main current through the signal-train and cut out the day and night circuits substantially as shown and for the purposes described.

3. In an electric alarm mechanism, the combination with the day and night circuits, the main line being connected with the central-office indicator and signaling devices, magnets adjustably secured to the switchboard and in the main circuit having an armature-lever adapted to engage with the said signaling devices, said signaling devices being provided with independent circuits, and means for closing either the day or night circuits.

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Witnesses:

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