

No. 786,843.

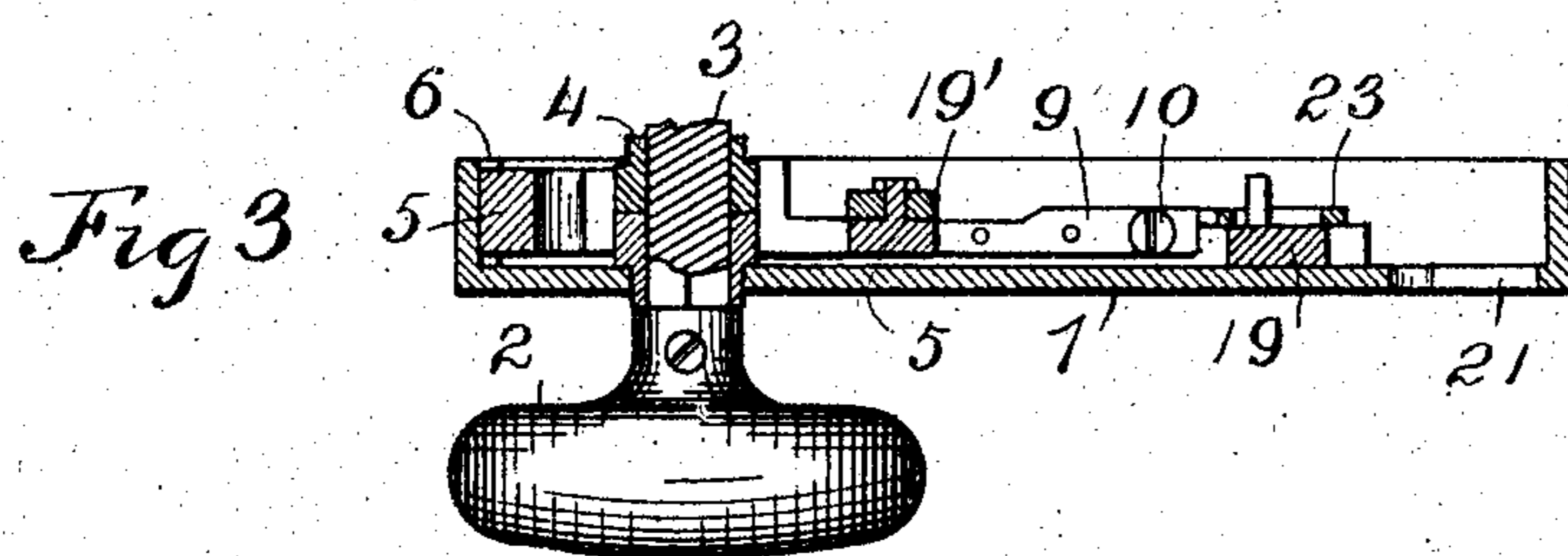
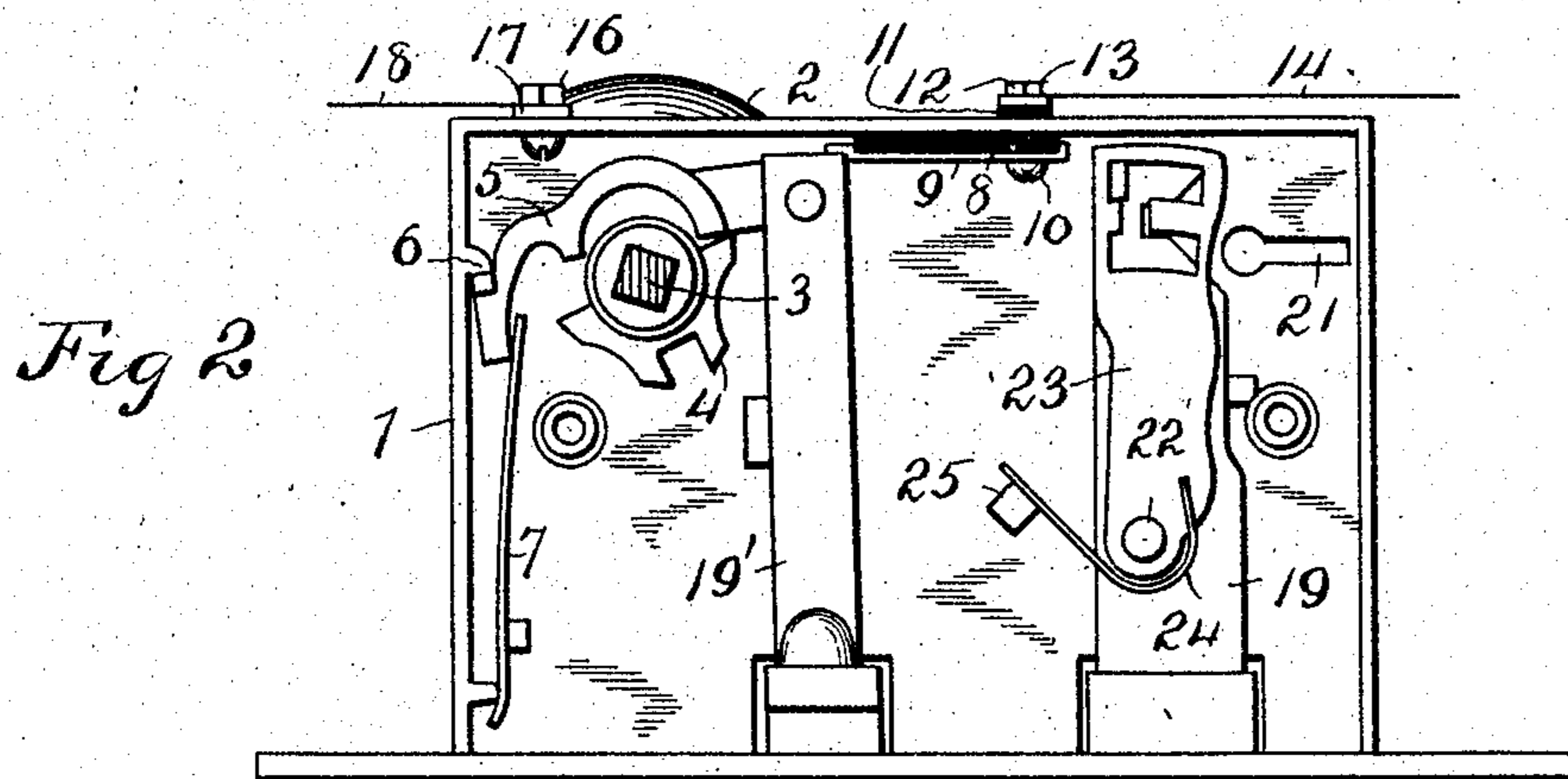
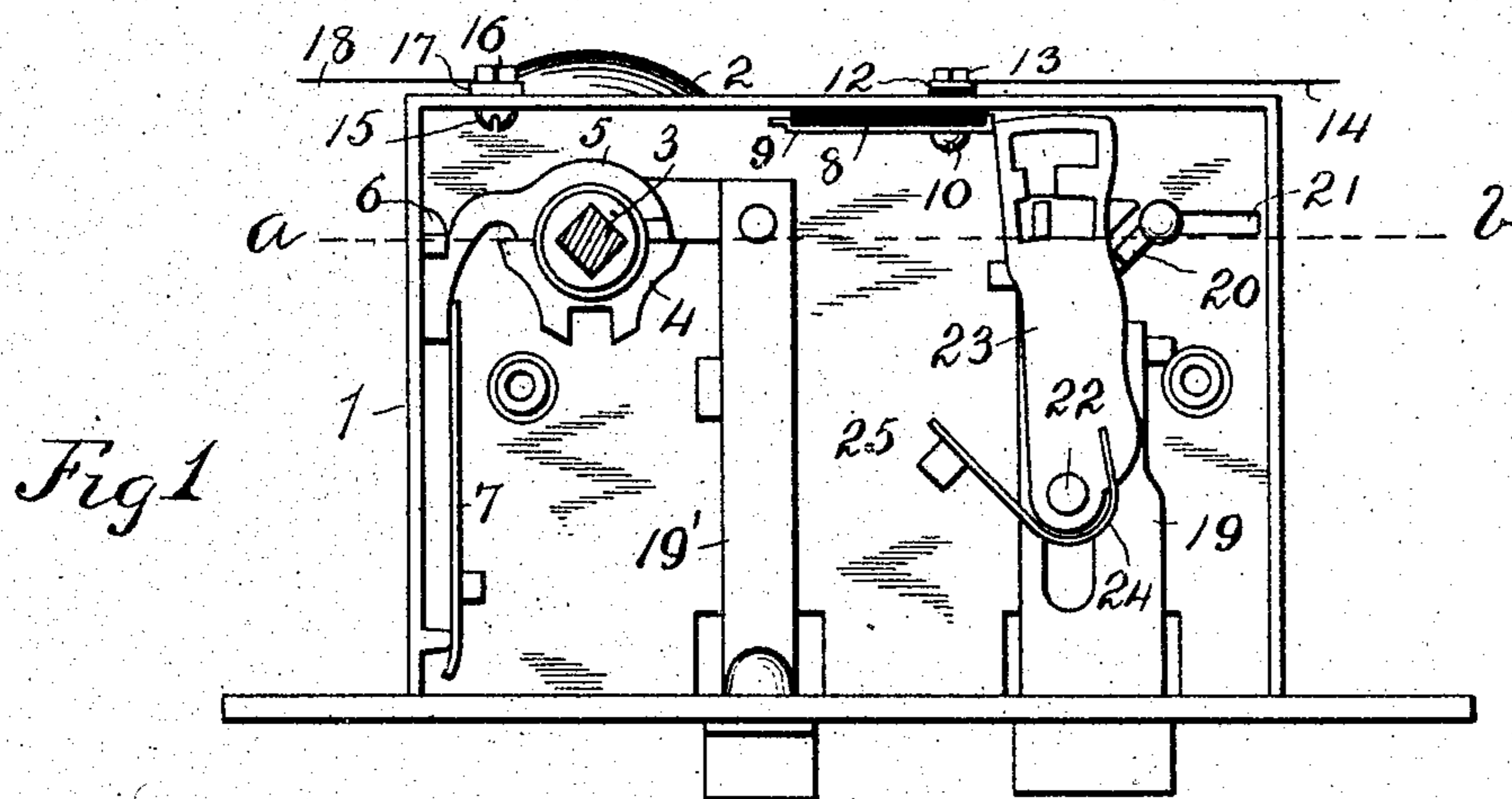
PATENTED APR. 11, 1905.

W. F. ROBINSON & C. F. BROADHURST.

ELECTRIC SIGNALING SYSTEM.

APPLICATION FILED OCT. 3, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

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R. H. House

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Their Attorney.

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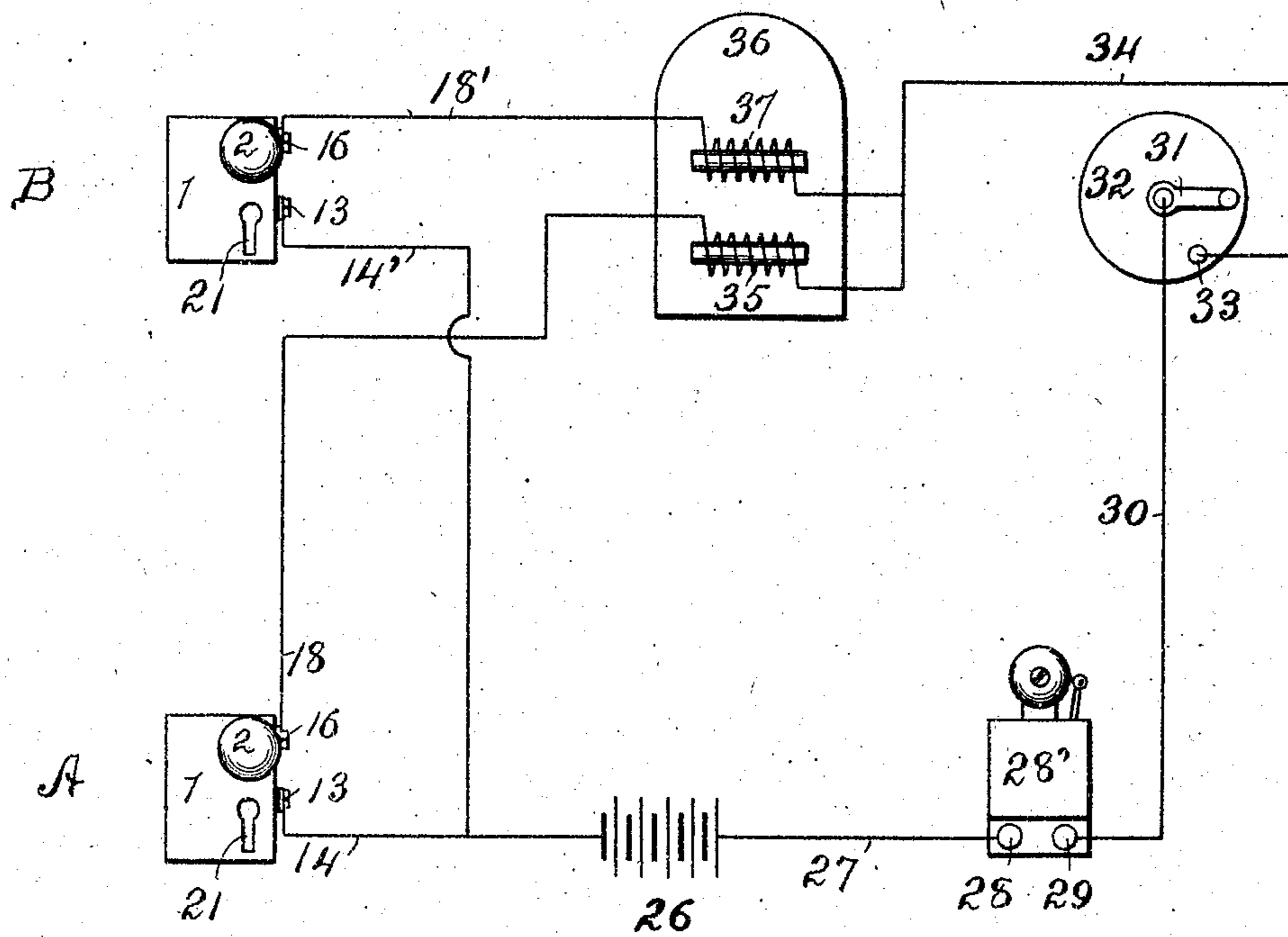
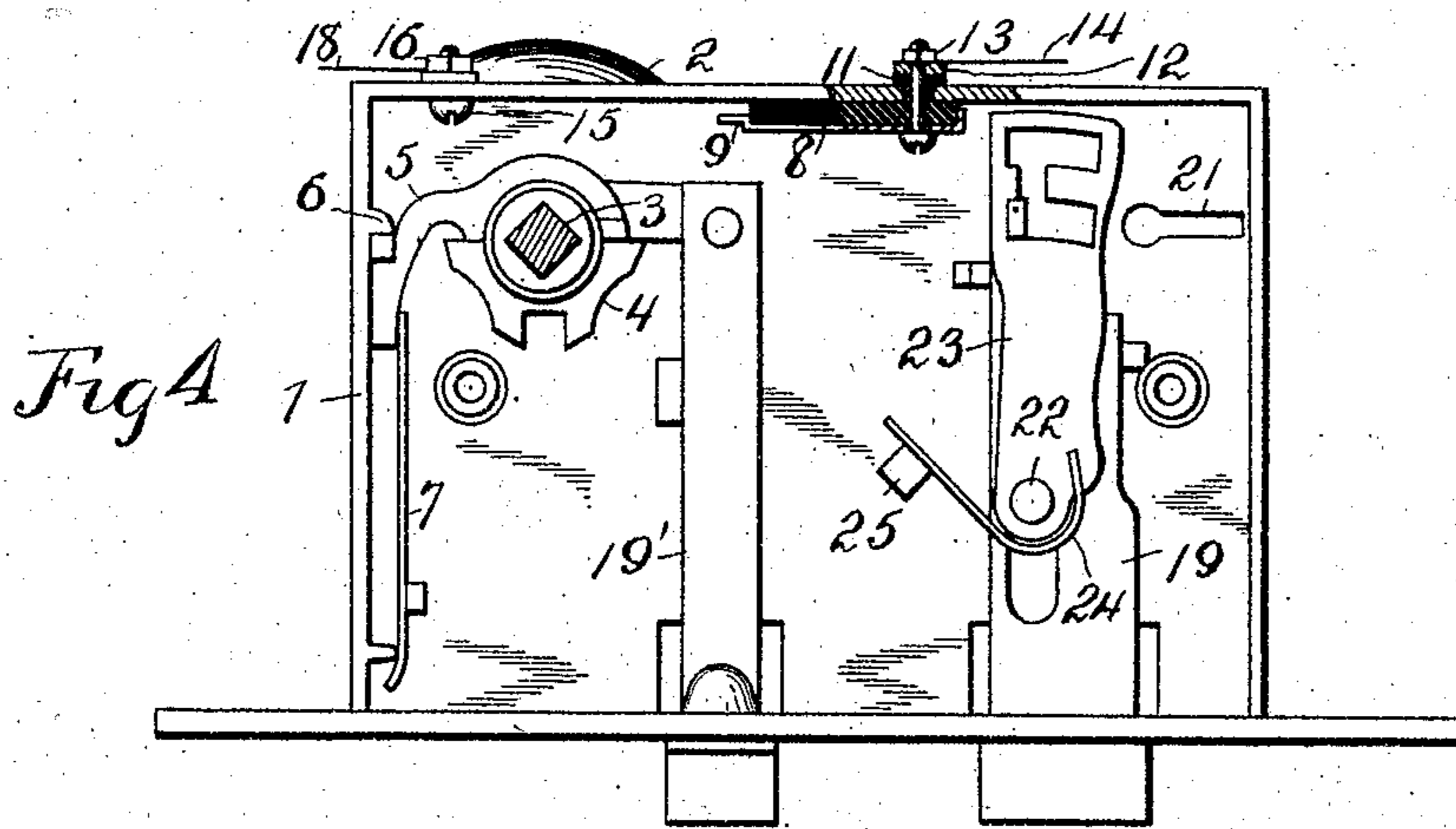


Fig 5

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UNITED STATES PATENT OFFICE.

WILLIAM F. ROBINSON AND COLUMBUS F. BROADHURST, OF KANSAS CITY, MISSOURI.

ELECTRIC SIGNALING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 786,843, dated April 11, 1905.

Application filed October 3, 1903. Serial No. 175,605.

To all whom it may concern:

Be it known that we, WILLIAM F. ROBINSON and COLUMBUS F. BROADHURST, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Electric Signaling Systems, of which the following is a specification.

Our invention relates to improvements in electric signaling systems.

It relates more particularly to an electrical signaling mechanism in which an electrically-actuated signal is operated to sound or otherwise give an alarm when the knob of a door is turned in an attempt to open the door, mechanism being provided by which the turning of the knob controls the passage of a current in an electrical circuit in which the signaling device is located.

Our invention provides, further, means by which a key being turned in a lock located in said circuit actuates the alarm device.

Our invention provides, further, a plurality of locks connected with the said electric circuit and provided with means by which when the operating knob or key of any one of the locks is turned the signaling or alarm mechanism will be actuated.

Our invention provides, further, a lock the casing of which forms part of an electrical circuit, a contact in said casing and insulated therefrom, and means by which if either the knob or key of the lock is properly turned the electrical connection between the casing and contact will be completed and a signal be made by a signaling device located in said circuit.

Other novel features are hereinafter fully described and claimed.

In the accompanying drawings, illustrative of our invention, Figure 1 is a side view of the lock with one side removed, the tumbler being shown moved by the key so as to strike the insulated contact in the casing of the lock. Fig. 2 is a similar view showing

connection between the insulated contact and the casing being made by the mechanism actuated by the door-knob. Fig. 3 is a sectional view taken on the dotted line *a b* of Fig. 1. Fig. 4 is a view similar to Fig. 1, the parts being shown with both bolts in the locked positions and no electrical connection between the casing and the insulated contact being made. In this view the insulated contact, part of the casing, and part of the insulation are shown in section, disclosing the manner of securing the insulated contact in the casing. Fig. 5 is a diagrammatic view showing the circuit, two locks, an indicator, switch, alarm-bell, and battery located in the circuit.

Similar characters of reference indicate similar parts.

1 indicates the metallic casing of an ordinary door-lock, having a knob 2 mounted on a knob-spindle 3, rotatable in the casing, and having mounted thereon a hub 4, adapted when the knob is turned to swing a lever 5, mounted in the casing and bearing at one end upon a projection 6 in the casing. The other end of the lever 5 is pivoted to the inner end of a reciprocable bolt 19', mounted in the casing 1. A spring 7, secured at one end of the casing, bears at its other end upon the end of the lever 5, bearing upon the projection 6, and causes the bolt actuated by the knob to remain normally in the position shown in Fig. 4. Mounted upon a piece of insulation 8 on the inside of the casing 1 is a metal strip 9, which forms a contact normally insulated from the lever 5, but adapted to be struck by the said lever when the lever is swung by the knob 2 to the position shown in Fig. 2, and thus forming an electrical connection between the casing 1 and contact 9. A screw 10, connected at its inner end to the contact 9, extends through said contact, the insulation 8, and the casing 1, but is insulated from the casing 1 by a thimble 11 of insulating material encircling the said screw and

provided at its outer end with a flange which bears upon the outer side of the casing. The outer end of the screw 10 is screw-threaded and has mounted thereon a washer 12 and outside thereof a nut 13, between which and the washer is clamped the wire 14, which forms part of an electrical circuit. A screw 15 extends through the casing in contact therewith and has on its screw-threaded outer end a nut 16, between which and a washer 17, mounted on the screw 15 outside the casing, is clamped a wire 18, which forms part of the electrical circuit.

In the casing 1, mounted to the right of the contact 9 as viewed in Fig. 4, is an ordinary sliding bolt 19, adapted to be reciprocated by a key 20, adapted to be inserted for the purpose in a keyhole 21 in the casing 1. Pivoted on a stud 22, mounted in the casing, is an ordinary tumbler 23, adapted to be swung by the key 20, so as to strike the contact 9, as shown in Fig. 1. The tumbler is retracted by means of the spring 24, one end of which is secured to the tumbler, and the other end bears upon a projection 25 in the casing, the tension of the spring being such that normally the tumbler will be in the position shown in Fig. 2. When the key 20 is inserted in the keyhole 21 and caused to reciprocate the bolt 19, the tumbler 23, being in electrical connection with the casing by the projection or stud 22, will make electrical connection between the casing 1 and the contact 9 by being forced against said contact, as shown in Fig. 1, thus permitting an electrical current passing in wire 18 to pass through screw 15, casing 1, stud 22, tumbler 23, contact 9, screw 10 to wire 14, and thence through the circuit to the signaling devices located therein and described hereinafter. In a like manner when the knob 2 is turned the spindle 3 will swing the lever 5 into contact with the contact 9, and the lever 5 being in electrical contact with the casing 1 the current will pass from the casing through the lever 5 to the contact 9.

Referring to Fig. 5, 26 denotes an ordinary battery, to one pole of which is connected the wire 14, the other pole being connected by a wire 27 to one binding-post, 28, of an ordinary electric bell 28', to the other binding-post, 29, of which is connected one end of a wire 30, the other end of which is connected to the lever 31 of a switch 32, provided with an insulated contact 33, to which is connected one end of a wire 34, the other end of which is connected to one terminal of the coil 35 of an ordinary drop-magnet forming part of an indicator, (indicated by 36.) The other terminal of said coil is connected to the wire 18, which connects with the casing 1 of a lock located at A. If the lock of another door is to be inserted in the circuit—as, for instance, at B—one end of another coil, 37, with which the in-

dicator 36 is provided, is connected to the wire 34, the other end of the coil being connected to a wire 18', connected to the casing of the lock located at B. The insulated contact in the casing at B is connected by a wire 14' with the wire 14.

When it is desired to have the mechanism operative for sending in a signal to the bell 28' and having the indicator 36 show the lock that is being tampered with, the lever 31 of the switch 32 is swung so that its free end is connected with the contact 33. If now the knob 2 at A is turned or a key inserted through the keyhole 21 of said lock, the circuit will be completed through the said lock at A, as already described, the current passing from the battery 26 by wire 27 to binding-post 28, through bell 28' to binding-post 29, thence by wire 30 to lever 31, contact 33, wire 34, coil 35, and wire 18 to the casing, thence, as described, through the casing and contact of lock at A to wire 14, and thence to the battery 26. The bell 28' will give the alarm, and the drop (not shown) of the indicator controlled by coil 35 will be actuated and designate the lock that is being tampered with. If the knob of the lock at B be turned or a key inserted therein and turned, the circuit will be completed through the lock at B instead of at A and the current will pass from the battery 26, as before described, to the wire 34, thence through the coil 37 of the indicator to the wire 18', thence through the casing 1 of the lock at B to wire 14', connecting with the contact at B, and thence to wire 14, and from there back to the battery 26.

It is obvious that many more lock mechanisms may be inserted in the circuit than the two described, and the locks may be used on doors or other devices provided with locks, and each of the locks being operated with a knob or key or with both.

Our invention may be modified in many ways without departing from its spirit.

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

1. In an electric signaling system, the combination with an electric circuit having a plurality of branches, of means for generating a current therein, a signaling device controlled by the current in said circuit, and a plurality of door-locks located one in each of said branches and provided each with a casing forming a part of the branch circuit, and having each a contact connected electrically with said branch circuit and normally electrically insulated from the casing, a reciprocable bolt, and means by which when the bolt is reciprocated in the proper direction, the branch circuit will be completed through the casing and contact of said lock.

2. In an electric signaling system, the

combination with an electric circuit having a plurality of branches, of means for generating a current therein, a signaling device controlled by the current in said circuit, and a
5 plurality of door-locks located one in each of said branches provided each with a casing forming a part of said branch circuit, and having each a contact connected with said branch circuit and normally insulated from
10 said casing, a rotatable door-knob mounted in the casing, and means by which when the

knob is turned in the proper direction, the branch circuit will be completed through the casing and contact of said lock.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM F. ROBINSON.
COLUMBUS F. BROADHURST.

Witnesses:

WARREN D. HOUSE,
HENRY F. ROSE.