

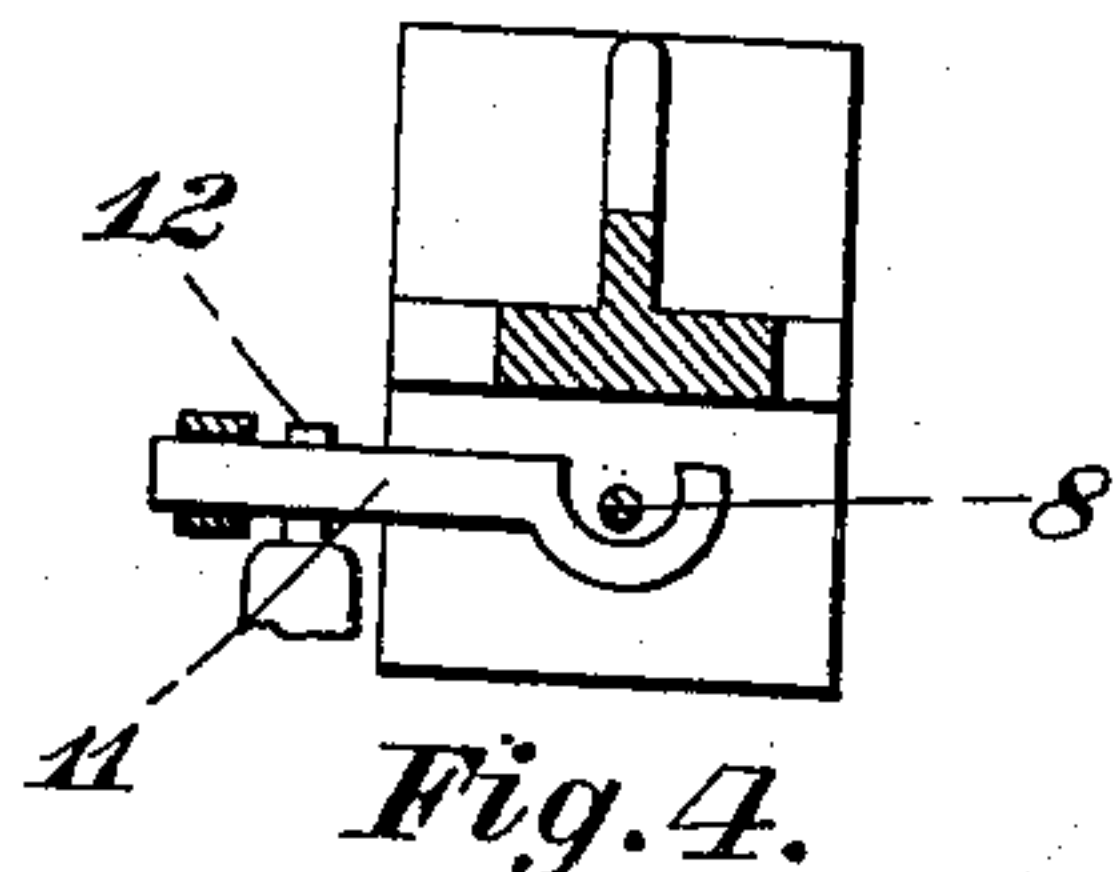
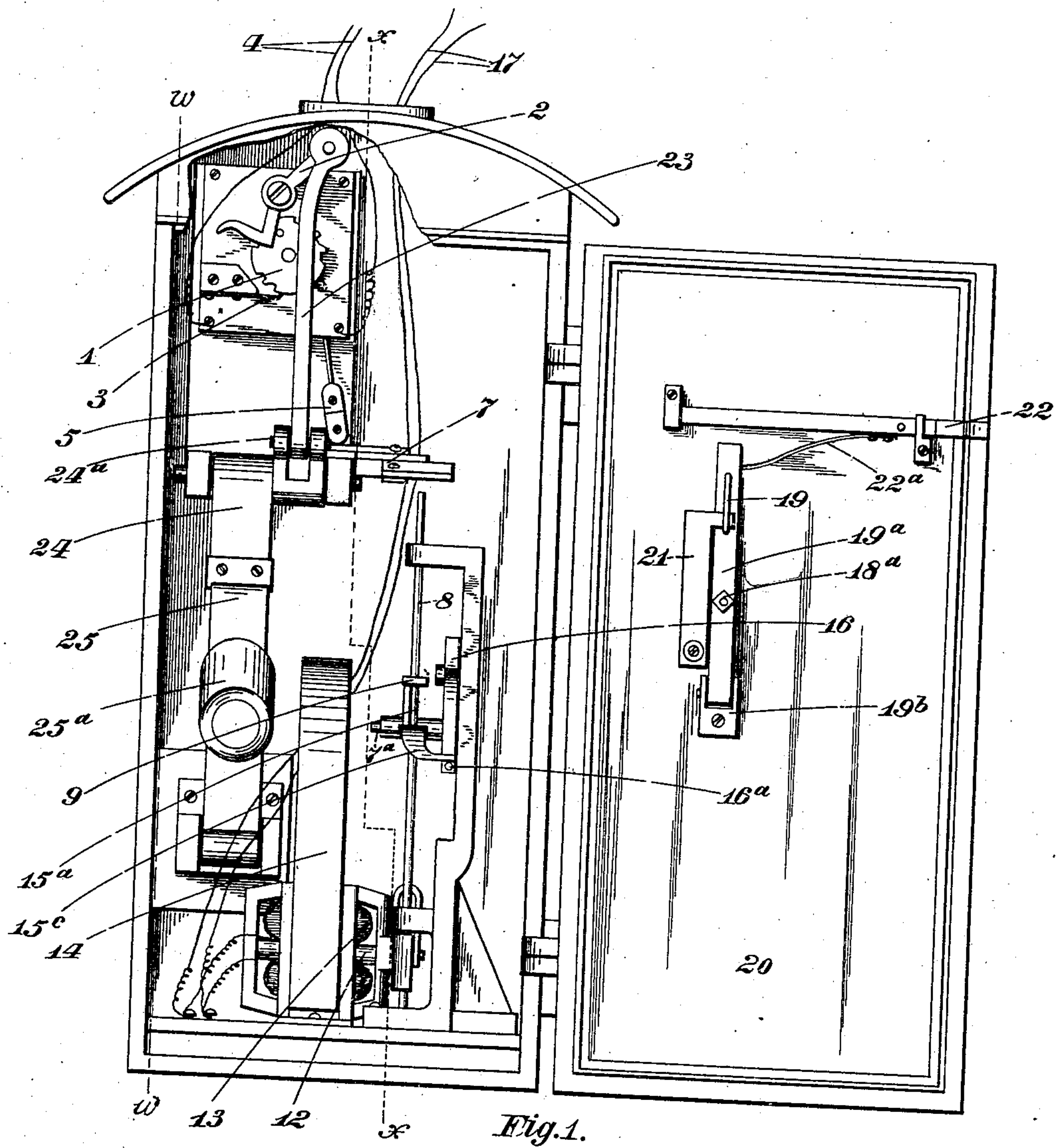
No. 894,304.

PATENTED JULY 28, 1908.

L. G. WOOLLEY.  
FIRE ALARM BOX.

APPLICATION FILED AUG. 31, 1906.

2 SHEETS—SHEET 1.



Witnesses

*Bey Finckel*  
*Alice B. Cook.*

Inventor

*Leonidas G. Woolley*

By

*Finckel & Finckel*

*his Attorneys.*

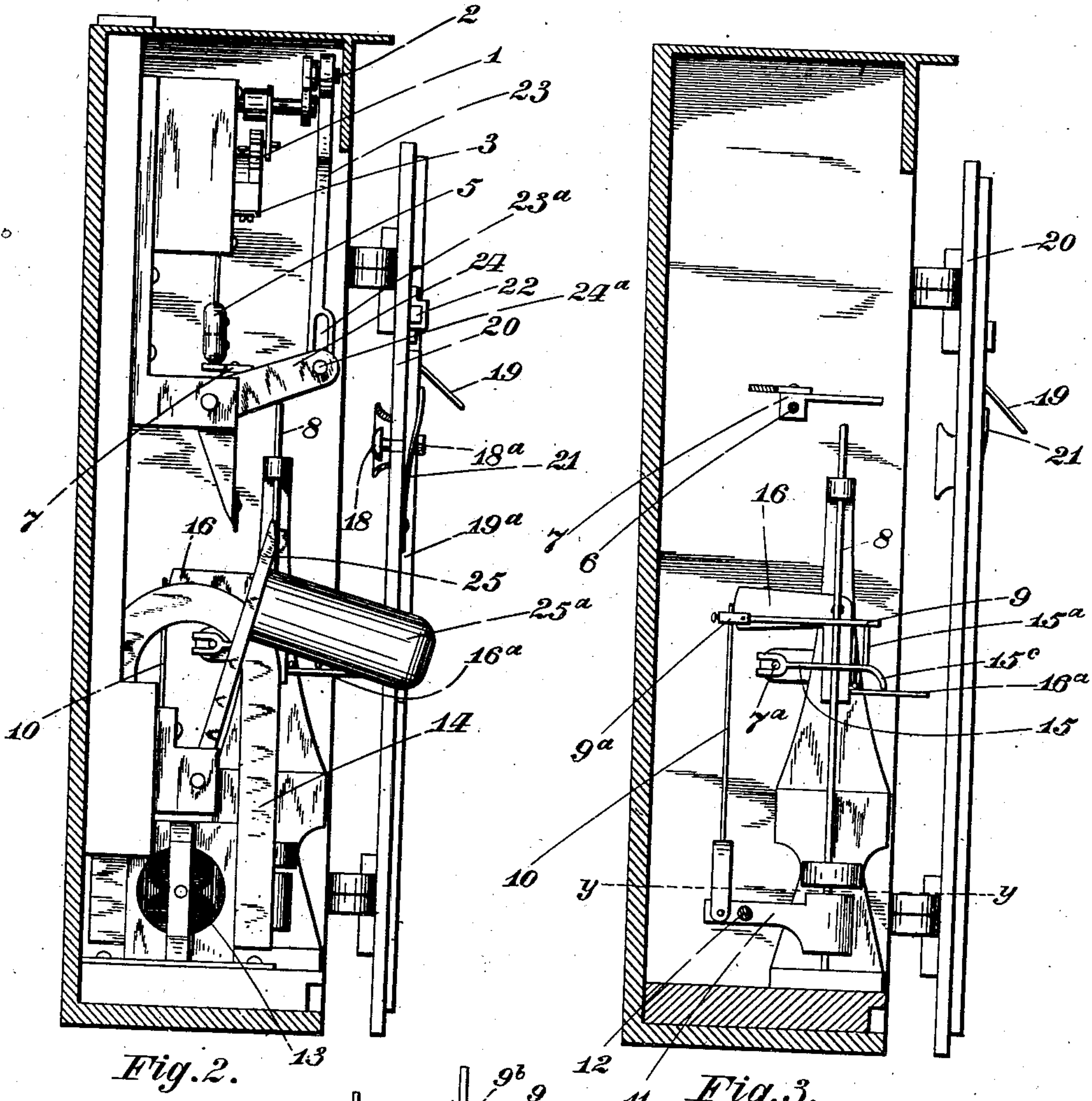
No. 894,304.

PATENTED JULY 28, 1908.

L. G. WOOLLEY.  
FIRE ALARM BOX.

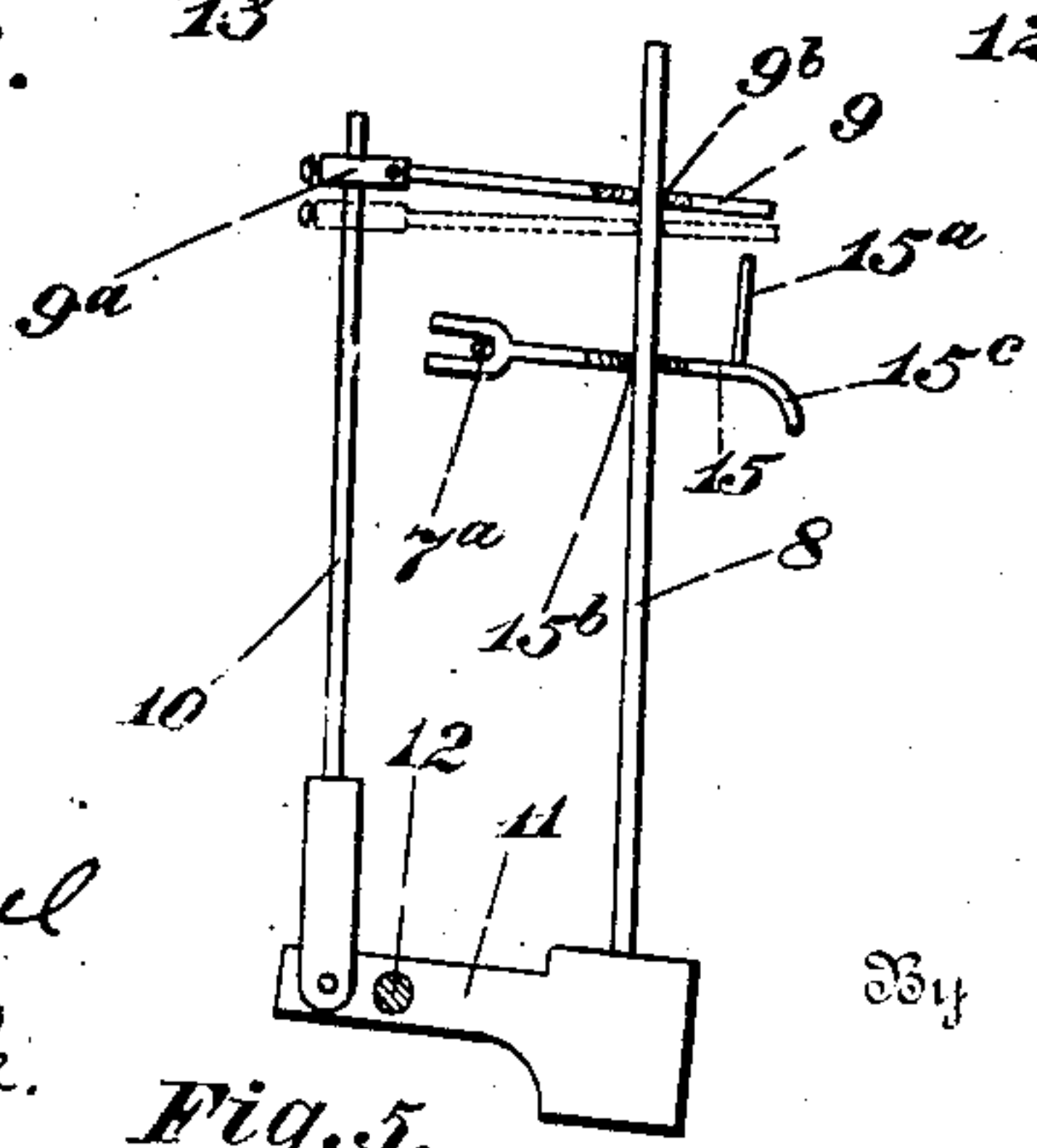
APPLICATION FILED AUG. 31, 1906.

2 SHEETS—SHEET 2.



*Fig. 2.*

*Fig. 3.*



*Fig. 5.*

Witnesses

Witnesses  
Benj. Finckel  
Alice B. Cook.

Alice B. Cook.

Inventor

*Leonidas G. Woolley*

 $\mathfrak{S}_4$ 

Finckel & Finckel

his Attorneys



# UNITED STATES PATENT OFFICE.

LEONIDAS G. WOOLLEY, OF LIMA, OHIO, ASSIGNOR TO JOHN C. RILEY, OF LIMA, OHIO.

## FIRE-ALARM BOX.

No. 894,304.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed August 31, 1906. Serial No. 332,799.

*To all whom it may concern:*

Be it known that I, LEONIDAS G. WOOLLEY, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Fire-Alarm Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved fire alarm box especially adapted for use as a street box and adapted to be operated either by a person at the box or by a distant auxiliary electro-magnetic generator, as from a residence within a given fire district.

The invention consists of the construction hereinafter described and pointed out in the appended claims, the invention not being confined to the precise details shown.

In the accompanying drawings—Figure 1 is a view of the box in front elevation with the door open and disclosing the interior construction; Fig. 2 is a vertical sectional view on the line *w—w* Fig. 1 showing in side elevation the interior mechanism; Fig. 3 is a similar sectional view on the line *x—x* Fig. 1; Fig. 4 is a detail horizontal section on the line *y—y* Fig. 3 looking down; Fig. 5 is a detail illustrating the feed rod and the devices for operating it.

1 designates the signal-sending or "break-wheel." The shaft of this wheel is operated by a spring (not shown but well understood) adapted to be wound by pulling down a lever 2. The break wheel has a suitable contact pen 3 for making and breaking the main signal circuit 4 and sounding or otherwise indicating the point from which the alarm is sent. The motion of the break wheel is controlled by an ordinary escapement (not shown but well understood) having a pendulum 5. Pivoted at 6 is a lever 7 the inner or rear arm of which is held normally raised to interfere with the operation of the pendulum, and the forward end of which is adapted to be raised to depress the rear end and release the pendulum. The forward end of the lever 7 can be raised in either of two ways, to-wit: by the operation of a distant electro-magnetic generator or auxiliary alarm box or by devices on the door of the box shown. I will describe first the mechanism to be operated

by a distant electro-magnetic generator. This mechanism is like that shown in the patent of the United States issued to me on December 26, 1905, No. 808,135. It comprises a smooth rod or striker 8 that is fed upward with a step-by-step motion by means of a clutching member or arm 9 hinged to an adjustable block 9<sup>a</sup> on the upper end of a rod 10 which is hinged at its lower end to a rocking lever 11. The rocking lever 11 is fulcrumed on a shaft 12 having fixed thereon a wire coiled armature 13 working between the poles of a permanent magnet 14.

The rocking of the shaft 12 is effected by generating electrical impulses in the wire coil of the armature 13, thus changing the polarity of the armature, on the shaft 12; and because the armature is in the field of and affected by the poles of the permanent magnet a rocking motion of the shaft results.

The clutching member 9 is simply a plain, flat arm made with a circular hole 9<sup>b</sup> of slightly larger diameter than the diameter of the smooth rod 8 which passes through it. Pivoted loosely on a pin 7<sup>a</sup> projecting from a standard in the box is a stop arm 15 having a hole 15<sup>b</sup> (like the hole 9<sup>b</sup> in the clutching member 9) through which hole 15<sup>b</sup> the rod 8 also passes. The inner portion of the arm 15 is furnished with an upwardly projecting pin 15<sup>a</sup> that serves as a rest for the inner end of the clutching arm when the inner ends of the two arms (9 and 15) are raised, as hereinafter described, to put the holes therein in such position that the rod 8 shall be free to drop by gravity to its starting position. In feeding the rod 8 upward the bars 9 and 15 cooperate with each other. The rod 9 on the upward stroke grips the rod 8 and carries it upward a step, and the bar 15 on the downward stroke of said bar 9 catches and holds said rod 8 in the position to which it was carried by the bar 9 on the upward stroke. The upper end of the rod 8 is preferably located at such a distance below the outer arm of the lever 7 that, say a dozen or more, upward feeding strokes are required to effect contact of the rod with said lever 7, because if one or two strokes would suffice to effect the operation of said lever 7 it might be accidentally operated—as by a falling telegraph or telephone wire—and so give a false alarm.

The stop arm 15 is downwardly curved at its outer end, as seen at 15<sup>c</sup>, and lies, when



the door is open, on a finger 16<sup>a</sup> on the lower arm of a weighted bell crank lever 16. This finger 16<sup>a</sup> projects beyond the face of the box when the door is open and is pressed rearward by the closing of the door. The bar 15 and clutch member 9 are lifted by the bell crank lever 16 when the door is opened and the bar 8 (if it had been operated) freed to drop to its original position; and when the door is closed the bars 15 and 9 are again free to work upon the operation of the receiving electro-magnet.

17 designates the conductors from the auxiliary box, which may contain an ordinary magneto-electric generator and be operative manually to effect the feeding of the rod 8. When the rod is sufficiently so fed upward it lifts the outer end of the lever 7 and releases the escapement whereupon the break wheel operates.

The means for manually operating the alarm box at the place where it is located comprises chiefly a push button 18 in the outer side of the door 20 and an inclined finger 19 on the inner side of the door, the latter being adapted to be pushed inward by the former to act on the outer end of the lever 7 so as to raise it and depress the inner end to release the escapement pendulum. In the instance shown the push button 18 is bolted at 18<sup>a</sup> to a bar 19<sup>a</sup> that is hinged at its lower end to the inner side of the door, as seen at 19<sup>b</sup>. The bar 19<sup>a</sup> is normally held up against the door by means of a spring 21, and this also normally holds the push button and inclined finger outward and in position to be operated.

22 is a bolt for latching the door closed. This bolt is provided with a spring 22<sup>a</sup> the end of which presses against the side of the bar 19<sup>a</sup>. The spring 22<sup>a</sup> is made of such strength and the parts are so constructed that when the door is open the bolt is thrown to such an extent that the spring 22<sup>a</sup> does not press with sufficient force on the bar 19<sup>a</sup> to prevent the operation of the spring 21 to throw the push button and finger 19 outward. But the hole into which the bolt projects to lock the door closed is made so shallow as to leave the spring with pressure enough against the bar 19<sup>a</sup> to hold said bar inward when pushed in by the push button.

To automatically wind the spring of the break wheel I employ a link 23 attached at its upper end to the lever arm 2 of the spring-winding shaft, said link having a slot 23<sup>a</sup> at its lower end through which extends a pin 24<sup>a</sup> of a bell crank lever 24. The bell crank lever 24 is operated by the upper end of an arm 25 pivoted at its lower end to a suitable projection from the rear wall of the box. The upper end of the arm 25 is furnished with a projection 25<sup>a</sup> which when the door is opened falls outward and extends beyond the face of the door so that upon closing the door

it, and the arm 25, are pressed inward to actuate the bell crank lever 24, pull down the link 23 and wind the spring of the break wheel. The arm 25 and the bell crank lever 24 are so positioned with reference to each other that before the projection 25<sup>a</sup> is pushed entirely in, or as far as the closing door will push it, the end of the arm 25 will pass under and beyond the lower end of the bell crank lever and hence leave the link 23 free to rise upon the unwinding of the break-wheel spring, as it will, of course, in operating the break wheel. The slot 23<sup>a</sup> permits the upper end of the arm 25 to pass outward under the arm of the bell crank lever when the door is again opened and the weight 25<sup>a</sup> swings said arm outward.

What I claim and desire to secure by Letters Patent is:

1. In a fire alarm mechanism, the combination of a box and a door therefor, a break-wheel, power-storing devices for operating the break-wheel, means for supplying power to the power-storing devices including a winding-shaft and a lever connected therewith, a second lever having a weighted free-end supported by and movable with the door in opening and closing the same, said second lever being moved to operate the first-mentioned lever in closing the door and set for operation upon opening the door.

2. In a fire alarm mechanism, the combination of a break-wheel, power-storing devices for operating the break-wheel, means for controlling the operation of the power-storing devices including a pendulum, a lever adapted automatically to engage said pendulum to hold the same from operation, and an electrically-actuated striker movable into and out of engagement with said lever to control the operation thereof.

3. In a fire alarm mechanism, the combination of a box or casing, a break-wheel, power-storing devices for operating the break-wheel, means for controlling the operation of the power-storing devices including a pendulum, a lever adapted automatically to engage said pendulum to hold the same from operation, an electrically-actuated striker for operating said lever to release its engagement with the pendulum to permit the operation of the power-storing devices, and means manually operable from the outside of the box to operate said lever to disengage the same from the pendulum.

4. In a fire alarm mechanism, the combination of a box and a door therefor, a break-wheel, power-storing devices for operating the break-wheel, means for supplying power to the power-storing devices including a winding-shaft provided with a lever, a bell-crank lever, a link connecting said levers and having a sliding connection with one arm of the bell-crank lever whereby said link is actuated by the movement of the bell-crank



lever in one direction only, and a lever operated by the closing of the door for operating said bell-crank lever to actuate said link.

5. In a fire alarm mechanism, the combination of a box, a door for the box, a break wheel, power storing devices for operating the break wheel, means for latching the break wheel from operation, devices on the door adapted when the door is closed to be operated to release said latch, a latch to hold the door closed, and a spring to move said

latch to door-latching position, said spring also engaging the devices for releasing the break wheel latch to retain it in the position to which it is moved.

15

In testimony whereof I affix my signature, in presence of two witnesses.

LEONIDAS G. WOOLLEY.

Witnesses:

T. R. HAMILTON,  
LENA M. STEWART.