No. 773,165. PATENTED OCT. 25, 1904.

H. SMITH.

FIRE ALARM BOX.

APPLICATION FILED JUNE 22, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

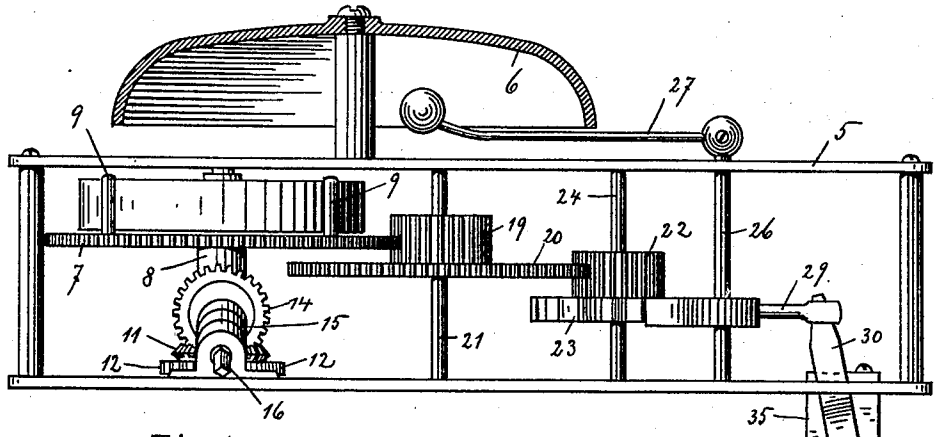
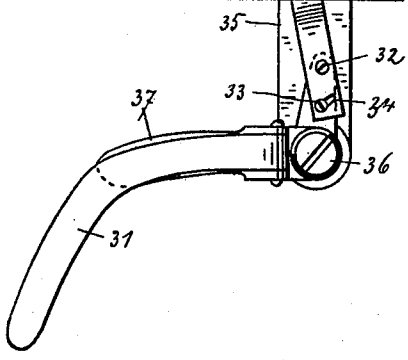


Fig. 1.



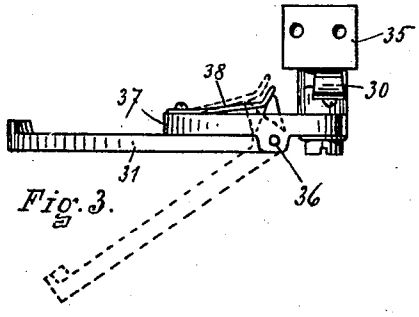


Fig. 3.

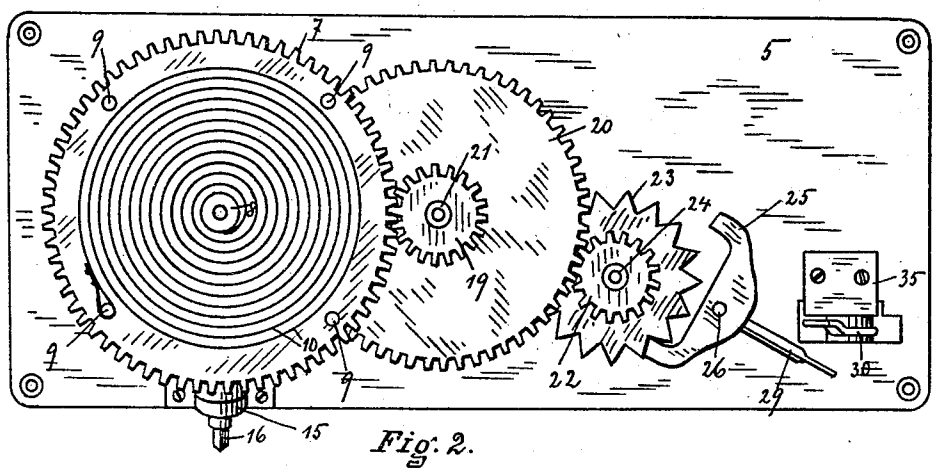


Fig. 2.

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NO MODEL. 3 SHEETS—SHEET 2.

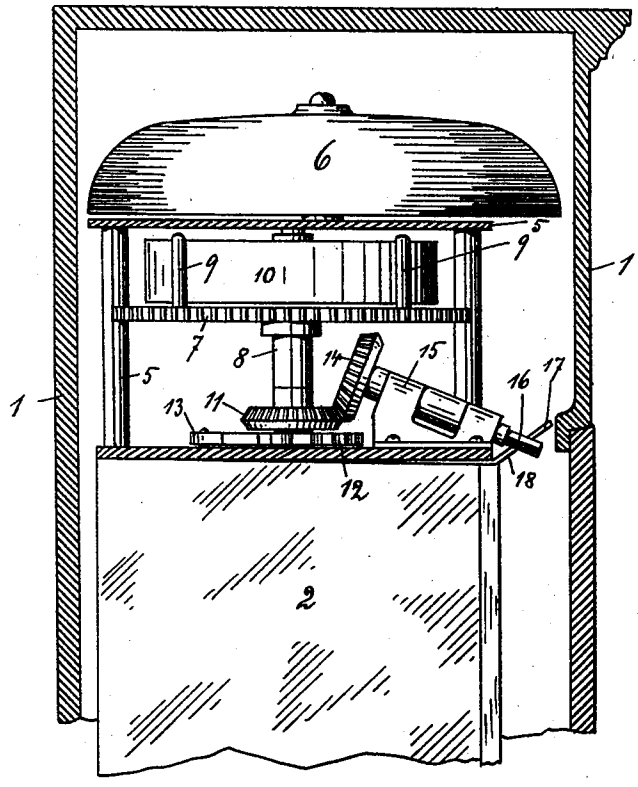


Fig. 4.

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PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

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FIRE ALARM BOX.

APPLICATION FILED JUNE 22, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

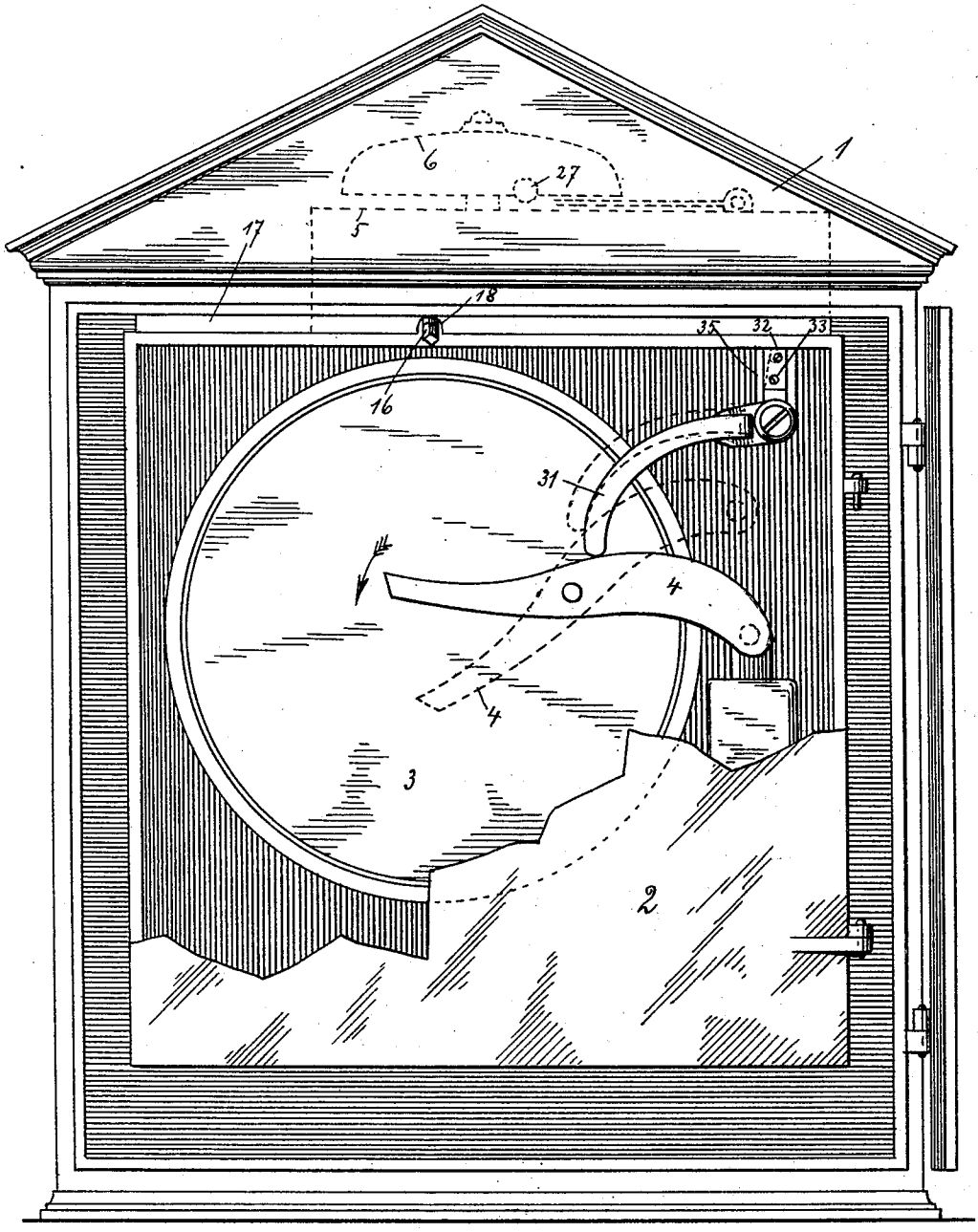


Fig. 5.

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No. 773,165. Patented October 25, 1904.

UNITED STATES PATENT OFFICE.

HENRY SMITH, OF BUFFALO, NEW YORK.

FIRE-ALARM BOX.

SPECIFICATION forming part of Letters Patent No. 773,165, dated October 25, 1904.

Application filed June 22, 1903. Serial No. 162,537. (No model.)

To all whom it may concern:

Be it known that I, HENRY SMITH, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Fire-Alarm Boxes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form part of this specification.

This invention relates to improvements in fire-alarm boxes, and more particularly to the introduction and operating of an alarm-bell within the box to indicate that an alarm is being given.

The object of this invention is to connect the alarm-bell above referred to, so as to have it ring as the box is pulled in sending in an alarm and at no other time.

To that end it consists in arranging within the alarm-box a gong or bell controlled by mechanism engaging the alarm-pull of the box in such a manner as to disengage said mechanism and cause the gong within the box to be sounded as the alarm-pull is being operated.

It also consists of means for adjusting the releasing mechanism so as to operate the box-alarm either before or after a complete fire-alarm has been sounded and in which the box-alarm mechanism is automatically set as the box is closed.

It further consists in other details of its construction and combinations of its operative parts, all of which will now be more definitely described.

In the drawings, Figure 1 is an elevation of my improved box-alarm for fire-alarm boxes, showing its operating mechanism. Fig. 2 is a top plan view of the same with the bell and upper plate of casing removed to show construction. Fig. 3 is a detail top plan view of the releasing-lever. Fig. 4 is a detail end view showing my improved alarm in position within a fire-alarm box, and Fig. 5 is a reduced view of a fire-alarm box equipped with my improved box-alarm with portions broken away and showing the communicating mechanism between the box-alarm and the fire-alarm box.

Referring to the reference-numbers in a more particular description, 1 is the outer box or casing; 2, the second or intermediate box, in which the switch, alarm-giving levers, &c., are mounted; and 3, the inner box containing the electrical transmitting mechanism or gearing for opening and closing the circuit in turning in an alarm. This is the general arrangement of fire-alarm boxes. The inner box being closed at all times is practically dust-proof and the box 2, containing the switch and operating levers, being protected from the elements by the outer box or casing 1.

The transmitting mechanism is controlled by the manually-operated lever 4, which is accessible upon opening the door of outer box. My present invention, which consists in sounding an alarm at the box, is also operated by this lever 4 and is arranged as follows.

Secured to the top of the box 2 is the frame 5, upon which the gong 6 is mounted.

7 is a gear-wheel loosely mounted upon the vertical shaft 8. (See Figs. 1 and 2.) Resting above this gear-wheel 7 and held between the pins 9, secured in said gear-wheel, is the coil-spring 10. This spring 10 is secured at its outer end to one of the pins 9 and at its other end to the vertical shaft 8. Under the gear-wheel 7 and rigidly mounted on the shaft 8 are the bevel-gear 11 and the ratchet-wheel 12. The ratchet-wheel 12 is provided with a spring-pawl 13, (see Fig. 4,) which prevents a return movement of said ratchet-wheel and its shaft 8 when under the tension of the coil-spring 10, and the bevel-gear 11 engages a second bevel-gear 14, the shaft 16 of which is mounted in the bearings 15, the opposite end of said shaft being rectangular in shape and projecting beyond the bearings, producing a winding-stem to said shaft.

As seen in Figs. 4 and 5, the box-alarm gong and its mechanism rest upon the casing 2 and project into the upper portion of the casing 1, and to prevent the box-alarm from being tampered with a protecting-strip 17 projects from the upper edge of the casing 2 to the inner face of the casing 1, a small hole 18 be-

ing cut in said strip, through which the rectangular end of the shaft 16 protrudes.

The gear-wheel 7 (see Figs. 1 and 2) engages a pinion 19, which is mounted upon the vertical shaft 21 together with the gear-wheel 20, and the gear-wheel 20 in turn engages the pinion 22, mounted upon the vertical shaft 24 together with the escapement-wheel 23. Engaging this escapement-wheel 23 is the escapement-lever 25, mounted upon the vertical rock-shaft 26. At the upper projecting end of this rock-shaft 26 is secured the bell-hammer 27, which extends under the bell 6, which is sounded by said hammer.

29 is the projecting pin, secured to the escapement-lever 25, the outer end of which is adapted for engagement with the vertical arm 30 of the releasing-arm 31. This relasing-arm 31 is loosely pivoted in the depending bracket 35, and its free end rests upon the operating-lever 4. (See Fig. 5.) The vertical arm 30 of the releasing-lever 31 is secured to a short arm 37 of the releasing-lever 31 by two small screws 32 33, the screw 32 forming a pivot and the screw 33 passing through an elongated opening 34 cut in arm 30, thus permitting the pivoted adjustment of this arm. (See Fig. 1.) It will be seen that the depending arm of the releasing-lever 31 will be raised as the lever 4 is pulled down, and its vertical arm 30 will become disengaged from the projecting pin 29 of the escapement 25, and by the adjustment of arm 30, as above described, it can be set so as to release the escapement-pin either at a slight movement of the lever 4 or so as to require almost an entire stroke of the arm 4 before the escapement is released

The releasing-lever 31 is hinged, as at 36, and when in operative position rests against the short arm 37, upon which a spring 38 is mounted, which serves to hold the lever 31 in operative position. This releasing-lever rests within the intermediate or second box 2, which is not accessible to the public, as it is not essential to open the box 2 to turn in an alarm, the arm 4 being pulled down through the door of said box 2; but should it be desired to turn in a test-alarm by an operator having a key to the box 2 he has but to turn the lever 31 outwardly, as seen in Fig. 3 in dotted lines, thus drawing it out of engagement with the lever 4 and permitting the alarm-pull to be operated without disturbing the box-alarm. It would be impossible for the operator to leave the releasing-lever in this position, (out of engagement,) as it would be automatically thrown back upon closing the door of the second box 2.

In operation the box-alarm being assembled as above described is set by winding the spring 10 with a key fitted over the rectangular protruding end of the shaft 16. A full stroke of the arm 4 usually causes the alarm to be repeated four times, and by the adjustment of the arm 30 its upper end can be set so as to release the escapement-pin 25 as soon as the arm 4 has been turned sufficiently to cause one alarm to be turned in.

I am aware that alarm-bells have been placed in fire-alarm boxes to indicate that an alarm has been turned in, thus attracting attention to the act, with a purpose to avoid malicious giving of alarms; but in most of these boxes a more serious danger has been encountered in view of the box-alarm being set in operation before the fire-alarm and the operator not being familiar with its operation assumes that the fire-alarm has been sent in and leaves the box without accomplishing his purpose. The adjustment of the arm 30 is particularly devised to regulate this feature.

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

1. In the herein-described box-alarm for fire-alarm boxes, consisting essentially of the box 1 having the gong 6 mounted in its upper end, the gong mechanism consisting of the spring 10 tensioned by the winding-stem 16, the escapement 25 operated by the tension of said spring, said escapement being provided with the hammer 27 for sounding the gong in combination with the releasing-lever 31 pivoted in the bracket 35 and resting upon the alarm-pull of the box, the engaging arm 29 projecting from said escapement and engaging the lever 30 secured to said releasing-lever 31, the whole arranged to automatically sound a gong within the box as the fire-alarm is being operated, substantially as shown and described.

2. A fire-alarm box having an alarm-transmitting mechanism and a manually-operated hand-lever for operating the transmitting mechanism, in combination with an audible-alarm mechanism at the box, a spring for actuating the audible-alarm mechanism, and a catch for holding the mechanism from operating, a connecting device between the catch and the manually-operated hand-lever arranged to be thrown out of operative position, with reference to the latter, and adjusted with reference to the former, substantially as set forth.

3. A fire-alarm box, having a signal-transmitting mechanism and a manually-operated hand-lever for operating the signal-transmitting mechanism in combination with an audible-alarm mechanism at the box having a spring for actuating and a catch for holding it from operating, a jointed arm on said catch arranged to engage with the manually-operated lever and with the door of the alarm-box, substantially as and for the purposes stated.

4. A fire-alarm box, having a signal-transmitting mechanism and a manually-operated handle for controlling said mechanism, in combination with an audible signal at the box, a mechanism for actuating the audible signal, including a driving-spring, a catch for

restraining the operation of the audible-signal mechanism, and a connection between the catch and the handle for operating the transmitting mechanism, said connection including adjustable parts whereby the tripping of the catch may be regulated with reference to the extent of movement of the handle, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 13th day of June, 1903.

HENRY SMITH.

Witnesses:
GEO. L. KINGSTON,
HARRY O. KINGSTON.