

E. L. MALTBY.
PORTABLE PROTECTING APPARATUS.
APPLICATION FILED DEC. 11, 1909.

1,122,016.

Patented Dec. 22, 1914.

2 SHEETS-SHEET 1.

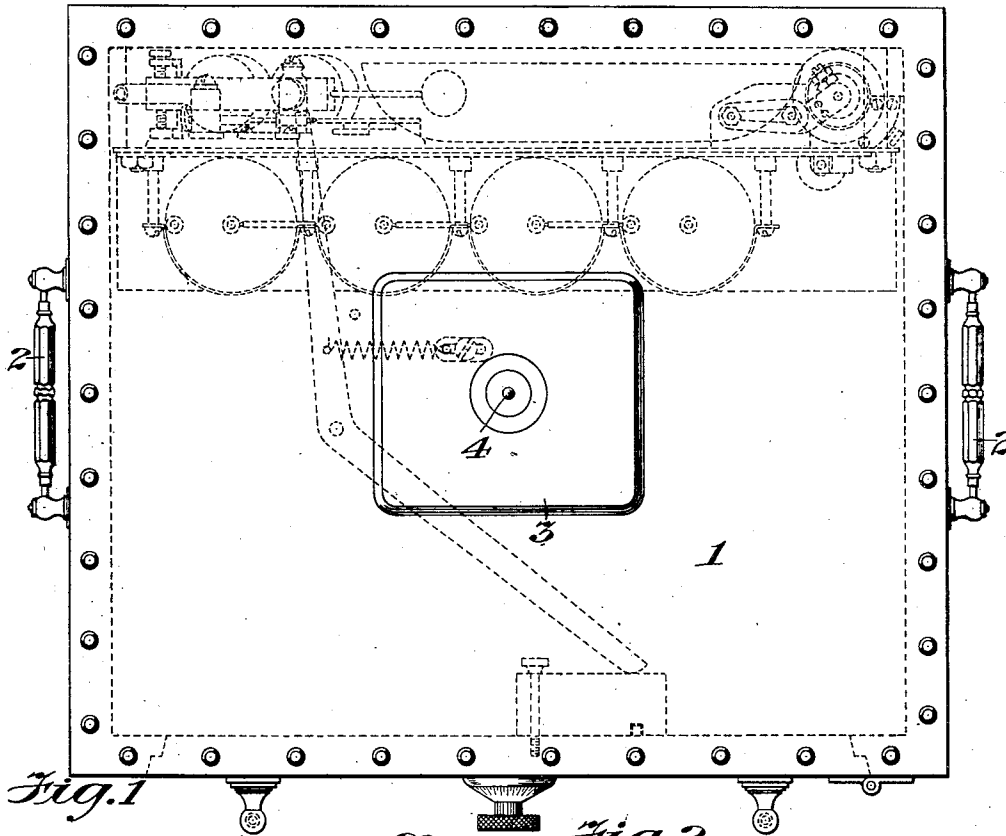


Fig. 1

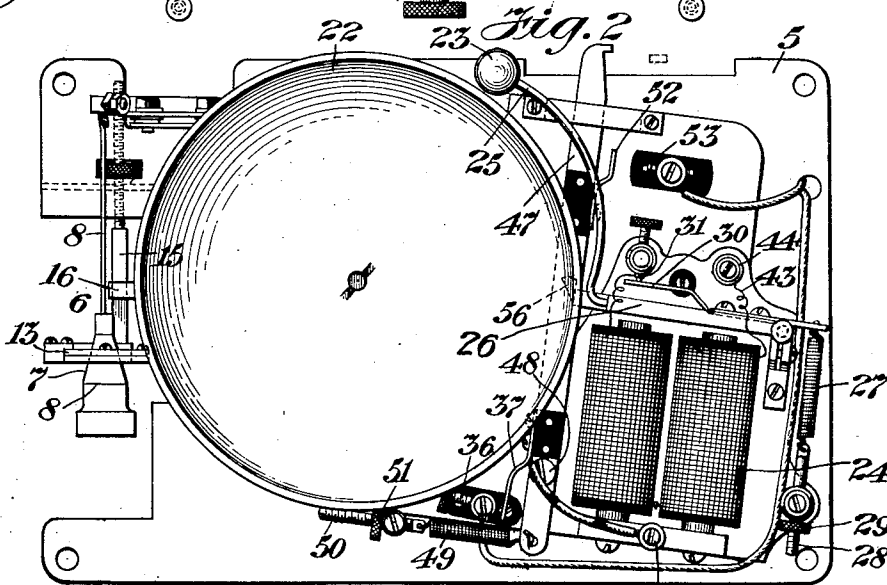


Fig. 2

Witnesses:
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Fig. 3

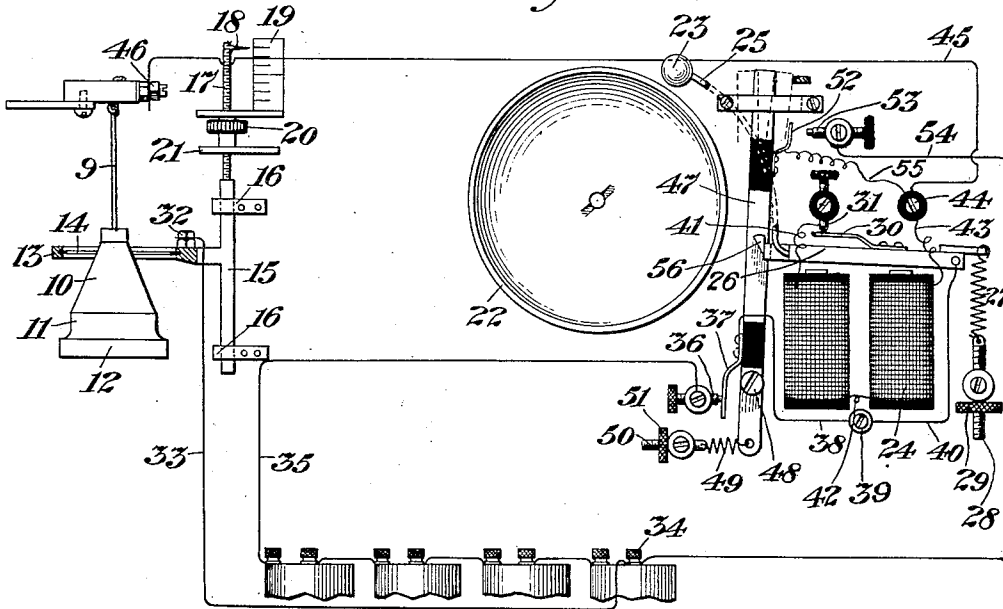


Fig. 4

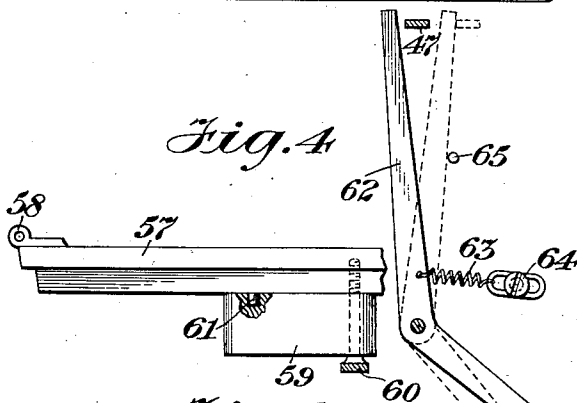


Fig. 5

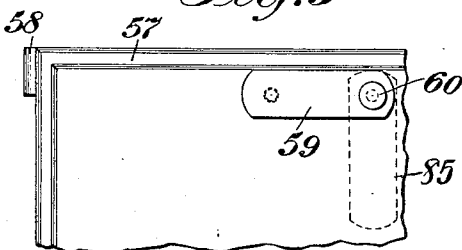


Fig. 7

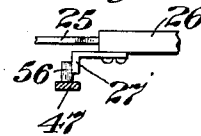


Fig. 6

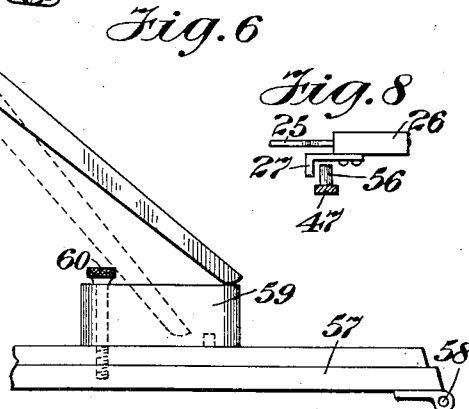
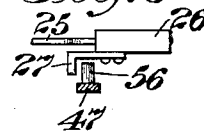


Fig. 8



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UNITED STATES PATENT OFFICE.

EDWARD L. MALTBY, OF BROOKLYN, NEW YORK, ASSIGNOR TO NEW YORK SAFETY CHEST COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PORTABLE PROTECTING APPARATUS.

1,122,016.

Specification of Letters Patent.

Patented Dec. 22, 1914.

Application filed December 11, 1909. Serial No. 532,556.

To all whom it may concern:

Be it known that I, EDWARD L. MALTBY, a citizen of the United States, and a resident of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Portable Protecting Apparatus, of which the following is a specification.

My invention relates to a portable protecting apparatus, and particularly to an apparatus in which a gravity operated circuit closer, having a movable member, is employed, the movable member being adapted to close an electric circuit when the apparatus is moved in any direction.

More particularly, my invention relates to a safety chest for containing valuable articles, which chest, by means of my invention, is prevented from being burglarized.

One of the objects of my invention is to provide an apparatus of the class described having a gravity operated circuit closer with an alarm which is actuated by electrical means, and to provide a switch which closes the alarm circuit, the switch being controlled by the gravity operated circuit closer and released by electrical means and being actuated by mechanical means to close the circuit to continue the actuation of the alarm.

Another object of my invention is to provide an apparatus of the class described, with an electrically operated alarm in which the electro-magnet which actuates the alarm also releases the switch, the latter being operated mechanically to close a circuit through the electro-magnet to continue the actuation of the alarm.

Another object of my invention is to provide the apparatus having the characteristics heretofore referred to with means controlled by the opening of the door to move the switch to stop the alarm and by the closing of the door to reset the device.

Another object of my invention is to improve the construction of the gravity operated circuit closer and particularly to provide means for adjusting it so that the extent of permissible movement may be varied before the circuit is closed.

With the above and other objects in view, my invention consists in the parts, improvements and combinations more fully pointed out hereinafter.

Referring now to the drawings which are

attached to this specification and form a part thereof, Figure 1. is a top plan view of the safety chest in which the alarm mechanism is illustrated in dotted lines, within the chest. Fig. 2. is a side elevation of the removable plate carrying the alarm mechanism and gravity operated circuit closer. Fig. 3. is a diagrammatic view illustrating the arrangement of circuits and the manner of actuating the alarm. Fig. 4. is a detail view showing the door, with the end broken away and carrying a block to operate the connecting means between the door and the switch. Fig. 5. is a detail elevation with parts broken away of the door and block shown in Fig. 4. Fig. 6. is a detail view showing the door, block, and lever used to control the switch, to stop the alarm when the door is opened. Fig. 7. is a detail view with parts broken away, showing the armature which releases the switch. Fig. 8 is a view of the parts shown in Fig. 7. but in another position.

The shell or casing 1 of the portable apparatus, which it is desired to protect, is preferably provided with handles 2 for carrying it about. The form of this apparatus may be widely varied. In the particular embodiment of the invention illustrated, it assumes the form of a safety chest on the top of which a level 3 with air-bubble 4 is provided to level the chest. Suitable means are provided such as the plate 5 for carrying the alarm mechanism, the plate preferably carrying the remaining parts of the controlling devices.

A gravity operated circuit closer 6 is employed, the form of which may be varied, the movable member 7 thereof being in the form of a weight 8 and being suspended by suitable means such as the rod 9. In the particular embodiment of the invention illustrated, the weight has a conical or tapering portion 10 terminating in a cylindrical portion 11 to which is integrally secured a collar 12 of larger diameter than the portion 11.

A contact member 13 carrying a contact ring 14 embraces the weight, the contact being made between the member and the conical portion of the weight. The contact member is adjustable so as to vary the extent of permissible movement of the weight before closing the circuit. The means for accomplishing this adjustment may be va-

ried. In the particular embodiment of the invention illustrated, the contact member is adjustable axially with relation to the weight. It is mounted upon a bracket 15, part of which slides in guide 16, the bracket carrying a screw 17, to the upper end of which a pointer is secured. A scale 19 is provided for the pointer. An adjusting thumb-screw 20 confined between stops 21 is provided to move the screw. The contact member 14 may thus be moved axially with relation to the cone 10 so as to vary the length of permissible movement of the weight before it closes the circuit. Additional movement of the contact member toward the bottom of the weight will bring it into contact with the collar 12 which clamps the weight against movement, thus holding it firmly when the box is shipped.

20 An alarm is provided which is actuated when the apparatus is moved in any direction, for example, either by tilting or jarring, or sliding the chest. The form of the alarm may be varied. In the particular embodiment of the invention illustrated, the alarm includes a bell 22 struck by a hammer 23, the hammer being actuated by an electro-magnet 24. As illustrated, the stem 25 carrying the hammer is directly attached to the armature 26. A spring 27 and adjustable screw 28 with nut 29 for regulating the tension of the spring are provided to control the armature 26. The armature carries a spring-blade 30 which contacts with a terminal 31, thus forming a make and break device for the rapid vibration of the bell hammer when the electro-magnet 24 is connected in circuit.

The auxiliary circuit controlled by the gravity circuit closer may now readily be traced through the bell magnet, as follows: Starting with the connection 32 the circuit leads by the wire 33 to one pole 34 of the batteries, and then by return wire 35 from the other pole of the batteries to a pair of contacts 36, 37, which will be described hereafter, to wire 38 to binding post 39. Here the current enters the bell frame so as to reach the contact spring 30 through the armature of the electro-magnet. This is indicated diagrammatically in Fig. 3 by means of the line 40. The current leaves the armature by spring 30 which contacts with contact-screw 31 (insulated from the frame), then by wire 41 to the electro-magnet 24, the two coils being connected in series as indicated in 42. The current leaves the coils by wire 43 connected to the post 44, the post being insulated from the frame and returns to the gravity circuit closer by wire 45, being connected to the other terminal of the closer at 46.

I provide suitable means for continuing the actuation of the alarm, even though the gravity operated circuit closer, having once

closed the circuit, should be restored to a normal position, thus opening the circuit. The form of this means may be varied. In the particular embodiment of the invention illustrated, I provide a switch controlled by the gravity operated circuit closer, which switch closes a main circuit to continue the actuation of the alarm in the event referred to. As illustrated, the switch consists of a pivoted lever 47 pivoted at 48, and is provided with mechanical means, such as a spring 49, for moving it in one direction. By means of the screw 50 and nut 51, the spring 49 may be tensioned. The lever 47 carries a switch point 52.

It will be observed that mechanical means are used to actuate the switch and that electrical means are used to control or release the switch. In the particular embodiment of the invention illustrated, the electrical means include the electro-magnet 24 which also serves the purpose of actuating the alarm. The switch point 52, when moved, contacts with the contact screw 53 which is connected by wire 54 with one pole of the battery at 34. The switch point 52 is also connected with the post 44, and is preferably connected by means of a wire 55. When the circuit is closed at 53, the current flows from the battery terminal 34 through wire 54, contacts 53, 52, post 44, wire 43, through the coils of the electromagnet and out by the make and break 31, through the frame (indicated by the wire 40) via post 39, wire 38, contacts 36, 37, and returns by wire 35, to the other pole of the battery. This closes the main battery circuit which will continue the ringing, no matter what happens to the auxiliary circuit which includes the gravity circuit closer.

It will be observed that if the auxiliary circuit through the gravity operated circuit closer is closed, this affords a parallel connection for the current which passes through the coils of electro-magnet 24 and to make and break device 30, 31. Should the auxiliary circuit be broken by restoring the pendulum, or weight 10 to normal position, the current through the auxiliary circuit ceases, but the current through the bell magnet continues, since the main circuit is closed at 52, 53.

The means whereby the armature 26 controls the switch carrying switch point 52, may be varied. As illustrated, a stop 56 is mounted on the lever 47 and the armature 26 is provided with an arm 27 which engages the stop 56 as shown. When the armature is attracted, the stop 56 passes over the end of the arm 27 and the armature is free to vibrate. When the lever 47 is returned to stop the ringing, the beveled face of the stop 56 acts to depress the arm 27, to push it out of the way, as the lever 47 is pushed back to normal position.

Suitable means are provided for controlling the lever 47 and the switch to break the circuit to stop the ringing and to reset the device. These means are controlled by the door or the part used to close the apparatus. The form of the means may be varied. As illustrated, the door 57 hinged to 58 carries a block 59 which contacts with one end of the connecting means between the block and the lever 47. The block 59 is made movable, being pivotally secured to the door by means of the pin 60; a recess in the block fits over a pin 61 thus holding the block in position. It may be dropped into inoperative position as indicated by dotted line 85. Suitable connecting means are provided between the block and the switch lever 47. As illustrated, these comprise a lever 62 to which a spring 63 is attached, adjustably secured to the frame by connection 64. A stop 65 limits the movement of the lever 62. The block 59 being in proper position, when the door is closed, the lever 62 is thrown in one direction so as to move its end out of contact with the switch lever 47 as shown in Fig. 6. If now the chest is moved the alarm rings, the lever 47 closes the main circuit and approaches the end of the lever 62. To stop the alarm, all that is necessary is to open the door, which permits the spring 63 to actuate the lever 62, pressing back the switch lever 47, breaking the circuit at 52, the force of the spring 63 being greater than that of the spring 49 attached to the switch lever. The circuit also is broken at contacts 36, 37, one of which is mounted on the switch lever. This latter break insures deadening the alarm, when the door is open, even though an accidental movement of the gravity circuit closer should close its auxiliary circuit. In shipping, the block 59 is dropped to the dotted line position out of the path of the end of the door lever 62 which then pushes back the switch lever 47, to open the circuit, even though the door be closed.

Claims:

1. In a safety chest, the combination of a case, and protecting means entirely inclosed therein and comprising, an alarm, a circuit including an electromagnet for starting the alarm, a gravity-operated circuit closer including a weighted pendulum adapted to close said circuit when the case is moved in any direction, an electric circuit for continuing the operation of the alarm, a switch for closing the latter circuit, and mechanical means for actuating said switch to close said circuit, said switch being normally held open and being adapted to be released through the actuation of said gravity operated circuit-closer.

2. In a safety chest, the combination of a case, and protecting means entirely inclosed therein and comprising, an alarm, a circuit for starting the alarm and including an elec-

tromagnet, a gravity-operated pendulum constituting part of a circuit-closer adapted to effect the closing of said circuit when the case is moved in any direction, a circuit for continuing the operation of the alarm also including said electromagnet, a switch for closing the latter circuit, said switch being normally held open by the armature of said electromagnet, and a spring for closing said switch upon the movement of said armature.

3. In a safety chest, the combination of a case having a door, and protecting means entirely inclosed therein and comprising, an alarm, a circuit including an electromagnet for starting the alarm, a gravity-operated circuit closer adapted to close said circuit when the case is moved in any direction, an electric circuit including said electromagnet for continuing the operation of the alarm, a switch tending to close the latter circuit, said switch being normally open and being adapted to be released upon the actuation of said circuit-closer to close the latter circuit, and means actuated by the opening of said door for re-opening said switch.

4. In a safety chest, the combination of a case, and protecting means entirely inclosed therein and comprising, an alarm, a circuit including an electromagnet for starting the alarm, a gravity-operated circuit closer adapted to close said circuit when the case is moved in any direction, an electric circuit including said electromagnet for continuing the operation of the alarm, a switch tending to close the latter circuit, said switch being normally held open and being adapted to be released upon the actuation of said circuit-closer, a spring for actuating said switch, a stronger spring within the case for moving the switch in the opposite direction, and means for releasing said spring to open the switch.

5. In a safety chest, the combination of a case, and protecting means entirely inclosed therein and comprising, an alarm, a circuit including an electromagnet for starting the alarm, a gravity-operated circuit closer adapted to close said circuit when the case is moved in any direction, an electric circuit including said electromagnet for continuing the operation of the alarm, a switch tending to close the latter circuit, said switch being normally held open and being adapted to be released upon the actuation of said circuit-closer to close the latter circuit, a door for the case, and a spring for opening said switch, said spring being normally held inoperative by said door.

6. A safety chest or receptacle containing an alarm and mechanism for operating the alarm, and means controlling the alarm and comprising a gravity-operated device adapted to set off the alarm whenever said chest is tipped in any direction from normal position, a movable closure for the

chest and means operated by the closure and adapted to render the alarm-operated mechanism operable when the chest is closed and inoperable when the chest is opened.

- 5 7. A safety chest or receptable containing an alarm, mechanism for operating the alarm, and means controlling the alarm and comprising a gravity-operated device adapted to set off the alarm whenever said chest
10 is tipped in any direction from normal position, a movable closure for the chest and means including a movable block operated by the closure and adapted to render the alarm-operated mechanism operable when
15 the chest is closed and inoperable when the chest is opened.

8. A safety chest or receptacle containing an alarm, mechanism for operating the

alarm, and means controlling the alarm and comprising a gravity-operated device adapted to set off the alarm whenever said chest
20 is tipped in any direction from normal position, a movable closure for the chest and means including a pivoted block carried by the closure and connections adapted to render the alarm-operated mechanism operable
25 when the chest is closed and inoperable when the chest is opened.

In testimony whereof, I have signed my name to this specification, in the presence of
30 two subscribing witnesses.

EDWARD L. MALTBY.

Witnesses:

W. F. BISSING,

M. FREVERT.