June 25, 1957 F. C. W. STELTER 2,797,405

CONTAINER FOR VALUABLES WITH ALARM SYSTEM

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FIG. 1.

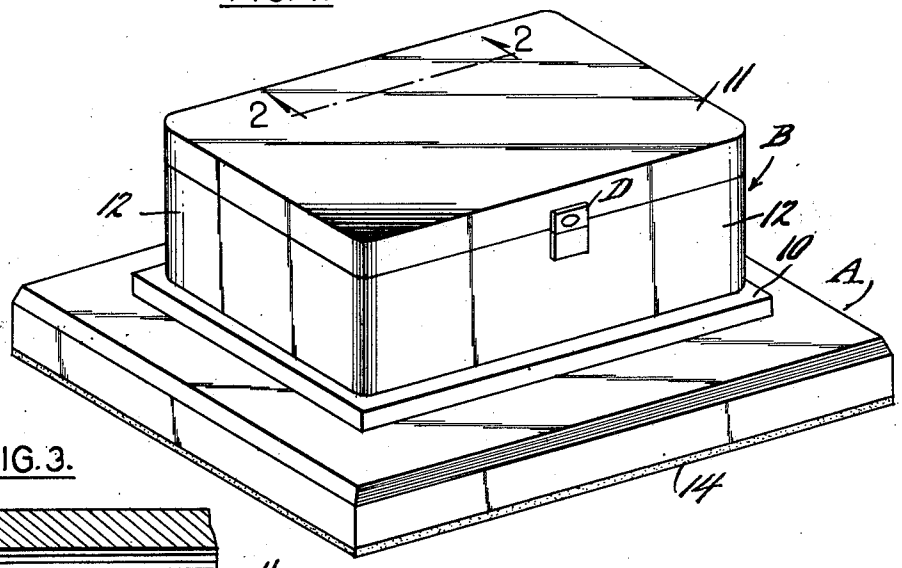


FIG. 3.

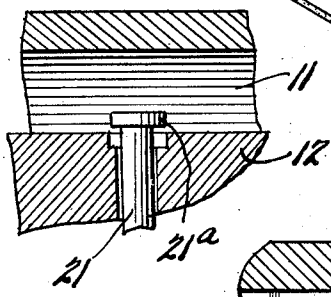
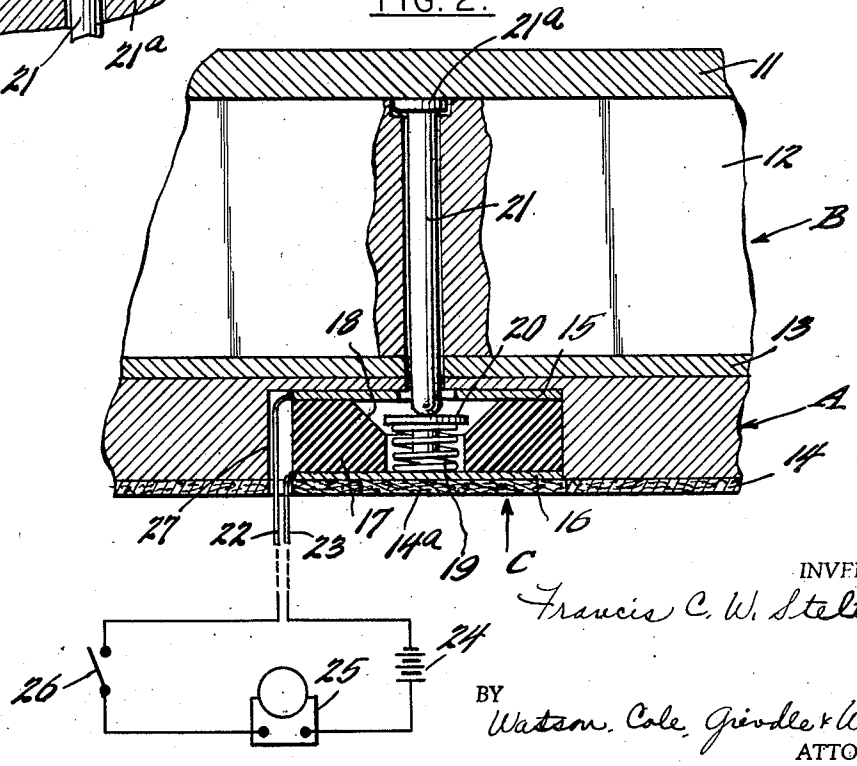


FIG. 2.



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FIG. 4.

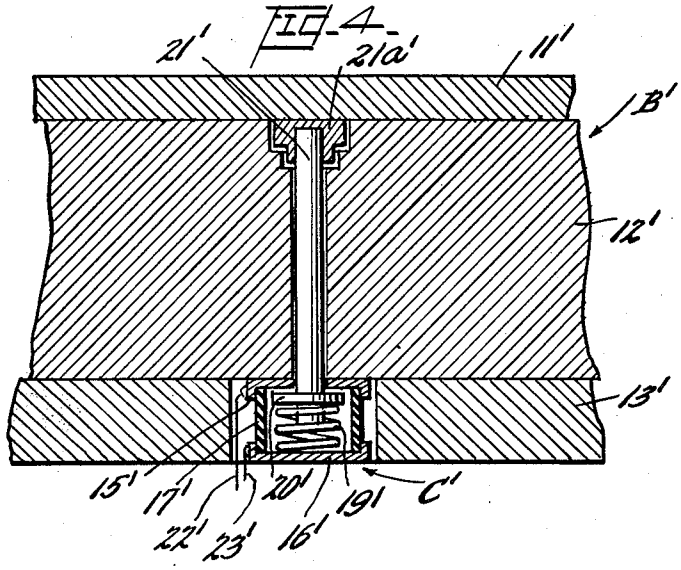
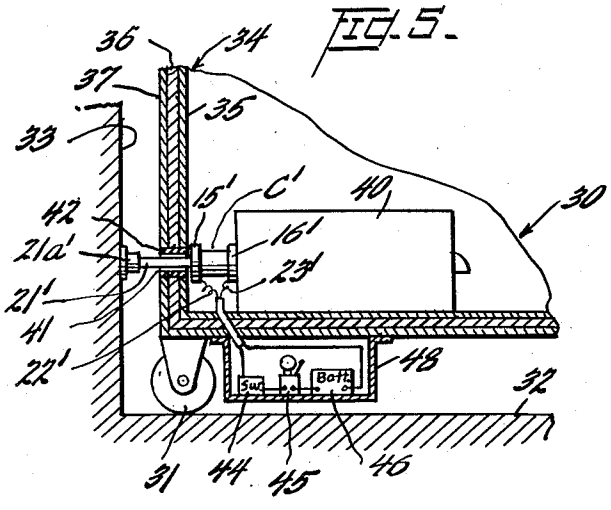


FIG. 5.



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CONTAINER FOR VALUABLES WITH ALARM SYSTEM

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6 Claims. (Cl. 340—280)

This invention relates to containers for valuables provided with an alarm which is sounded in the event that the container is tampered with by an unauthorized person or persons. More specifically the invention relates to such containers having one or more members which are movably associated with the remainder of the container, and in which a switch button and its actuating means are both movably associated with the container.

It has been suggested to provide a two-part jewel box structure comprising a relatively large base member upon which a standard jewel box might be snugly fitted. The inclusion of such a base greatly enhances the appearance of the jewel box structure, and at the same time the base tends to fix the jewel box more firmly on the table or dresser upon which it is kept. By eliminating the possibility of jewel box slippage upon any surface on which it rests, the possibility that the jewel box will be dropped or damaged, thereby springing open its lid and scattering or damaging its contents, is greatly eliminated.

In the event that such a jewel box structure is tampered with by an unauthorized person, three possibilities are open to him. He might spring the jewel box lid open and remove the box contents, or he might remove the box from its base for removal of the box contents at some later time, or he might carry away both box and base. The problem of providing an alarm which will sound upon the happening of any one of these three contingencies has been solved by this invention.

Similarly, in the case of a conventional one-part jewel box the contents may be stolen either by opening the box without altering its position or by removing the box in its entirety.

Likewise, a movable safe may be opened and its drawers or other movable members removed without altering its position, or the safe may be moved as a unit for more convenient access.

Accordingly, an object of this invention is to provide a container having one or more movable members and being movable as a unit, in which alarm means will be energized upon movement of one of the movable members or upon removal of the container as a unit.

Another object of this invention is to provide a jewel box structure comprising a base and jewel box in which alarm means will be energized in the event the lid is raised, or the jewel box is removed from the base, or in the event that both jewel box and base are removed from the surface upon which they rest.

A further object of this invention is to provide a conventional one-part jewel box in which alarm means will be energized in the event the box is opened, or if the box is removed from its resting place.

A still further object of this invention is to provide a movable safe in which alarm means will be energized in the event the safe is moved as a unit, or if the safe is opened in position and its drawers or other movable contents are removed.

I accomplished these objects in the case of the two-part jewel box by providing an aperture in the base of

the jewel box structure into which a switch device is loosely fitted. This switch device comprises two opposed contact members in spaced insulated relation and a depressible conducting means normally making electrical contact between the contact members when the conducting means is not depressed. Between this depressible conducting means and the jewel box lid I slidably fit a pin which holds the conducting means depressed when the lid is in a closed position and when the jewel box is snugly fitted on the base. In this manner, if the lid is raised the pin will no longer be held confined and the conducting means will be allowed to make contact between the contact members. I place these contact members in an electrical alarm circuit so that the alarm will be sounded when contact is made between the two contact members. If the jewel box is removed from the jewel box base, the pin is of course removed with the box and accordingly the conducting means is released and contact again is made between the two contact members. Because the switch device is loosely fitted in the base member, it will drop from the base member if the jewel box and base are removed from the structure upon which they rest. In such an event, the conducting means is no longer held depressed by the pin and contact is again made between the two contact members.

I accomplish these objects in a similar manner in the case of the conventional one-part jewel box and the movable safe. In the one-part jewel box the switch device is loosely fitted directly in the bottom of the box instead of in a separate base. The pin may be free as in the case of the two-part box or may be attached to the depressible conducting means. The actuation of the switch is occasioned by raising the lid or by lifting the entire box, as in the case of the two-part box.

In the case of the movable safe the pin is attached to the depressible conducting means and the switch device and pin are supported as a unit by journalling the pin slidably in the rear wall of the safe. The safe drawer or other movable member is positioned against one end of the switch device and the other end of the pin contacts the wall of the room in which the safe is located. Thus, movement of the safe or its movable member will allow movement of the pin and conducting means to make contact between the switch device contact members.

Other and further objects, features, and advantages will be apparent from the description which follows read in connection with the accompanying drawings, in which

Figure 1 is a perspective view of a two-part jewel box structure including jewel box and base.

Figure 2 is a fragmentary sectional view taken along line 2—2 of Figure 1 and also showing diagrammatically the alarm circuit for the jewel box structure.

Figure 3 is a fragmentary cross section taken along line 2—2 of Figure 1 with the jewel box lid in raised position.

Figure 4 is a fragmentary cross section similar to Figure 3 but taken through a vertical wall of a one-part jewel box.

Figure 5 is a fragmentary cross section showing the invention as applied to a safe.

In order to facilitate an understanding of the invention, reference is made to the embodiments thereof shown in the accompanying drawings and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

In Figure 1 a two-part container unit for valuables is shown including a base member A upon which a conventional jewel box B may be snugly fitted. A moulding member 10 is fixed upon base A to define a space within

which the jewel box proper may be placed. The jewel box B is an integral structure comprising a hinged lid **11**, vertical side walls **12**, and a bottom member **13**, shown in Figure 2. Any conventional lock, as at D, may be employed to secure the jewel box lid.

A resilient sheet **14** of felt, cork, rubber or the like, may be cemented to base A.

In Figure 2 is shown a fragmentary cross-sectional view of the two-part structure of Figure 1. A switch device is shown generally at C. This device comprises two opposed contact members **15** and **16** which are maintained in spaced insulated relation by insulator **17**. Insulator **17** is provided with a centrally disposed aperture **18** within which is positioned a coil spring **19** bearing a flanged contact maker **20**. A resilient sheet **14***a* may be cemented to contact **16** if desired. An aperture **27** is provided in base member A for the reception of switch device C.

Within any one of the jewel box side walls **12** and the jewel box base **13** is formed a vertically disposed bore for the reception of operating pin **21** slidably therein. This bore is enlarged adjacent lid **11** for reception of the head **21***a* of pin **21**. In this manner, the pin **21** is biased against downward movement. Preferably the bore is formed within the side wall to which the lid is hinged, eliminating the possibility of its discovery, but it may be formed in any one of the side walls.

A jewel box alarm circuit is diagrammatically shown in Figure 2. This circuit includes conductors **22** and **23** connected to contacts **15** and **16** respectively. The switch is placed in series with a conventional alarm circuit including a battery **24** and alarm device **25** which is shown as a bell, but may be any suitable device such as a light. If desired, a stationary switch **26** may be provided at some convenient location to deenergize the circuit at all times. The alarm circuit shown in Figure 2 is positioned at some point remote from the jewel box structure; however, this circuit might be housed within a false bottom within the jewel box B by running conductors **22** and **23** through base member A and jewel box bottom **13** to the false bottom, sufficient slack being left in conductors **22** and **23** to permit movement of device C relative to base A.

In considering operation of the alarm mechanism let it first be assumed that an unauthorized person springs lock D of the jewel box and raises lid **11** to remove the jewel box contents. As lid **11** is raised, pin **21** is no longer held against upward movement by the lid.

Therefore, pin **21** will move upward under influence of spring **19** to the position shown in Figure 3 and contact will be made between contacts **15** and **16** through spring **19** and contact maker **20**. Assuming manual switch **26** to be closed, the alarm circuit will then be activated and current will flow from battery **24** through conductor **23** to contact **16**. From contact **16** current will flow through spring **19** and contact maker **20** to contact **15**, and thence through conductor **22** and switch **26** to alarm device **25**.

Assuming that an unauthorized person does not attempt to open lid **11** but merely removes jewel box B from base A for opening of the jewel box at some later time, pin **21** will then be removed with jewel box B. If pin **21** is so removed, coil spring **19** will expand to again make electrical contact between contacts **15** and **16**. In this manner, current will again flow through alarm **25**.

On the other hand, if an unauthorized person were to remove both jewel box B and base A from the surface upon which they rest, switch device C will not move with the base A and pin **21** will again be lifted off contact maker **20**. Accordingly, spring **19** will expand to close a circuit between contacts **15** and **16** thereby energizing alarm **25**. If the alarm circuit is enclosed within jewel box B, it is important that conductors **22** and **23** be provided with sufficient slack to allow this relative movement between switch device C and base member A.

As pointed out above, the provision of manual switch **26** is optional. The switch might be mounted at some concealed location external of the jewel box structure if the alarm circuit is also external of the structure. If the alarm circuit is included within a false bottom in jewel box B, the switch operator might be located at some position on the box side and its identity as a switch operator might be concealed in any number of ways.

Figure 4 illustrates the invention as applied to a one-part container unit for valuables comprising jewel box B′ having a hinged lid **11′**, a vertical wall **12′**, and a bottom member **13′**, which bottom member serves as the base of the box. The switch device shown in Figure 4 is similar to that shown in Figure 2, and is designated C′. Switch device C′ comprises opposed contact members **15′** and **16′** which are attached to opposite ends of a cylindrical insulator **17′**. A coil spring **19′** is positioned in cylindrical insulator **17′** and bears at its lower end on contact member **16′**. A contact maker **20′** is secured on operating pin **21′** slightly above the bottom of said pin. The portion of pin **21′** below contact maker **20′** is received within spring **19′**.

Thus it will be seen that pin **21′** is attached to switch device C′ and may be moved as a unit with the switch device for convenient mounting in the jewel box. Within any one of the side walls **12′** of jewel box B′ is formed a vertically disposed bore for the reception of operating pin **21′** slidably therein. The bottom member **13′** of jewel box B′ is bored to receive switch device C′ loosely therein.

The switch device C′ and pin **21′** are positioned in jewel box B′ by inserting the pin and switch device in the aligned bores in the wall **12′** and bottom member **13′**, respectively. A head **21***a′* is then securely attached to the end of pin **21′** in any conventional manner. In this way, switch device C′ and pin **21′** are locked in the jewel box B′ and may be transported as a unit therewith.

Switch device C′ is intended to be connected to an alarm circuit such as is shown in Figure 2, conductors **22′** and **23′** being provided for this purpose. The alarm circuit consisting of battery **24**, alarm device **25** and switch **26** may, of course, be located in a false bottom in jewel box B′, or may be located at some point distant from the box, as mentioned in connection with Figure 2.

The operation of the alarm system in Figure 4 is as follows: If lid **11′** is raised, pin **21′** will be free to move under the influence of spring **19′** until contact maker **20′** bears against contact member **15′**, thus completing the circuit and energizing the alarm. Similarly, if jewel box B′ is removed from its supporting surface, switch device C′ will be free to move downwardly under the influence of spring **19′**. The switch device is thus moved relative to pin **21′** until contact member **15′** bears against contact maker **20′**, completing the circuit and energizing the alarm.

Figure 5 shows the alarm system applied to a container unit for valuables comprising a safe indicated generally at **30**. The safe is mounted on wheels such as the one indicated at **31**, which wheels rest on the floor **32** of a room having a wall **33**. Safe **30** is shown as having a double-wall construction indicated generally at **34** consisting of inner wall **35** separated by filler material **36** from outer wall **37**. However, the alarm system could be applied in the same manner to a safe having a single-wall construction. Safe **30** has a drawer **40** which may be pulled out after the safe door (not shown) has been opened. As shown in Figure 5, a hole **41** is drilled in the wall **34** of the safe behind box **40** to slidingly accommodate pin **21′** which carries switch device C′. Pin **21′** and switch device C′ are constructed as shown in cross section in Figure 4. If desired, the hole **41** may be lined with a bearing sleeve **42**. The switch device and pin are positioned in the safe by inserting pin **21′** from the

inside of the safe out through hole **41** and then securely attaching the head **21***a*′ to the pin **21**′.

An alarm system comprising switch **44**, bell **45** and battery **46** is carried in a box **48** attached to the bottom of the safe. Switch **44** has an actuating member (not shown) which extends through the box **48** for convenient operation by authorized personnel who know its location. In this modification, as in those shown in Figures 2 and 4, the alarm system could be in a false bottom in the safe or located at some point distant from the safe, and the alarm could be some conventional signal other than a bell. The switch device C′ is connected to the alarm system by conductors **22**′ and **23**′.

The system shown in Figure 5 may be initially positioned for proper operation in the following manner: With switch **44** in closed position energizing the alarm, and drawer **40** moved to the left in Figure 5 forcing switch device C′ into contact with inner wall **35**, safe **30** is rolled across the floor **32** until head **21***a* contacts wall **33**, moving pin **21**′ into switch device C′ until the alarm signal is turned off by the separation of contact maker **20**′ and contact member **15**′.

With the various parts positioned as described above, the operation of the alarm system shown in Figure 5 is as follows, reference being made to Figure 4 for the interior construction of switch device C′. If the safe is moved away from wall **33**, pin **21**′ will move relative both to wall **34** of the safe and to switch device C′ under the influence of spring **19**′ until contact maker **20**′ touches contact member **15**′, thus completing the circuit and energizing the alarm **45**. If, instead of moving the safe, an unauthorized person opens the safe and pulls drawer **40** to the right as shown in Figure 5, switch device C′ will be moved relative to wall **34** and pin **21**′ under the influence of spring **19**′ until contact member **15**′ bears against contact maker **20**′, thus completing the circuit and energizing the alarm.

Drawer **40** may, of course, be replaced by any movable member of value, such as a vase, which will contact switch device C′. The spring **19**′ in the switch device is only strong enough to move pin **21**′ and the switch device itself. Consequently, the spring is not strong enough to move the object, for example, drawer **40**, and thereby create a false alarm.

The alarm systems as illustrated and described above are by way of example only, and any changes which might occur to one skilled in the art are contemplated by the present invention, within the scope of the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a movable container unit for valuables having enclosure surfaces rigidly positioned relative to each other and a member movable relative to said enclosure surfaces, an alarm system associated with said container unit and comprising a switch device having contact members separated by an insulator, contact means movably positioned between said contact members and normally tending to establish electrical contact between said contact members, and operating means associated with said contact means, one of said enclosure surfaces having a bore therethrough, said switch device being freely supported for movement relative to said one enclosure surface, said operating means being slidingly positioned in said bore, said switch device and said operating means forming an operative unit having one of its ends positioned for contact by said movable member and the other of its ends being free to extend outside said container unit.

2. A switching device for use with an enclosed container having a bottom, a plurality of vertical sidewalls, and a hinged lid to activate an alarm in response to unauthorized tampering with the container, comprising a pin extending through a bore in one of said sidewalls and having a head contacting an inner surface of said lid which limits the axial sliding movement of the pin in a first direction with respect to said bore and a shaft portion projecting from the bottom of said container with the head so limited, a base member separable from said container having an upper surface upon which said container bottom is adapted to rest and a lower surface formed with a recess, an electrical switch separable from said base member positioned within said recess and including means for normally biasing the switch into an operate condition, said operate biasing means being opposed by said pin to maintain the switch in the non-operate condition when said container is positioned on said base by a force applied to the switch by the shaft portion of said pin which projects into said recess through a communicating passage in said base.

3. A switching device for use with an enclosed container having a bottom, a plurality of vertical sidewalls, and a hinged lid to render an alarm in response to unauthorized tampering with the container, comprising a pin extending through a bore in one of said sidewalls and having a first terminal portion contacting an inner surface of said lid which limits the axial sliding movement of the pin in a first direction with respect to said bore and a second terminal portion projecting from the bottom of said container with the first portion so limited, a base member separable from said container having an upper surface upon which said container bottom is adapted to rest and a lower surface formed with a recess, an electrical switch separable from said base member positioned within said recess and including means for normally biasing the switch into an operate condition, said operate biasing means being opposed by said pin to maintain the switch in the non-operate condition when said container is positioned on said base by a force applied to the switch by the second portion of said pin which projects into said recess through a communicating passage in said base.

4. A switching device for use with an enclosed container having a bottom, a plurality of sidewalls, and a movable member for access to the container to render an alarm in respoonse to unauthorized tampering with the container, comprising an element extending through said container and having a first portion contacting an inner surface of said movable member which limits the movement of the element in a first direction and a second portion projecting from the bottom of said container with the first portion so limited, a base member separable from said container having an upper surface upon which said container bottom is adapted to rest and a lower surface formed with a recess, an electrical switch separable from said base member positioned within said recess and including means for normally biasing the switch into an operate condition, said operate biasing means being opposed by said element to maintain the switch in the non-operate condition when said container is positioned on said base by a force applied to the switch by the second portion of said element which projects into said recess through a communicating passage in said base.

5. A switching device for use in activating an alarm in response to the unauthorized tampering of an enclosed container having a plurality of walls and a movable member providing access to the interior of said container, comprising an element slidable within and relative said container and having a terminal portion contacting an inside surface of said movable member which limits the movement of the element in a first direction and a second portion projecting from the wall of said container removed from said movable member with the element limited in movement by the movable member, a switch separable from said container and including means for normally biasing the switch into an operate condition, said operate biasing means being opposed by said element to maintain the switch in the non-operate condition when the container is positioned relative said switch so that said second projecting portion contacts said switch and

with the movable member in position to close the container.

6. A switching device for use in activating an alarm in response to the unauthorized tampering of an enclosed container having a plurality of walls and a movable cover member providing access to the interior of said container, comprising an element slidable within and relative said container and having a terminal portion contacting an inside surface of said movable cover member which limits the movement of the element in a first direction and a second portion projecting from the bottom of said container with the element limited in movement by the movable cover member, a switch separable from said container and including means for normally biasing the switch into an operate condition, said operate biasing means being opposed by said element to maintain the switch in the non-operate condition when the container is positioned relative said switch so that said second projecting portion contacts said switch and with the movable member in position to close the container.

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