H. W. COTTRELL.

TRUNK LOCK.

APPLICATION FILED MAR. 23, 1909.

928,904. Patented July 20, 1909.

Fig. 1.

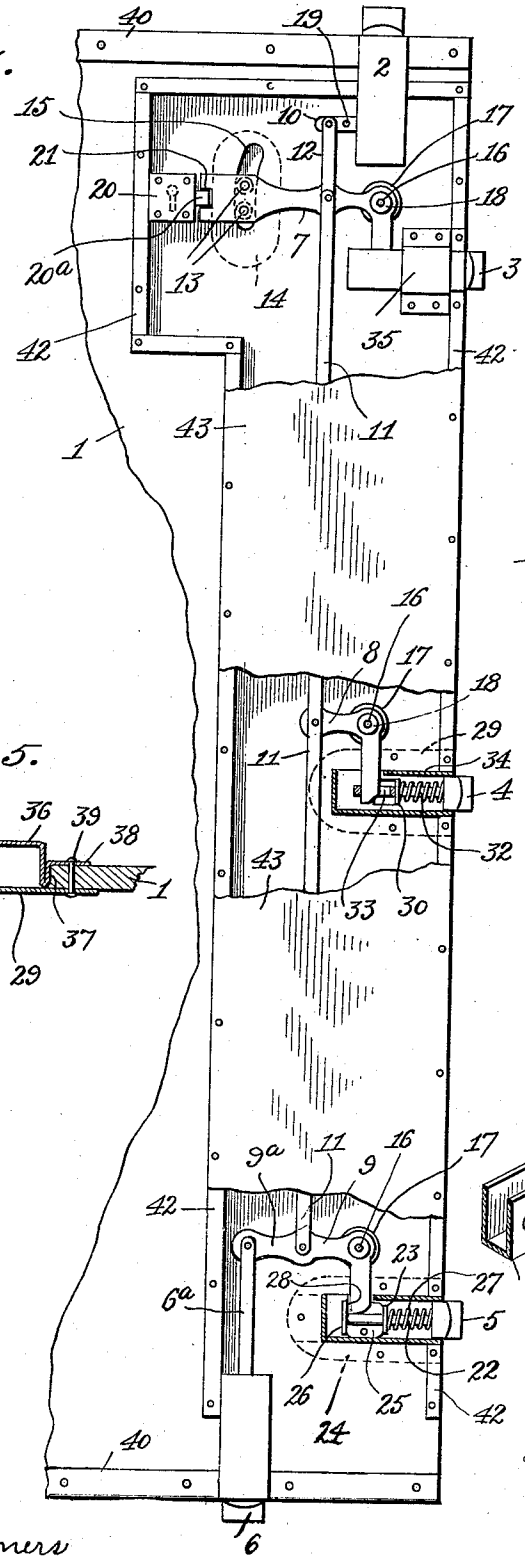


Fig. 2.

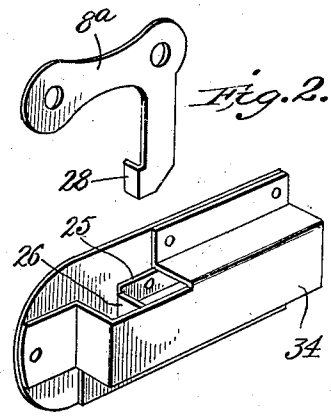


Fig. 3.

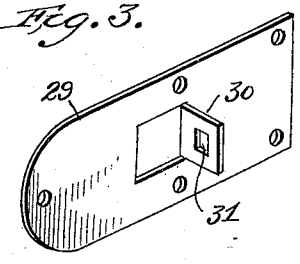
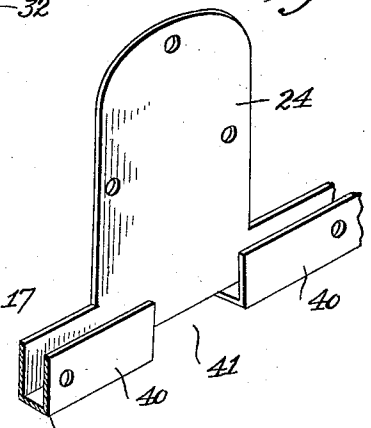


Fig. 5.

Fig. 4.



Witnesses

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TRUNK-LOCK.

No. 928,904. Specification of Letters Patent. Patented July 20, 1909.

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To all whom it may concern:

Be it known that I, HENRY W. COTTRELL, a citizen of the United States of America, residing at Richmond, Virginia, have invented certain new and useful Improvements in Trunk-Locks; 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, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

My invention relates to locking and unlocking mechanism for the inside doors or for the followers of trunks, especially of the type known as wardrobe trunks and has for its object to provide a simple and comparatively flat mechanism for operating simultaneously a number of spring latches placed at the edges of a trunk door or at the edges of a follower, capable of being readily covered up and concealed within the thickness of the built up door or follower, and at the same time permitting an independent movement of each latch when the door is moved into latched position.

The invention consists in details of construction, combination and arrangement of parts hereinafter to be described and claimed.

Referring to the drawings in which like parts are similarly designated, Figure 1 is a plan view of the inner side of a portion of a trunk door the sheathing which covers the lock mechanism being broken away in parts and parts of latches shown in section. Fig. 2 is a perspective view of one of the light, sheet metal bell-crank levers and of a latch casing. Fig. 3 is a perspective view of an intermediate latch base plate. Fig. 4 is a like view of another form of latch plate provided with a channel shape anti-warping strip. Fig. 5 is a transverse section of a latch case illustrating its formation and method of connecting it to the door or follower.

In the drawings 1 designates the door, 2, 3, 4, 5, and 6 a number of spring latches secured to the door so that their bolts will project beyond the edge and capable of being simultaneously actuated by mechanism to unlatch them. This unlatching mechanism comprises a main bell crank lever 7, auxiliary bell crank levers 8, 9 and a preferably straight lever 10, all connected to one another by suitable means. This connecting means is here shown as a thin strip of rigid sheet metal 11 extending from the main bell crank lever 7 to the lower bell crank lever 9 and a short sheet metal link 12 connecting the levers 7 and 10. All of the levers operate to withdraw a spring latch from its latching position. The main bell crank lever 7 has connected to it by means of rivets 13 any suitable handle or strap, preferably passing through a cover plate 14 shown in dotted lines adapted to cover an arcuate slot 15 in which the rivets or other handle connection must necessarily move in order to operate the pivoted lever 7. Each bell crank lever is preferably but not necessarily secured to the door by means of a rivet 16, said rivet passing through washers 17 and 18 at each side of the pivot point of the lever. The bell crank lever 9 is provided with an extension 9^a to which is pivotally connected a sheet metal link or equivalent device 6^a connected to the end of the bolt 6, while the upper latch 2 is operated by means of the lever 10 pivoted at 19 and whose free end engages a slot or projection on the bolt of the latch 2.

The entire mechanism is readily locked by locking any one of the unlatching members and to this end I have shown a lock 20 whose bolt 20^a is capable of entering a recess 21 in the end of the main lever 7 to prevent said lever from being moved in its slot 15. It is obvious that the same result may be accomplished by locking any one of the other levers or by locking the rod 11 against displacement from their normal inoperative positions.

I have shown two forms of latches, both of which are particularly adapted to the purposes herein mentioned. In the latch 5, the bolt is provided with a round shank 22 that passes through a loose rectangular plate 23 and is held in place on its bottom plate 24 by a strap riveted to said plate, the end of the bolt having riveted or otherwise secured to it a plate 26. The plate 26 takes against the strap 25 and limits the outward movement of the bolt while the loose plate 23 forms an abutment for one end of a spring 27 the other end of said spring abutting against the head of the bolt. When using this type of latch the bell crank levers are made of sheet metal and are provided with

an extension 28 or a portion of their engaging edge, shown in Fig. 2 is turned either up or down as may be desired, at right angles to the lever in order to form a large bearing surface to take against the plate 26. The latch 4 is of a simpler construction and is preferably used where the least strain is exerted, as for example, intermediate the ends of the door or follower. In this latch the base plate 29 has punched from it a rectangular portion 30, Fig. 3, that is bent up at right angles to the plate and said portion 30 is provided with a rectangular hole 31 through which slides the rectangular shank 32 of said bolt 4 and said shank is provided with a slot 33 into which one arm of the angle lever 8 projects. The angle lever in this instance is not formed with the angular projection 28, but is left flat.

The bolt is held in place and guided within a sheet metal cover 34 substantially identical with that shown in Fig. 2. When this type of cover is used for the bolt and the latch is let through the thickness of the door, I use over the latch a sheet metal strap 35 as shown applied to bolt 3, Fig. 1. In order to avoid the use of such a strap 35 I find it desirable to form the bolt case or cover as shown in section in Fig. 5 where the sheet metal cover is provided with substantially a channel shaped portion 36 the edges of which are turned outwardly and upon themselves as indicated at 37 and then at right angles thereto so as to form lateral flanges 38. Rivets 39 can then pass through the flanges 38 and the base plate or support 29 or 24 as the case may be, or any other style of base plate. This structure enables the body of the door 1 to be riveted tightly between the upper and lower metal parts of the latch case and strengthens the connection between them.

Inasmuch as both the follower and the inside door for trunks are made of very thin material, chiefly of thin wood or fiber they are apt to warp and in order to prevent warping I form one of the parts of the two-part sheet metal casing of the latch, here shown as the base plate, in one piece with an anti-warping channel 40 as shown in Fig. 4. This channel 40 extends toward each side of the base plate 24 or 29, as the case may be, and is discontinuous at the center of the plate to form an opening 41 for the passage of the bolt. Along the edge of the door or follower I place a thin strip of suitable material 42 extending around the latch mechanism and over the latter and the strips of material 42, I secure a cover 43 of thin material such as fiber, reinforced burlap or the like in order to conceal the latching mechanism and make the door more sightly.

I claim:—

1. The combination with a trunk door or follower, of a plurality of bolts mounted adjacent the edge thereof, springs on said bolts to normally project them beyond said edge, an abutment on each bolt, a bell-crank lever pivoted to the door or follower adjacent each bolt, disconnected therefrom and capable of engaging said abutment, means to interconnect the bell-crank levers, and a single operating device for the assembled parts.

2. The combination with a trunk door or follower, of a plurality of bolts mounted adjacent the edges thereof, springs for said bolts to normally project them beyond said edges, an abutment on each bolt, a sheet metal lever pivoted to the door or follower having an engaging portion bent substantially at right angles to the lever, one of said levers adjacent to, disconnected from and in operative relation to each bolt and means to simultaneously actuate the levers.

3. The combination with a trunk door or follower having a slot; of a plurality of spring actuated bolts normally projecting beyond the edge thereof, of a bell-crank lever disconnected from and in operative relation to each bolt, means to interconnect the levers, one of said levers having an extended arm and means passing through the slot and connected to said extended arm whereby a substantially rectilinear movement of said means will actuate the parts.

4. The combination with a trunk door or follower, of a latch comprising a spring-urged bolt, a casing in which said bolt is operatively mounted, said casing having a channel-shaped strip extending therefrom and capable of taking over the edge of the door or follower.

5. The combination with a trunk door or follower; of a spring-urged bolt, a sheet metal casing in which said bolt is mounted, a sheet metal channel-shaped strip covering the edge of the door or follower and a flat plate forming an extension of one of the flanges of said channel-shaped strip, the other flange and web of said strip being discontinuous opposite to the plate, thereby forming a guide passage for the bolt.

6. The combination with a trunk door or follower having a slot; of a plurality of spring actuated bolts normally projecting beyond the edge thereof, a bell-crank lever, disconnected from and in operative relation to each bolt, means to interconnect the levers, one of said levers having an extended arm, a lock for said arm, and means passing through the slot and connected to said extended arm whereby a substantially rectilinear movement of said means will actuate the parts.

7. The combination with a trunk door or follower having a slot therein; of a plurality of spring urged bolts, sheet metal bell crank levers pivoted to the door or follower, one or more of said bell crank levers having their

bolt engaging edges turned up at right angles to form a wider bearing surface, a sheet metal strip pivoted to said levers to interconnect them and an operating handle connected to one of the sheet metal parts and passing through the slot in the door.

8. The combination with a trunk door or follower; of an end latch therefor comprising a spring actuated bolt, and a two-part casing one of the parts thereof having a channel shaped anti-warping strip forming an extension thereof capable of taking over the edge of the door or follower, one of the parts of said casing comprising a base plate and the other a channel shaped portion, the edges of which are bent back upon itself and then outwardly to form lateral flanges.

9. The combination with a trunk door or follower; of a plurality of spring urged latches having two-part sheet metal cases comprising a flat sheet metal base and a channel shaped cover having its edges bent upon itself and then outwardly to form lateral flanges, the bases of the latches at the upper and lower edges of the door or follower having channel shaped lateral anti-warping extensions taking over the edges thereof, sheet metal levers pivoted to the door or follower each engaging a latch, sheet metal members to pivotally connect the levers, a handle to operate the pivotally connected elements and means to lock one of said elements.

10. The combination with a trunk door or follower; of spring-urged bolts and their cases mounted in the door or follower, an abutment in each bolt and an opening in its case, a bell-crank lever disconnected from both case and latch and pivoted to the door or follower adjacent each latch, one arm of said bell-crank lever passing through said opening in the case and engaging the bolt abutment.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

HENRY W. COTTRELL.

Witnesses:

JNO. B. WELSH,

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