

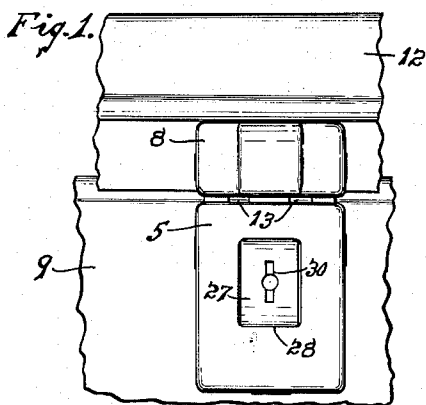
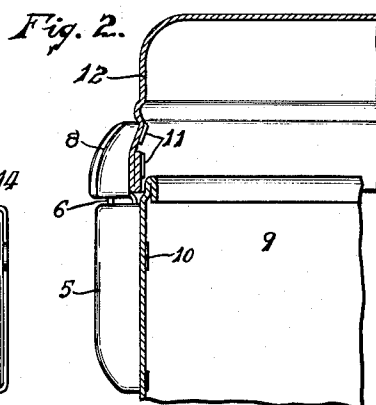
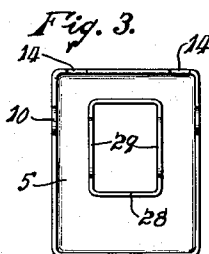
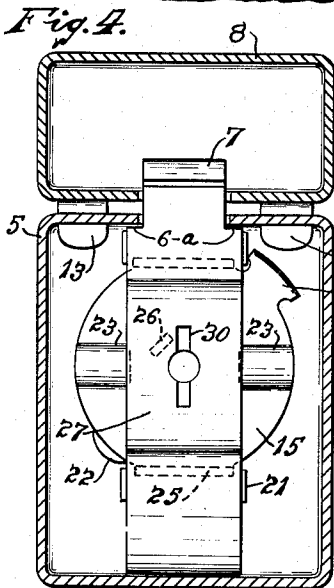
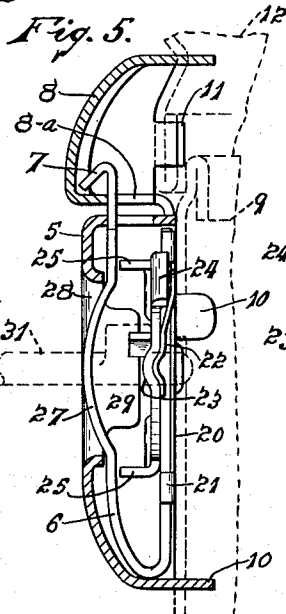
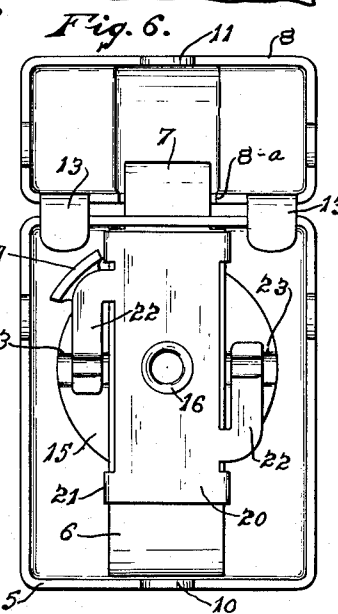
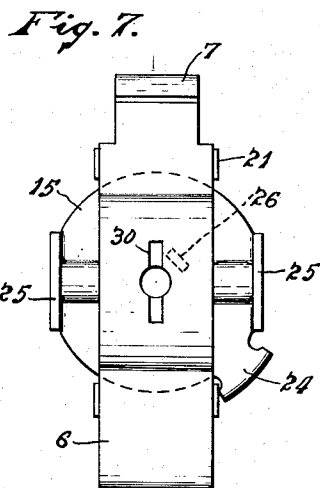
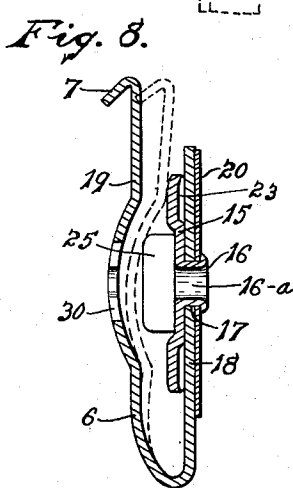
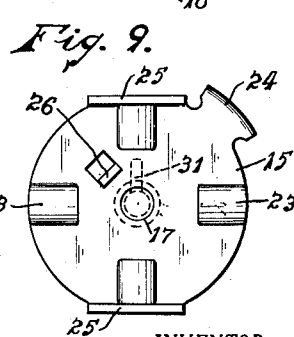
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C. A. VAHLSTROM ET AL

2,664,735

CONTAINER LATCH AND LOCK

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INVENTOR.
CARL A. VAHLSTROM &
PHILIP J. WALTHER
BY *Louis V. Lucia*
ATTORNEY.

UNITED STATES PATENT OFFICE

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CONTAINER LATCH AND LOCK

Carl A. Vahlstrom, New Britain, and Philip J. Walther, Newington, Conn., assignors to The American Hardware Corporation, New Britain, Conn., a corporation of Connecticut

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This invention relates to improvements in container latch and lock and more particularly to a latch which is primarily intended for use in connection with containers such as boxes, cases, and the like.

An object of the present invention is to provide a latch construction which is highly economical to produce and in which the bolt and its operating mechanism may be assembled as a separable unit which can be inserted into a casing as the casing is mounted to its container.

A further object of this invention is the provision of a latch which is extremely simple in construction, contains a minimum of parts and is highly efficient in its operation.

Further objects and advantages of this invention will be more clearly understood from the following description and the accompanying drawings in which:

Fig. 1 is a front view of our invention showing the same attached to a box.

Fig. 2 is a side view thereof.

Fig. 3 is a rear view of the casing of said latch.

Fig. 4 is an enlarged front view of the latch showing the casing thereof in section.

Fig. 5 is a side view of the bolt unit with the casing shown in central vertical section.

Fig. 6 is a rear view of said unit and casing.

Fig. 7 is a front view of the bolt unit showing the same in unlocked condition.

Fig. 8 is a side view thereof in central vertical section.

Fig. 9 is a front view of the lock plate used in the said unit.

In the embodiment of our invention, as illustrated in the drawings, our improved latch includes a casing 5 which is adapted to contain a unit that includes a resilient bolt member 6 comprising a U-shaped spring having a latching finger 7 which extends from the casing 5 into a keeper in the form of a shell 8, through a notch 8-a in the wall thereof, and engages the inner side of said wall.

In the form shown, the casing 5 may be secured directly to a member, such as the box indicated at 9, by means of prongs 10 thereon which are inserted into openings in the said box and folded against the back of the box wall. The keeper 8 is also provided with similar prongs 11 by means of which it is likewise secured to the cover of the box as indicated at 12.

The said keeper is preferably provided with guide fingers 13 which extend through recesses or notches 14 in the casing 5 for retaining the keeper in alignment therewith.

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The bolt member 6 and its locking mechanism are combined into a separable unit which may be readily inserted into operative position within the casing 5 as the said casing is attached to the wall of the box 9. This unit includes a locking plate 15 having an eyelet 15 projecting therefrom and extending through an opening 17 in the rear leg 18 of the U-shaped bolt member 6 so as to rotatably mount the said plate between the said rear leg and the front leg 19 of the bolt member.

A flat retaining spring 20 is secured against the rear surface of the leg 18 by means of a flange which is formed on the eyelet 16 and the said spring has ears 21, which engage the sides of the leg 18 to prevent rotation of the spring, and resilient fingers 22 at opposite sides thereof which engage recesses 23 in the rear surface of the locking plate 15 to position said plate in either locked or unlocked position relatively to the bolt.

The said locking plate is also provided with a projection 24 which extends rearwardly therefrom and engages the sides of the leg 18, or the ears 21, to provide a stop for limiting the rotation of the plate between the said locked and unlocked positions. The said plate is also provided with perpendicular ears 25 at opposite sides thereof which operate to prevent unlocking movement of the bolt 6, when the plate 15 is in locked position, and a perpendicular stud 26 is provided, adjacent to the opening 16-a in the eyelet portion, to be engaged by a key for rotating the said plate.

The bolt 6 is provided with shoulders 6-a which engage the wall of the shell 5 adjacent to the opening therein to retain the locking unit within said shell and to resist the pull which is applied to the bolt when an attempt is made to move the keeper while the bolt is in locked position.

The said bolt has a forwardly projecting curved portion 27 which extends into an opening 28 in the front wall of the casing 5 and the said opening has side flanges 29 which are disposed at opposite sides of the bolt to locate the locking unit within the casing 5 and permit movement of the bolt between said flanges 29.

The bolt also has a central key opening 30 which extends through the curved portion 27 thereof and is aligned with the opening 16-a so as to rotatably receive a key 31 therein (shown in dotted lines), which engages the stud 26 and thereby rotates the locking plate 15.

The operation of our improved latch is as follows: when it is desired to lock the latch, the key indicated at 31 is inserted through the opening 30 and into the opening 16-a so that the operating finger of the key will engage the stud 26 to

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rotate the plate 15. When the said plate is rotated into locking position, the ears 25—25 will be disposed in back of the bolt 6 so that it cannot be forced inwardly to cause the finger 7 to be disengaged from the keeper 8.

When it is desired to unlock the latch, the plate 15 is rotated with the key to the position indicated in Fig. 8, wherein the locking fingers 25—25 are disposed at opposite sides of the bolt 6 and rearward movement of the bolt 6 is permitted between the said fingers when it is forced inwardly to its unlocking position illustrated in dotted lines in Fig. 8.

It will be noted that the bolt 6, the locking plate 15 and the retaining spring 20 are joined together, by means of the eyelet 16, to form a self-contained unit which is readily insertable into the shell 5 as the said shell is secured to the container 9. This greatly facilitates the assembling of the latch and materially reduces the cost thereof since no previous assembling of the bolt to the casing is required. Also, when in its operative position within the shell 5, the said unit rests against the wall of the container 9 and thereby eliminates the necessity for a back plate on the shell 5 such as heretofore commonly used in devices of this class.

As shown in Fig. 5, the eyelet 16 preferably projects beyond the rear surface of the retaining spring 20 into a hole in the wall of the container 5 and helps to position the unit. However, if desired, the hole in the wall of the container may be eliminated by making the end of the eyelet flush with the surface of the spring and reducing the length of the key end so that it will not project beyond the eyelet.

We claim:

1. A latch lock comprising a casing and a self-contained locking unit within said casing; the said unit including a U-shaped spring member having one leg thereof forming a movable bolt having a latching finger, the other leg of said member having a locking plate rotatable thereon with locking fingers movable, by rotation of said locking plate to a selected position, into register with the said bolt to prevent movement thereof, and a spring member secured to said other leg and engageable with the said locking plate to resist rotation thereof.

2. A latch lock comprising a casing and a locking unit contained within said casing; the said locking unit including a U-shaped spring member having one leg thereof forming a movable bolt that extends outwardly from the casing, the other leg of said member being adapted to be supported in stationary position by and on the surface of the member to which the casing is to be secured, a locking plate rotatable on said other leg, a locking finger projecting from said plate in the direction of the bolt and, upon rotation of said locking plate to a selected position, being engageable with the bolt to prevent unlocking movement thereof, key engageable means on said plate permitting rotation of the plate by a key, and a retaining spring bearing on the locking plate to resist rotation thereof.

3. A latch lock mechanism comprising a casing and a self-contained locking unit separably mounted within said casing; the said unit comprising a U-shaped spring member having a movable leg and a stationary leg, the said movable leg forming a bolt having a portion extending outwardly through an opening in said casing, a locking plate disposed between the said stationary and movable legs and rotatably secured to

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the stationary leg, a retaining spring also secured to the stationary leg and engaging said plate to resist rotation thereof, a locking finger projecting from said plate and movable, by rotation of said locking plate to a selected position, into position to engage the rear of the bolt and prevent unlocking movement thereof, the said bolt having an operating portion accessible through an opening in the front of said casing and the said portion having a key opening permitting the insertion of a key therethrough for operating the locking plate, and a projection on said plate engageable with said key for rotating the plate to locked and unlocked positions.

4. A latch lock mechanism comprising a casing and a locking unit contained within said casing; the said locking unit comprising a U-shaped member having a movable and a stationary leg, the said movable leg forming a bolt, an extension on said bolt projecting outwardly through an opening in the casing, a locking finger on said extension, abutment shoulders on said bolt engageable with the casing to secure the bolt against longitudinal movement relatively to the casing, key operated locking means between the said stationary and movable legs which, when in a selected position, prevents unlocking movement of the bolt, and a curved portion on said bolt extending forwardly into an opening in the front of said casing and accessible through said opening to permit manual operation of the bolt, the said curved portion having a key opening therein to permit the insertion of a key through said bolt for the operation of said locking means.

5. A latch lock comprising a casing and a self-contained locking unit within said casing; the said locking unit comprising a U-shaped spring member having a stationary leg adapted to be positioned upon the wall of a container and a movable leg normally urged in the direction of the front wall of the casing, said movable leg forming a bolt having a curved portion extending into an opening in the said wall of the casing to permit manual operation of the bolt, an extension on said bolt projecting outwardly through an opening in the wall of the casing, a locking finger on said extension, a locking plate rotatably secured to the stationary leg of said U-shaped spring member and disposed between said stationary leg and the movable leg, a spring secured to said stationary leg and engageable with spaced recesses on said plate for positioning the plate and resisting rotation thereof, a projection on said plate engageable with the bolt when the plate is in locking position to prevent movement of the bolt to unlocking position, a separate projection on said plate; the said bolt and plate having key receiving openings accessible through the opening in the front of the casing to receive a key that is adapted to engage said separate projection for rotating the plate into locked and unlocked positions.

6. A latch lock comprising a casing having an opening in the front wall thereof with flanges extending inwardly from the sides of said opening, a U-shaped spring member contained within said casing and having a stationary leg and a movable leg, the said movable leg forming a bolt movably positioned by and between the said flanges and accessible through said opening for the operation thereof, an extension on said bolt projecting through an end wall of the casing, a hook portion on said extension, a key operated locking mechanism including a plate rotatably mounted on said stationary leg, fingers on said

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plate engageable, when in a selected position, with the bolt to prevent unlocking movement thereof, the said bolt having a key opening therein accessible through the opening in the casing to receive a key for rotating said plate.

7. A latch lock comprising a casing and a locking unit contained within said casing; the said locking unit comprising a U-shaped spring member having a stationary leg and a movable leg forming a bolt, the said bolt being accessible through an opening in the front of the casing, a locking plate disposed between the said stationary leg and bolt and having an eyelet portion extending through an opening in the stationary leg for rotatably mounting said plate thereon, locking fingers on said plate engageable, when in a selected position, with the bolt for preventing unlocking movement thereof, a retaining spring secured by said eyelet portion against the side of the stationary leg opposite the locking plate and having extensions engageable with the plate to resist rotation thereof, and a projection on said locking plate, the said bolt having a key opening therethrough in alignment with the opening in the said eyelet portion to permit the insertion of a key into said openings for engaging said projection to thereby rotate said locking plate.

8. A container latch lock comprising an open-back casing having a front wall, side walls, and end walls, the said front wall having an opening therein with adjacent flanges projecting inwardly into said casing and one of said end walls having an opening therein, and a self-contained locking unit positioned within the said casing and adapted to be supported thereby against the wall

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of the container; the said unit including a U-shaped spring member having a stationary leg and a movable leg forming a bolt, an extension on said bolt, a locking finger on said extension, a key-operated locking plate pivotally secured to the stationary leg and located between it and the movable leg, a retaining spring member also secured to said stationary leg and engaging said locking plate to resist rotation thereof, said movable leg having a portion accessible through the opening in said front wall; the said portion having a key opening therein, a locking finger on said locking plate engageable, when in a selected position, with the movable leg to prevent unlocking movement thereof; the said unit being positioned by the end walls and the said flanges, with the loop between said legs and the end of the stationary leg abutting the end walls of the casing, the said stationary leg being adapted to rest against the surface of the container wall and the said movable leg being disposed between the said flanges with the projection thereon extending through the opening in the end wall, and means on said casing for securing it to the container wall.

CARL A. VAHLSTROM.
PHILIP J. WALTHER.

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