United States Patent [19]

Manuel, deceased

[11] **3,848,440**

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[54] **PADLOCK CASE**

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[52] **U.S. Cl.** ..... **70/55,** 206/527, 150/52 R

[51] **Int. Cl.** **E05b 67/38**

[58] **Field of Search** ..... 70/52, 54, 55, 56, 455; 150/.5, 52 R; 206/46 H, 527; 249/92, 97, 121

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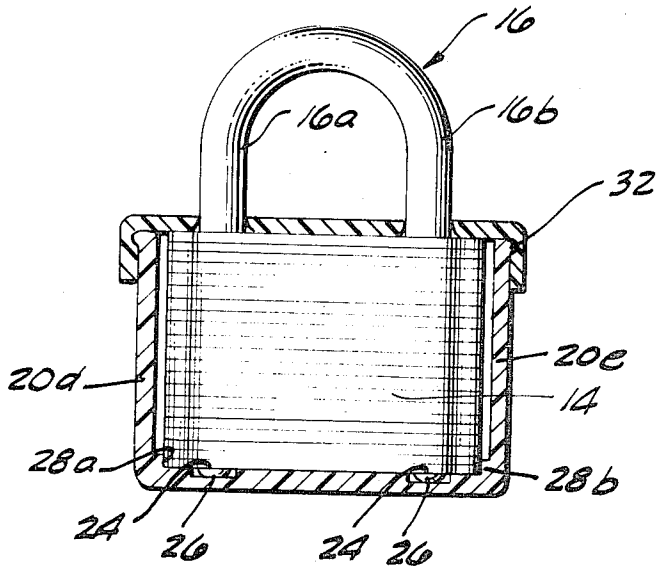
[57] **ABSTRACT**

A padlock case adapted to contain the body portion of a padlock. The case includes a container and a cover that mate to surround the padlock body of a padlock. Bevelled holes in the cover tightly receive the legs of the shackle of the padlock so that water can not get into the case via the openings provided by the cover holes. Container lips on flexible container walls act to hold the padlock body within the container. A container flange fits into a cover flange to form a seal between the cover and the container. The above and other features of the case increase its utility. The case is well suited for outdoor use on a padlock body and is especially suited to keep mud, water, or other harmful elements away from the body portion of a padlock.

11 Claims, 7 Drawing Figures



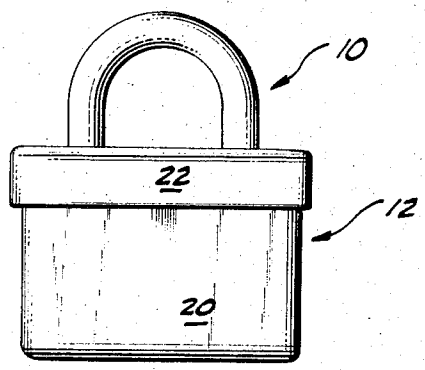


FIG. 1.

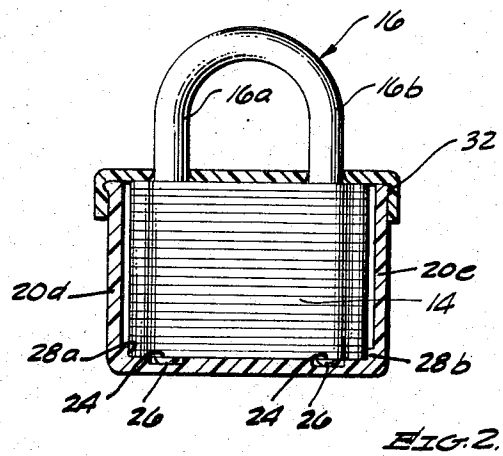


FIG. 2.

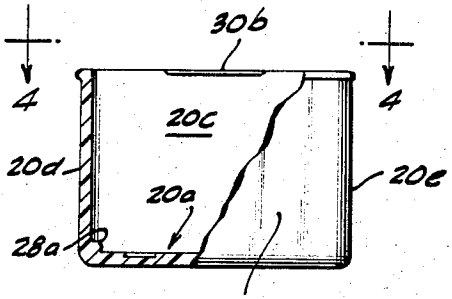


FIG. 3.

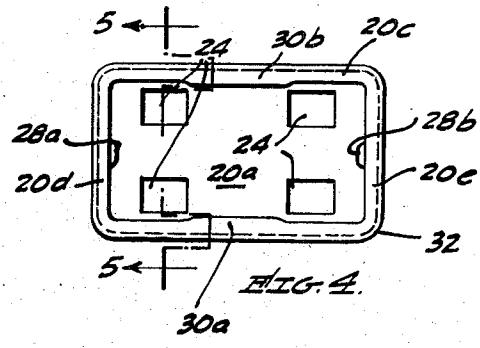


FIG. 4.

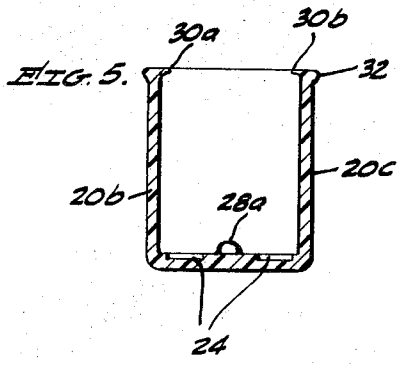


FIG. 5.

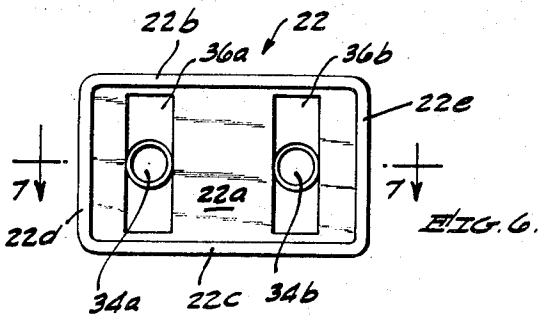


FIG. 6.

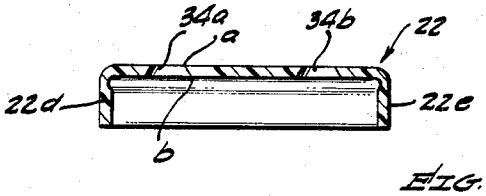


FIG. 7.

PADLOCK CASE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to cases adapted to contain the body portions of padlocks in order to protect the padlock body portions from being ruined by direct exposure to mud, sand, water, dirt, rain, etc.

Padlocks are used outdoors on vehicles, boats, and elsewhere to lock up articles such as vehicle spare tires, bicycles and other articles. Any padlock that is left outdoors can be ruined in a short time by mud, sand, dirt, water, rain, or moisture. Mud can clog up the key slot of a key operated padlock. Water or moisture can get into the body portion of the padlock causing the parts of the lock mechanism to rust up. The padlock can become tarnished. A rusty padlock can "freeze up" so that it can not be unlocked. Many of the padlocks that are currently sold are bought as replacements for padlocks that have been rendered useless due to having been directly exposed to outdoor conditions in which they have been covered with mud, placed in water, or otherwise subjected to harmful elements.

It is the main object of the present invnetion to provide a case that is adapted to contain the body portion of a padlock that is to be used outdoors. The case serves to keep the padlock in good working condition when it is subject during normal use to mud, water, moisture, or the like.

The case provided by the present invention can be made in varios forms and can include various features. The The particular padlock described hereinafter is comprised of a container and a cover that removably mates with the container. The cover has two bevelled holes adapted to receive respective shackle legs of a padlock. A padlock body portion can be disposed within the container with the legs of the padlock's shackle extending through the holes in the cover to the outside of the case. The cover holes are sized to form a close fit between the shackle legs and the surrounding portions of the cover. The described padlock case includes several features that add to the utility of the case. One feature is flexible container walls having lips that act to hold the container onto the padlock body portion. Another feature is a container flange that fits into a flange on the case cover to to form a seal between the cover and the container.

The above and other objects of the present invention and advantages and features of the invention will be made clear upon review of the following discussion of an embodiment of the present invention taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an elevation, frontal view of a padlock and a case, comprised of a container and a cover, which encloses a body portion of the padlock.

FIG. **2** is a view similar to the view of FIG. **1** except that the case is shown in cross section in this instance.

FIG. **3** is an elevation view of a case contanier shown with a portion of its front wall cut away.

FIG. **4** is a plan view, taken along line **4—4** of FIG. **3**, of a case container.

FIG. **5** is a transverse section view taken along line **5—5** of FIG. **4**.

FIG. **6** is a plan view of the bottom side of a case cover also shown in FIGS. **1** and **2**.

FIG. **7** is a view taken on line **7—7** of FIG. **6**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. **1** and **2** show a conventional padlock **10** in combination with a case **12**. The padlock includes a padlock body portion and a shackle. The padlock body portion, or padlock body is labelled **14** and the shackle is labelled **16**. The shackle includes a bight portion connecting two shackle legs **16***a* and **16***b*. A key slot (not shown) in the bottom end of the padlock body receives a key which can be turned to release a free end (not shown) of the shackle legs **16***b* from locked engagement with a lock mechanism within the body **14**. The illustrated padlock is a key operated padlock and the illustrated case is particularily designed for use in combination with this padlock. Similarily, a combination type padlock, having a combination dial, can be protected, by following the principles of the invention, by a case particularily designed for use in combination with the padlock.

The case **12** surrounds the padlock body portion **14** which is contained, or nested, therein and thereby protected by the case against direct exposure to mud, water, or other harmful elements of an outdoors environment.

The case **12** is comprised of a case container **20** and a case cover **22** which mate with each other to define an enclosed space therein which is adapted to receive the body portion **14** of a padlock **10** in the manner shown in FIG. **1**. The space defined by the case is slightly greater in volume than the volume occupied in the case by the padlock body **14**.

The case container **20** includes a bottom wall **20***a*, a front wall **20***b*, a back wall **20***c*, and side walls **20***d* and **20***e*. The upper end of the container is open so that a padlock body can be placed into the container.

The container bottom wall **20***a* includes four recesses **24** provided to receive respective rivet ends **26** protruding from the bottom end of the padlock body near its lowermost corners. Two tiny bumps, or bosses, **28***a*, **28***b* protrude from side walls **20***d* and **20***e* near bottom wall **20***a* to locate the padlock body in the center of the container, which container is slightly wider than the width of the padlock body, as indicated in FIG. **2**, with the sides of the padlock body pressed between the bumps **28***a*, **28***b* which are somewhat resilient. Two elongated, narrow lips **30***a*, **30***b* are formed on the inside of the upper edges of the container front wall **20***b* and the container back wall **20***c*. Each of these lips extends sidewardly a slight distance toward the center of the container to hang over the inside surfaces of the front and back walls. The width of the gap between these lips is slightly less than the thickness of the padlock body **14**. The width of the gap between the front and back container walls in slightly greater than the thickness of the padlock body.

The container lips **30***a*, **30***b* cooperate to lightly, but firmly, embrace the upper portion of the padlock body to hold the container on the padlock body and thereby keep the container from falling away from the padlock body. A narrow rim flange extends around the upper end of the container and fits in the case cover (see FIG. **2**) to provide a more effective seal between the container and the cover and to provide a tighter fit between the container and the cover.

The case cover **22** includes a top wall **22***a* and a cover flange defined by a front wall **22***b*, a back wall **22***c*, and side walls **22***d* and **22***e*. The cover mates with the container so that the cover flange overlaps with the upper end of the container which endd fits snugly into the cover flange.

The cover **22** includes two bevelled, round holes **34***a*, **34***b* located in the middle of the cover wall **22***a* and having a center to center spacing equal to the spacing between the centers of the legs **16***a*, **16***b* of the shackle **16** of the padlock **10.** Each cover hole **34***a*, **34***b* is bevelled to have a conical configuration, as shown in FIG. **7,** to form a shall diameter edge *a* at the top side of the cover wall **22***a* and a large diameter edge *b* of slightly larger diameter than edge *a*, at the bottom side of the cover wall **22***a*. The hole edges *a* and *b* of both cover holes are of equal diameter. The diameter of the edge *a* of each hole is slightly less than the diameter of the shackle legs **16***a*, **16***b*(which are of the same diameter). The diameter *b* of each cover hole is slightly greater than the diameter of the shackle legs **16***a*, **16** *b*. Shackle legs **16**a and **16***b* are received in the cover holes in a close fit with the legs acting to cause resilient enlargement of the hole edges *a*. The shackle legs seal the cover holes with the hole edges *a* resiliently embracing the shackle legs to keep water from getting into the case throught the openings provided by the cover holes. The cover holes serve as aperture means through which the shackle legs project from the padlock body to the outside of the case.

The bottom side of the cover wall **22***a* includes two rectangular recesses wherein the cover holes **34***a*, **34***b* are located. Some padlocks have body portions with annular lips that surround the shackle legs at their point of entry into the padlock body portion. The recesses, identified as **36***a* and **36***b*, are provided to receive such annular lips when such padlock has its body portion contained in the case.

The container **20** and the cover **22** are both molded plastic members and are in this instance made of polyethylene. Other suitable plastice material can be used in lieu of polyethylene. The thickness of the walls of the container and of the cover is such that they are not completely rigid but are instead somewhat flexible to make it easy to mate and unmate the cover and the container and yet obtain a close fit between the cover and the container when they are mated.

The case **12** surrounds the padlock body portion **14** and thereby protects it from outdoor conditions. Although the case is primarily useful for protecting a padlock during its use outdoors it is also useful to keep the padlock body portion from scratching up other articles such as a bicycle provided with a chain and an encased padlock used to chain up the bicycle.

The padlock **10** and the case **12** are assembled as follows. First, the padlock is unlocked to disengage, or release, a free end (not shown) of the shackle legs **16***b* from the lock mechanism in the padlock body **14.** Next, The container is held in one hand and the container side walls **20**d and **20***e* are squeezed together to bow or flex these walls inwardly of the container toward each other to thereby cause the container front and back walls **20***b* and **20***c* to bow outwardly of the container so that they flex away from each other to increase the width of the gap existing between the container lips **30***a* and **30***b*. The lips move away from each other until the gap between them becomes wide enough to receive the padlock body portion **14** without any significant interference between the lips and the nearby sides of the padlock.

The padlock body portion **14** is lowered through the open upper end of the container **20** and made to approach the bottom wall **20***a*. The lower edges of the sides of the padlock body slip, or move, between the bumps **28***a*, **28***b* which thereupon plastically, or resiliently, deform to lightly embrace the padlock body while acting to center the padlock body inside the container so that the sides of the padlock are equally spaced from the container side walls **20***d* and **20***e*.

Next, the squeeze pressure exerted on the container side walls **20***d* and **20***e* is removed whereupon these walls return, by virtue of their inherent resiliency, to, or toward, their natural, unflexed condition and configuration. The container container front and back walls thereupon resiliently resiliently return to, or toward, their natural, unflexed condition and configuration causing the container lips **30***a*, **30***b* to firmly embrace, or grip, the upper end of the padlock body, with the container lips, depending on the precise dimensions of the particular case, either (a) contacting the front and back sides of the padlock body at a point slightly below the upper edges of the padlock body, or (b) projecting over onto the upper end of the padlock body. The container lips act to hold the container on the padlock body so (a) the container will not fall off of the padlock body and (b) the padlock body can not be easily removed from within the container without first causing the container lips **30***a*, **30***b* to separate or move away from each other so that the sides of the padlock body will substantially clear the lips as the padlock is withdrawn from the container.

Next, the cover **22** is assembled with the container **20** and padlock **10** as follows. The free end of shackle leg **16***b* is inserted into cover hole **34***a* which fits tightly onto the shackle leg so that the edge *a* of the hole **34***a* wipes along the shackle leg, and the cover is moved past the bight portion of the shackle onto the shackle leg **16***a*. The cover is now pivoted about the shackle leg **16** a and aligned with the cover so that the cover flange faces toward the upper end of the container. The cover **22** is now pushed downward onto the upper end of the container to mate the cover and container with the cover flange overlapping the upper end of the container flange, or lip, **32** closely fitted within the cover flange to seal the cover to the container. The cover flange and also the flange **32** act to keep water out of the case. Next, the shackle is pivoted about its leg **16***a* to locate the free end of the shackle leg **16***b* over the vacant cover hole **34***b*, which is in registry with the opening of the padlock body that is adapted to receive the free end of the shackle leg **16***b*. The padlock can now be locked by pushing the shackle toward the padlock body to drive the free end of the shackle leg **16***b* through the cover hole **34***b* and into the padlock body into locking engagement with the padlock lock mechanism. The shackle legs **16***b* seals the opening provided by the cover hole **34***b* in the manner shown in FIG. **2.** Because of the close fit between the shackle legs **16***a*, **16***b* and the surrounding edges, or portions of the cover **22,** water can not get into the case via the cover holes **34***a*, **34***b*.

The case **12** can be separated from the padlock **10** in the following manner. First, the cover **22** is gripped by its cover flange and the cover is lifted away from the

container **20** to unmate the cover from the container. The cover is moved toward the bight portion of the shackle **16** to so locate the cover that the cover holes **34***a*, **34***b* encircle the upper ends of the shackle legs near the bight portion. Squeeze pressure is exerted on the container side walls **20***d* and **20***e* to cause them to bow inward and force the container front and back walls **20***b* and **20***c* to bow outward to carry the container lips **30***a*, **30***b* substantially out of contact with the upper part of the padlock body so that the effective gap between the container lips **30***a*,**30***b* widens and becomes wider than the thickness, from front to back, of the padlock body portion **14.**

Next, the padlock **10** is lifted away from the container **20** to lift the padlock body portion **14** out of the container through its open upper end. The padlock can now be unlocked in the usual manner by the use of a key. After the padlock has been unlocked so that the free end of the shackle leg **16***b* is disposed outside of the padlock body it is possible to remove the case cover **22** from the padlock by (a) pushing the case toward the padlock body to remove the shackle leg **16***b* from the cover hole **34***b*, and (b) slipping the cover along the shackle leg **16***a*, the shackle bight portion, and the leg **16***b* until the free end of the leg **16***b* is removed from within the cover hole **34***a*.

Although the best mode contemplated for carryout the present invention has been herein shown and described, it will be apparent that modifications and variation may be made without departing from what is regarded to be the subject matter of the invention.

What is claimed is:

1. A case adapted to contain and surround the body portion of a padlock to protect it from mud, water, or other substances, the case including opening defining means adapted for receiving the legs of a padlock shackle, the opening defining means being comprised of two round bevelled holes each sized to form a snug fit with a respective shackle leg whereby a body portion of a padlock can be contained within the case with the padlock's shackle protruding through the case to the outside of the case.

2. The case set forth in claim **1** wherein the case comprises a case container having an open upper end and a case cover that mates with the open upper end of the case container, the opening defining means being situated in the case cover.

3. The case set forth in claim **2** wherein said case container includes a container flange on its upper end and wherein said case cover includes a cover flange, said container flange being adapted to fit tightly into said cover flange.

4. The case set forth in claim **2** wherein said case container and case cover are comprised of plastic material formed to define flexible walls in each of them.

5. The case set forth in claim **2** wherein said case container and said case cover substantially conform in size and shape to a body portion of a padlock to be contained within said case.

6. The case set forth in claim **2** wherein said case container includes flexible walls with lip means on at least one wall adapted for gripping a corresponding side of a padlock body portion.

7. The case set forth in claim **6** wherein said lip means is comprised of respective lips on opposed walls of said case container, said lips being adapted to press upon opposed portions of a padlock body portion to hold the padlock body portion disposed in said case container.

8. The case set forth in claim **6** wherein said flexible walls are relatively nonstretchable.

9. The case set forth in claim **2** wherein said case container includes integral means adapted to center a padlock body portion within said case container.

10. The case set forth in claim **9** wherein said flanges are relatively nonstretchable.

11. The case set forth in claim **10** wherein said case container and case cover are comprised of flexible but relatively nonstretchable material.

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