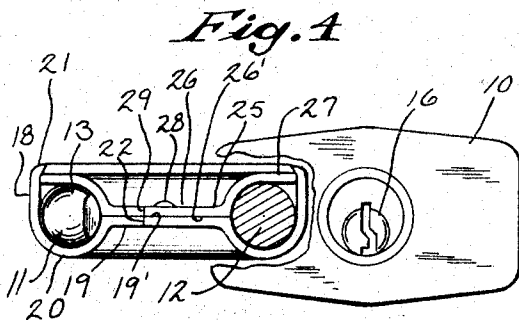
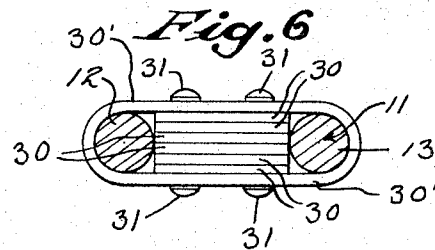
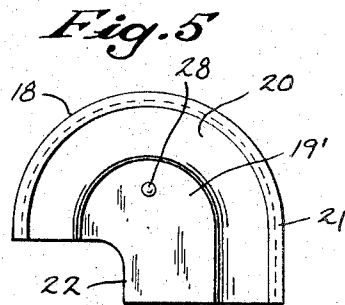
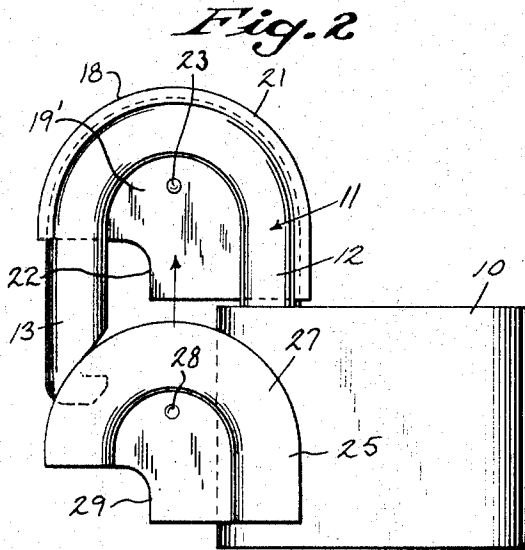
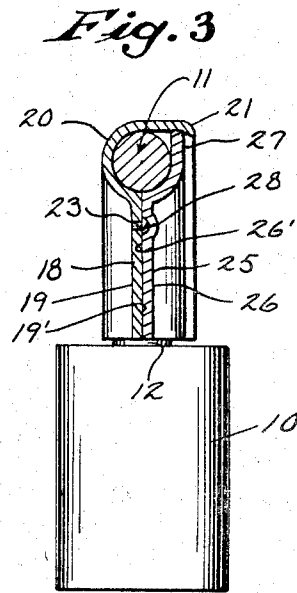
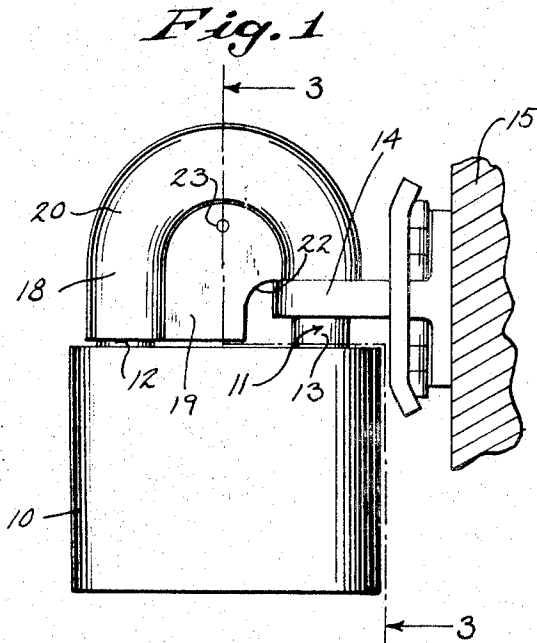


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R. L. OWEN ET AL
PADLOCK SHACKLE GUARDS
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PADLOCK SHACKLE GUARDS

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3 Claims

ABSTRACT OF THE DISCLOSURE

To provide a metallic guard or shield for the major portion of the space bounded by the legs of a padlock shackle when the latter is in closed condition, the shackle legs have applied thereto a space-blocking safety guard or shield. The guard is of an eccentric shape to provide within the outline of the closed shackle a relatively small opening to receive a hasp, staple, eye, hook, or the like, when the padlock is applied for closure locking purposes, but the guard will prevent the insertion of a bar, rod, or tool such as might be unauthorizedly used to exert leverage and pressure between the body or case of the lock and the shackle in an effort to force, twist, or pry the shackle sufficiently to release the padlock.

BACKGROUND OF THE INVENTION

Field of the invention

The present invention pertains to means for guarding the space bounded by the legs of a closed padlock shackle to eliminate the possibility of it being tampered with and released or mutilated, to thereby enhance the safety features of the padlock to which it is applied.

Description of the prior art

As far as applicants are aware there is nothing presently available which is similar in any respect to the improved padlock shackle guard, either in purpose or construction.

SUMMARY OF THE INVENTION

Burglars and thieves have for many years used various methods of attack on padlocks in an attempt to gain entry to a dwelling, warehouse, garage, factory, cabinet, or other closure controlled thereby to steal the personal property or valuables housed within such enclosures. If the padlock body or case resists blows thereon or attempts to pick the lock cylinder, the burglars then will attempt to force open the padlock shackle by inserting in the opening bounded by the shackle legs a suitable tool, or they may attempt to file, cut, or saw the shackle, or insert devices into the case openings around the shackle legs for the purpose of releasing the padlock lever or levers to surreptitiously release the padlock. Padlock manufacturers, consequently, have sought to make their locks strong and tamperproof, but the shackle has often, heretofore, proved to be one of the most vulnerable points of attack. Pursuant to the present invention the improved padlock shackle guard serves to protect and guard the space within the inverted U-shaped padlock shackle and, when the padlock thus equipped hangs from a staple, eye, or hook, it cannot be forced for padlock opening purposes.

The improved shackle guard may be provided in different types and sizes to engage shackles of various sizes and of varying dimensions. The shackle guard can be placed on the shackle at the factory during the manufacture of the padlock, or it can be provided in a pair of sections susceptible of being easily applied to the padlock shackle by dealers and locksmiths after the padlock has been sold or is in use.

Another object of the invention is to provide, for application to a padlock shackle, a guard or shield which adds to the sturdy and heavy appearance of the padlock and serves to warn burglars or tamperers that such padlocks will resist their attempts to disengage or release the same.

Still further objects of the present invention are to provide a padlock shackle guard which is easily applicable to padlock shackles of various types, which is simple in design and construction, which is relatively inexpensive, which greatly enhances the safety features of the padlock to which it is applied, and which is otherwise particularly well suited for the purposes described.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing, wherein the same reference characters designate the same or similar parts in all of the views:

FIG. 1 is a side view of a padlock equipped with the improved shackle guard with the padlock locked onto a hasp;

FIG. 2 is a side view of a padlock with the locking leg of the shackle thereof released and swung away from the body or case of the padlock and illustrating the manner in which the shackle guard components may be applied to the padlock shackle;

FIG. 3 is a vertical sectional view taken approximately along the line 3—3 of FIG. 1;

FIG. 4 is an inverted plan view of the released padlock shackle in its position of FIG. 2 only fully equipped with the components of the shackle guard, parts being broken away and shown in section;

FIG. 5 is a rear face view of one of the components or plates of the shackle guard which, as is shown in FIG. 2, is applied to portions of the shackle leg before assembly of the other element or plate of the shackle guard; and

FIG. 6 is an inverted plan view of a modified form of shackle guard of laminated form and with the outer lamination formed to encircle the padlock shackle legs, which are shown in section.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now more particularly to the drawings, it will appear that a padlock body or case is indicated by the numeral **10**, and the same, as is standard, has projecting from an end thereof a shackle designated generally by the numeral **11**. Said shackle has an extension or long leg **12** extending into a cavity in the padlock body **10** and arranged to permit yielding reciprocatory movement of the shackle, when released, and swinging movement thereof. The releasable or short leg **13** is lockingly engaged by suitable conventional spring-urged mechanism (not shown) within a cavity in the body **10** and said lever mechanism is set or released by conventional key-operated cylinder plug mechanism (not shown) housed within the lock body **10**.

For guarding an enclosure or the like so as to prevent surreptitious entry thereinto and theft, the released padlock shackle is normally applied to a staple, eye, or hasp **14** projecting from a surface **15**, and then the shackle is pivoted so as to register the short shackle leg **11** with its opening in the padlock body, whereupon when the shackle is reciprocated or forced inwardly, the shackle will be locked into the body **10** and relative to the hasp or other element it engages.

In attempts to unauthorizedly open a padlock to gain surreptitious entry to the enclosure controlled thereby, a burglar or tamperer may subject the padlock body to severe blows or pick the lock cylinder to move the pin tumblers in the keyway. Should the padlock under attack be so strong as to resist this type of tampering the burglar may then work on the padlock shackle to attempt to force it open by inserting a strong prying tool or instru-

ment into the space within the outline of the shackle legs. Or, a burglar may attempt to file, cut or saw the shackle or insert a shim into a shackle leg opening and thereby manipulate and release the locking lever mechanism.

The shackle guard of the present invention provides a simple means for thwarting the above-mentioned unauthorized attacks on the locked padlock shackle body so that when the locked padlock hangs from a staple, eye or hook, it cannot be forced or released, with the consequent opening of the padlock.

As is illustrated in FIGS. 1-5 of the drawing, in its preferred form the novel shackle guard of the present invention includes a first metal plate or section 18 which is of inverted U-shaped design conforming to the outline of the shackle 11, said section including a flat main portion 19 having an outer face and having an inner face 19'. The outer curved edge of said section 18 is provided with an outwardly bowed flange 20 forming a groove within which the shackle 11 closely fits. The main portion 19 of said guard section 18 is adapted to span the major portion of the space bounded by the shackle legs 12, 13 when said device is applied to a padlock shackle, as will be described.

As shown in FIG. 3, the curved flange 20 on said guard section 18 is designed to extend around more than half of the circumference of the shackle cross section, and is formed with a substantially straight extension portion having a slightly inturned flange or lip 21 thereon. The main portion 19 of said guard section is provided with a cutout or recess 22 in the lower corner thereof adjacent the short leg 13 of the shackle to accommodate a hasp 14, padlock eye, hook, or other element when the padlock is locked. In the inner face 19' of said main portion 18 of the guard there is a small protruding rivet or stud 23 and the stock on the outer face of the guard section 18 is bumped outwardly, slightly.

Referring now more particularly to FIGS. 2-4 of the drawing, the complete shackle guard assembly includes a second plate or section 25 which is designed to be mounted on said section 18 in superimposed relation, said second section being slightly smaller than said first section to fit within the confines of the inturned edge flange or lip 21 thereon, as will be hereinafter seen. Preferably, said mating guard sections 18, 25 are formed of hardened steel but other suitable metal or other material could be utilized and the invention is not to be limited in this respect.

As best appears in FIG. 3, the smaller section 25 is provided with a flat portion 26 having an inner face 26' with a dimpled recess 28 therein adapted to receive the projecting stud 23 on the section 18, and said smaller section is provided with an outwardly-curved peripheral flange 27 designed to extend partially around the shackle cross section, said flange having a relatively straight edge portion engageable beneath the inturned lip 21 on the outer outer edge of the section 18. A cutout 29 (FIG. 2) in the lower corner portion of said smaller section 25 is designed to register with the hasp-receiving cutout 22 in the section 18 when said sections are assembled in superimposed relationship.

As hereinabove mentioned, pursuant to the present invention there is provided a padlock shackle guard substantially filling the space between the leg of a padlock shackle to prevent the unauthorized opening of said padlock, and said guard device can either be permanently mounted on the lock by the manufacturer or it can be supplied in a pair of sections for installation on an existing lock by a dealer or locksmith. Said guard can be applied to locks of either the key-operated or permutation type.

To install the novel shackle guard assembly on a padlock the lock must be released and the short, locking leg 13 of the shackle 11 swung away from the body 10, illustrated in FIGS. 2 and 4 of the drawings. With the shackle thus opened, the first plate member or section 18

is arranged on the shackle with the major portion of said shackle which projects beyond the lock body 10 lodging within the curved groove formed by the peripheral flange 20 on said section. As is shown in FIG. 2, the smaller, mating section 25 of said two-piece guard unit is then positioned relative to said section 18 in the manner illustrated and is manually urged upwardly in covering relation to the section 18 with the flanged edge portion 27 thereon engaging the inturned lip 21 on said larger section with the inner faces 19', 26' of said sections in facing relationship. When said section 25 is moved to a position wherein the edge of the flange thereon is completely engaged beneath said overlapping flange lip 21, the shackle 11 will be embraced by said oppositely-bowed flanges 20, 27 of the guard sections and will be covered thereby. When the section 25 has thus been mounted on the section 18 the protruding stud 23 on the latter registers with and snaps tightly into the recess 28 in the section 25 (FIG. 4) to prevent relative movement of said sections, thereby retaining the same in place.

With the mating sections 18 and 25 securely mounted on the shackle 11 as described the free leg 13 of said shackle can be projected through a hasp 14 (FIG. 1) or other element on the compartment or closure it is intended to lock, said hasp extending through the relatively small, registering cutouts 22, 29 in said overlying sections. The shackle leg 13 is then swung into registration with and forced inwardly into the opening therefor in the padlock body to lock said compartment or closure.

As will be readily appreciated, the novel shackle guard cannot be removed when the padlock is in its closed position, and with said double-layered guard mounted thereon it is virtually impossible to insert a crow bar or other tool between the shackle legs 12, 13 and force or pry the lock open, the hasp-receiving openings 22, 29 being too small to permit the introduction of any effective tool. With said guard mounted thereon it is also impossible to insert shims or other devices into the shackle leg openings in the padlock body in order to manipulate the locking lever mechanism to open the lock, and the heavy protective covering provided around the shackle legs by said guard renders it impractical to cut or saw through the shackle. Thus, the improved shackle guard will effectively prevent unauthorized entry into the compartment or closure protected by the padlock by methods aimed at prying, mutilating or releasing the padlock shackle.

In FIG. 6 of the drawing there is illustrated a modified form of shackle guard assembly. In this form of the invention the guard is formed of a plurality of laminations 30 which are permanently secured together as a unit by rivets 31 or the like. Said laminated plates are designed to fill and block the space between the legs 12, 13 of a padlock shackle 11, as in the principal form of the invention. The opposite outer laminations 30' of said modified form of guard encircle the shackle legs to secure said guard thereon. The advantage of said modified guard design is increased strength provided by its laminated construction, thus further minimizing the possibility of the padlock being forced open or mutilated.

From the foregoing detailed description it will be seen that the present invention provides a novel spaced-blocking shackle guard that effectively prevents the unauthorized opening of a padlock shackle, thereby enhancing the safety features of said padlock and making the same relatively tamperproof. Said shackle guard is easily applicable to padlock shackles of various types, sizes, and styles, is simple in design and construction, and is relatively inexpensive.

It is to be understood that while a preferred embodiment of the present invention and one modified form thereof have been illustrated and described herein, numerous additional variations or modifications will undoubtedly occur to those skilled in the art and it is intended to cover herein not only the illustrated forms of the present invention but also any and all modifications or varia-

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tions thereof as may come within the spirit of said invention, and within the scope of the following claims.

What we claim is:

1. The combination with a shackle-equipped padlock, of a guard affixed to the padlock shackle and blocking the major portion of the space within the shackle outline when the shackle is in closed condition relative to the padlock body, said guard being formed of a pair of complementary superimposed plates whose peripheral portions are provided with curved complementary flanges which embrace portions of the shackle, an edge portion of one of said plates having an inturned lip to receive and engage an edge portion of the other plate.

2. The padlock shackle and guard combination of claim 1 wherein the guard plates are formed with complementary engaging means to secure the plate together in superimposed, shackle-embracing relation which include a protuberance on an inner face of one of the plates and a recess in the other plate to receive said protuberance, one of said plates also being formed with an inturned pe-

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ripheral lip under which a peripheral portion of the other plate is engaged in the assembled superimposed condition of the plates.

3. The padlock shackle and guard combination of claim 1 wherein the guard is provided with a hasp accommodating recess in a lower corner portion adjacent the freeable leg of the shackle.

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