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Tuttle

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[54] **MULTIPLE-LOCK SECURING SYSTEM**

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[52] **U.S. Cl.** **70/14;** 70/DIG. 63

[51] **Int. Cl.** **E05b 73/00**

[58] **Field of Search** 70/14, 18, 15, 57, 58, 70/DIG. 63, 262, 263; 292/148

[56] **References Cited**

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[57] **ABSTRACT**

A multiple-lock securing system for providing access to a secured area by releasing one of the locks. A bar has a security device attached thereto. A locking plate contains openings with locks positioned therein. The bar can be fastened to the locking plate when the locks are positioned in each of the openings. When one of the locks is removed from the locking plate, the bar is released providing access to the secured area.

1 Claim, 4 Drawing Figures

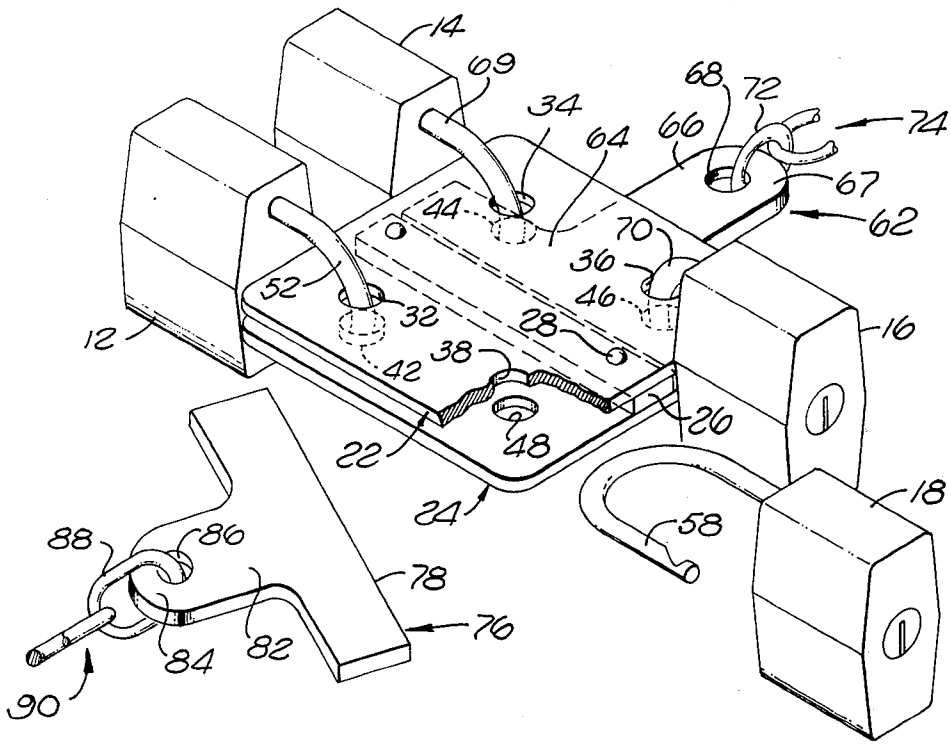


FIG. 1.

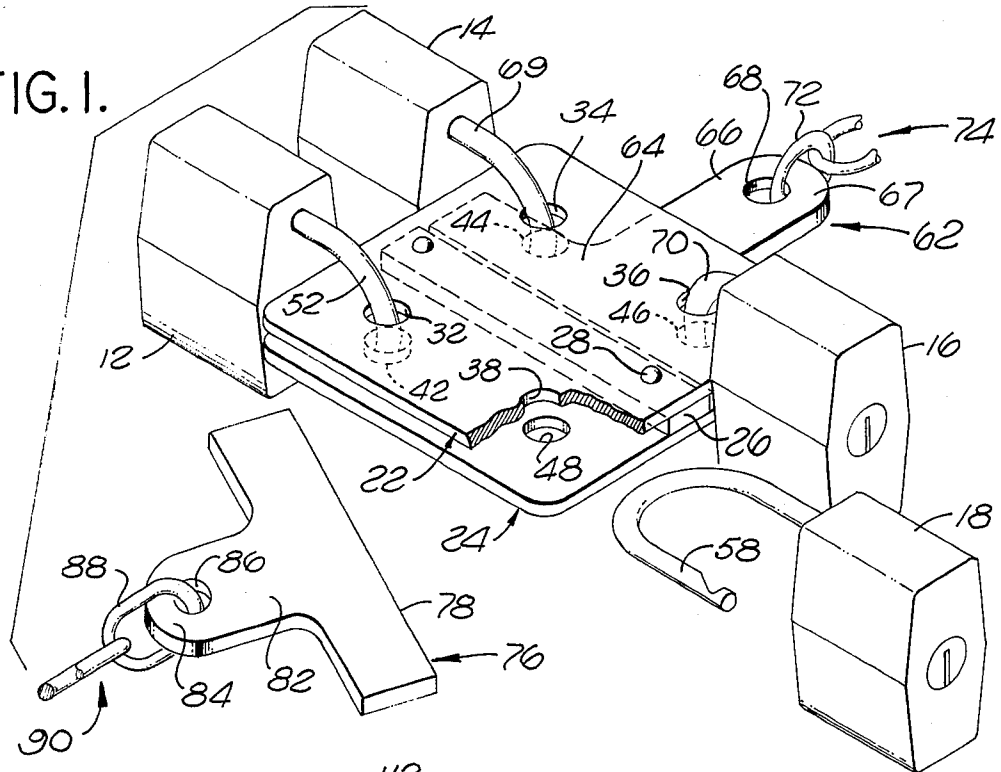
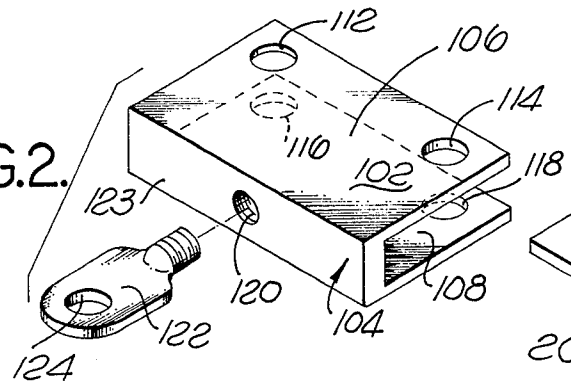


FIG. 2.



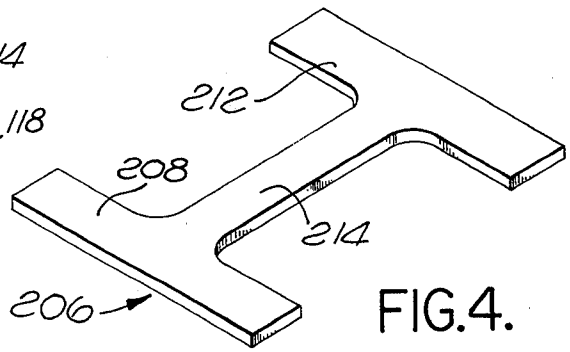


FIG. 4.

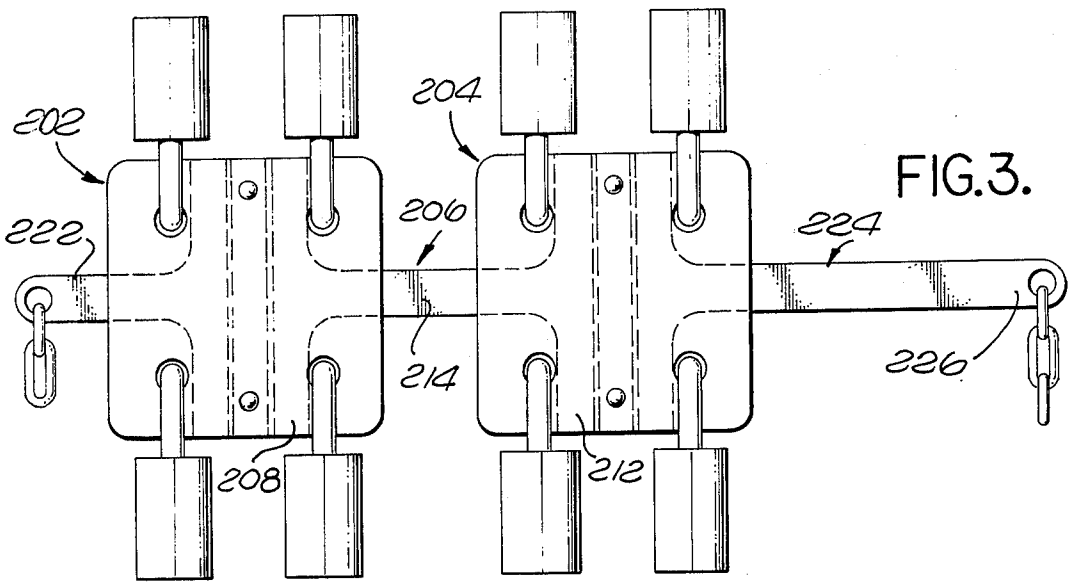


FIG. 3.

MULTIPLE-LOCK SECURING SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

The field of art to which the invention pertains includes the field of securing systems, particularly with respect to a multiple-lock securing system for providing access to a secured area upon removal of one of the locks.

2. Description of the Prior Art

Multiple-lock securing systems, which provide access to a secured area used by a large number of persons, require for the system to remain operative, that each of the locks be fixed in a predetermined manner. Typically, a chain is wrapped around a gate post or an adjacent post fixed in concrete or the like. A multiplicity of locks are fixed along the length of the chain. Removal of one of the locks releases the chain, while retaining the remaining locks intact. Upon replacement of the removed lock, the chain is again secured in place. Typically, each individual user may have his own lock opened only by his own key, which will provide access to and from the secured area. If one of the users should replace the lock in a wrong position, then the area may be entered or left only by opening that particular lock. As a result, individuals are often locked into or out of the secured area due to the improper positioning of one of the locks.

Known prior art includes U.S. Pat. No. 2,963,895.

The present invention provides a multiple-lock securing system for providing access to a secured area. Each of the locks can be easily repositioned once the user has opened the secured area. Each user is provided with a separate key and lock and thus, should one of the users lose his key, the lock can be replaced with a new lock operative by a different key.

SUMMARY OF THE INVENTION

A multiple-lock securing system provides access to a secured area by releasing on of the locks. A bar includes a means for attaching a security device thereto. A locking plate has a plurality of openings for positioning one of the locks therein. The bar is fastened to the locking plate when the locks are positioned in each of the openings. Removal of one of the locks from its respective opening releases the bar and provides access to the secured area.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a multiple-lock securing system shown partially disassembled;

FIG. **2** is a locking plate used in a two-lock securing system;

FIG. **3** is a plan view of a multiple-lock securing system incorporating the locking arrangement of FIG. **1**; and

FIG. **4** is a perspective view of a locking bar utilized in the embodiment of FIG. **3.**

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. **1,** there is shown a multiple-lock securing system constructed in accordance with the principles of the invention. The securing system of FIG. **1** can be utilized with up to four individual locks illustrated as a first, second, third, and fourth lock **12,** 14, 16, and **18,** respectively, each of which is opened by different keys. A generally rectangular upper locking plate **22** and a lower locking plate **24** are positioned in parallel planes. The upper and lower plates **22** and **24** are similar in size and have their peripheries aligned in common planes. The plates are separated from each other by means of a spacer **26** which extends transversely at the center of the plates and is sandwiched therebetween. The plates and spacer **26** are secured together by means of rivits **28.**

The upper locking plage **22** contains openings **32, 34,** 36, and **38** respectively, at each corner of the plate. These openings are aligned with similar openings **42,** 44, 46, and **48** in the lower locking plate **24,** respectively. As illustrated in FIG. **1,** the first lock **12** is shown secured to the upper and lower locking plates **22** and **24.** The first lock **12** contains a shackle **52** which passes through the aligned openings **32** and **42,** of the upper and lower locking plates **22** and **24,** respectively. The second lock **14** and third lock **16** are shown in similar locked position. The fourth lock **18** is illustrated unlocked with its shackle **58** removed from the respective openings **38** and **48** of the upper and lower locking plates **22** and **24.**

A first bar **62** of generally T-shaped configuration is integrally formed of a base **64** and an arm **66** and has a thickness less than the spacing between the upper and lower locking plates **22** and **24.** The free end **67** of the arm **66** contains an aperture **68** to which the end link **72** of a first chain **74** is attached. The bar **62** is normally positioned with one side of the base **64** adjacent the spacer **26.** The side of the base **64** integral with the arm **66** is adjacent the openings **34** and **36** of the first locking plate and openings **44** and **46** of the second locking plate. In this position, which is illustrated in FIG. **1,** the free end of the arm **66** extends outwardly from between the plates. The shackle **69** of the second lock **14** is inserted through the openings **34** and **36** in the upper and lower locking plates and the shackle **70** of the third lock **16** is inserted through the openings **36** and **46** of the upper and lower locking plates. The first bar **62** then cannot be removed from between the upper and lower locking plates. The length of the bar base is approximately equal to the width of the plates **24** and **26.** Should the sides of the arm **66** be moved to an extreme position adjacent the second lock **14** or the third lock **16** shackles, the base **64** would still be blocked by the shackles **69** and **70.** Further, since opposite sides of the base **64** are secured between the shackles of the locks **14** and **16,** and the spacer **26,** little angular movement of the bar **62** can occur.

The securing system further comprises a second bar **76,** also of T-shaped configuration, having similar dimensions as the first bar **62.** The bar **76** includes a base **78** integral with an arm **82.** The free end **84** of the arm **82** contains an aperture **86** to which the end link **88** of a second chain **90** is attached.

The bar **76** can be secured between the upper and lower locking plates **22** and **24** by the first and fourth locks, **12** and **18,** in the same manner as the bar **62** is secured by the second and third locks **14** and **16.** When the shackle **58** of the lock **18** is removed from the openings **38** and **48,** in the upper and lower locking plates **22** and **24,** the base **78** of the bar **76** can be moved parallel to the spacer **26** until free of the shackle **52** of lock **12.** Then the bar **76** can be removed from between the plates as is illustrated in FIG. **1.** Similarly, the bar **76** can be removed by releasing shackle **52** of lock **12.**

The embodiment of FIG. **1** has been described as connecting the end links of a first chain **74** and a second chain **90** together. The other end links of the first and second chain **74** and **90** are each normally secured to a permanent structure such as a post or wall (not shown) thus completing the integral structure. It should be understood that the ends links **72** and **88** could also represent opposite ends of a continuous chain as well.

Referring now to FIG. **2**, there is shown a securing system used with only two locks. A U-shaped locking plate **102** is formed of an end section **104** which is secured to a first upstanding arm **106** and a second upstanding arm **108.** The openings **112** and **114** in the first arm **106** free corners are aligned with openings **116** and **118** in the second arm **108** free corners, respectively. A perpendicularly-extending leg **122** is threaded into a threaded opening **120** formed in the outer surface **123** of the end section **104.** An aperture **124** at the free end of the leg **122** can have an end link of a chain (not shown) attached thereto similar to the chain utilized in the arrangement of FIG. **1.** A bar of T-shaped configuration similar to the first bar **62** of the embodiment of FIG. **1** can be used to attach the end of a chain to the locking plate **102.** A lock and shackle arrangement as in FIG. **1** can then be provided for securing and removing the T-shaped bar from the locking plate **102.** The threaded leg **122** enables the locking plate to be made adjustable at its connection with a wall gate. Alternatively the leg **122** can be made integral with the surface **123.** The leg **122** performs the same function as one of the arms of the bars **62** or **76** of FIG. **1.**

Referring now to FIG. **3,** there is shown an arrangement for ganging a plurality of locking plates such as the locking plates **22** and **24** of FIG. **1.** This embodiment can be used when more than four locks provide access to the system. A generally H-shaped bar **206** shown in perspective view in FIG. **4** is utilized to interconnect a first locking plate system **202** to a second locking plate system **204.** The bar **206** comprises a pair of side rails **208** and **212,** which are interconnected by means of a perpendicularly-extending and integrally-formed central arm **214.** As can be seen in FIG. **3,** the rails **208** and **212** provide the same function as the bases **64** and **78** of the bars **62** and **76,** respectively, of FIG. **1.** The central arm **214** extends transversely between the rails **208** and **212** and interconnects the adjacent sides of the locking plate systems **202** and **204.** T-shaped bars **222** and **224** are used at the non-adjacent sides of the plate system as in the arrangement of FIG. **3** is similar to that of FIGS. **1** and **2,** and with any one of the eight locks illustrated in FIG. **3** removed, a chain secured to the bars **222** and **224** is released. The arm **226** of bar **224** is illustrated as being elongate in configuration as compared to the arm **82** of the bar **76** of FIG. **1.** This extension enables the locking plate to be grasped easier at the arm **226** which then acts as a handle.

Should it be necessary or desirable to utilize less than four locks in the arrangement of FIG. **1** or eight locks in the arrangement of FIG. **3,** the aligned openings in any one of the corners of the locking could be replaced by a rivet. Additionally, it should be understood that the arrangement of FIG. **3** could be further ganged for additional locking plate systems, thereby making provision for adding any multiplicity of four additional locks. The H-shaped bar **206** of FIG. **4** could also be used to interconnect the securing system of FIG. **1** with that of FIG. **2** where only six locks are used.

What is claimed is:

1. A multiple-lock securing system for providing access to a secured area by releasing one of a plurality of locks comprising:

first and second locking plates defining openings therein for positioning said plurality of locks in said openings;

bar means having a base and an arm extending therefrom, said base being positioned adjacent to two of said openings, each of which may receive one of said locks therein, the length of said base being greater than the distance between said openings;

means for interconnecting said first locking plate to said second locking plate comprising an integrally formed member having a pair of bars, one of said bars being secured to said first locking plate, and the other of said bars being secured to said second locking plate; and

means formed on said locking plates for enabling said bars to be fastened to said locking plates when said locks are positioned in said openings and removed therefrom when one of said locks is removed from its respective opening.

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