United States Patent [19]

Korell

[11] **3,857,620**

[45] **Dec. 31, 1974**

[54] **DESK LOCK SYSTEM**

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[73] Assignee: **Steelcase Inc.**, Grand Rapids, Mich.

[22] Filed: **June 1, 1973**

[21] Appl. No.: **366,071**

[52] **U.S. Cl.** **312/219**

[51] **Int. Cl.** **F05b 65/46**

[58] **Field of Search** 312/107.5, 194, 215–219; 70/264

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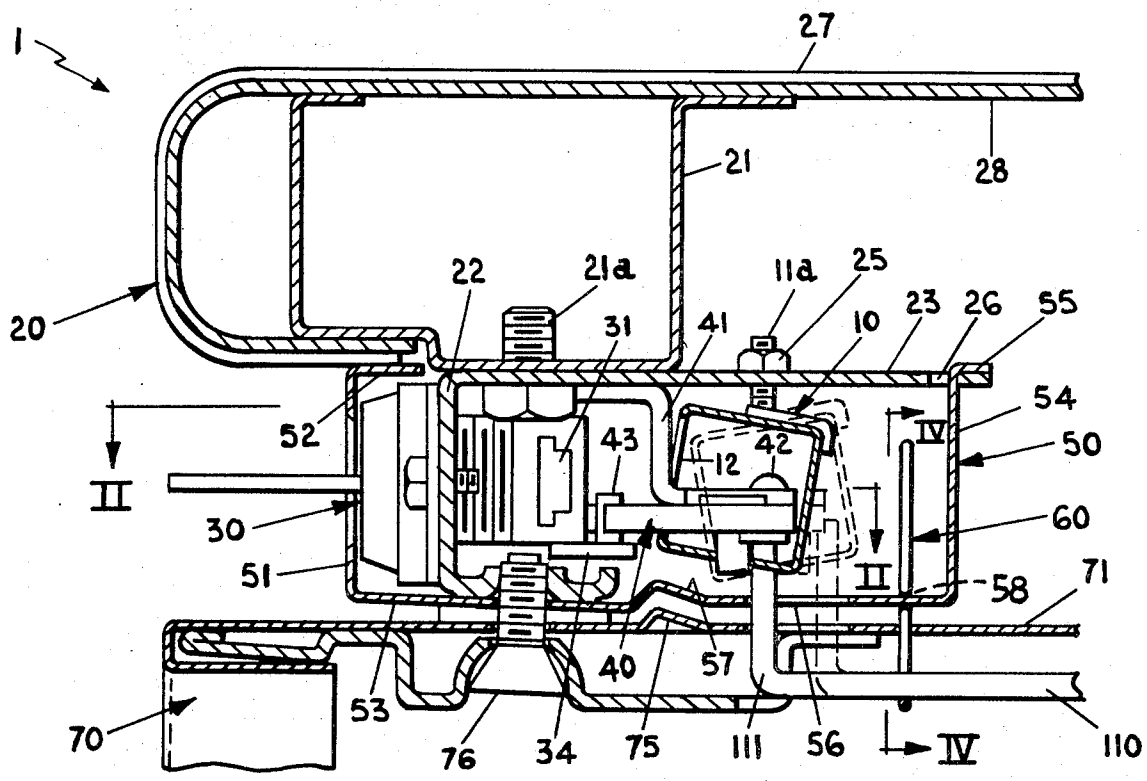
Primary Examiner—James C. Mitchell

Attorney, Agent, or Firm—Price, Heneveld, Huizenga & Cooper

[57] **ABSTRACT**

A locking system for desks or the like including an elongated rock bar pivotally suspended from the desk top and actuated to fore and aft movement by a key lock whose actuator is connected to the rock bar through a pivotally mounted bell crank. A linkage member or members from one or more secondary locking systems located in the desk pedestal or like compartment is fitted into one of a plurality of spaced apertures in the rock bar so that the movement of the rock bar is transmitted to the secondary locking system. Movement of the secondary locking system, in turn, locks or unlocks the drawers or doors located in the pedestal.

22 Claims, 12 Drawing Figures



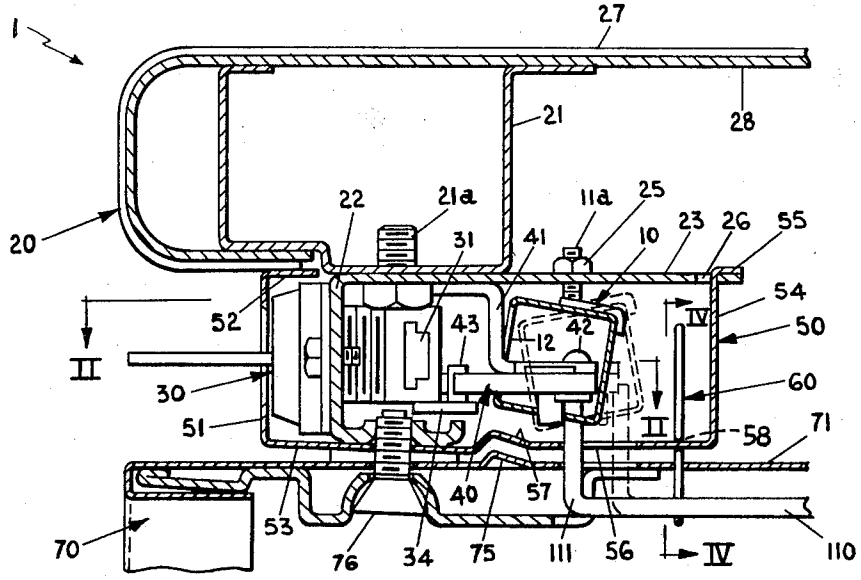


FIG. 1

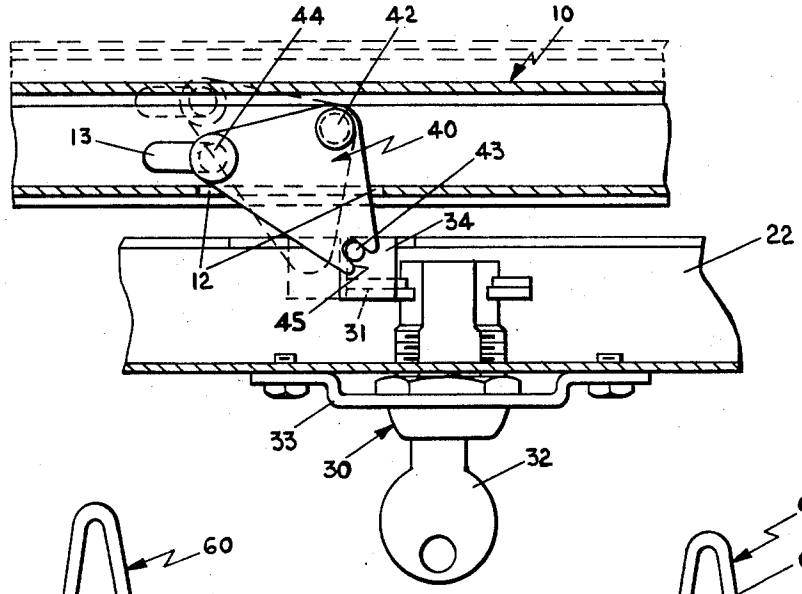


FIG. 2

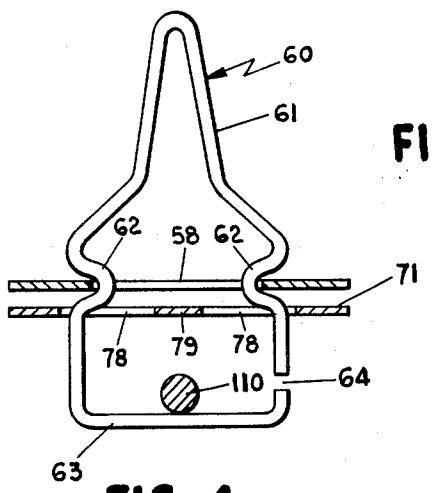


FIG. 4

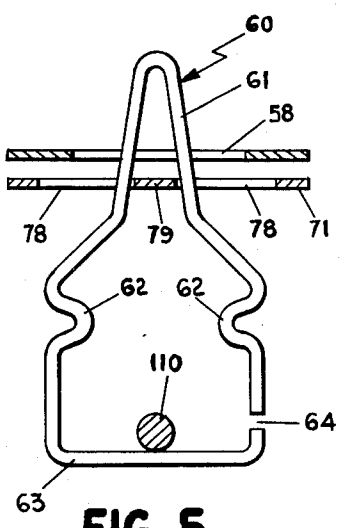


FIG. 5

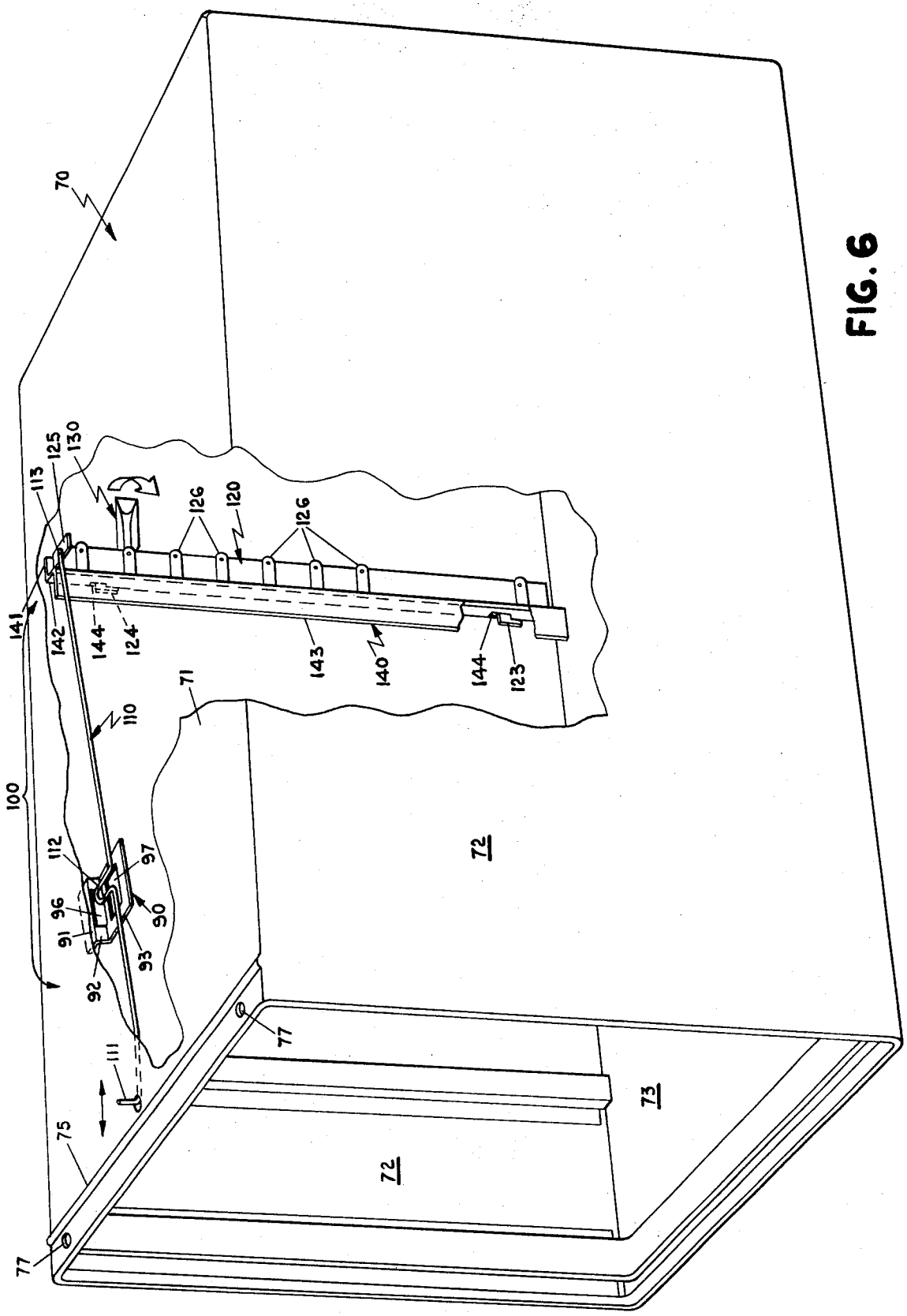

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FIG. 6

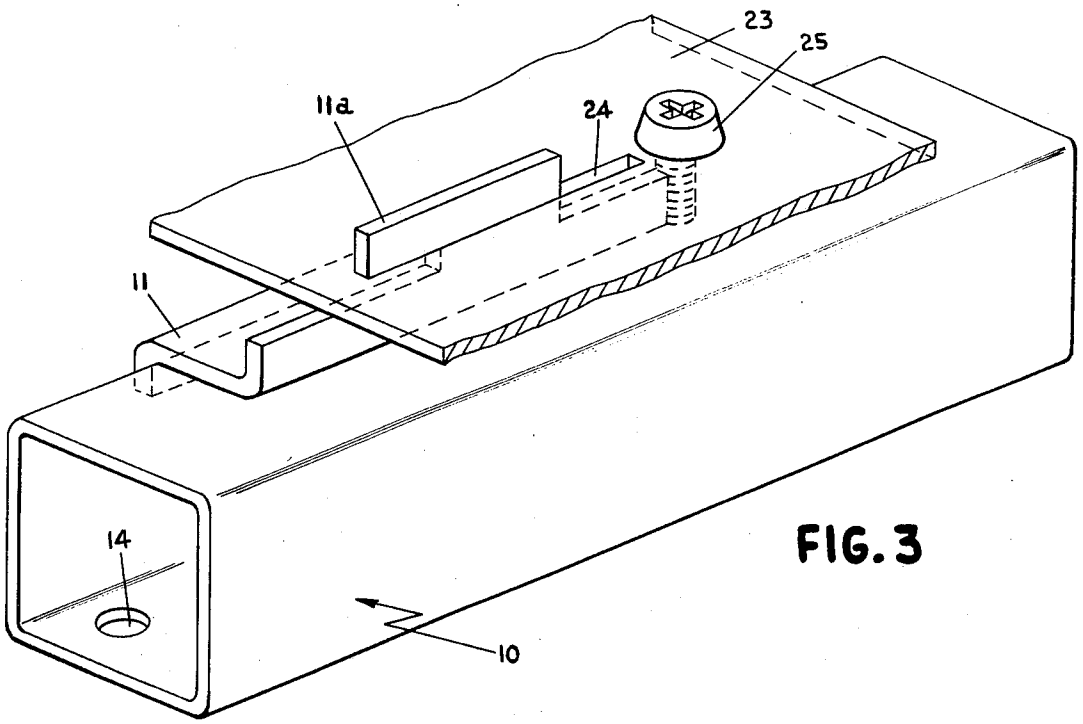


FIG. 3

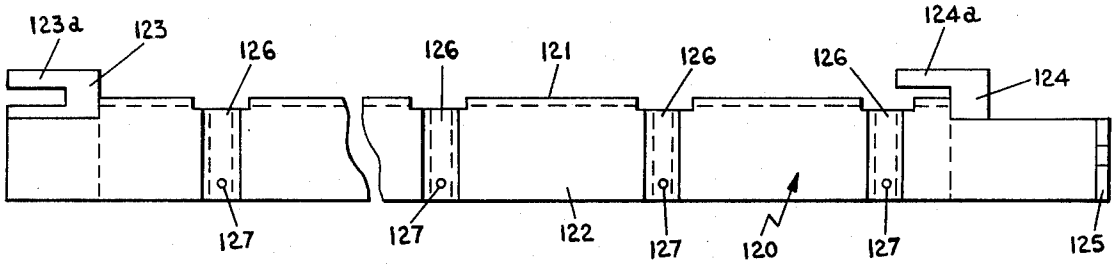


FIG. 7

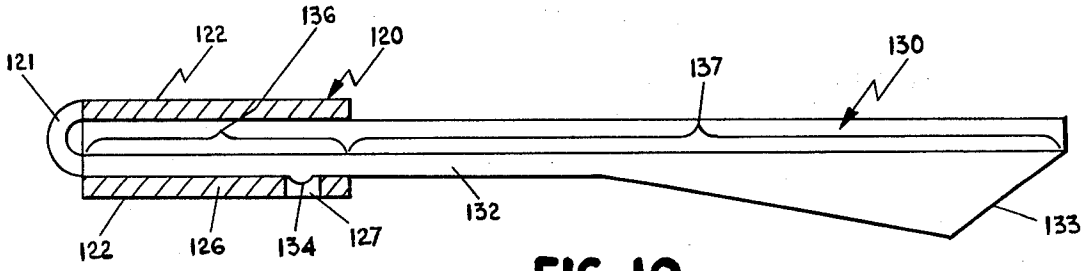


FIG. 10

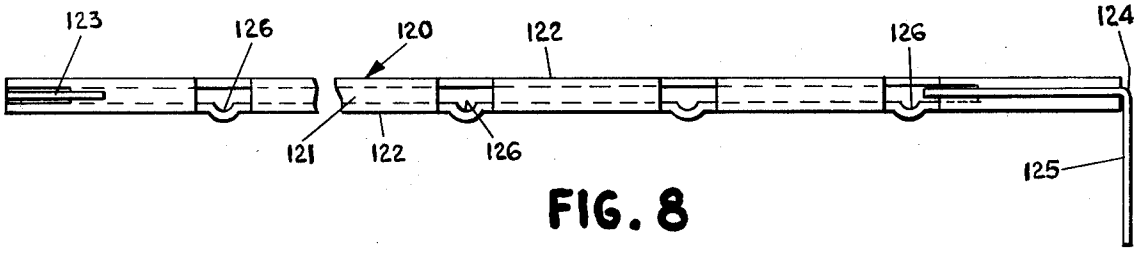


FIG. 8

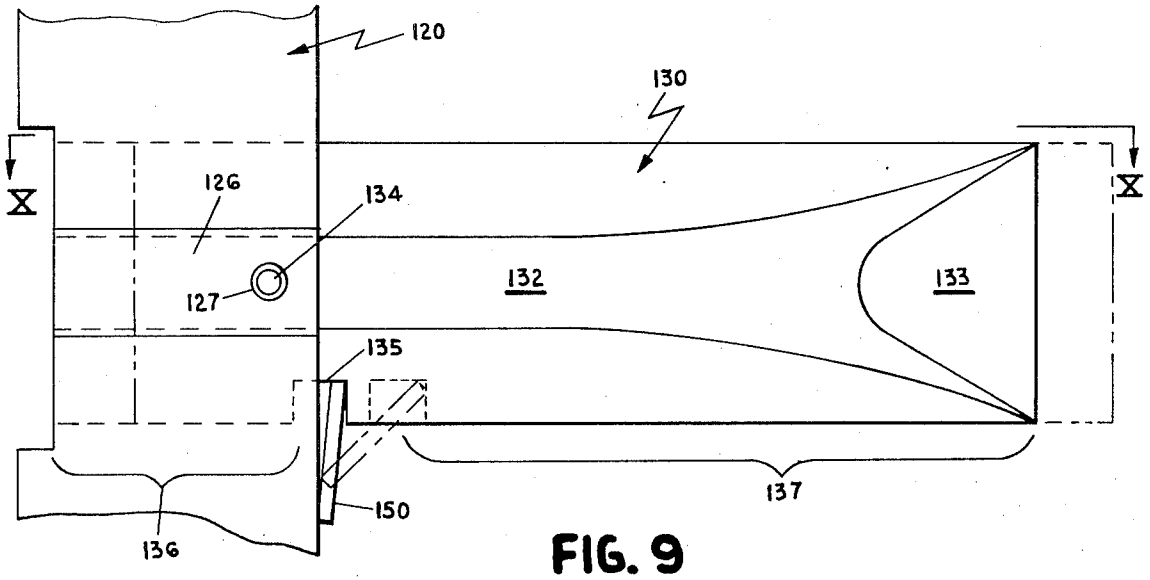


FIG. 9

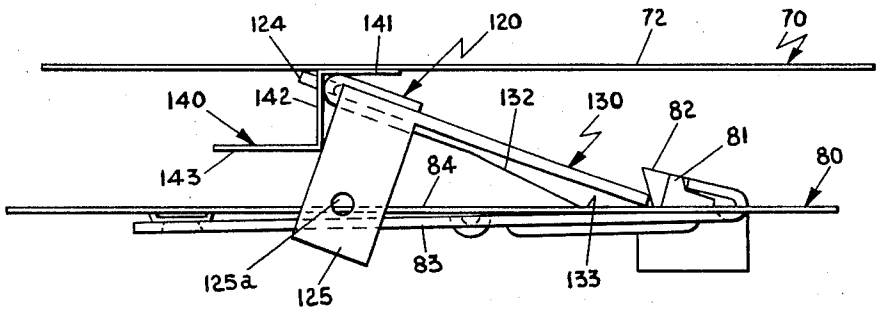


FIG. 11

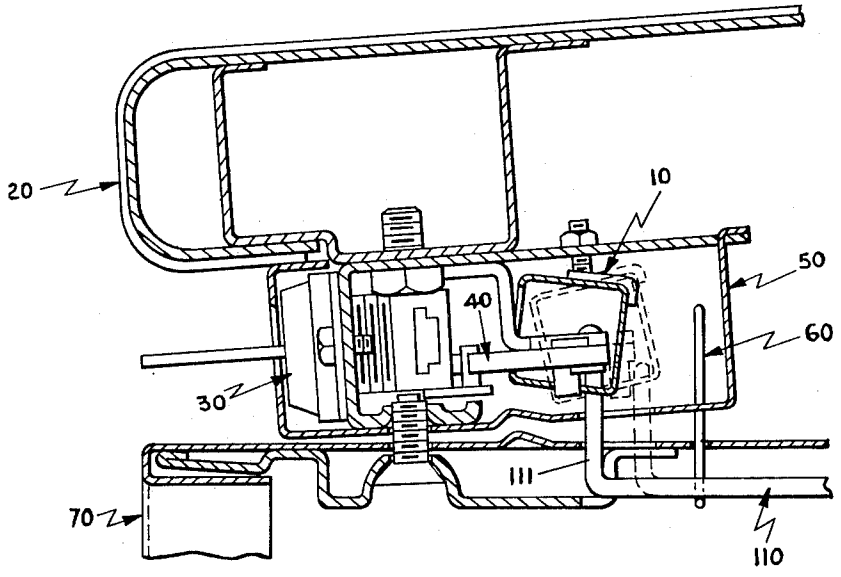


FIG. 12

DESK LOCK SYSTEM

BACKGROUND

The present invention relates to locking systems for desks, cabinets or other articles of furniture. Specifically, it relates to gang locking mechanisms which facilitate locking of a plurality of drawers, doors or other like components.

Gang locking mechanisms typically are complicated and noisy. The activation of typical prior art gang locking mechanisms sets off a symphony of clanking and clattering as a result of its many "knee bone to ankle bone" connections. Sliding bars make metal-to-metal sliding noises. Vertically dropping bars make clattering noises. In metal furniture, these noises are amplified by the metal walls and panels of the article of furniture. In this age when noise pollution in a crowded office can be overpowering, such noisy mechanisms are not welcomed by the consumer.

Prior art mechanisms also lack flexibility. Some employ a key lock actuated sliding bar to which a plurality of secondary locking systems located in the pedestals can be connected. Such connections can be made at various points along the length of the bar. However, the connecting means employed are typically of the "nut and bolt" variety. Accordingly, any rearrangement of location of the secondary locking systems is anything but quick and easy.

Another problem encountered in connection with gang locking mechanisms is their lack of security. In most prior art systems, it is too easy to slip a thin screwdriver or file into just the right crack or crevice and unlock the entire system.

SUMMARY OF THE INVENTION

The present invention comprises a locking system which is quiet, flexible and secure. A rock bar is mounted in a desk, cabinet or like article of furniture for fore and aft movement. A lock means operably connected to the rock bar controls this fore and aft movement. Preferably, the rock bar is pivotally suspended in order to maximize silence of operation. A secondary locking means is operably connected with a drawer, door or like component to facilitate locking of the components. This secondary locking means is operably connected to the rock bar such that movement of the rock bar in a fore and aft direction controls the locking and unlocking of the component or components with which the secondary locking means is associated.

Preferably, the secondary locking system includes linkage means having a free end located generally adjacent the rock bar. The rock bar includes receiving means for releasably receiving a free end of the linkage means. By providing a plurality of such receiving means at spaced intervals along the length of the rock bar, one can locate the secondary locking means at various locations along the length of the rock bar. Because the receiving means are adapted to releasably receive the free end of the linkage means, one can readily relocate the secondary locking means as desired. Preferably, this flexibility is achieved by providing some type of holding means for holding the linkage means in a position with its free end located in an aperture in the rock bar, such an aperture serving as the receiving means referred to above.

Security in this system is preferably provided by a shroud which completely enshrouds the rock bar. The secondary locking means are located in pedestals or like components mounted below the shroud. The top of the pedestal or other component generally abuts against the bottom of the shroud. To prevent insertion of a thin screwdriver or other tool into the crack between the component and the shroud, one or the other of the component or shroud is provided with a projecting ridge, the other of the shroud or component being provided with a mating relief whereby the ridge actually projects to a position at least completely blocking the crevice between the two.

These and other features, objects and advantages of the invention will be more fully appreciated and understood by reference to the written specification and appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a lateral cross-sectional view showing the lock bar, key lock and free end of the linkage rod of the locking system of the present invention;

FIG. **2** is a cross-sectional view taken generally along plane II—II of FIG. **1**;

FIG. **3** is a fragmentary perspective view showing the means whereby the rock bar is pivotally suspended from a hanger flange associated with the desk top;

FIG. **4** is a cross-sectional view taken generally along plane IV—IV of FIG. **1**;

FIG. **5** is the same cross-sectional view as FIG. **4**, except that the holding clip for holding the linkage rod in position with its free end engaging the rock bar has been released from its holding position, thereby releasing the free end of the linkage rod from engagement with the rock bar;

FIG. **6** is a partially broken perspective view of a pedestal having the secondary locking system of the present invention mounted therein;

FIG. **7** is a side elevational view of the vertical lock bar employed in the secondary locking system shown in FIG. **6**;

FIG. **8** is an end elevational view of the vertical lock bar shown in FIG. **7**;

FIG. **9** is a fragmentary view showing a lock tab positioned within the vertical lock bar;

FIG. **10** is a cross-sectional view taken along plane X—X of FIG. **9**;

FIG. **11** is a top plan view of the vertical lock bar and an associated lock tab mounted in a pedestal adjacent a drawer; and

FIG. **12** is a cross-sectional view comparable to FIG. **1**, except that the desk top is oriented at a sloping angle with respect to the desk pedestal.

PREFERRED EMBODIMENT

In the preferred embodiment, an elongated tubular rock bar **10** is pivotally suspended from the top **20** of desk **1** (FIG. **1**). Key lock **30** controls fore and aft movement of rock bar **10** through an interconnecting bell crank **40** (FIGS. **1** and **2**). Rock bar **10**, key lock **30** and bell crank **40** are completely enshrouded by a shroud **50** which is joined to top **20** (FIG. **1**). Movement of rock bar **10** activates a secondary pedestal locking mechanism **100** which is mounted in pedestal **70** (FIG. **6**). The free end **111** of a linkage rod **110** of secondary locking mechanism **100** projects upwardly through the top wall **71** of pedestal **70**, through shroud **50** and is received in a linkage receiving aperture **14** in rock bar **10** (FIGS. **1**, **3** and **6**).

Linkage rod **110** is pivotally secured at its other end **113** to a vertical lock bar **120** hingedly mounted on a bracket **140** which, in turn, is welded to the inside of pedestal **70.** One or more lock tabs **130** are releasably mounted in receiving channels **126** in lock bar **120** to serve as lock stops for adjacent drawers **80** or other like components (FIG. **11**). When rock bar **10** is swung forwardly to its forward position as shown in FIG. **1,** vertical lock bar **120** is rotated to its out or locking position with its lock tabs **130** positioned in line with a lock stop **81** on an adjacent drawer **80** (FIG. **11**). When rock bar **10** is rotated to its rearward position as shown in phantom in FIG. **1,** vertical lock bar **120** is rotated to its unlocked position with lock tabs **130** out of the way of lock stops **81** on drawers **80.** The transmission of the fore and aft movement or rock bar **10** to pivotal movement of lock bar **120** about a vertical axis is effected through linkage rod **110.**

To prevent unauthorized entry into the drawers or doors included in the system, the top wall **71** of pedestal **70** includes an upwardly projecting security ridge **75** (FIG. **1**). A relief **57** is shroud **50** matingly receives security ridge **75** whereby security ridge **75** completely blocks passage through the crevice between shroud **50** and pedestal top wall **71.**

Rock bar **10** is formed of tubular steel stock (FIGS. **1** and **3**). Hanger brackets **11,** each defining a hook **11a** are welded to rock bar **10** to facilitate its pivotal suspension from desk top **20.** Three or four brackets **11** are usually sufficient. To facilitate cooperation between rock bar **10** and linkage rod **110,** a plurality of link receiving apertures **14** are provided at spaced intervals along the length of the bottom wall of rock bar **10** (FIG. **3**). By providing a plurality of such apertures **14** at spaced intervals along the length of rock bar **10,** one can locate one or more secondary locking systems **100** at any of several points along the length of rock bar **10.** This means, for example, that one is free to provide one, two or more pedestals along the length of the desk **1,** beneath desk top **20,** and that one can vary the particular positions at which one locates one or more such pedestals **70.**

In order to facilitate joining of bell crank **40** to rock bar **10,** rock bar **10** is provided with an opening **12** in the front wall thereof through which bell crank **40** passes (FIGS. **1** and **2**). A slot **13** is provided in the bottom of rock bar **10** to facilitate the actual physical connection between bell crank **40** and rock bar **10.**

Desk top **20** includes a top laminate surface **27** on a substrate sheet of metal **28.** This is reinforced by a reinforcing hat section **21.** Another reinforcing rail **22** is joined to hat section **21** by bolts **21***a* or the like and depends downwardly from hat section **21.** Reinforcing rail **22** provides the mounting surface for key lock **30.**

A rearward projecting hanger flange **23,** which is an extension of reinforcing rail **22** (FIGS. **1** and **3**), is used to pivotally suspend rock bar **10.** Hanger flange **23** includes slots **24** for receiving the hook portion **11a** of hanger **11** of rock bar **10.** Hanger flange **23** also includes a threaded aperture adjacent one of the slots **24** for receiving a stop bolt **25.** Each slot **24** is sufficiently large that the hook portion **11***a* of hanger **11** can be passed therethrough and can be slid to one side so that rock bar **10** is pivotally suspended from hanger flange **23.** Once hanger flange **11** is so located, bolt **24** is threaded into hanger flange **23** adjacent one edge of hanger bracket **11** to thereby prevent further longitudinal movement of hanger bracket **11** within slot **24.** Thus, stop bolt **25** positively prevents hook **11a** from falling out of slot **24.**

Hanger flange **23** also aids in mounting shroud **50.** A plurality of spaced shroud tab slots **26** are positioned along the rear of hanger flange **23.** These receive tabs **55** of shroud **50** to thereby support the rear of shroud **50.**

Bell crank **40** is mounted on a mounting flange **41** which, in turn, is secured to hanger flange **23** (FIG. **1**). A fixed pivot bolt **42** joins bell crank **40** to mounting flange **41.** Bell crank **40,** itself, is generally triangular in configuration (FIG. **2**) and is driven at one corner by a pin **43** operably connected to the actuator or bolt **31** of key lock **30.** At another corner, bell crank **40** includes a rock bar pin **44** depending downwardly therefrom and passing through slot **13** in rock bar **10.**

Key lock **30,** itself, is conventional having an actuator or bolt **31** controlled by a key **32.** A bracket **34,** which contains pin **43,** is fastened to actuator **31** to facilitate actuation of bell crank **40.** The pin **43** projects upwardly from bracket **34** and is received in a notch **45** in the corner of bell crank **40.** Key lock **30** is mounted to reinforcing rail **22** by means of a suitable mounting plate **33** and other conventional securing means. When the actuator **31** of key lock **30** is shifted to the left as shown in FIG. **2,** bell crank **40** pivots about its fixed pivot **42,** thereby shifting rock bar **10** rearwardly to the position shown in phantom in FIG. **2.**

Shroud **50** is bent of sheet metal so as to define a top front lip **52,** a front wall **51,** a bottom wall **53** and a rear wall **54** (FIG. **1**). A plurality of tabs **55** are bent over at the top of rear wall **54** for mating engagement within slots **26** of hanger flange **23.** A plurality of screws, usually six, in line with bolt **76** as viewed in FIG. **1** and therefore not shown, hold the forward portion of shroud **50** in place on rail **22.** Shroud **50** extends generally the length of desk top **20** and completely enshrouds rock bar **10,** key lock **30** and bell crank **40.**

For each link receiving aperture **14** in rock bar **10,** shroud **50** includes a corresponding linkage access hole **56.** This allows the free end **111** of linkage rod **110** to pass upwardly through hole **56** and into hole **14** in rock bar **10.** Shroud **50** also includes an upwardly deformed relief **57** running generally the length thereof for matingly receiving the security ridges **75** in the top walls **71** of any pedestals **70** which are secured to desk top **20.** The relief **57** actually allows ridge **75** to project upwardly to a point where it is at least generally in line with the rest of the flat bottom wall **53** of shroud **50.** In this manner, security ridge **75** acts to completely block passage through the space between the top wall **71** of pedestal **70** and the bottom wall **53** of shroud **50.**

Pedestal **70** can be of any of a number of constructions having a top wall **71,** sidewalls **72,** bottom walls **73** and a rear wall (FIG. **6**). Top wall **71** includes an upwardly projecting security ridge **75** generally at the front thereof. Suitable bolt holes **77** are provided at the front and each side of pedestal top wall **71** to facilitate mounting of pedestal **70** to reinforcing rail **22** via mounting bolts **76.** In all other respects, pedestal **70** can be mounted to desk **1** in the manner disclosed and claimed in the copending patent application Ser. No. 366,155 filed on even date herewith by Gale F. Wilcox and Donald D. Korell, entitled SUSPENDED PEDESTAL DESK, and assigned to the assignee of this appli-

cation, Steelcase Inc. The disclosure of this copending application is incorporated herein by reference.

The drawers mounted in pedestal **70** are generally conventional in nature and for purposes of the present invention, it is only important that the drawers include some sort of lock stop for cooperating with lock tabs **130** (FIG. **11**). Drawer **30** includes a lock stop **81** projecting outwardly from the sidewall **84** of drawer **80**. Actually, lock stop **81** projects outwardly from a plate or lever **83**, through a hole in the side of drawer **80**. Lever **83** is pivotally mounted on the inside of drawer **80** and in spring biased towards the position shown in FIG. **11**. Plate **83** also includes an outwardly projecting out stop **82**, but out stop **82** is not in line with lock tab **130** and is provided only to prevent one from readily pulling the drawer **80** out of pedestal **70**. While the present application specifically discloses the secondary locking system **100** being used to lock drawers **80**, secondary locking system **100** could be used to lock other like components such as doors. To be sure, this would require a relocation and perhaps other modifications of the secondary locking system **100**.

One very useful feature of the present invention is the means whereby linkage rod **110** is releasably joined to rock bar **10**. This is achieved in the present invention by merely inserting the free end **111** of linkage rod **110** into an aperture **14** in rock bar **10**. Then, one merely provides holding means for holding linkage rod **110** up with free end **111** in aperture **14**. The present specification discloses two alternative means for holding linkage rod **110** in this position.

The first holding means disclosed in a spring wire clip **60** (FIGS. **4** and **5**). Spring wire **60** is formed into the shape of a closed loop having an arrow shaped head **61**, notches **62** at the base of arrowhead **61** and a bottom retaining portion **63**. At one point, there is a gap or split **64** in wire **60** in order to facilitate insertion of linkage rod **110** into the retaining portion **63** of clip **60** and in order to facilitate mounting of spring clip **60** to pedestal top wall **71**. Pedestal top wall **71** is provided with a pair of spaced holes **78** defining a bridge **79** therebetween. By manipulating split **64** in clip **60**, one can slip clip **60** over bridge **79** such that clip **60** will always be secured with respect to pedestal top wall **71** (see FIG. **5**, particulary). Shroud **50** is provided with a plurality of clip receiving apertures **58** generally at the rear thereof (FIG. **1**) into which clips **60** can be inserted. The arrowhead portion **61** of clip **60** is pushed up through aperture **58** and the spring wire then snaps back such that notches **62** are captured on either side of aperture **58**. This positively holds linkage rod **110** up with its free end **111** positioned in a receiving aperture **14** in rock bar **10**. If one desires to change the system, as for example by changing the position of pedestal **70**, one simply pulls spring wire clip **60** downwardly out of aperture **58**. In order to prevent complete disassembly of the overall system, the arrowhead portion **61** catches on and hangs from bridge **79** to thereby prevent linkage rod **110** from completely falling down and getting in the way of workers as they change the position of pedestal **70**. Also, linkage rod **110** is in a convenient position for reinsertion into rock bar **10**.

An alternative holding system is disclosed in FIG. **6**. In this alternative embodiment, a bracket **90** is welded to the top wall **71** of pedestal **70** at a point approximately midway between the ends of linkage rod **110**. Bracket **90** includes a mounting flange **91** which is welded or otherwise secured to top wall **71** of pedestal **70** (FIG. **6**). A wall **92** depends downwardly therefrom and a bottom wall **93** extends laterally from wall **92**, generally parallel to top wall **71**. This makes it possible to slip linkage rod **110** on top of wall **93** and into the position in bracket **90** which is shown in FIG. **6**. Downwardly depending wall **92** includes an aperture **96** therein through which the end of U-shaped deviation **112** projects. The bottom wall **93** of bracket **90** includes an aperture **97** therein which allows one to gain access to adjustment "U" **112**, which is bent into rod **110**, with a pair of pliers or a screwdriver or the like. Basically, the purpose of bracket **90** is to hold linkage rod **110** up with its free end **111** engaged within rock bar **10**. Once linkage rod **110** is in position in holding bracket **90**, its free end **111** is held up in engagement with an aperture **14** in rock bar **10**. Linkage rod **110** is preferably formed of a slightly resiliently flexible steel rod material such that when one desires to disengage linkage rod **110** from rock bar **10**, one can simply pull downwardly on the forward portion thereof to thereby pull the end **111** out of aperture **14**. There is sufficient distance between bracket **90** and rock bar **10** that the free end portion to linkage rod **110** can readily be forced downwardly. This makes it possible to completely remove pedestal **70** and secondary locking system **100** from a particular relationship with respect to rock bar **10** and rearrange them in another location along the length of rock bar **10**.

The specific details of the construction of secondary locking system **100** are more fully set forth in the copending patent application entitled "PEDESTAL LOCK SYSTEM" filed on even date herewith by Douglas Sheerhorn, Robert G. Mohr and Donald D. Korell, Ser. No. 366,162, assigned to the same assignee as the present application, Steelcase Inc. This specification specifically incorporated herein by reference. Generally, secondary locking system **100** includes a vertical lock bar **120** hingedly mounted on a bracket **140** which is, in turn, welded to the inside of pedestal **70** (FIG. **6**). Lock bar **120** includes a plurality of lock tab receiving channels **126** therein for receiving a plurality of lock tabs **130** (FIGS. **6**, **7**, **8**, **9**, **10** and **11**). Linkage rod **110**, formed of a steel rod material, has one end **113** pivotally connected to lock bar **120** and a free end **111** located generally adjacent rock bar **10** for receipt in an aperture **14** of rock bar **10**. Movement of rock bar **10** to its fore position, toward the front of the desk or to the left as viewed in FIG. **1**, swings vertical lock bar **120** to its locked position with lock tabs **130** in line with the lock stops **81** on drawers **80** (FIG. **11**). To facilitate system flexibility, each lock tab **130** can be removed from lock bar **120** by placing a coin or screwdriver in a notch **135** therein and prying outwardly (FIG. **9**). Lock tab **130** can then be relocated in a different channel **126** so as to facilitate mounting different sized drawers in pedestal **70** or mounting different arrangements of drawers in pedestal **70**.

OPERATION

In operation, rock bar **10**, bell crank **40**, reinforcing rail **22**, key lock **30** and shroud **50** are mounted to a desk top **20** in the manner heretofore described. Then the desk **1** can be provided with any number of pedestals or compartments **70** as may be desired. Once pedestal **70** is mounted to the desk, the secondary locking system **100** which is mounted within the pedestal **70** is

joined to rock bar **10** by pushing linkage rod **110** upwardly until its free end **111** is received within a link receiving aperture **14** in rock bar **10.** Linkage rod **110** is held in this up position either by bracket **90** or by spring wire clip **60.** Now, one can lock or unlock drawers or like components within pedestal **70** by use of a single key lock **30.** Rotation of key **32** moves actuator bolt **31** laterally, thereby rotating bell crank **40** and effecting movement of rock bar **10** either fore or aft. This movement is transferred to vertical lock bar **120** via linkage rod **110.** Changes in pedestal arrangement can be readily effected simply by pulling the free end **111** of linkage rod **110** downwardly out of engagement with its aperture **14** in rock bar **10** and, thereafter, removing and remounting pedestal **70.**

Of course, it is understood that the above is merely a preferred embodiment of the invention and that various changes and alterations can be made thereof without departing from the spirit and broader aspects of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

1. A locking system for the drawers, doors or like components of a desk, cabinet or like articles of furniture, said locking system comprising: an elongated rock bar pivotally suspended in said article of furniture for fore and aft swinging movement; lock means operably connected to said rock bar for controlling the fore and aft swinging movement thereof; secondary locking means operably connected with said components for locking and unlocking said components; said rock bar and said secondary locking means including cooperating means cooperating to operably connect said rock bar to said secondary locking means whereby said fore and aft swinging movement of said rock bar effects locking and unlocking movement in said secondary locking means.

2. A locking system for the drawers, doors or like components of a desk, cabinet or like articles of furniture, said locking system comprising: an elongated rock bar mounted in said article of furniture for fore and aft movement; lock means operably connected to said rock bar for controlling the fore and aft movement thereof; secondary locking means operably connected with said components for locking and unlocking said components; said rock bar and said secondary locking means including cooperating means cooperating to operably connect said rock bar to said secondary locking means whereby said fore and aft movement of said rock bar effects locking and unlocking movement in said secondary locking means; said secondary locking means including linkage means having a free end positioned generally adjacent said rock bar; said rock bar including receiving means releasably receiving said free end of said linkage means; said receiving means in said rock bar including an aperture therein; said locking system including holding means secured to said article of furniture independently of said rock bar for holding said linkage up with its said free end positioned within said aperture.

3. The locking system of claim **2** in which said holding means comprises a clip; said article of furniture including a clip receiving aperture into which said clip is releasably received whereby said clip can be removed from said clip receiving aperture to thereby allow said linkage to fall free of said rock bar.

4. The locking system of claim **2** in which said linkage comprises an elongated rod; said holding means comprising a bracket mounted in said article, said rod passing through said bracket; said bracket being spaced from said rock bar whereby a substantial portion of said rod extends between said bracket and said rock bar, said portion of said rod being sufficiently flexible that it can be flexed downwardly to thereby facilitate removal of its free end from said aperture in said rock bar, but whereby it is biased upwardly into said aperture.

5. The locking system of claim **1** in which said lock means includes a movable actuator; a bell crank pivotally mounted to said article of furniture and pivotally connected to said actuator and said rock bar whereby activation of said lock means activates said movable actuator, which, in turn, rotates said bell crank which, in turn, moves said rock bar in a fore and aft direction.

6. The locking system of claim **5** in which said rock bar includes a slot; said bell crank including a pin; said bell crank being pivotally joined to said rock bar by means of said pin being received in said slot in said rock bar, said slot being sufficiently long to allow freedom of movement of said bell crank without binding.

7. The locking system of claim **6** in which said rock bar comprises an elongated tubular member; said tubular member including a bell crank opening therein whereby said bell crank passes into said tubular member for pivotal connection thereto.

8. A locking system for drawers, doors or like components of a desk, cabinet or like articles of furniture, said article of furniture having a top, said locking system comprising: an elongated rock bar pivotally suspended from said top of said article of furniture for fore and aft swinging movement; lock means operably connected to said rock bar for controlling the fore and aft movement thereof; secondary locking means operably connected with said components for locking and unlocking said components; said rock bar including a plurality of receiving means at different locations along the length of said rock bar, each of said receiving means being adapted to releasably cooperate with said secondary lock means whereby said secondary lock means and its respective components can be located at one of a plurality of locations along the length of said rock bar; said secondary lock means including means cooperating with one of said receiving means to thereby operably connect said secondary locking means to said rock bar whereby said fore and aft movement of said rock bar effects locking and unlocking movement in said secondary locking means.

9. The locking system of claim **8** in which said component to be locked is positioned within a compartment, said compartment being joined to said top of said article of furniture; said secondary lock means including a linkage having a free end generally adjacent said rock bar, said free end comprising said means cooperating with said receiving means to operably connect said secondary locking means with said rock bar; said receiving means comprising an aperture into which said free end of said linkage extends; said system including holding means holding said linkage up with said end in said aperture.

10. The locking system of claim **9** in which said holding means comprises a bracket mounted to the top of said component; said linkage comprising an elongated rod passing through said bracket; said bracket being

positioned such that a substantial portion of said rod passes between said bracket in said rock bar; said portion of said linkage having sufficient resilient flexibility whereby said linkage can be flexed downwardly and thereby removed from said aperture in said rock bar, but is biased upwardly into engagement in said aperture in said rock bar.

11. The locking system of claim **8** in which a shroud enshrouds said rock bar, said shroud being joined to said top; said secondary locking means including linkage means having a free end generally adjacent said rock bar; said receiving means in said rock bar comprising an aperture, said system including holding means holding said linkage up with said free end in said aperture; said holding means comprising a clip; said shroud including a clip receiving aperture for releasably receiving said clip whereby said clip can be inserted into and held in said clip receiving aperture or can be removed therefrom.

12. The locking system of claim **11** in which said clip comprises a piece of wire having resilient spring-like properties formed into a closed loop, said linkage passing through said loop; said loop including an inward deviation at each side thereof for seating on opposite sides of said clip receiving aperture in said shroud.

13. The locking system of claim **12** in which said components are positioned within a compartment; said compartment being mounted to said top with the top of said compartment abutting against said shroud; said compartment including a top having a pair of spaced holes therein defining a bridge therebetween; said clip wire passing through each of said holes and being closed at its top whereby when said clip wire is removed from said clip receiving aperture in said shroud, it is held generally at the top of said compartment by said bridge.

14. The locking system of claim **8** including a shroud mounted to said top around said rock bar, thereby enshrouding said rock bar to prevent access thereto, said shroud including apertures located generally at each of said receiving means; said secondary lock means including a portion passing through said apertures in said shroud to facilitate operable connections of said secondary lock means to said rock bar.

15. The locking system of claim **14** in which said component and said secondary locking system are mounted in a compartment, said compartment being secured to said article of furniture generally below said shroud; said compartment including a top wall positioned generally in abutting relationship with respect to the bottom wall of said shroud; said top wall of the compartment including an aperture through which a portion of said secondary locking means passes, said aperture being generally adjacent an aperture in said shroud; said top wall including a security ridge projecting upwardly therefrom generally in front of said aperture and said portion of said secondary locking means which passes through said aperture, said shroud including an upward deviation therein defining a relief conforming generally in configuration to said security ridge whereby said security ridge projects upwardly to a point at least in line with generally the bottom wall of said shroud whereby insertion of a tool into the space between said shroud and said top wall of said compartment is prevented.

16. The locking system of claim **8** in which said lock means includes a movable actuator; a bell crank pivotally mounted to said article of furniture and pivotally connected to said actuator and said rock bar whereby activation of said lock means activates said movable actuator, which in turn rotates said bell crank which in turn moves said rock bar in a fore and aft direction.

17. The locking system of claim **16** in which said rock bar includes a slot; said bell crank including a pin; said bell crank being pivotally joined to said rock bar by means of said pin being received in said slot in said rock bar, said slot being sufficiently long to allow freedom of movement of said bell crank without binding.

18. The locking system of claim **17** in which said rock bar comprises an elongated tubular member; said tubular member including a bell crank opening therein whereby said bell crank passes into said tubular member for pivotal connection thereto.

19. The locking system of claim **18** in which said rock bar includes at least a pair of spaced hooks projecting upwardly therefrom; said top including a flange having a slot therein for each said hook; each said hook being positioned within each said slot to thereby suspend said rock bar from said flange.

20. The locking system of claim **19** in which said slot is sufficiently long to allow said hook to be inserted thereinto; stop means being releasably secured to said flange generally adjacent said hook for preventing removal of said hook after it has been inserted into said slot.

21. The locking system of claim **8** in which said rock bar includes at least a pair of spaced hooks projecting upwardly therefrom; said top including a flange having a slot therein for each said hook; each said hook being positioned within each said slot to thereby suspend said rock bar from said flange.

22. The locking system of claim **21** in which said slot is sufficiently long to allow said hook to be inserted thereinto; stop means being releasably secured to said flange generally adjacent said hook for preventing removal of said hook after it has been inserted into said slot.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 3,857,620

DATED : December 31, 1974

INVENTOR(S) : Donald D. Korell

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3, line 16;

"or" should be --- of ---.

Column 3, line 22;

"is" should be --- in ---.

Column 3, line 66;

"24" should be --- 25 ---.

Column 5, line 7;

"30" should be --- 80 ---.

Column 5, line 11;

"on" should be --- to ---.

Column 5, line 12;

"in" should be --- is ---.

Column 5, line 32;

"in" should be --- is ---.

Column 5, line 39;

After "spring" insert --- wire ---.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 3,857,620 PAGE 2

DATED : December 31, 1974

INVENTOR(S) : Donald D. Korell

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 6, line 24;

"to" should be --- of ---.

Column 8, line 67;

"component" should be --- compartment ---.

Signed and sealed this 10th day of June 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks