SELF-LOCKING SECURITY BAR

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ABSTRACT
A combined Security Bar and a key-operated locking mechanism designed for locking filing cabinets, chests, doors, drawers, and furniture and for locking typewriters and other items to desk tops, tables, or other structures. A bar having a shaped opening or slot in one end and a key hole in the other end over which is attached a lock mechanism which includes a key-operated cylinder and a cam rotatable with the lock cylinder to cover enough of the key hole to prevent entry into or removal from said keyhole a notched-pin when the key-operated cylinder is in a locked position.

5 Claims, 7 Drawing Figures
SELF-LOCKING SECURITY BAR

The present invention relates to a lock which is an integral part of a security-bar. Security Bars are used on the fronts of filing cabinets to prevent opening of the drawers. Security Bars are used across doors and extend from door frame to door frame and attach to the inside of the door in such a way as to prevent opening the door. Security Bars are also used on many pick-up trucks to hold the spare tire in place under the pick-up body. Security Bars have been adapted for use on gates whereby one end of the bar engages a hole in the floor while the other end attaches a structure above the gate and thus prevents the gate from being opened. Security Bars are also adaptable for use in locking an office machine or television set to a table top.

The above examples illustrate the wide application of security bars and their use is not limited to these examples.

Security Bars, when used on a typical office filing cabinet, are often locked in place by using a padlock to secure one end of the Security Bar. Control over security is difficult when padlocks are used, since they are readily replaceable and easily exchanged and there is a need for something better.

Padlocks are also difficult to master-key and their keyways are not readily available to match other keyways in a security system. Padlocks can be left in an opened position which makes it easy for anyone to place the padlock in position and lock it. Locking devices for security bars have had no standardization and an inspection of a typical office where home-made security bars are used on filing cabinets will reveal a wide variety of padlocks in use which means there is no control over keys and no way to provide a master key for the office files.

Therefore, it is an important object of my present invention to provide a lock as an integral part of the security bar and by that means to provide uniform keys for any given office requirement.

Another object of the invention is to provide a locking security bar which can be master-keyed using popular keyways whereby the master door key used for opening doors can also be useable on security bars.

Another object of my invention is to provide a security bar which can be locked only by use of a key. This feature limits locking only by a person who is in possession of a proper key thus eliminating the possibility of an unauthorized person locking the security bar thereby establishing responsibility for the locking function.

A further object of my invention is to provide security bars with self-contained locks having a uniform appearance which can be finished to match color schemes.

Another object of my invention is to provide a key operated lock as a part of a security bar in which the lock cylinder can be removable and re-keyable, thereby making it possible to change keys as required.

Another object of my invention is to provide a locking mechanism for a security bar in which a portion of the mechanism is permanently attached to the object or structure being locked and barred; such portion to be peculiarly engageable with the security bar assembly and not readily useable in conjunction with any other barring arrangement.

Another object of my invention is to provide a security bar having attachment provisions which become more securely fastened by distortion of the bar by bending or prying attempts at removal.

Another object of my invention is to provide a security bar which is readily attachable to such items as filing cabinets, typewriters, and office machines by means of simple tools.

Another object of my invention is to provide a security bar with self contained locking mechanisms which are applicable to storage cabinets, doors and drawers in which a locking mechanism is a part of each end of said bar thus requiring the use of two keys to either apply or remove said bar from said cabinet, door, etc.

With the above and other objects in view, the present invention consists of a combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of my invention.

Referring to the drawings, wherein like reference characters indicate like parts or elements throughout the several views.

FIG. 1 is a perspective view of a typical filing cabinet with a security bar in a locked position and attached at both top and bottom of the cabinet with the security bar extending the length of the cabinet.

FIG. 2 is a drawing of a notch-pin and shows a section of reduced diameter having two flat sides.

FIG. 3 is a perspective drawing of a typical storage cabinet showing a key-hole slot on one end of the security bar and a locking mechanism on the other end.

FIG. 4 is a drawing of a detail of a key hole shaped slot which may be used instead of the slot shown in FIG. 5 at the end of a security bar opposite the lock mechanism.

FIG. 5 is a detailed perspective view showing the locking mechanism in an unlocked condition at one end of a security bar and a slot in the other end with notch pins shown in relation to the unattached security bar.

FIG. 6 is a detailed perspective view showing the locking mechanism on one end of a security bar in a locked condition and a slot at the other end engaging a notch pin.

Referring more particularly to the drawings, the security bar is represented in its entirety by the reference numeral 1, the same comprising a generally U shaped bar with a lock housing 2 at one end and a slot or other opening 3 at the other end. In a typical application two notch-pins 4, 5 are installed on the front of a filing cabinet or storage cabinet by boring holes through the cabinet frame and attaching the notch pins with nuts. The notch pin (FIG. 2) element more specifically comprises an enlarged generally cylindrical inner head portion which is of a diameter larger than the width of the slot in keyhole 7, but which is also smaller than the diameter of the round portion of keyhole 7 so as to permit the same to be inserted therein. The notch pin further comprises a section having a generally rectangular (two flats) cross section 6 whereby the lesser dimen-
sion of said rectangle is less than the width of the slot portion of keyhole 7 and the greater dimension is more than the slot portion of keyhole 7. These flats are dimensioned to slideably engage the slot portion of keyhole 7 as well as slot 3 and when thus engaged are prevented from turning by said slots. With notch-pin 4 at the top and notch-pin 5 at the bottom of a cabinet front attachment of security bar 1 is accomplished by first inserting key 8 into lock cylinder 9 and rotating the key until cam 10 leaves keyhole 7 totally uncovered (FIG. 10). Then by sliding notch 3 into flattened area of notch-pin 5, and putting notch-pin 4 through round portion of keyhole 7, (FIG. 6) and pushing security bar 1 down until the flats on notch-pin 4 engage the slot portion of keyhole 7, the cam can be turned by key 8 until it rests over the round portion of keyhole 7 and prevents lock-pin 4 from being disengaged from keyhole 7.

Lock cylinder 9 is removable and re-keyable and is retained within housing 2. The cam 10 is attached to the rotatable key plug of lock cylinder 9 and oriented so that cam 10 will always cover a portion of keyhole 7 when the key is removed from the cylinder.

When security bar 1 is installed on a typical storage cabinet notch pins can be attached on the front face of the cabinet at each side of the doors (FIG. 3). Slot 3, (FIG. 5) on the end of security bar 1 can be replaced by a keyhole 11, (FIG. 4) which will engage a notch-pin 5. The slot portion of keyhole 11 extends towards the near end of security bar 1, (FIG. 4) and keyhole 7 is oriented with its slot extending towards the other end of the security bar. With keyhole slots oriented towards opposite ends of the security bar one or both slots must have a length at least two times the diameter of the round portion of the keyhole in order to slide the security bar endways enough to engage notch-pins at both ends.

An important feature of the present invention resides in the provision of key holes at each end of the security bar with the slots of said key holes pointing towards the adjacent ends of said security bar. This provision prevents withdrawal of the notch-pins after the security bar has been locked in place because any pulling or bending of the security bar only seats the notch-pins deeper into the key hole slots.

When it is desired to remove said security bar from a typical cabinet key 8 is inserted into lock cylinder 9 and rotated until cam 10 no longer obstructs the round portion of keyhole 7, then security bar 1 is moved longitudinally until notch-pin 4 can be withdrawn through the round portion of keyhole 7. After notch-pin 4 is disengaged from keyhole 7, the security bar is moved until the slot 3 or keyhole 11 is disengaged from notch-pin 5.

It is an important feature that after the security bar 1 has been removed from the cabinet key 8 must be rotated to a position where cam 10 again covers a portion of the round portion of keyhole 7 before key 8 can be removed from the lock cylinder. This feature makes it mandatory that a person in possession of the proper key be present when the security bar is both locked in position on and removed from the cabinet.

While I have herein suggested that the described locking security bar device is to be applied to the front of a filing cabinet or storage cabinet, it will be apparent that it can also be readily applied to other objects without departing from the spirit of the invention, for example: a modified notch-pin can be attached through a desk top into an office machine and when the security bar is locked to said notch-pin removal of the office machine will be restricted.

Having thus described an embodiment of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures and devices coming within the scope of the annexed claims.

What I claim is:

1. A locking device comprising:
   a. a bar member having an elongated slot and said slot being enlarged at one end portion thereof to form a key-hole shaped opening with the narrow end of said slot extending toward near end of said bar member,
   b. a cam rotatably connected to a key operated lock cylinder supported in a housing removably attached to said bar member,
   c. said cam being pivotable between a locked position wherein said cam covers all or part of the enlarged end portion of said key-hole slot and an unlocked position wherein it leaves said key-hole completely unobstructed,
   d. a notch-pin slideably engageable with said key-hole shape slot.

2. The combination set forth in claim 1 including:
   a. locating means covered by said removable housing and engageable with said notch-pin for locking said notch-pin in said key-hole, and,
   b. said locating means and housing being removably attached to one end of a bar,
   c. the other end of said bar having a slotted or key-hole shaped opening longitudinally oriented to engageably accept a notch-pin, which has been previously attached to a cabinet frame or other structure.

3. The combination set forth in claim 1 including:
   a. Duplicate locating means covered by removable housings and engageable with said locking pins,
   b. a locating means on each end of said bar, each lock capable of being keyed alike or keyed different, requiring the use of two keys to apply said bar to, or remove from a cabinet or other structure.

4. In a lock adapted to secure a notched bolt into a key-hole shaped opening through a longitudinal bar, a housing attached to said bar over said key hole, said housing having closed ends with an aperture there-through, a key actuated cylinder mounted in said aperture and fitted with a rotatable cam, said cam located to swingingly cover and uncover a portion of the round section of said keyhole, a notched bolt slideably engageable with said keyhole and not rotatable when engaged with the elongated section of said keyhole.

5. In a locking bar device, a longitudinal bar having a key-hole shaped opening through and near one end of said bar in which the elongated portion of said key-hole has a length of two or more times the diameter of the round portion of said key-hole, and the elongated portion extending away from the middle of said bar, near the opposite end of said bar, a key-hole shaped opening in which the elongated portion is more than one, but less than two times the diameter of the round portion of said key-hole and with the elongated portion extending away from the middle of said bar, a removable housing covering either of both key-hole shaped openings, said housing containing a locating means and rotatable cam, said cam swingable into locking position to cover the round portion of said key-hole.