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[56]

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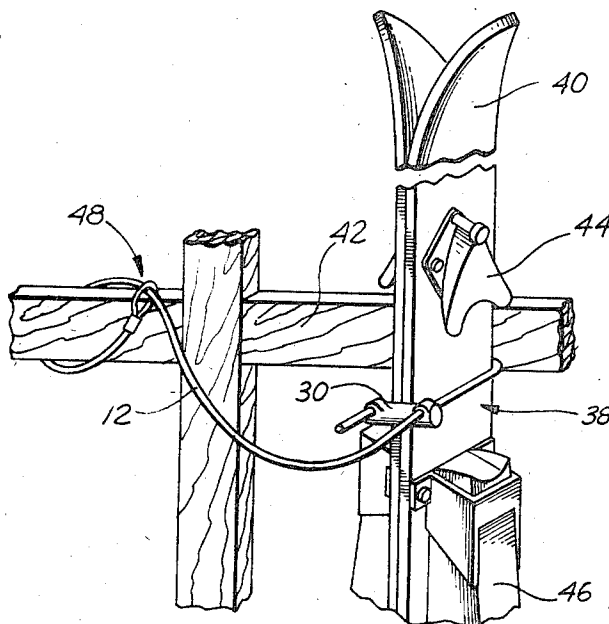
[54] **LOCKING DEVICE**
2 Claims, 3 Drawing Figs.

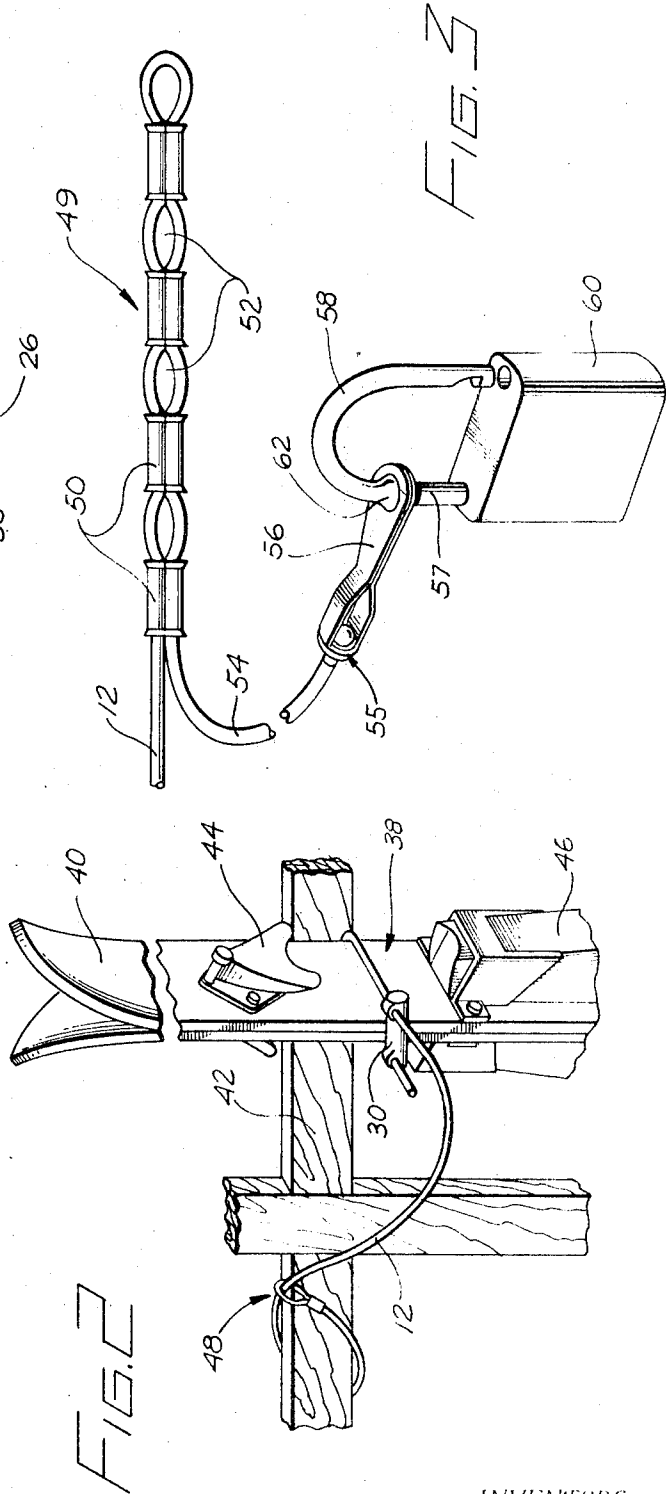
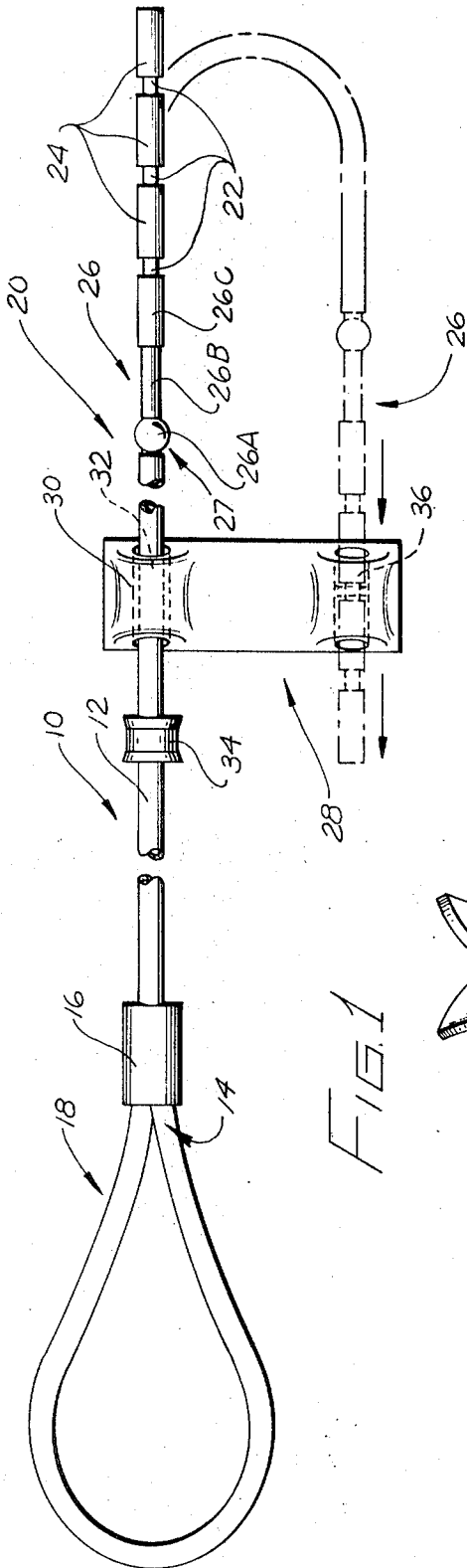
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ABSTRACT: A locking device adapted to prevent the theft of an object by tethering the object to a fixture. The device comprises an elongated, flexible cable with a fixed loop at one end and means for providing a flexible variable-sized, releasable binding at the other end.





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LOCKING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to locking devices, and more particularly to a device adapted to prevent the theft of an object by tethering the object to a fixture. The invention is particularly suitable for preventing the theft of skis or the like.

2. Description of the Prior Art

Occasionally, persons leave their belongings unattended in public places, particularly when it is inconvenient for an owner to continuously transport an object of large size or weight. For example, a skier often leaves his skis and ski-poles unattended near a ski lodge because his ski equipment is too cumbersome to be carried around, thereby creating the possibility of loss by theft. In response to this possibility, several locking devices for skis have been developed; but these devices have several disadvantages, the most significant disadvantage being their failure to fit all types and designs of skis. For example, presently known ski locks generally comprise a length of flexible cable with a locking mechanism at one end adapted to link up with the free end of the cable. The free end usually includes a connecting ring or a lock head adapted to be threaded through an aperture in the skis or ski bindings. The cable is then drawn around a fixture, such as a tree or a portion of a ski rack, and the free end is linked with the locking mechanism at the other end of the cable. These locking devices do not fit all skis, however, because many ski bindings either do not have a permanently confined opening or an opening large enough to permit passage of the free end of the cable. The present invention eliminates this problem by providing an adjustable locking device capable of use with all types and designs of skis.

Although the advantages of this invention are readily apparent when considering the problems related to locking devices for skis, the invention is not considered to be limited thereto. For example, many types of property, particularly public-owned properties, are often left unguarded in public areas for substantial lengths of time. To prevent thefts, it is common to secure these objects to a fixture or to the ground with a length of chain bolted or welded to the object being secured. The locking device of this invention is fastened to an object quickly without the inconvenience and expense of permanently securing a locking device directly to the object being fastened.

SUMMARY OF THE INVENTION

Briefly, this invention includes an elongated, flexible cable with a fixed loop at one end and releasable, variable-sized binding means at the other end. Preferably, the binding means comprises lock-receiving means and lock means adapted to be releasably coupled to a portion of the lock-receiving means.

In use, one end of the cable is secured to a fixture by a slip knot formed from wrapping the cable around a fixed upright or horizontal bar portion of a fixture and drawing the binding means through the fixed loop at the end of the cable. The binding means end of the cable is then locked to the object being secured by adjustably fastening the binding means around the object. In the preferred form, the lock-receiving means comprises a series of lock-receiving members. Thus, a variable-sized fastening loop is formed by engaging the lock means with a desired one of the lock-receiving members. Preferably, the binding means includes at least one elongated flexible member adapted to provide a substantial portion of the fastening loop, thereby enabling the loop to be drawn tightly around the object being secured. The opening provided by the fixed loop at the opposite end of the cable is limited in size to prevent passage of an object larger than the binding means. As a result, the object being fastened cannot be slipped back through the fixed loop.

The locking device of this invention is particularly useful for securing an object having a pair of fixed spaced-apart protrusions. That is, the binding means of the invention is adapted to be adjustably fastened around the object between the protrusions so that it cannot be passed over either of the protrusions.

When the object being secured is a pair of skis, for example, the binding means is preferably fastened around the skis between the toe and heel bindings. In the preferred form of the invention, the lock means is engaged with a particular one of the lock-receiving members to provide a tight, secure fastening loop incapable of being slipped over either of the bindings. Thus, the locking device of this invention is adaptable for use with all types of skis because it is fastened around the skis, thereby functioning independently of design features associated with various skis. When used for securing objects generally, the binding means is to be wrapped around the object, or a particular portion thereof, and adjustably tightened before locking. Thus, the locking device need not be permanently affixed to the object being secured.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic elevational view showing a preferred embodiment of the fastening device of this invention;

FIG. 2 is a perspective view showing the preferred fastening device in use; and

FIG. 3 is an elevational view showing an alternate embodiment of the releasable binding provided by this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, a locking device 10 includes an elongated, flexible cable 12. Preferably, the cable has a core of braided steel wire, but any other suitable chain or wire cable can be used providing it is relatively flexible and has the degree of strength requiring a chain cutter or the like to sever it. Preferably, the cable is coated with a plastic material such as vinyl to resist corrosion and prevent abrasion of contacting surfaces.

A segment of wire core (not shown) at an end 14 of the cable is swaged to the cable forward of end 14 by a hollow metal sleeve 16 to form a loop 18 at one end of the cable. Releasable, variable-sized binding means 20 are located at the opposite end of the cable, and include an elongated segment of wire core 22 projecting outwardly from the cable. A series of spaced-apart metal sleeve-like members 24 are secured to the core, preferably by swaging, such that the exposed segments of wire core define a series of recesses or notches 22 extending inwardly from the binding means end of the cable. An elongated, metal sleeve-like member 26 is secured to the wire core forward of members 24 and includes a substantially round ball sleeve 26A which abuts against an end 27 of the cable defined by the termination of the plastic vinyl coating which covers the cable. Sleeve-like member 26 additionally includes a narrow, cylindrical, intermediate segment 26B integral with the ball sleeve, and a larger cylindrical segment 26C integral with segment 26B and substantially equal in length and diameter to members 24. Members 24 and 26 cooperate to provide a relatively flexible shank at the end of the cable.

Binding means 20 additionally includes lock means 28 secured to the cable forward of ball sleeve 26A. The lock means comprises a cylindrical lock housing 30 having an elongated aperture 32 extending therethrough. The cable slideably extends through aperture 32 to enable the lock housing to translate freely along the end of the cable. A metal cylindrical stop sleeve 34 is swaged to the cable on the side of housing 30 opposite ball sleeve 26A. Both the stop sleeve and ball sleeve are greater in diameter than aperture 32 so that translational movement of the lock housing along the cable is confined therebetween. A second elongated lock aperture 36 extends through housing 30 and provides the shackle means for lock means 28. A slideable locking projection (not shown) is disposed internally within the lock housing and is adapted to be alternatively exposed and concealed in a small portion of lock aperture 36.

During operation of the lock means, the cable shank is slideably engaged with lock aperture 36 so that the portion of the cable from sleeve 34 to the end of the shank forms a flexible fastening loop, as shown in FIG. 1 and at 38 in FIG. 2. Each of shank members 24 and 26C are adapted to be pushed through lock aperture 36 in the direction of the arrows shown in FIG. 1 to enable the size of fastening loop 38 to be altered as required. Movement of shank members 24 and 26C through the aperture causes the locking projection therein to be forcibly retracted to allow passage of the members. The locking projection is adapted to be progressively registered with notches 22 as the shank is pushed through the aperture, thereby providing a fastening loop with graduated sizes. A ratchet device (not shown) disposed internally in the lock housing cooperates with the locking projection to prevent reverse movement of the cable shank in aperture 36. The shank is removable from the aperture by inserting a key (not shown) into the housing to retract the locking projection.

In use, locking device 10 is adapted to secure an object, such as a pair of skis 40, to a fixture such as an elongated horizontal beam 42 herein representing part of a conventional ski rack. A toe binding 44 is disposed intermediate of the skis, and a heel binding 46 is located behind the toe binding. An end of the locking device is adapted to be secured to beam 42 by a slip knot 48 formed by passing the cable around the beam and drawing binding means 20 and the remainder of the cable through loop 18. The binding is then fastened around the skis by drawing the cable shank around the skis between bindings 44 and 46 and pushing it through aperture 36 to form fastening loop 38. The loop is drawn tightly around the skis by forcing lock housing 30 up against stop sleeve 34, and advancing the cable shank through aperture 36 as far as possible in the direction of the arrow shown in FIG. 1. The adjustability of the lock means, and the flexibility of the cable and the shank cable enable the loop to be drawn very tightly around the skis so that the loop cannot be slipped over either the heel or toe binding.

It is noted that use of the locking device of this invention has been described in connection with skis; but it is readily apparent that the device can be used as a releasable binding for securing other bulky or heavy objects which necessarily must be left unattended in public places. It is further noted that the device has been shown secured to a ski rack, but it is apparent that it can be used effectively with other fixtures such as trees or posts. It is to be understood that this invention is not limited to the particular form of releasable binding means 20 shown in FIGS. 1 and 2. Alternate embodiments are within the scope of this invention, so long as they provide releasable, variable-sized binding means adapted to be adjustably fastened around the object being secured. An alternate embodiment of the binding means contemplated by this invention is shown in FIG. 3, wherein a shank portion 49 of cable 12 is formed by doubling a length of cable and swaging a series of metal sleeve-like members 50 around the adjacent cables in spaced-apart relation. Thus, shank 49 comprises a series of spaced-apart connecting loops 52 disposed between members 50. A

flexible end portion 54 of cable 12 is preferably secured at its end 55 to an elongated metal swivel member 56. The opposite end of the swivel member makes a loose fit around a lower portion 57 of a shackle 58 extending upwardly from the top of a padlock 60. A flange 62 projects outwardly from the outer surface of the shackle above lower portion 57, and is adapted to provide stop means for restraining the travel of swivel member 56 along the lower part of the shackle. In use, a flexible, releasable, variable-sized binding is formed by wrapping end portion 54 of the cable and cable shank 49 around the object being secured. The shackle of lock 60 is then inserted through a desired one of connecting loops 52 and locked to form a tight fastening loop incapable of being removed from the object.

15 We claim:

1. A ski lock for securing a pair of skis to a fixture, the ski lock comprising a flexible, elongated cable having first and second ends, the cable including a flexible wire reinforcing member and a corrosion resistant and abrasion resistant material covering a substantial portion of the reinforcing member; means forming a fixed loop at the first end of the cable; a lock housing having a first opening through which the cable fits to secure the lock housing to an intermediate portion of the cable, and a second opening with a locking member in it, the lock housing being of a size sufficient to fit through the fixed loop of the cable; stop means secured to the cable between the fixed loop and the lock housing to limit movement of the lock housing relative to the cable; a plurality of lock-receiving members secured to the second end of the cable so that a series of lock-receiving grooves are formed by the spaces between the lock-receiving members, the lock-receiving members being of a size sufficient to fit through the second opening in the lock housing to engage a desired one of the lock-receiving grooves so that the portion of the cable between the stop means and the lock-receiving members forms a flexible binding loop which is adjustable in size, whereby the first end of the cable is fastened to the fixture by wrapping the cable around the fixture and drawing the lock-housing through the fixed loop, and the flexible binding loop at the second end of the cable is wrapped tightly around the skis and locked.

2. A locking device for securing an object to a fixture, the device comprising a flexible, elongated cable; means forming a fixed loop at one end of the cable; an elongated binding member at the other end of the cable including a pair of flexible members disposed adjacent to each other; and a series of spaced-apart segments secured around the adjacent flexible member to form a series of spaced-apart lock-receiving loops therebetween; a lock with releasable shackle means; and means for securing the lock adjacent to the flexible binding member, whereby the cable is fastened to the fixture by wrapping it around the fixture and drawing the lock through the fixed loop, and the elongated binding member is wrapped tightly around the object and the shackle means engaged with one of the lock-receiving loops and locked.