May 9, 1961 M. P. FALK 2,983,132

SECURITY DEVICE

Filed April 22, 1959 2 Sheets-Sheet 1

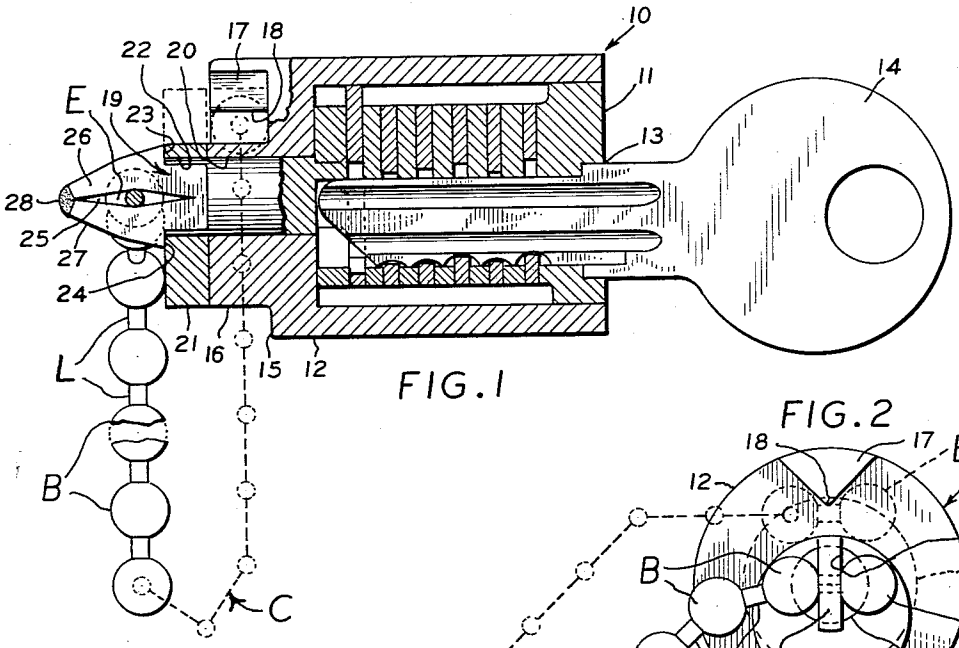


FIG. 1

FIG. 2

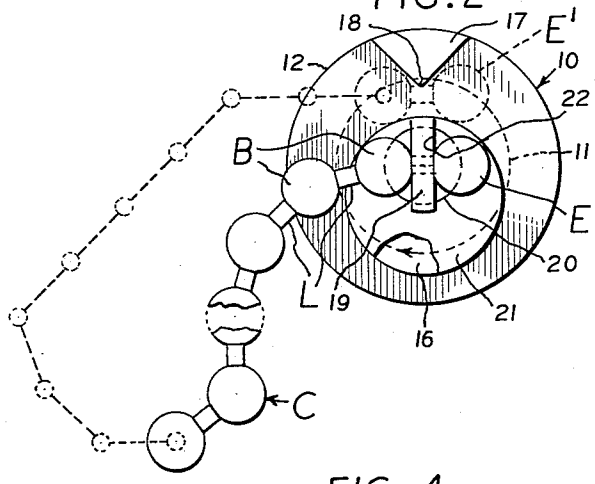


FIG. 3

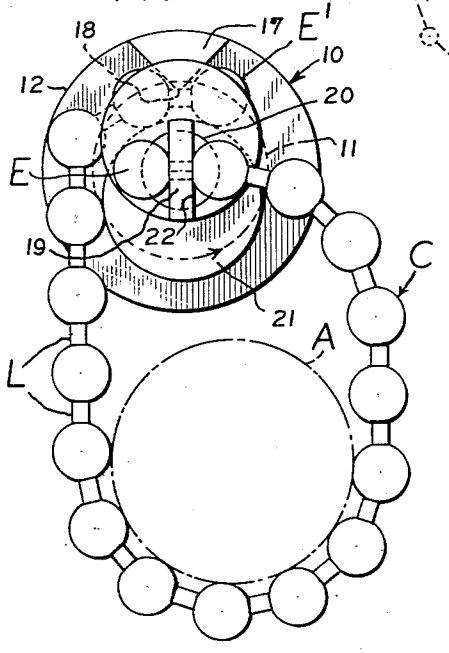
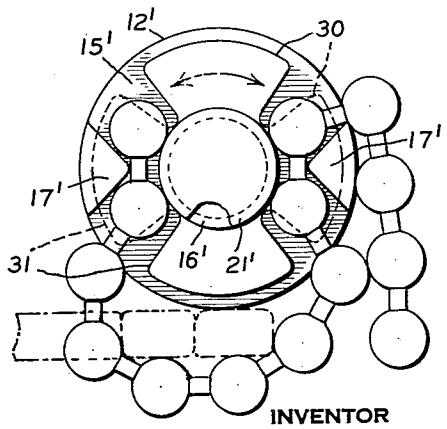


FIG. 4



INVENTOR
MYRON P. FALK
BY Mark Bassecher
ATTORNEY

May 9, 1961 M. P. FALK 2,983,132

SECURITY DEVICE

Filed April 22, 1959 2 Sheets-Sheet 2

FIG. 5

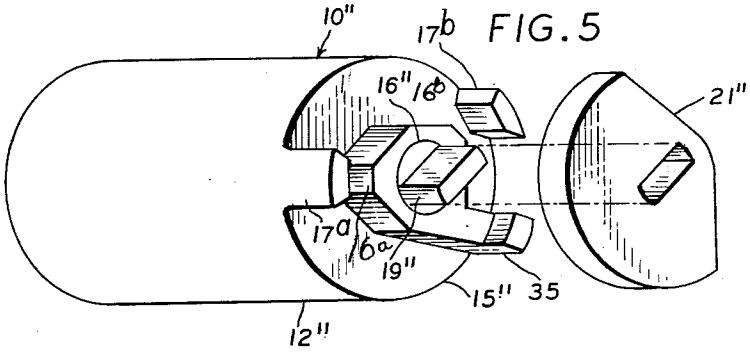


FIG. 6

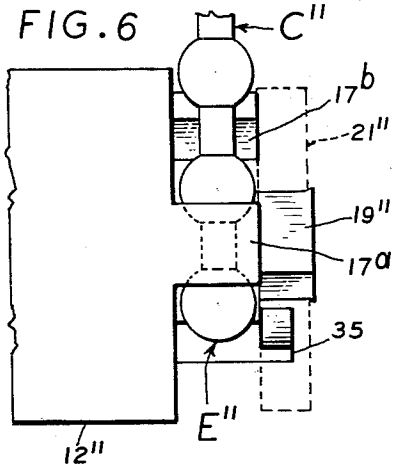


FIG. 7

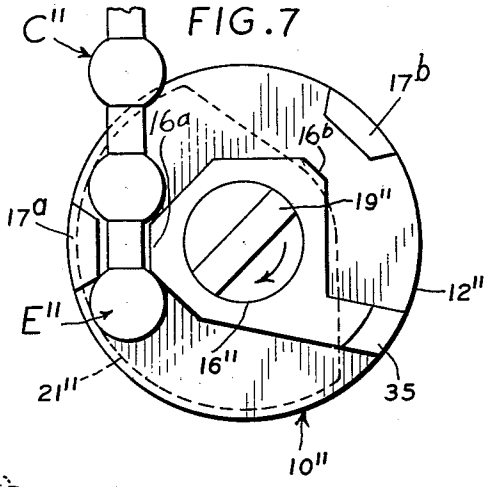
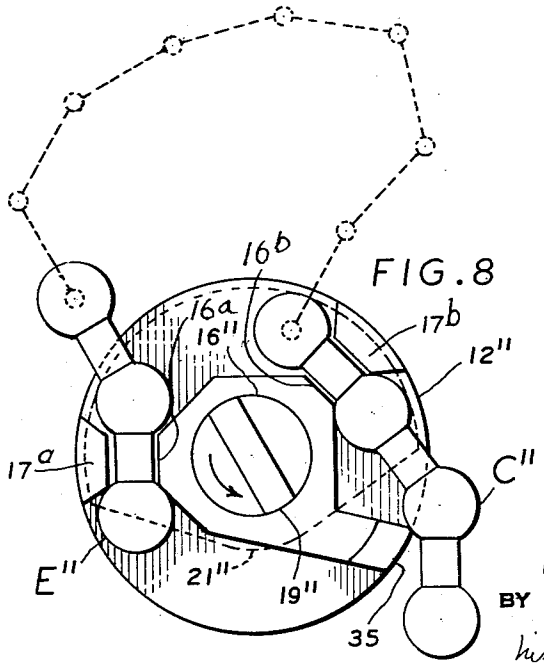


FIG. 8



INVENTOR
MYRON P. FALK
BY Mark Bassechas
his ATTORNEY

United States Patent Office

2,983,132

Patented May 9, 1961

2,983,132

SECURITY DEVICE

Myron P. Falk, Leominster, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts

Filed Apr. 22, 1959, Ser. No. 808,165

2 Claims. (Cl. 70—49)

This invention relates to a security device and more particularly to a portable locking mechanism adapted to prevent theft or removal of normally portable items. Still more particularly, this invention relates to a chain locking device whereby a loop or bight formed of the chain may be locked into the chain and, thereby, articles encompased within the loop or bight may be assured against separation.

Portable removable articles such as skis, lawnmowers, bicycles or the like are often left out of doors for short periods of time and thus become easy articles for thefts. It is an object of this invention to provide a locking device for a chain whereby such chain may be encircled about the object to be protected, and about a stationary object, thereby effectively securing the portable object to the stationary object and preventing the theft thereof.

It is a further object of this invention to provide a portable chain locking device which is extremely economical to produce and which may be used without alteration to protect a wide variety of articles against theft.

Still a further object of this invention is to provide a locking device of the class described whereby a plurality of loops or bights may be formed of the chain, thereby permitting the locking or securing of a plurality of articles, with the same locking mechanism at the same time.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, reference is made to the drawings, forming a part hereof, in which:

Figure 1 is a magnified vertical section through a locking device in accordance with the invention;

Figure 2 is an end elevational view of the device in the chain releasing position thereof;

Figure 3 is a view similar to Figure 2, showing the chain in the locked position thereof;

Figure 4 is a view similar to the views of Figures 2 and 3 of an embodiment of the invention;

Figure 5 is an exploded perspective view of an embodiment of this invention;

Figure 6 is a section taken on the line 6—6 of Figure 5;

Figure 7 is an end elevation, partly in phantom, of the embodiment of Figure 5 in the unlocked position;

Figure 8 is a view similar to that of Figure 7 but in the locked position.

In accordance with the invention, a locking assembly **10** which is, in the illustrated embodiments, of the disk tumbler type but which may be, without variation from the spirit of the invention, of any known type, such as the pin tumbler type, is provided with a key rotatable plug **11**, secured within an armoured housing **12**. The plug, in the usual manner, provides an exposed keyway **13**, wherein may be inserted the operating key **14**.

At the end **15** of the casing **12** opposed to the keyway end **13**, there is provided a cylindrical hub **16** extending beyond the end **15** a distance slightly in excess of the diameter of the ball link portions B of the chain C. The end **15** of the casing is formed, in addition, with a toothed member **17** of generally pyramidal form, the apex **18** of the tooth being spaced from the outer periphery of the

hub **16** a distance somewhat less than the diameter of the ball links B, but greater than the diameter of the cylindrical linking portions L between the balls B.

The rotatable plug **11** is provided with a generally rectangularly cross-sectioned drive bar **19** which extends through the aperture **20** formed in the hub **16** of the casing **12**. An end plate **21**, of substantially circular configuration, is eccentrically provided with a rectangular slot **22**, substantially conforming with the rectangular cross-section of the drive bar **19**. A pair of shoulders **23** and **24** on the drive bar overlay portions of the end plate **21** surrounding the slot **22**, thereby preventing endwise removal of the end plate **21** from the said drive bar.

In the embodiment depicted in Figures 1 to 3, one end E of the chain C is secured to the drive bar **19**. A convenient means of affixing the end of the chain to the drive bar is illustrated in Figure 1, wherein the end part of the bar **19** is bifurcated by forming the same with the slot at **25**, such slot serving to receive a link portion L of the chain, the ends **26, 27** of the bifurcated bar, after insertion of the chain, being bent inwardly to prevent removal of the chain and welded, as illustrated at **28**, to assure a permanent connection.

The chain device is applied by swinging the end plate **21** by means of key operation to the open position shown in Figure 2. In such position, any portion of the chain C from the free end E' inwardly along the length, may be seated or inserted transversely bodily sidewise in the direction substantially parallel with the axis of the plug **11**, into the socket seat or space between the apex of the tooth **17** and the periphery of the hub **16**. In such inserted orientation, the relatively narrow link portion L will lie between the apex of the tooth **17** and the hub, **18** and **16**, respectively, and a pair of ball link portions B will lie one to each side of the tooth **17**. It will be readily recognized that in the thus inserted position of the chain, movement of the chain aong its length is prevented by action of the tooth and hub and only sidewise removal of the chain from the casing is possible. When the key **14** is turned to the locked position, with the chain positioned as previously described, the end plate **21** will be swung by the drive bar **19** to the position shown in Figure 3 wherein the chain portion imprisoned between the tooth **17** and hub **16** will lie beneath the end plate, thereby preventing endwise as well as sidewise removal of the chain from the casing.

As will be obvious from Figure 3, any article A imprisoned within the loop or bight of the chain defined by the fixed end E and the portion confined between the tooth **17** and hub **16** cannot be moved except within the limits provided by the length of chain forming the bight or loop. If a stationary object, such as a tree or stanchion, is included within this loop, the article can be removed from the tree or stanchion only by operating the key plug **11** by means of the proper key **14**, thereby swinging the end plate **21** to the position shown in Figure 2.

In the embodiment shown in Figure 4, a central hub **16'** and a pair of toothed members **17'** are provided on the end surface **15'** of the casing **12'**. In this embodiment, the end plate **21'** is provided with a pair of opposed wings **30, 31**, which wings, in the locked position of the plug, occupy the dotted line position shown in Figure 4, thereby overlying the space between the teeth **17'** and the hub **16'**. In this embodiment, permanent fastening of the chain to any portion of the lock assembly is not necessary since a lock, bight or loop or chain will be formed between the portions of the chain imprisoned between the teeth **17'** and the hub **16'** in the locked position of the plug. If it is desired to provide a plurality of locked loops or bights of chain, one end of such chain may be permanently secured or fastened to the casing **12'**, in which case a first locked loop or bight will be defined between the

affixed end of the chain and the portion of the chain imprisoned between the tooth 17' and the hub 16' and a second loop defined between the portion between the two teeth 17' and the hub 16'. In similar manner, a plurality of locked loops or bights may be formed with an unattached chain by forming three or more teeth in proximate relation to the central hub in the manner illustrated in Figure 4 and by providing the end cap with a plurality of wings to match the number of teeth provided.

In the embodiment of Figures 5 to 8, an end E'' of the chain C'' is permanently affixed to the assembly 10''. The end 15'' of the casing 12'' is provided, in addition to the central hub 16'' having teeth 16*a* and 16*b*, with a pair of inwardly directed opposing toothed members 17*a* and 17*b*, spaced about 120° apart about the periphery of the casing. The casing end 15'' is provided, in addition, with an upstanding stop member 35 which extends from the end 15'' a distance greater than the toothed portions 17*a* and 17*b*.

In this embodiment, the end plate 21'' is secured to the drive bar 19'' by staking or otherwise, and presents an angular segment somewhat greater than the angle of separation of the teeth 17*a* and 17*b*.

As shown in Figures 7 and 8, the end plate 21'' is secured to the bar 19'' in a manner to overlie tooth 17*a* in both the opened and closed positions of the lock (the end E'' being inserted between tooth 17*a* and hub tooth 16*a* prior to staking the plate 21'' to the said bar 19''). The stop or abutment member 35 blocks end plate 21'' from opening far enough to release end E''. As in the prior embodiments, the chain C'' may be looped about the objects to be locked and inserted while the end plate 21'' is in the position shown in Figure 7, between the tooth 17*b* and the hub tooth 16*b*, whereupon the end plate 21'' may be shifted to the position of Figure 8 by rotating the key.

The heretofore described chain locking device provides a versatile and portable means for preventing theft of a wide variety of articles. The length of chain supplied with the device may be varied commensurate with the size of the article to be secured and the availability of trees, stanchions and like substantially immovable objects. The theft of portable articles may be discouraged even where no stanchion is available by connecting together a plurality of such articles by the device, thereby rendering transportation of the connected articles inconvenient or suspicious in appearance.

Having thus described the invention and illustrated its use, what is claimed as new and is desired to be secured by Letters Patent is:

1. A chain locking device comprising a generally cylindrical housing, a key plug rotatably mounted in said housing with the key receiving end of said plug extending to one side of said housing and a connector bar extending beyond the other side, a chain member secured to said housing, said chain member including ball links and wire links, a boss on said other side of said housing surrounding said connector bar, a tooth member formed on said other side of said housing, said tooth member having an apex portion directed toward said boss and spaced therefrom a distance greater than the width of said wire links and less than the width of said ball links, and an end plate carried by said connector bar, said plate, in the locked position of said plug, overlying said boss and toothed member.

2. A chain locking device comprising a generally cylindrical housing, a key plug rotatably mounted in said housing with the key receiving end of said plug extending to one side of said housing and a connector bar extending beyond the other side of said housing, a boss on said other side of said housing surrounding said connector bar, first and second tooth members formed on said other side of said housing, each of said tooth members having an apex portion directed toward said boss and spaced therefrom, an end plate carried by said connector bar and rotatable therewith, said end plate, in the locked position of said plug, overlying both said toothed members, a stop member extending from said other side of said housing in the path of rotation of said plate, said plate, when rotated against said stop member, overlying said first tooth member but not said second tooth member, and a chain comprising ball links and wire links disposed between said first toothed member and said boss, with one said ball link to either side of said first tooth member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,390,402	Vincent	Sept. 13, 1921
1,689,437	Hurd	Oct. 30, 1928
1,814,356	Wise	July 14, 1931

FOREIGN PATENTS

812,771	Germany	Sept. 3, 1951