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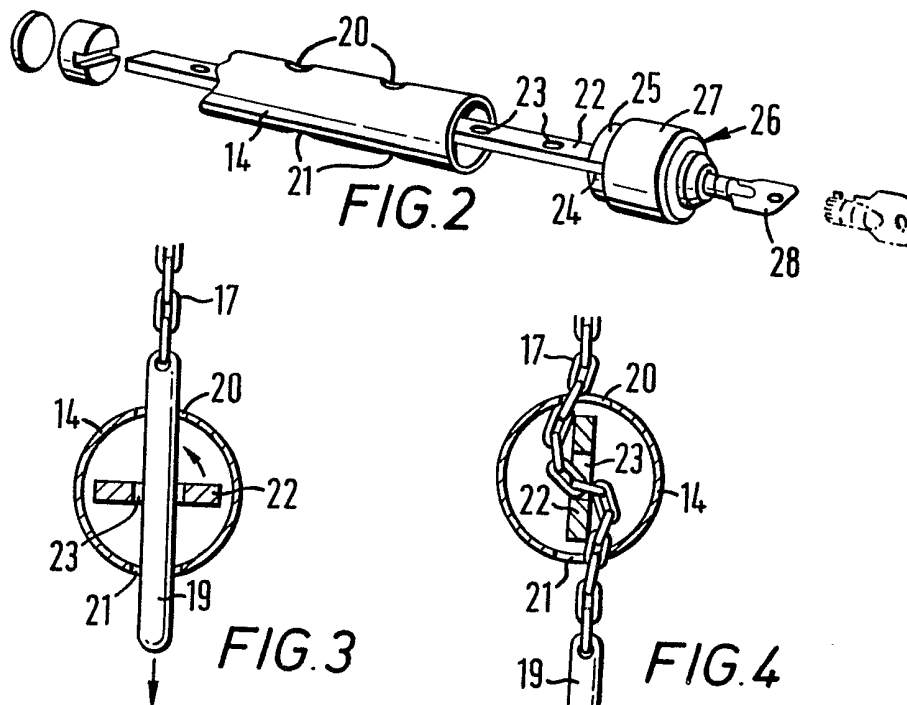
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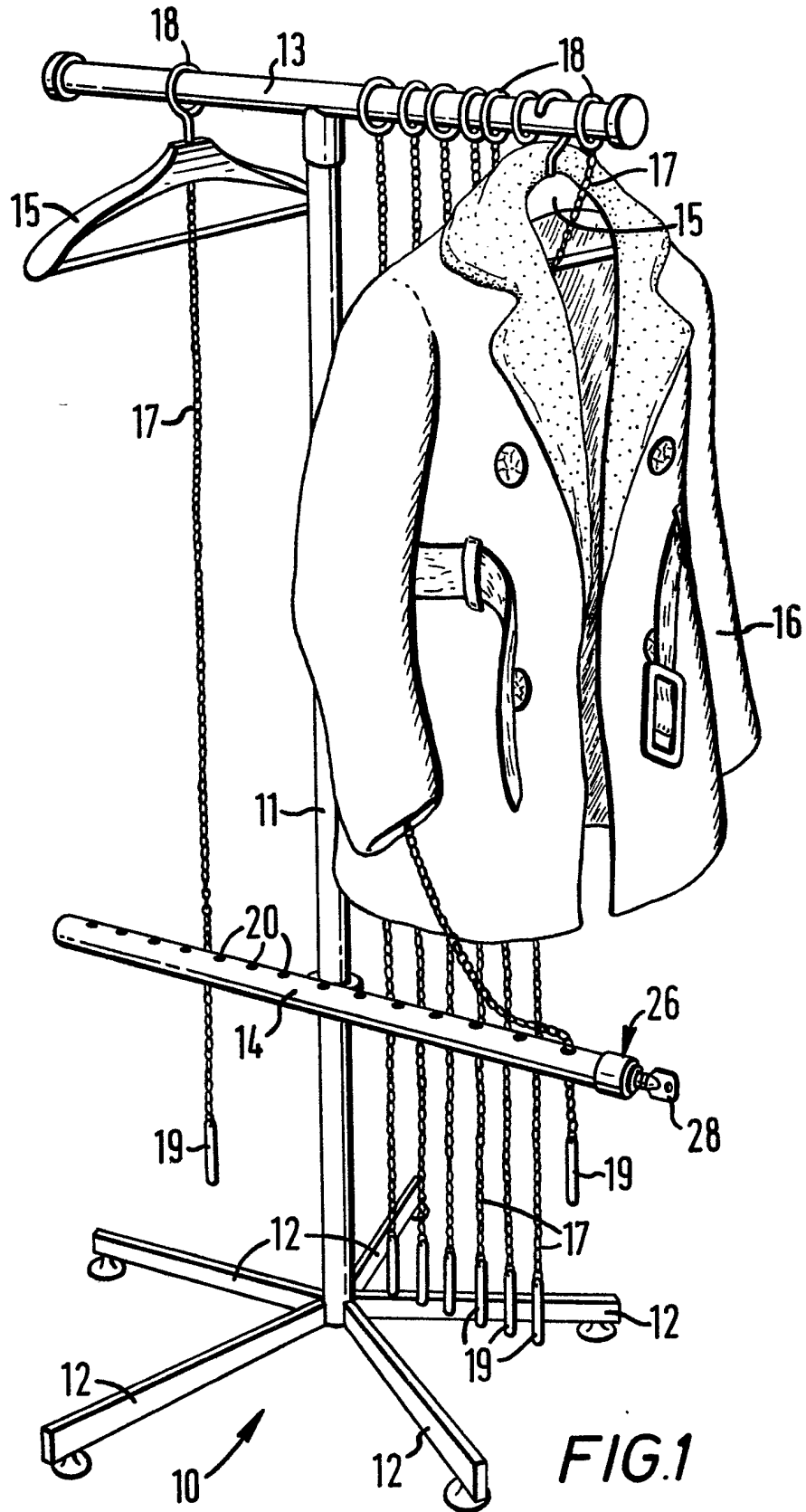
(54) A garment security device

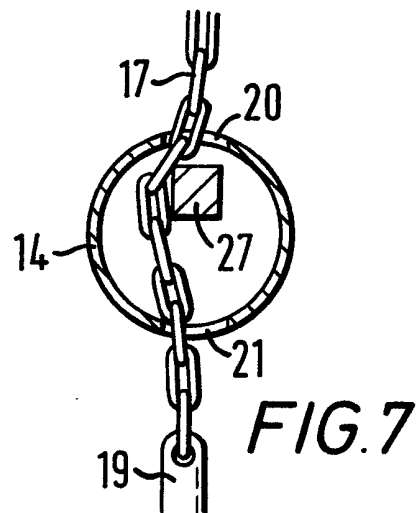
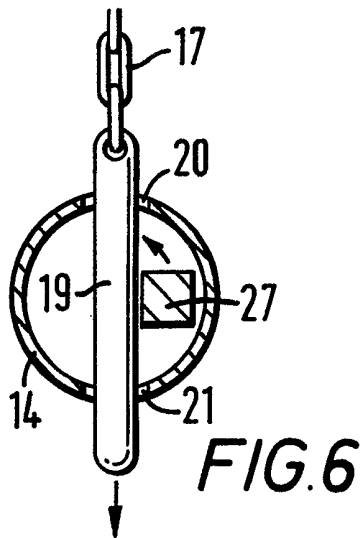
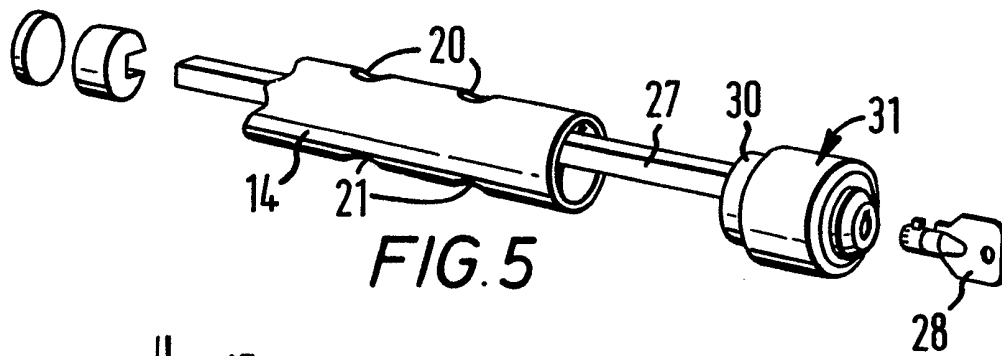
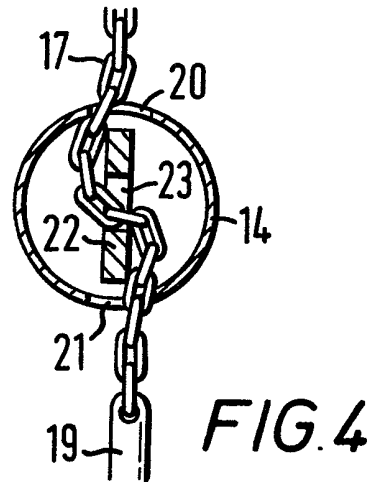
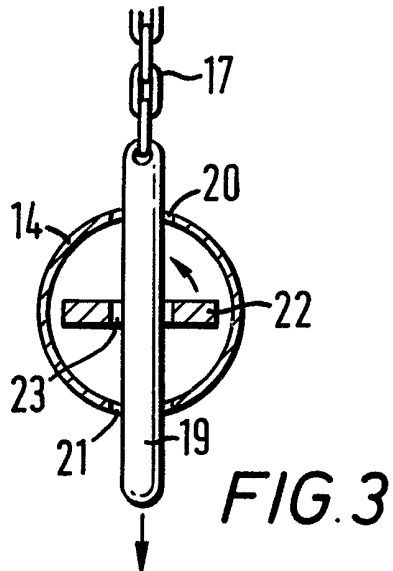
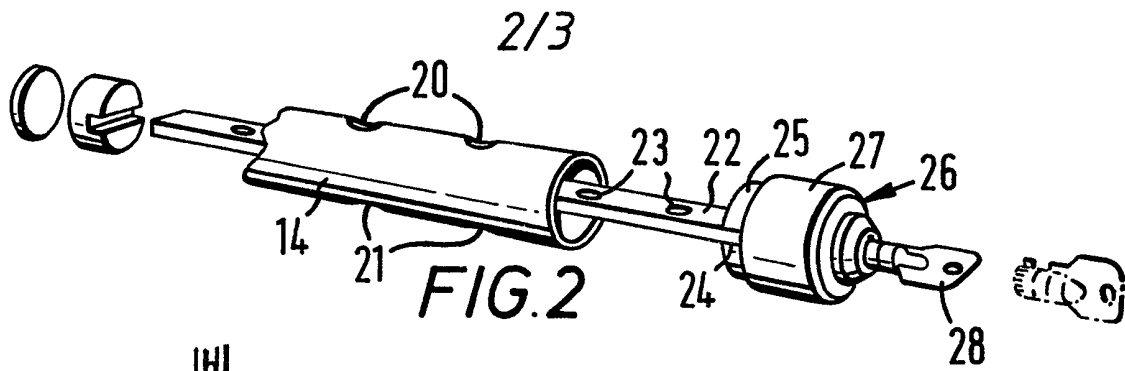
(57) Apparatus for restraining
movement of a flexible member of a
garment security device comprises a
chamber having an inlet aperture 20
and an outlet aperture 21 for receiving
a portion of the flexible member 17
therethrough, a movable member at
least a portion of which is located in

the chamber and which is movable
relative to the chamber and a lock 26
for securing the movable member
relative to the chamber. The
arrangement is such that when the
portion of the flexible member extends
through the chamber and the movable
member is moved relative to the
chamber, the portion of the flexible
member extending through the
chamber is diverted from an axis
extending through the apertures
thereby restraining movement of the
flexible member in a direction
longitudinal of the axis. In use the
flexible member extends through e.g.
the arm of the garment on a hanger.



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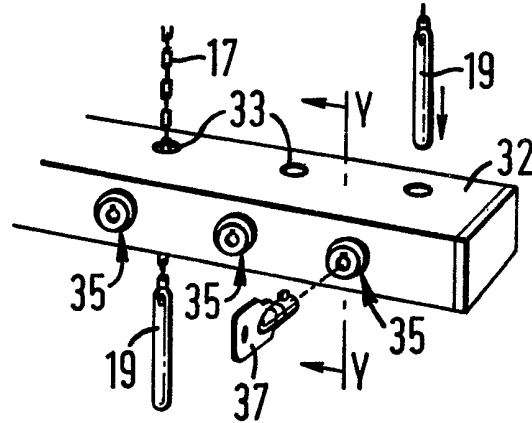


FIG. 8

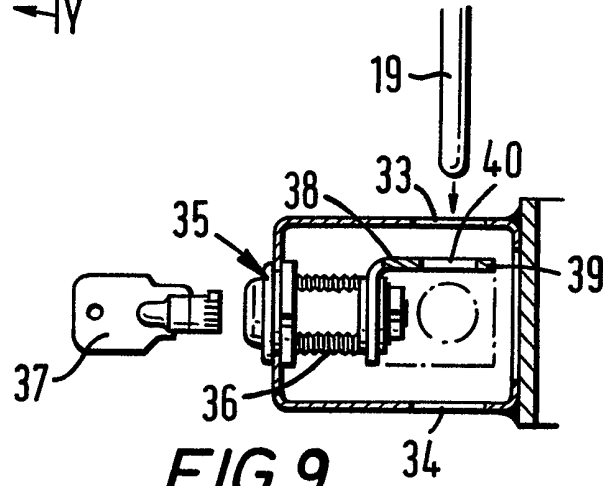


FIG. 9

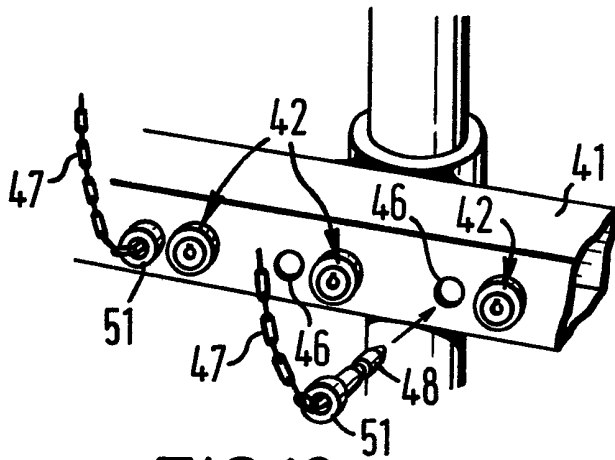


FIG. 10

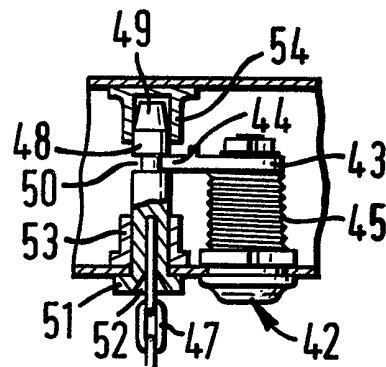


FIG. 11

SPECIFICATION

A garment security device

This invention relates to apparatus for restraining movement of a flexible member of a garment security device.

It is known to provide garment security devices which comprise a horizontal bar supporting hangers for suspending garments, such as jackets and coats, thereon. A plurality of flexible members, such as chains, is provided each associated with a corresponding one of the hangers. The ends of the flexible members remote from the corresponding hangers are adapted to be secured in locking means provided in a horizontal elongate component extending parallel to the bar and below the garments after each flexible member has been threaded through an arm of a garment suspended from a hanger associated therewith.

According to the present invention, there is provided apparatus for restraining movement of a flexible member of a garment security device comprising a chamber having an inlet aperture and an outlet aperture for receiving a portion of the flexible member therethrough, a movable member at least a portion of which is located in the chamber and which is movable relative to the chamber, and means for securing the movable member relative to the chamber so that, when the said portion of the flexible member extends through the chamber and the movable member is moved relative to the chamber, the said portion of the flexible member extending through the chamber is diverted from an axis extending through the apertures thereby restraining movement of the flexible member in a direction longitudinally of the axis.

The chamber may comprise a tubular member having pairs of said inlet and said outlet apertures, the pairs being spaced one from another longitudinally of the tubular member.

The movable member is provided with an aperture for receiving the said portion of the flexible member therethrough.

The apparatus may comprise a plurality of said movable members, each being associated with a corresponding one of pairs of inlet and outlet apertures.

A plurality of securing means may be provided each being associated with a corresponding one of the movable members.

The chamber may be mounted on a stand and may be height adjustable relative to the stand.

Following is a description, by way of example only and with reference to the accompanying drawings, of one method of carrying the invention into effect.

In the drawings:—

FIGURE 1 is a perspective view of apparatus in accordance with the present invention;

FIGURE 2 is a diagrammatic perspective view of a portion of the apparatus;

FIGURE 3 is a diagrammatic cross section of the portion shown in Figure 2 showing a portion of a chain being inserted therethrough;

FIGURE 4 is a view similar to Figure 3 with the chain in a 'locked' position;

FIGURE 5 is a view similar to Figure 2 of another embodiment of apparatus in accordance with the present invention;

FIGURE 6 is a diagrammatic cross section of the portion shown in Figure 5 showing a portion of a chain passing therethrough;

FIGURE 7 is a view similar to Figure 6 showing the portion of the chain in a 'locked' position;

FIGURE 8 is a diagrammatic perspective view of a portion of another embodiment of the invention;

FIGURE 9 is a cross section on the line Y—Y of Figure 8;

FIGURE 10 is a diagrammatic perspective view of another embodiment of the invention; and

FIGURE 11 is a diagrammatic cross section of the apparatus shown in Figure 10.

Referring now to Figures 1 to 4 of the drawings, there is shown a stand 10 comprising an upright tubular member 11 a lower portion of which is provided with a plurality of radially extending legs 12. The upright member 11 has mounted on an upper portion thereof a horizontally extending upper tubular member 13 and on a lower portion thereof a horizontally extending lower tubular member 14. The upper tubular member 13 has mounted thereon a plurality of hangers 15 each for supporting a garment 16 thereon. A plurality of chains 17 is provided an upper end portion of each of which may either be secured to a ring 18 located on the upper tubular member 13 or secured to a corresponding one of the hangers 15. A lower end portion of each chain 17 is provided with an elongate weight 19.

The lower tubular member 14 is provided with a plurality of upper apertures 20 spaced one from another longitudinally of the tubular member 14 and a plurality of lower apertures 21 spaced one from another longitudinally of the tubular member 14. Each upper aperture 20 is in register with a corresponding lower aperture 21 so that each upper aperture 20 and the corresponding lower aperture 21 constitute a pair of apertures. The lower tubular member 14 has extending therethrough a bar 22 having a plurality of apertures 23 spaced one from another longitudinally of the bar. An end portion of the bar is received in a slot 24 of a barrel 25 of a locking device 26, the barrel being contained within a housing 27 of the device 26 which housing 27 is secured to an end portion of the lower tubular member 14. The barrel 25 is rotatable on a central longitudinal axis thereof relative to the housing 27 only on insertion of a key 28 into a recess (not shown) of the locking device 26. Rotation of the barrel 25 on a central longitudinal axis thereof relative to the housing 27 of the locking device 26 effects rotation of the bar 22 on the central longitudinal axis thereof relative to the central longitudinal axis of the lower tubular member 14 whereby the bar 22 is turned from a position as shown in Figure 3 to a position as shown in Figure 4.

In use, a garment 16 is mounted on the hanger 15 and the weight 19 of the chain 17 corresponding to the hanger 15 is threaded through an arm of the garment 16 through an upper aperture 20 of the lower tubular member 14, through an aperture 23 of the bar 22 corresponding to the upper aperture 20 and through a lower aperture 21 of the lower tubular member 14 corresponding to the upper aperture 20 thereof. The chain 17 thus is guided in the same path as the weight 19 so that a lower portion of the chain 17 extends through the aperture 20 of the lower tubular member 14, the aperture 23 of the bar 22 and the lower aperture 21 of the lower tubular member 14.

On insertion of the key 28 in the corresponding recess of the locking device 26 and subsequent rotation of the barrel 25 relative to the housing 27, the bar 22 is rotated on a central longitudinal axis thereof and effects twisting of the portion of the chain 17 extending through the lower tubular member 14 into a substantially 'S' configuration. In consequence, upward movement of the chain 17 through the lower tubular member 14 is restrained because the weight 19, being rigid, cannot follow the curved path of the chain around the constrictions formed by the bar 22 and the lower tubular member 14.

Therefore, the garment 16 cannot be removed from the corresponding hanger 15 because the chain 17 extending through an arm of the garment, is secured at opposite end portions thereof.

The lower portion of the chain 17 can be removed from engagement with the lower tubular member 14 only after the barrel 25 is provided with the key 28 and is turned so as to rotate the bar 22 from the position shown in Figure 4 to the position shown in Figure 3.

Referring now to Figures 5 to 7 of the drawings, there is shown a bar 29 an end portion of which is secured to a barrel 30 of a locking device 31 similar to the locking device 26, the central longitudinal axis of the bar 29 extending parallel to but displaced laterally of the axis of rotation of the barrel 50. In consequence, when the barrel 30 is rotated, the bar 29 displaces a portion of a chain 17 extending through upper and lower apertures 20, 21 of a lower tubular member 14 causing the portion of the chain 17 to adopt a curved configuration thereby preventing the rigid weight 19 of the chain 17 from being removed through the tubular member 14 until the bar 29 is again moved to the position shown in Figure 6.

Referring now to Figures 8 and 9 there is shown a lower tubular member 32 which is similar to the tubular member 14 except that the tubular member 32 is of substantially rectangular cross section and is provided with upper and lower pairs of apertures 33, 34 the pairs being spaced one from another longitudinally of the tubular member 32. The tubular member 32 is provided with a plurality of locking devices 35 each being similar to the locking device 26 and each comprising a barrel 36 rotatable on a longitudinal

axis thereof on insertion of the key 37 into a recess (not shown) provided in the barrel 36. Each barrel 36 has secured thereto a plate 38 in the form of a right angle so that the limb 39 of the plate extends inwardly of the tubular member 32 from an end portion of the barrel 36. The limb 39 is provided with an aperture 40 which, in an unlocked position of each locking device 35, is in register with the pair of upper and lower apertures 33, 34 corresponding with the locking device 35.

A portion of a chain 17 inserted through the upper aperture 33, the aperture 40 of the limb 39 of the plate 38 and the lower aperture 34 is restrained from being removed from the tubular member 32 when the corresponding barrel is turned, on insertion of the key 37, from the unlocked position shown in full lines in Figure 9 to the locked position shown in chain dotted lines in Figure 9.

Referring now to Figures 10 and 11, there is shown a tubular member 41 similar to the tubular member 32 and provided with a plurality of locking devices 42 each being similar to the locking device 35 except that each locking device 42 is provided with a plate 43 having a limb 44 extending radially of a barrel 45 of the corresponding locking device 42. Also, the tubular member 41 is provided with a single series of apertures 46 each being located adjacent a corresponding one of the locking devices 42. Furthermore, each chain 47 associated with each locking device 42 is provided with a pin 48 instead of a weight 19. Each pin 48 is provided with a conical nose portion 49, a circumferential groove 50 adjacent the nose portion 49 and a circumferential radially extending flange 51 at an end portion remote from the nose portion 49, the flange having a conical recess 52 adjacent the chain 47. The tubular member 41 is provided with a plurality of pairs of guides 53, 54 each pair being located adjacent a locking device 42 for receiving a corresponding pin 48.

In use, a pin is inserted into an aperture 46 of the tubular member 41 such that a shank of the pin 48 is guided by the guide 53 and the nose portion 49 of the pin 48 is received in the guide 54, an inner surface of the circumferential flange 51 abutting an outer circumferential surface defining the aperture 46. When the barrel 45 is rotated on a central longitudinal axis thereof relative to the tubular member 41, the plate 43 is moved in an arcuate path and an end portion of the limb 44 of the plate 43 is received in a groove 50 of the pin restraining axial movement of the pin in a direction outwardly through the aperture 46. The pin 48 is moved when the barrel 45 is turned so that the limb 44 of the plate 43 is withdrawn from the groove 50 of the pin.

It will be appreciated that difficulty will be experienced when attempting to cut through a portion of a chain 17 adjacent a corresponding pin 48 because of the absence of a flat surface for guiding a cutting tool due to the presence of the conical recess 52.

CLAIMS

1. Apparatus for restraining movement of a flexible member of a garment security device comprising a chamber having an inlet aperture and an outlet aperture for receiving a portion of the flexible member therethrough, a movable member at least a portion of which is located in the chamber and which is movable relative to the chamber so that, when the said portion of the flexible member extends through the chamber and the movable member is moved relative to the chamber, the said portion of the flexible member extending through the chamber is diverted from an axis extending through the apertures thereby restraining movement of the flexible member in a direction longitudinally of the axis.
2. Apparatus as claimed in Claim 1 wherein the chamber comprises a tubular member having pairs of said inlet and outlet apertures, the pairs being spaced one from another longitudinally of the tubular member.
3. Apparatus as claimed in Claim 2 wherein the movable member is provided with an aperture for receiving the said portion of the flexible member therethrough.
4. Apparatus as claimed in Claim 3, wherein a plurality of movable members is provided, each movable member being associated with a corresponding one of pairs of inlet and outlet apertures.
5. Apparatus as claimed in Claim 4 wherein a plurality of securing means is provided, each being associated with the corresponding one of the movable members.
6. Apparatus as claimed in any one of the preceding claims wherein the chamber is mounted on a stand and is height adjustable relative to the stand.
7. Apparatus for restraining movement of a flexible member of a garment security device substantially as hereinbefore described and as illustrated in the accompanying drawings.