June 21, 1949. H. TRUSWELL 2,473,622

TYING DEVICE

Filed May 19, 1948

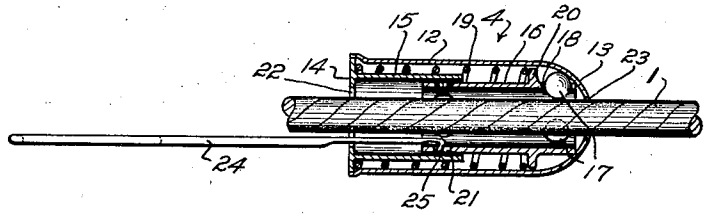


Fig. 1.

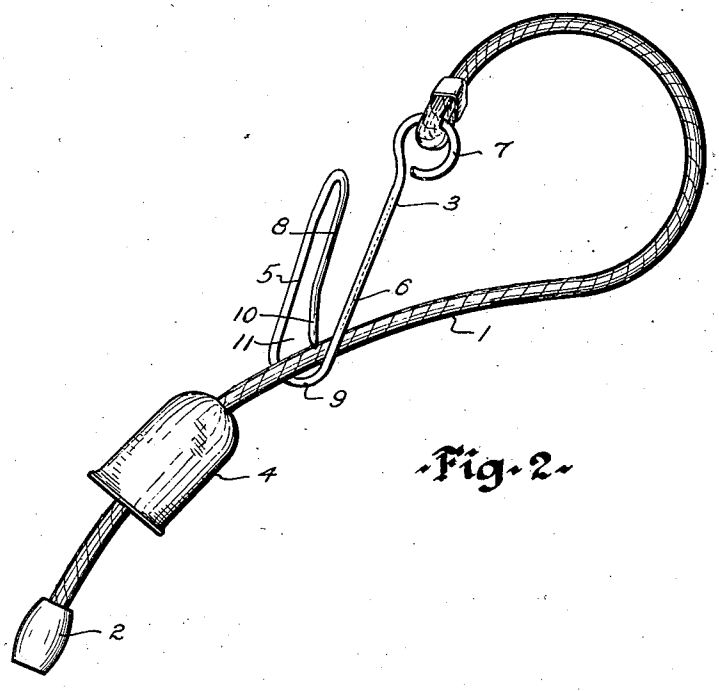


Fig. 2.

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Patented June 21, 1949

2,473,622

UNITED STATES PATENT OFFICE

2,473,622

TYING DEVICE

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Application May 19, 1948, Serial No. 27,901

3 Claims. (Cl. 70—15)

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This invention relates to a tying device.

An object of the invention is to provide a device for rapidly and securely tying up objects, such device being inherently non-releasable.

Another object is to provide a manacling or fettering device for use by police and like officials, such device being capable of rapid and convenient application and being releasable substantially only by means of separate key means.

Other objects, details and advantages of the invention will appear as this description proceeds with particular reference to the accompanying drawings, in which

Figure 1 is a longitudinal sectional elevation of a portion of the device, and

Figure 2 is a perspective view of the complete device.

The device comprises a flexible rope or cable 1 having a knob 2 secured to one end thereof, a hook 3 secured to the other end, and a non-return button 4 mounted on the cable and normally slidable in one direction only thereon.

The hook 3 is preferably formed of a single length of spring steel rod in U-shaped form to provide opposed legs 5 and 6. The end of leg 6 is formed with an eye 7 to which the cable is secured. Leg 5 is formed with an extension 8 bent into opposed relation to legs 5 and 6 and lying between the legs. Extension 8 extends throughout the major length of the legs to a point closely adjacent the web 9 of the hook. The end portion 10 of the extension is inclined towards leg 6 to limit the space between the end of the extension and leg 6 to an amount less than the diameter of the cable, the major portion of extension 8 being spaced from leg 6 a distance greater than the diameter of the cable. It will thus be observed that the cable 1 may be inserted between extension 8 and leg 6 and forced past the end of extension 8 into the cable retaining space 11 of the hook, extension 8 being laterally sprung by movement of the cable to permit such action. Thereafter, to disengage the cable from the hook, it is necessary to apply a flexing force to extension 8 to move it towards leg 5 and provide space for movement of the cable out of the hook. It is contemplated that the spring steel from which the hook is formed will possess sufficient inherent strength to prevent relative movement of extension 8 in response to ordinary manual pressure thereon whereby relatively great pressure, as by use of a suitable instrument, will be necessary to effect sufficient movement of extension 8 to permit release of the cable.

The non-return button 4 comprises a metal

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housing 12 having a conical end portion 13 and a closure plate 14 fixed to the other end thereof. A tubular member 15 is fixed to the plate 14 and extends axially of housing 12 in spaced relation to the side wall thereof. As shown, the member 15 terminates about midway between the ends of the housing. A sleeve 16 is slidably mounted within the tubular member 15 and housing 12 and extends forwardly of the end of member 15 towards the conical end 13. The sleeve carries a plurality of floating cable-gripping balls 17 which extend through openings 18 in the sleeve and are maintained within the openings by engagement with the wall of the housing. The sleeve is urged towards the forward end of the housing by a spring 19 bearing on the plate 14 and on a shoulder 20 carried by the sleeve. The rearward end portion of the sleeve is provided with a plurality of perforations 21. It will be observed that the length of the sleeve is considerably less than that of the housing and need not be greater than three-quarters the length of the housing. The cable passes longitudinally through the housing, openings 22 and 23 being provided therefor in the ends of the housing.

The button 4 permits passage of the cable therethrough in a direction rearwardly of the housing but does not permit passage of the cable in the reverse direction since such movement results in jamming of the balls 17 between the conical portion of the housing and the cable to effectively grip the cable.

Since the sleeve 16 is wholly enclosed within the housing, rearward movement of the sleeve to release the balls from gripping engagement with the cable to permit forward movement of the cable through the button is only possible by use of a separate key member, such as illustrated at 24. As shown, the key is adapted to be inserted adjacent the cable through opening 22 and is provided with a hooked end 25 for engagement with one of the perforations 21. Thus, the sleeve may be reciprocated rearwardly against the action of spring 19 to release the balls from cable-gripping engagement. It will be observed that the outer diameter of the sleeve is greater than the diameter of the housing opening 23.

In use, the cable is looped around the objects to be secured together, snapped into the hook 3, and pulled through the button 4 until the latter engages the hook, the loop being drawn as tightly as desired.

It will be appreciated that, when employed by officers of the law and the like, the device provides a most rapid and convenient means for

binding or fettering the arms or legs of a person whom it is desired to render helpless. Since the button 4 is non-returnable along the cable without the use of a special separate instrument and since it is substantially impossible to remove the cable loop from the hook 3, especially in loop-tightened position, without the use of a special instrument or, at best, with great manual difficulty, the device is particularly effective for manacling or fettering purposes.

What is claimed is:

1. A fettering device comprising a cable, a hook secured to one end of the cable and arranged to receive a portion of the cable intermediate its ends, said hook comprising a one-piece spring steel member of U-shaped form, one end portion of said member extending between the legs of the U-shaped form and being inclined towards one of the legs to provide a space therebetween less than the diameter of the cable, and a button on the cable for engagement with the hook, said button comprising a housing and cable-gripping means wholly concealed within the housing, said cable-gripping means when in cable-gripping position permitting movement of cable through the housing in one direction only.

2. A fettering device comprising a cable, a hook secured to one end of the cable and arranged to receive and hold a portion of the cable intermediate its ends, and a button on the cable for engagement with the hook, said button comprising a housing having end openings for passage of the cable therethrough and being otherwise closed, a tubular member fixed to the rearward end of the housing, a sleeve reciprocally mounted within the tubular member and housing, a spring urging the sleeve towards the forward end of

the housing, said sleeve carrying cable-gripping means at the forward end thereof, said means being releasable on rearward reciprocation of the sleeve, the rearward end of the sleeve when the latter is in cable-gripping relation terminating within the housing in spaced relation to the rearward end of the housing, the outer diameter of the sleeve being greater than the diameter of said cable opening in the rearward end of the housing.

3. A tying device comprising a cable, a hook secured to one end of the cable and arranged to receive a portion of the cable intermediate its ends, and a button on the cable for engagement with the hook, said button comprising a housing through which the cable extends, and a sleeve reciprocable in the housing and carrying cable-gripping means permitting in gripping relation movement of the cable through the housing in one direction only, said sleeve being wholly enclosed within the housing and the rearward end of the sleeve terminating in spaced relation to the rearward end of the housing when the sleeve is in cable-gripping position, said rearward end portion of the sleeve being provided with a plurality of key-receiving openings.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
32,872	James	July 23, 1861
968,665	Humphrey	Aug. 30, 1910