

[54] CABLE TIE CLIPS

[75] Inventor: Edgar Frank Emery, Isle of Man, England

[73] Assignee: Manx Mail Order Limited, Isle of Man, England

[22] Filed: July 15, 1974

[21] Appl. No.: 488,420

[52] U.S. Cl. 24/16 PB

[51] Int. Cl. B65d 63/00

[58] Field of Search 24/16 PB, 206 A, 230 B, 24/30.5 P, 73 PB, 17 AP; 248/74 PB

[56] References Cited

UNITED STATES PATENTS

2,979,794	4/1961	Bartolo	24/17 AP
3,214,808	11/1965	Litwin	24/16 PB
3,486,201	12/1969	Bourne	24/16 PB
3,581,347	6/1971	Verspieren	24/16 PB

D224,960 10/1972 Wilson 24/16 PB UX

FOREIGN PATENTS OR APPLICATIONS

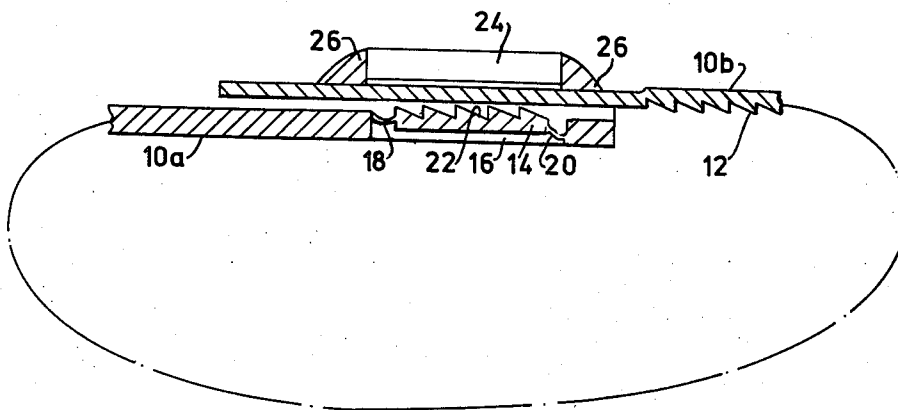
508,037 1/1955 Italy 24/206 A

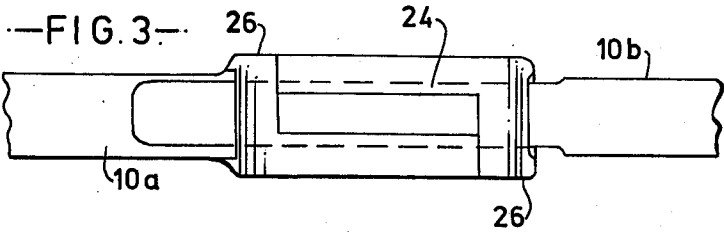
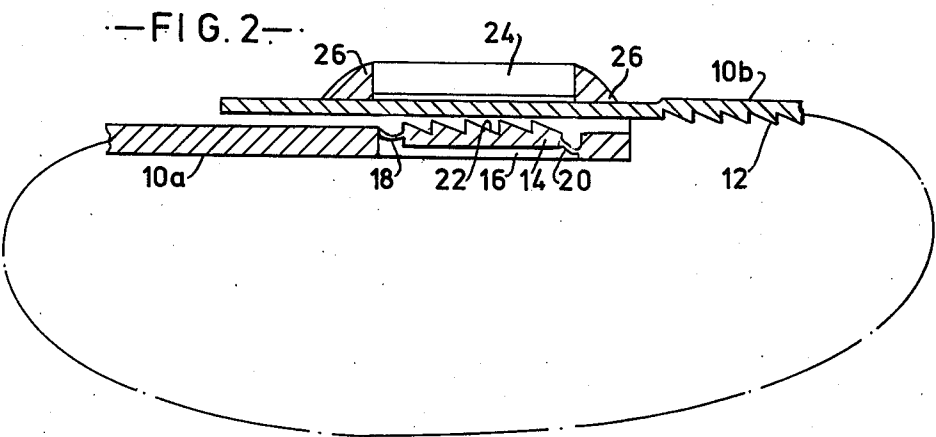
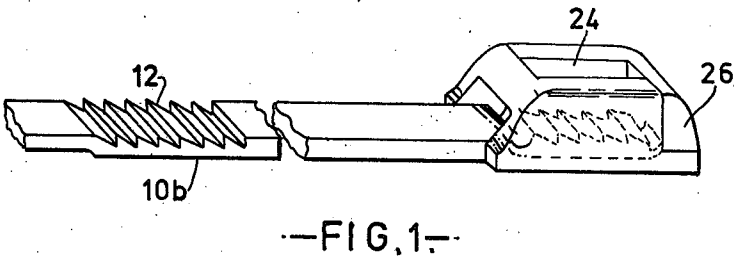
Primary Examiner—Donald A. Griffin
Attorney, Agent, or Firm—Scrivener, Parker, Scrivener and Clarke

[57] ABSTRACT

A tie device comprising a strap having an integral buckle or securing catch at one end by means of which the opposite end of the strap may be secured so that the strap forms a closed loop, the buckle including a pawl flexibly joined to the strap and arranged to co-operate with serrations formed at the free end of the strap to lock such free end in a guideway against withdrawal once such free end has been inserted into the buckle or securing catch.

3 Claims, 3 Drawing Figures





CABLE TIE CLIPS

The present invention relates to a tie device in the form of a strap having an integral buckle or securing catch at one end by means of which the opposite end of the strap may be secured so that the strap forms a closed loop. Such a tie device is particularly useful as a cable tie for securing groups of cables into runs or for strapping cables to supports but is equally useful in other applications.

According to the invention there is provided a tie device comprising an elongate strip which is transversely serrated on one surface over at least part of the length of the strip towards one end thereof and has a pawl disposed within an opening at the other end thereof and joined, at opposite ends, to the main body of the strip by flexible webs integral with such body and with said pawl, said pawl being transversely serrated on the surface thereof corresponding to said one surface at the other end of the strip, said strip further being formed with a guideway extending over said opening and pawl to receive the serrated end of the strip, said webs permitting yielding movement of said pawl to allow the serrated end of the strip to pass into the guideway and the serrations thereon to engage with the serrations on said pawl, and said serrations being so shaped that movement of the serrated end of the strip in a direction to withdraw such end from said guideway results in a jamming together of the pawl and serrated strip end within the confines of said guideway thereby resisting withdrawal of said end from the guideway.

Preferably the flexibility of the webs joining the pawl to the main body of the strip is achieved by making these webs substantially thinner than the strip itself. The locking action of the pawl is enhanced if the web joining the inner end of the pawl to the body of the strap extends from the pawl to the surface of the strip forming the base of the guideway and the other web extends from the pawl to the opposite surface of the strip.

The whole of the strip, pawl, webs and guideway may be moulded in one piece in a suitable synthetic plastics material.

The various features and advantages of the invention will be apparent from the following description of a preferred embodiment illustrated in the accompanying drawings, of which:

FIG. 1 is a perspective view of opposite ends of a tie device embodying the invention in untied state,

FIG. 2 is a longitudinal sectional view of opposite ends of the device of FIG. 1 with the free end of the strip entered into the buckle or catch at the opposite end, and

FIG. 3 is a plan view corresponding to FIG. 2.

Referring to the drawings the tie device comprises an elongate strip of flexible material formed at one end 10a with a guideway 24, 26 extending over an aperture 16 in which is disposed a pawl 14 bearing transverse serrations 22 on its surface facing into the guideway and being joined to the main body of the strip by thin flexible webs 18 and 20. The web 18 at the inner end

of the pawl 14 joins the strip 10a at the surface thereof which forms the base of the guideway and the web 20 at the opposite end of the pawl 14 joins the strip 10a at its opposite surface. The guideway is formed by up-standing side walls 24 each having a transverse extension 26, formed on opposite edges of the strip 10a and defining between them and the strip 10a a tunnel or guideway extending above the pawl 14.

The opposite end 10b of the strip is formed over part of its length with serrations 12 corresponding to the serrations 22 on the pawl 14 and on the same surface of the strip as the guideway at the opposite end of the strip.

In use the tie device shown in the drawings is looped around whatever is to be tied and the end 10b is inserted into the guideway 24, 26 in the manner illustrated in FIG. 2. The free end of the strip emerging from the guideway is then pulled to tighten the loop so formed and the serrations 12 are drawn over the serrations 22 on the pawl 14. The flexibility of the webs 18 and 22 allows the pawl to yield and permit the serrated part of the strap to pass into the guideway. When the pulling of the free end ceases the serrations 12 and 22 interengage and hold the strip in the state to which it has been adjusted. Pulling of the strip in a direction to withdraw the end 10b from the guideway causes the serrations 12 to pull the pawl 14 in a direction out of the opening 16 and into the confines of the guideway to produce a jamming action between the pawl and strip end within the guideway which produces a firm locking action resisting withdrawal of the free end of the strip.

We claim

1. A tie device comprising an elongate strip which is transversely serrated on one surface over at least part of the length of the strip towards one end thereof and has a pawl disposed within an opening at the other end thereof and joined, at opposite ends, to the main body of the strip by flexible webs integral with such body and with said pawl, said pawl being transversely serrated on the surface thereof corresponding to said one surface at the other end of the strip, said strip further being formed with a guideway extending over said opening and pawl to receive the serrated end of the strip, said webs permitting yielding movement of said pawl to allow the serrated end of the strip to pass into the guideway and the serrations thereon to engage with the serrations on said pawl, and said serrations being so shaped that movement of the serrated end of the strip in a direction to withdraw such end from said guideway results in a jamming together of the pawl and serrated strip end within the confines of said guideway thereby resisting withdrawal of said end from the guideway.

2. A tie device as set forth in claim 1 wherein the strip, the pawl, the webs and the guideway are formed integrally.

3. A tie device as set forth in claim 1 wherein the strip, the pawl, the webs and the guideway are a one-piece moulding in plastics material.

* * * * *