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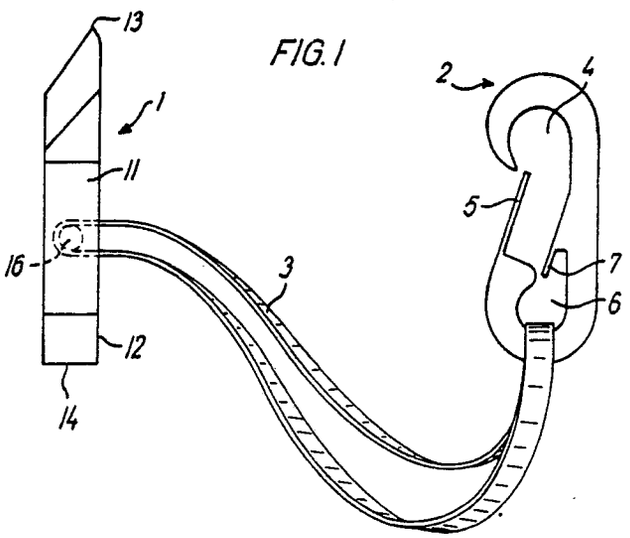
(54) An elastic strap for fastening a tarpaulin.

(57) An elastic strap for fastening a tarpaulin to a supporting structure, in particular a scaffolding, and of the type comprising an elastic band or ribbon (3) engaging the supporting structure and connected with an anchoring member ennaging the tarpaulin and constituted by a transverse pin (1) formed in its entirety to be pushed through the tarpaulin and being pivotally and detachably connected with the elastic band (3) close to its centre in the longitudinal direction, said band being connected for engagement with the supporting structure with a self-locking hook member (2), preferably a snap hook, which by hooking on the band (3) may slide therealong.

FIG. 1



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An elastic strap for fastening a tarpaulin.

The invention relates to an elastic strap for fastening a tarpaulin to a supporting structure, in particular a scaffolding and of the type comprising a flexible band or ribbon engaging the supporting structure and connected with an anchoring member engaging the tarpaulin.

The specific use of such straps for fastening scaffold tarpaulins implies that particular demands are made on such straps. Firstly, with respect to worker's safety, each individual strap must be simple and quick to mount. Secondly, the strap must have a certain flexibility in order to stand and avert sudden and strong shock stresses, typically caused by wind pressures on the tarpaulin, which otherwise might result in damages to the tarpaulin and/or parts of the strap.

The strap must eventually be safe against working loose or falling out if due to wind stresses or other circumstances it is caused to adopt a fully unloaded or slack condition.

A known strap of the above mentioned type consists of a comparatively rigid crook portion or anchoring member of molded plastics material and a separate, flexible rubber band. The anchoring member is provided at one end with a transverse pin inclined with respect to the shank portion of the hook and adapted to be passed through the tarpaulin and engage the external surface thereof and at the other end with a twin-hook, one eye of which is partially closed by means of a cast projection on the shank portion of the hook.

On arranging said anchoring member the oblique transverse pin is passed through a prefabricated eyelet in the tarpaulin which, however, in practice is rather difficult because, due to the rigid connection between the transverse pin and the shank portion of the anchoring member, it is troublesome to make them flush so much that they together may easily be pushed through the eyelet in the tarpaulin. The rubber band is subsequently disposed in the hook with the partially obstructed eyelet which could, however, also be effected prior to fastening the hook in the tarpaulin.

The securing as such to the scaffolding is effected in that the rubber band is pulled around part of the scaffolding and then pushed into the second open hook of the crook portion.

As it will be understood, said prior strap does not fulfill the requirements of a quick and simple mounting. Due to the required deformation on arranging, the strap is not suitable for one-hand mounting, and it is further necessary to provide the tarpaulin with perforations prior to mounting the anchoring member, meaning in other words that said strap necessitates an additional operational step, the actual tarpaulins being typically manufactured without perforations.

In addition, the strap is not sufficiently ensured against getting unintentionally loose, since the elastic band when unloaded may very easily slip out of the open hook.

Finally, the circumstance that both "ends" of the rubber band are fastened to the anchoring member entails, under otherwise equal conditions, that about the double length of rubber band is required for a given distance between the tarpulin and the scaffolding than in case the band should solely extend between the tarpaulin and the scaffolding. A consequence of said comparatively long, free end is, moreover, that the strap becomes more unhandy.

Another strap of the above mentioned type is disclosed in GB patent No. 1 154 266. Said strap consists of a body of rubber or the like provided with a head, a shank portion and a loop. Since the head is designed to be unable to pass through a tarpaulin eyelet, the strap is mounted so that the loop and the shank portion are pushed through an existing eyelet in the tarpaulin, from one side to the other, following which the loop is secured to a hook member provided on the supporting structure.

The elastic strap according to the present invention differs from prior art straps in that the anchoring member is constituted by a transverse pin formed in its entirety to be pushed through the tarpaulin and being pivotaily and detachably connected with the elastic band close to its centre in the longitudinal direction, and that the anchoring member for engagement with the supporting structure is connected with a self-locking hook member, preferably a snap hook, which by hooking on the band may slide therealong.

This provides for obtaining that the strap is quick and simple to mount and that it is now possible to mount it with only one hand, thereby enabling the operator while working to clutch the scaffolding with the other hand and thus obtain a higher degree of safety.

An additional advantage obtained by the strap according to the invention is that due to the use of the self-locking hook member it is positively safe against getting unintentionally loose while being used.

In a preferred embodiment of the strap according to the invention one end of the transverse pin is tapered to penetrate an unbroken tarpaulin and the other end of the transverse pin forms a blunt pressing surface.

It is thereby obtained that the strap may be

secured to the tarpaulin without a preceding, separate perforation thereof, entalling a supplementary effectiveness of the mounting process. The blunt pressing surface serves as abutment for an operator's thumb when the transverse pin is being pushed through the tarpaulin.

In a further preferred embodiment the transverse pin is made in two parts one of which constitutes a base portion having a cut-out with a protruding freely ending pivot pin adapted to engage the elastic band, while the second part constitutes a locking portion which by engaging the base portion covers the cut-out and the free end of the pivot pin.

Eventually, the elastic band may suitably have the form of a flat continuous rubber band.

The invention will now be explained in detail with reference to the drawing, in which

Fig. 1 is a view of an elastic strap according to the invention, and

Fig. 2 is a fragmentary view on a larger scale of the transverse pin to be used with the strap in Fig. 1.

The strap illustrated in Fig. 1 consists of a transverse pin 1, a snap hook 2 and an elastic rubber band 3 extending therebetween. The snap hook preferably made from molded plastics material forms a first eye 4 substantially closed by means of a resilient flange 5 and a second eye 6 analogously closed by means of a second resilient flange 7. As it will appear, the elastic band 3 is shaped as a flat, continuous rubber band. Alternatively, the elastic band may be provided with a cast loop at either end. The flexible band is pushed into the loop 6 of the snap hook 2 and secured to the transverse pin 1. Said securing step and the transverse pin will be more specifically explained in the following with reference to Fig. 2.

The transverse pin 1 which is likewise preferably made from molded plastics material consists of two sections 11 and 12. Section 11 constitutes a base portion while section 12 is a lock portion adapted to be secured to section 12 and contributes to fastening the entire transverse pin 1 to the elastic band 3.

Section 12 has a tapering end 13 and a blunt end 14 and centrally thereof a continuous cut-out 15 is provided. A projecting pin 16 having at its free end a short blind hole 18 is provided in cut-out 15. Cut-out 15 which in the longitudinal direction of section 12 is defined by an "oblique" surface 19 and a "straight" surface 20 merges, close to one lateral edge 21 of section 12, into two ledges 22 and 23. On either of said ledges there is provided continuous holes 24 and 25.

Three pins 29, 30 and 31 extend from the underside of the lock part 11 constituted by a plane plate and are adapted to pass on the assembling of sections 11 and 12 into tightly fitting locking engagement with holes 24, 18 and 25. As illustrated in Fig. 1, rubber band 3 is put around pin 16 on section 12, following which sections 11 and 12 are united into the transverse pin 1.

When mounting the elastic strap according to the invention, one hand grasps band 3 immediately beneath transverse pin 1 which is then by thumb oriented in parallel to the rubber band so that tip 13 faces the tarpaulin and the thumb engages the opposite surface 14. This turning of the transverse pin 1 in relation to band 3 is effected without problems as the band does not offer resistance to turning and the turning is incidentally facilitated by the fact that the oblique surface 19 of cut-out 15 offers more "space" for band 3 during said turbing.

With tip 13 in front, transverse pin is then pushed completely through the actual sheet or tarpaulin. A pull on band 3 will subsequently cause transverse pin 1 to engage the external surface of the sheet.

Finally, snap hook 2 is passed around a stationary part of the scaffolding and is hooked by eye 4 on band 3 so as to form a slide loop around the scaffolding part following which the mounting is complete.

Claims

1. An elastic strap for fastening a tarpaulin to a supporting structure, in particular a scaffolding and of the type comprising an elastic band (3) engaging the supporting structure and connected with an anchoring member engaging the tarpaulin, characterized in that the anchoring member is constituted by a transverse pin (1) formed in its entirety to be pushed through the tarpaulin and being pivotally and detachably connected with the elastic band (3) close to its centre in the longitudinal direction, and that the anchoring member for engagement with the supporting construction is connected with a self-locking hook member (2), preferably a snap hook, which by hooking on the band (3) may slide therealong.

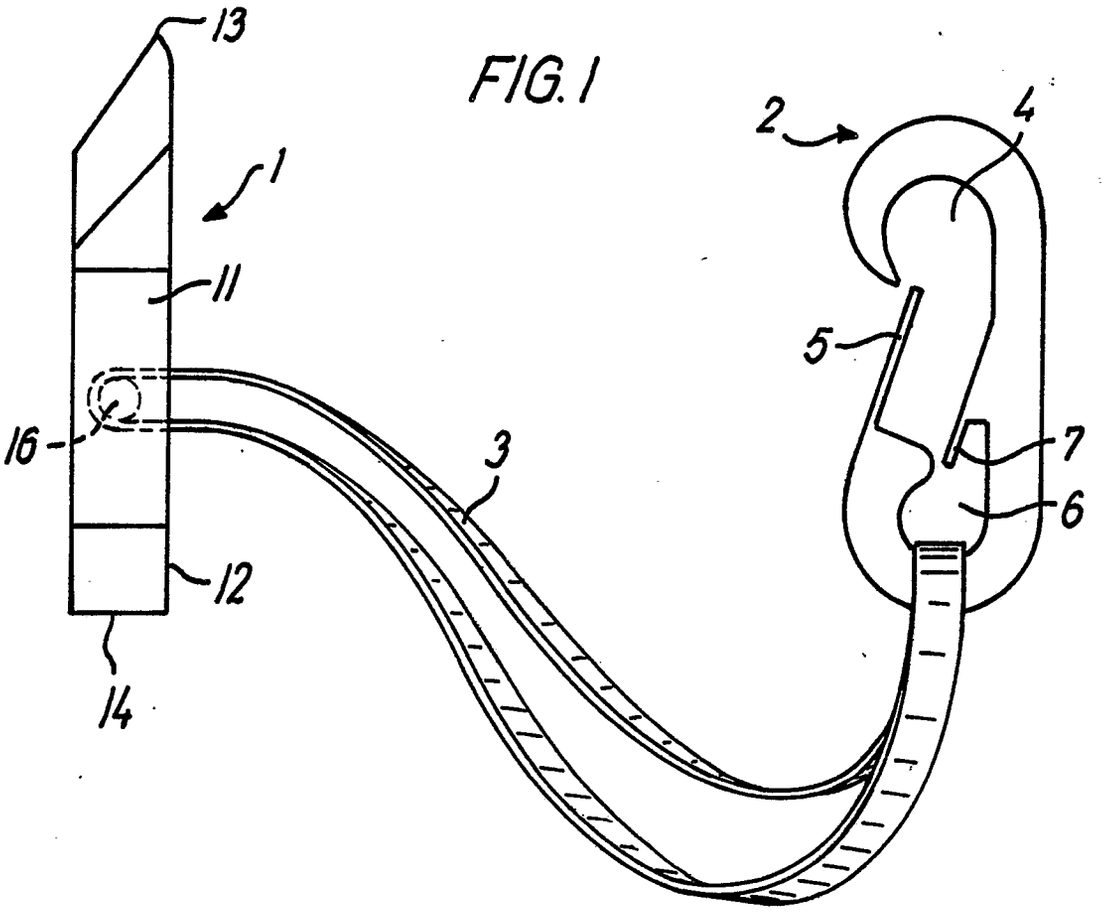
2. An elastic strap as claimed in claim 1 characterized in that one end (13) of the transverse pin (1) is tapered to penetrate an unbroken tarpaulin while the other end (14) forms a blunt pressing surface.

3. An elastic strap as claimed in claim 1 or 2, characterized in that the transverse pin (1) is made in two parts (11, 12), one of which (11) constitutes a base portion having a cut-out (15) with a protruding freely ending pivot pin (16) adapted to engage the elastic band while the second section (12)

constitutes a lock part which by engaging the base portion (11) covers the out-out (15) and the free end of the pivot pin (16).

4. An elastic strap as claimed in claims 1 or 3, characterized in that the elastic band has the form of a flat continuous rubber band.

FIG. 1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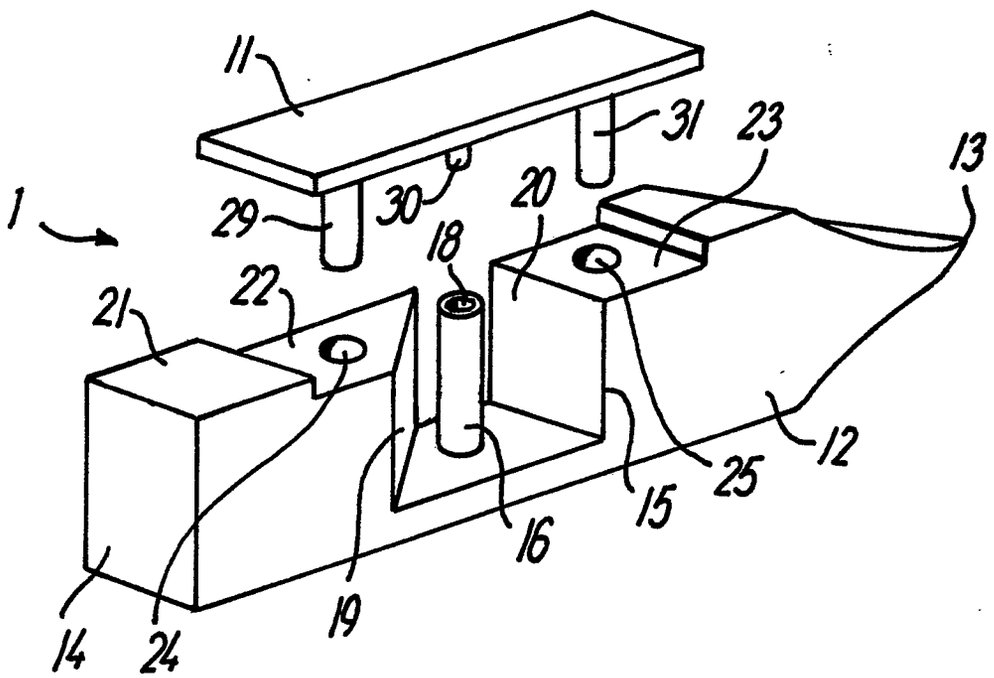
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FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 88 11 5308

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	DE-A-2 326 958 (WÜRTTEMBERGISCHE ALLPLASTIK) * Page 3, line 15 - page 4, line 28; figure 1 *	1	F 16 G 11/00 E 04 G 21/28
A	DE-A-3 204 654 (W. PRYM-WERKE) * Page 3, lines 15-24; figure 1 *	1	
A	DE-A-2 134 492 (W. PRYM-WERKE)		
A	FR-A-1 194 907 (TARRAVELLO)		
A	US-A-3 079 657 (RUSSELL)		
D,A	GB-A-1 154 266 (SUNNE GUMMIFABRIK)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

F 16 G
E 04 G
F 16 B
E 04 H
B 60 P
B 60 J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24-01-1989	BARON C.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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D : document cited in the application
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& : member of the same patent family, corresponding document

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