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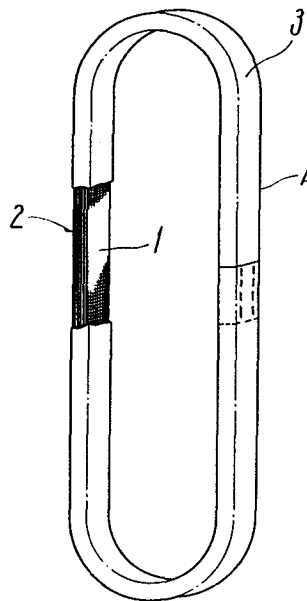
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(54) Suspension strap.

(57) The present invention relates to a suspension strap A for linking a cargo handling machine 5 and goods 4 to be loaded or unloaded therewith. The strap A is formed as a woven cloth band 1 using a synthetic fibre bundle 10 as warp and weft elements 11, 12, the band 1 being coiled in a large number of layers to form a looped core 2 which is contained in an annular protective tube 3.



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LOAD SUSPENSION STRAP

This invention relates to a suspension strap used for cargo work, and more particularly to a suspension strap for suspending goods during loading and unloading.

There is known from GB-A 1,325,207 a suspension strap
5 in which at least one synthetic fibre thread is wound
annularly a large number of times to form a looped core
which is covered by a protective tube. In this type of
suspension strap, however, the adjacent thread lengths
are not interconnected so that once the core has been
10 used the synthetic fibre thread sections may shift with-
in the core to slacken partially, for example, when a
thread length in the outermost layer of the core is shift-
ed inwardly it slackens so that when the endless core of
partly slackened thread is used to suspend a load, the
15 weight of the latter is not uniformly distributed through
the whole thread, but is supported by a reduced number of
thread lengths other than the slackened ones, thereby
resulting in a reduced effective load capacity and poss-
ible overloading and damage of the selectively loaded
20 thread lengths.

It is an object of the present invention to avoid or
minimize one or more of the above disadvantages.

The present invention provides a load suspension strap for use in linking a cargo handling machine and a load to be handled thereby, said strap having a looped core comprising a woven cloth band made of fibre bundles used
5 as warp and weft elements of said woven cloth band, said band being coiled in a large number of layers, and with a protective tube covering therewith said core.

Thus in the load suspension strap of the invention, the fibre bundle is used in the form of a warp and a weft of a
10 woven cloth, the woven cloth being coiled a large number of times to form a looped core so that the core is contained in an annular endless protective tube. In this way the suspension strap of the invention is substantially free from shifting of the warp in the tube, so that in use
15 the load is distributed substantially uniformly amongst all the warp elements or threads thereby protecting the core against damage and reduced load strength.

Further preferred features and advantages of the invention will appear from the following detailed description
20 given by way of example of a preferred embodiment illustrated with reference to the accompanying drawings in which:

Fig. 1 is a partial perspective view of a synthetic fibre bundle for use in a suspension strap of the
25 invention.

Fig. 2 is a plan view of a length of band of woven cloth for use in a strap of the invention;

Fig. 3 is a plan view of an endless core of a strap of the invention;

5 Fig. 4 is a partially cutaway perspective view of a suspension strap of the invention; and

Fig. 5 is an illustration of the mode of use of the suspension strap of Fig. 4.

10 Fig. 1 shows a synthetic fibre bundle 10 made up of a number of synthetic fibres or filaments extending parallel to each other. The bundle 10 is used as the warp and weft elements 11, 12 of a band of plain woven cloth 1 as shown in Fig. 2. The band of cloth 1 is coiled a large number of times in many layers as shown
15 in Fig. 3, so as to form an endless core 2.

The core 2 is contained in and covered by an annular protective tube 3 as shown in Fig. 4, the tube 3 being made so as to be somewhat longer than the core 2. Also, the tube 3 may be joined at both ends independently of the
20 core 2 and be slidable relative thereto, but is preferably oversewn at both ends so as to be joined integrally with the core 2 as shown in Fig. 4 and form a load suspension strap A of the invention.

As an alternative the band of woven cloth 1 could be formed in satin weave.

The above described load suspension straps A of the invention are used to suspend a load 4 at both ends thereof and be hooked onto a hook 5 of a cargo handling machine, such as a crane (not shown) for use in cargo handling.

In use of the above described suspension strap A there is practically no possibility of shifting of the warp 11, or in turn the band of woven cloth 1, within the tube 3, so that the load remains distributed substantially uniformly amongst all the warp elements 11 and the core 2 is protected against damage and possibly capacity reduction.

C L A I M S

1. A load suspension strap (A) for use in linking a cargo handling machine (5) and a load (4) to be handled thereby, said strap (A) having a looped core (2) comprising a woven cloth band made of fibre bundles (10) used
5 as warp and weft elements (11,12), of said woven cloth band (1), said band (1) being coiled in a large number of layers, and with a protective tube (3) covering therewith said core (2).
2. A suspension strap according to claim 1, wherein both
10 ends of said protective tube (3) covering therewith said core (2) are overlapped and said core (2) and protective tube (3) are joined at the overlapping portion.
3. A suspension strap according to claim 1 or claim 2 wherein said fibre bundles (10) are of synthetic fibre.
- 15 4. A suspension strap according to any one of claims 1 to 3 wherein said strap is of generally rectangular transverse cross-sectional shape.
5. A suspension strap according to any one of claims 1 to 4 wherein said protective tube is seamless.
- 20 6. A suspension strap according to any one of claims 1 to 5 wherein said protective tube is slightly longer than said core to allow stretching of the load bearing core within said protective tube relative thereto.

FIG. 1

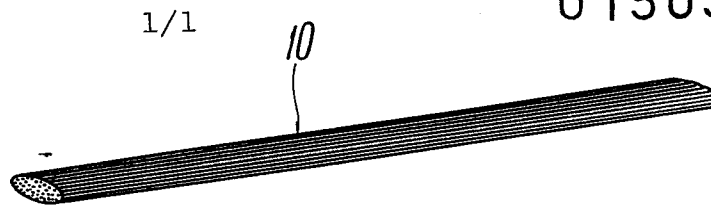


FIG. 2

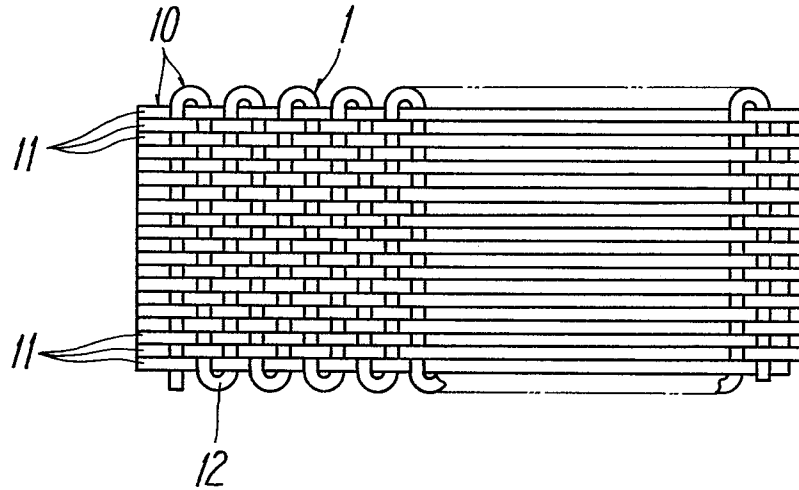


FIG. 3

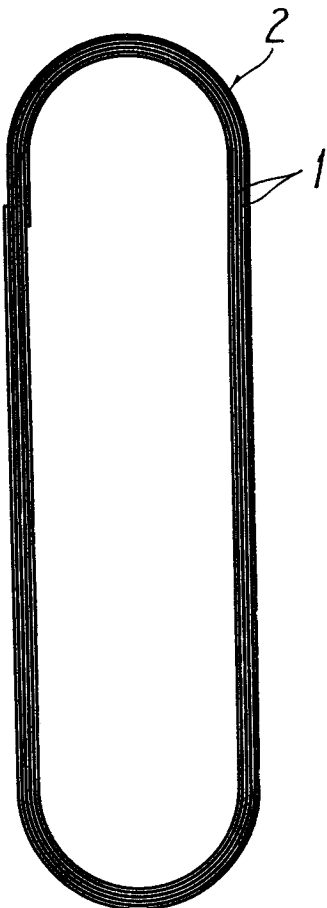


FIG. 4

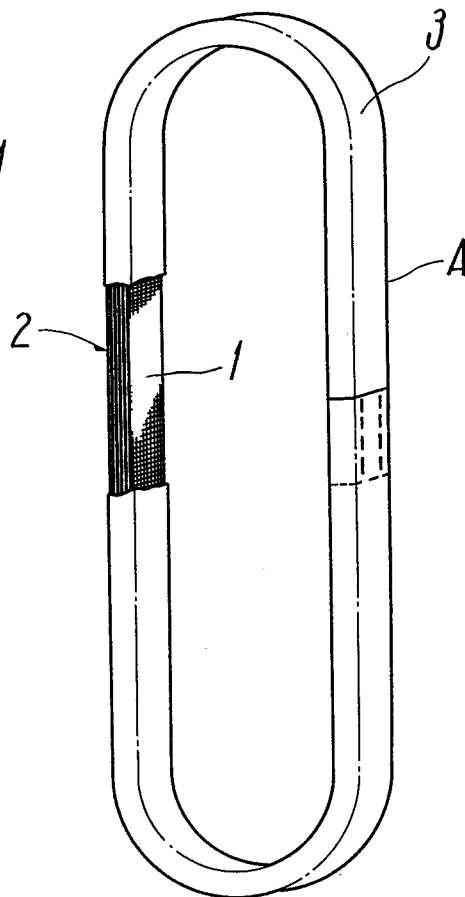
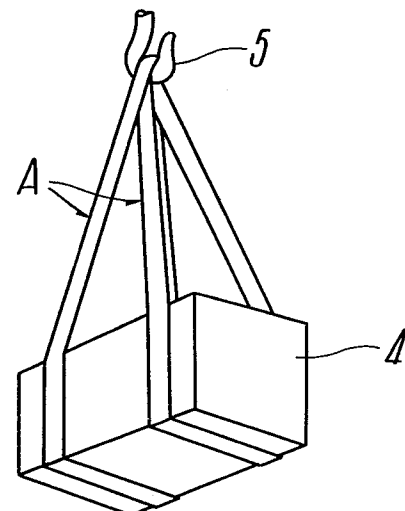


FIG. 5





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EUROPEAN SEARCH REPORT

0150550
Application number

EP 84 30 0620

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. ³)
D, Y	GB-A-1 325 207 (SPANSET INTER AG) * Whole document *	1	B 66 C 1/18
A		2, 3, 5, 6	
Y	--- GB-A-2 019 808 (BRUGGEMANN & BRANDT KG.) * Claims 1, 2, 4; figure 2 *	1	
Y	--- DE-B-2 453 838 (BAUR) * Figures 3, 4 *	1	
A	--- US-A-2 985 480 (OTLEY)		TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
A	--- US-A-3 368 837 (NORTON)		B 66 C 1/00
A	--- US-A-3 592 502 (BOLLIGER)		
A	--- US-A-4 045 072 (BROWN)		
A	--- DE-U-1 900 757 (FA. H. SCHELLENBERG) -----		
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 18-09-1984	Examiner KANAL P K
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	