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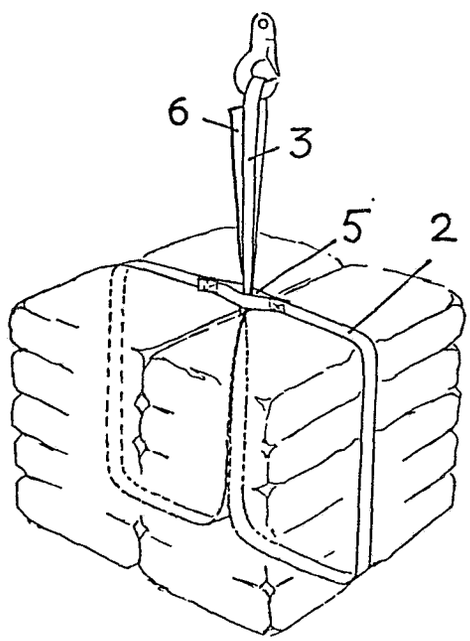
(54) A looped lifting and strapping sling for lifting two loads of primarily the same size and weight.

(57) Sling for litfting and strapping two loads of substantially the same size and weight, for example loads made up of bales, sacks or pipes.

The sling is divided, by means of a stitching or similar means, into a lifting loop (3) and a load-encircling sling part (2), and that end which is opposite to the lifting loop is provided with an eye (5) between two layers of material. When fitted around a load and suspended in a lifting hook the sling part (2) tightens around the load while the lifting loop (3) moves freely in the eye (5). By means of a tying band (6) fastened to the stitching of the lifting loop (3) the lifting loop can be tied to the sling part by a simple knot, which is formed while the sling is in the tightened state. Thus the sling is prevented from loosening during transportation and the lifting loop is prevented from sliding between the loads.



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A looped lifting and strapping sling for lifting two loads of primarily the same size and weight

The present invention relates to a looped lifting and strapping sling which is intended for lifting two loads of primarily the same size and weight, for example loads made up of bales, sacks or pipes, one end of the sling having been shaped into a lifting loop and there being at the opposite end an eye formed between two layers of material; thus, in the lifting position of the lifting and strapping sling the sling part between the eye and the lifting loop encircles both loads, the lifting loop having been passed up between the loads and through the eye located above and between the loads.

So-called clover-leaf slings are commonly used for lifting sacks. Such slings cannot, however, be lifted by means of an ordinary hoist but a spreading hoist is needed, i.e. four hooks supported by a framework, the hooks lifting the clover-leaf sling at four corners.

Also commonly used is a single loop one end of which is passed through the other end of the loop, whereby a slip knot which during lifting tightens around the load being lifted is obtained. With a slip knot, however, part of the strength of the lifting sling is wasted and, furthermore, the tightening point may damage the goods being lifted. In slip-noose lifting the load is not always in equilibrium, which may make the lifting insecure.

From British Patent 1 463 055 there is also known a lifting sling having at one end a lifting loop which is passed through an aperture at the opposite end, whereby

two loops are formed, both of which encircle a separate load. A platform having a central aperture for the lifting loop is used as the base for the loads. The size of the aperture and the dimensions and the type of the sling material are selected in such a way that friction between the lifting loop and the edges of the aperture prevents the lifting loop from moving in the aperture after the lifting loop has been removed from the hoist and the tension on the lifting loop has ceased.

The object of the present invention is to provide a lifting and strapping sling which is easy to use and reliable and at the same time has so economical a manufacturing technique that it can be discarded after use.

This has been accomplished by a lifting and strapping sling the principal characteristics of which are given in accompanying claim 1.

The lifting and strapping sling according to the invention is thus provided with a tying band one end of which is fastened to the strapping sling, preferably at the stitching or suchlike by means of which one end of the sling is formed into a lifting loop, or close to the stitching or suchlike. By means of this tying band the lifting loop is tied to the load-strapping sling while the lifting loop is in the lifting position, tightened around the load, whereby a binding is formed which keeps the load together also during transportation between liftings.

The point at which the tying band is fastened and which at the same time is preferably the stitching by means of which the lifting loop has been formed, is fitted at

such a point in the sling that, under the effect of the tension produced by the lifting, it rises close to the eye but remains below it. The eye, for its part, is located between the loads at the height of their upper edges. Thus it is easy to tie the tying band to the load-strapping sling. This knot of the tying band does not open even in repeated liftings but keeps the load together all the time and does not damage the structure of the sling. Until the tying band is tied, its free end is attached lightly with adhesive tape or the like inside the lifting loop, from where it can easily be pulled out for tying to the load-strapping sling.

The locking of the lifting and strapping sling by means of a tying band is done while the load is hanging from the lifting hook, at which time it is also in the tensioned state.

Owing to the eye formed in the lifting and strapping sling the load is lifted in an upright position. In this manner the ultimate strength of the lifting device can be completely exploited. Furthermore, the lifting takes place in such a way that the load is always in equilibrium, which increases the security of the lifting work.

The lifting and strapping sling according to the invention is preferably made from a band of synthetic material, but it can also be made from, for example, rope.

This lifting and strapping sling is very suitable for the lifting and strapping of products in sacks, for example cement and fertilizer sacks. For example, fertilizer sacks can in this way be strapped into bundles which can be handled by a tractor. Likewise, this lifting and strapping sling is suitable for strapping cellulose bales and also

for the bundling and lifting of pipes.

By using two lifting and strapping slings for bundling and lifting the same load it is possible to handle even floppy sacks.

The lifting and strapping sling according to the invention is described below in greater detail in the form of a preferred embodiment and with reference to the accompanying figures, in which

Figure 1 is a perspective representation of the lifting and strapping sling in the resting position;
Figure 2 depicts the sling according to Figure 1 at the stage at which the sling is being set into the position in which it can be fitted around the loads;
Figure 3 depicts the sling ready for being fitted around the loads;
Figure 4 depicts the sling fitted around the loads, at the lifting stage; and
Figure 5 depicts the sling around the load, after lifting, and tied by means of the tying band to the sling part passing over the loads.

In the figures, the lifting and strapping sling is indicated by reference numeral 1, that part of the sling which passes around the load by 2, and its lifting loop part by 3. The stitching by means of which the lifting loop 3 is formed is indicated by 4, the eye by 5, and the tying band by 6.

The figures illustrate the stage of passing the lifting and strapping sling around the load, the lifting stage, and the transportation stage between liftings. Before the sling is fitted around the load the said lifting loop end

is passed through the eye and tightened only so much that the lifting loops remain larger than the loads to be lifted, whereupon it is easy to fit the sling around the load. Figure 5 shows how the tying band 6 has been pulled out from inside the lifting loop 2, been passed from the left side of the loop, under the sling part 2 which encircles the load, to the right side of the loop, and between the thus formed oblique tying-band part and the loop, whereby a knot locking the sling in a tightened position has been formed. The tying is carried out at the stage according to Figure 4. To ensure tightening, the sling may be provided with two tying bands 6.

In the embodiment illustrated, the load is made up of cement sacks. As pointed out above, the load may also be made up of floppy and slippery plastic sacks, in which case two or more slings are used for lifting the same load. In this case it is also necessary to select a suitable sling material which clings to the plastic surface.

Claims

1. A looped lifting and strapping sling (1) for lifting two loads of substantially the same size and weight, for example loads made up of bales, sacks or pipes, one end of the sling (1) having been formed into a lifting loop (3) and there having been formed at the opposite end an eye (5) between two layers of material, in which case in the lifting position of the lifting and strapping sling (1) the sling part (2) between the eye and the lifting loop encircles both loads, the lifting loop (3) having been passed up between the loads and through the eye (5) located above and between the loads,
c h a r a c t e r i z e d i n that in order to tie the lifting loop (3) to the sling part (2) in order to keep the lifting and strapping sling (1) in the tightened state between liftings, there is a tying band (6) fastened preferably at the stitching (4) or similar means which delimits the lifting loop (3).

2. A lifting and strapping sling according to claim 1, c h a r a c t e r i z e d i n that the joint stitching (4) or similar means of the lifting loop (3) and the tying band is fitted so as to be located at a point which in the lifting position is approximately in alignment with the eye (5), slightly below it.

3. A lifting and strapping sling according to claim 1, c h a r a c t e r i z e d i n that there are two tying bands (6) fastened to the lifting and strapping sling.

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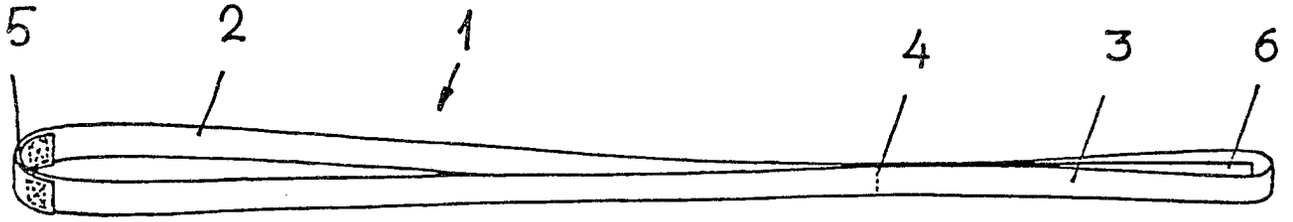
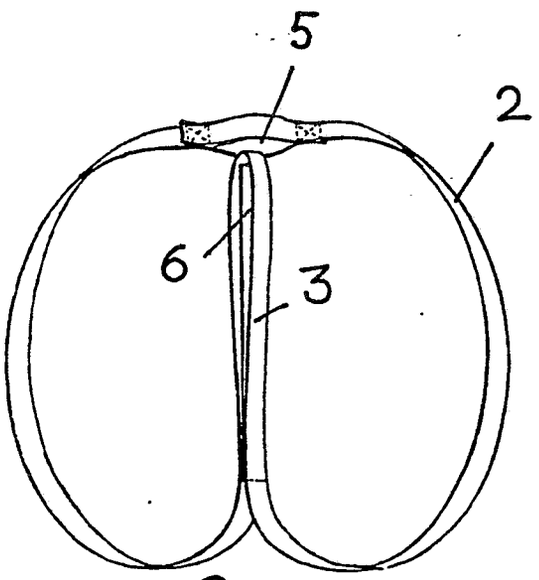


Kuvio 1



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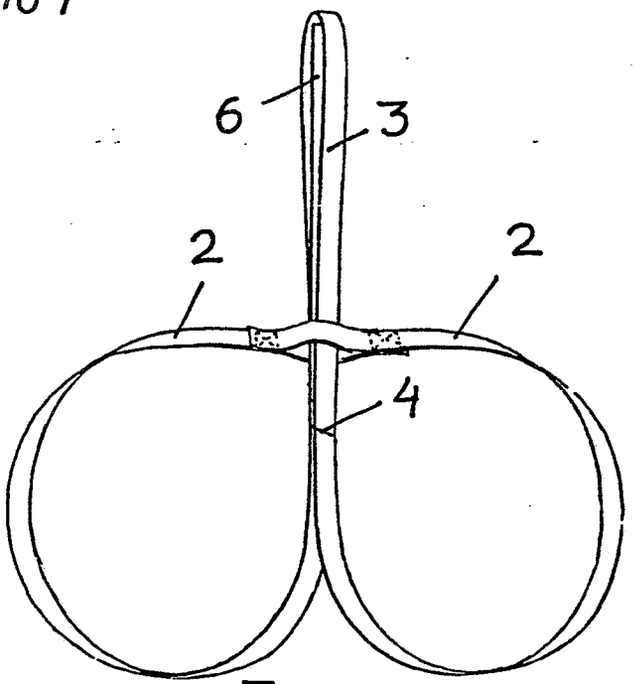
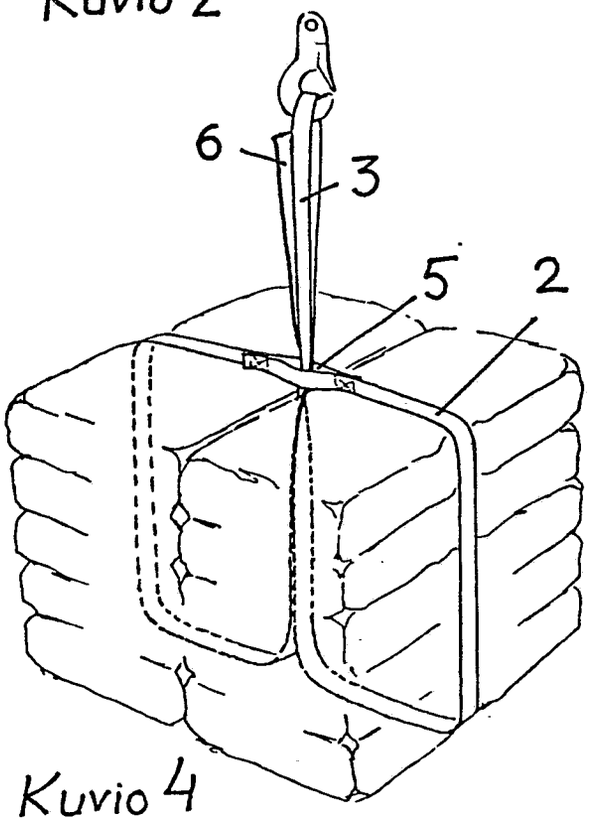
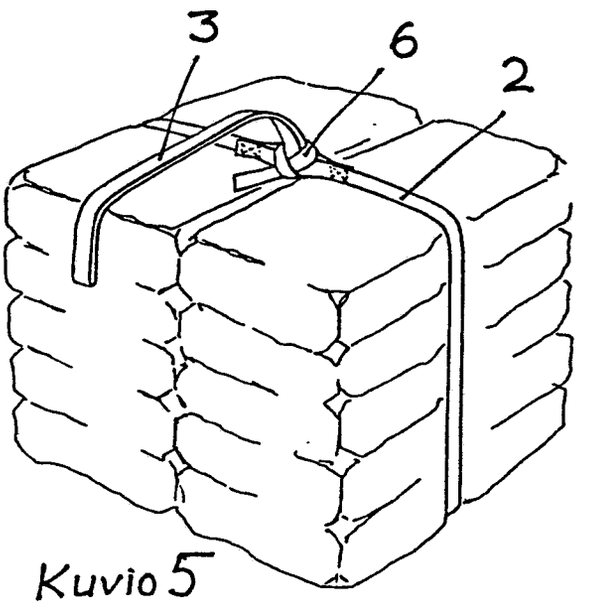


Kuvio 3



Kuvio 4



Kuvio 5

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EUROPEAN SEARCH REPORT

Application number

EP 86 30 1153

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,D	GB-A-1 463 055 (FISONS) * Page 1, lines 42-94; page 2, lines 1-9; page 3, lines 7-34 *	1	B 66 C 1/18 B 65 D 71/02
A	GB-A-1 431 042 (FISONS)		
A	GB-A-1 409 243 (FISONS)		
A	FR-A-1 247 293 (SAUVARD)		
A	GB-A-1 067 259 (GOTEBORGS BANDVAVERI)		TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	FR-A-2 336 337 (SPANSET INTER)		B 66 C B 65 D
A	EP-A-0 056 676 (TRANSWORLD MARINE AGENCY)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21-04-1986	VAN DEN BERGHE E.J.J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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