(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 114 787 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
11.07.2001 Bulletin 2001/28

(51) Int Cl.[7]: **B66C 1/18**

(21) Application number: **00830865.2**

(22) Date of filing: **29.12.2000**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **04.01.2000 IT MC000001 U**

(71) Applicant: **Piermartiri, Giancarlo**
63038 Ripatransone (AP) (IT)

(72) Inventor: **Piermartiri, Giancarlo**
63038 Ripatransone (AP) (IT)

(74) Representative: **Baldi, Claudio**
Piazza Ghislieri, 3
60035 Jesi (Ancona) (IT)

(54) **A weight-lifting belt provided with self-locking buckle**

(57) The present invention relates to a weight-lifting belt ending with two eyelets (2,3) and inserted into a self-locking buckle (4) with a clamp (8) and a hook (6) that is inserted into one of the two eyelets.

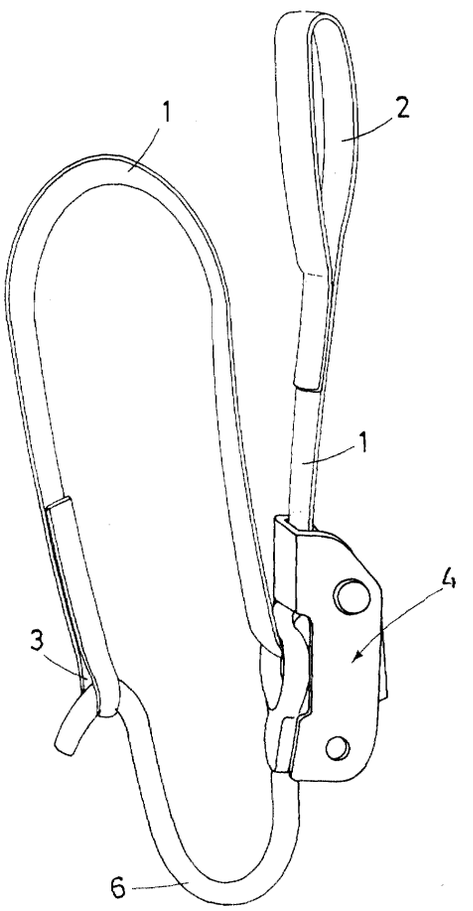

FIG. 1

EP 1 114 787 A1

Description

[0001] This patent application relates to a weight-lifting belt provided with a self-locking buckle.

[0002] The belt according to the present invention has been designed in order to provide a specific, functional tool for those who work in shops or yards, where it is often necessary to lift and move heavy objects - such as beams, pipes, trunks, stacks of arc welded metal meshes - using lifting devices, like cranes, bridge cranes, mechanical arms, etc.

[0003] If the object to be lifted has no suitable hooking points, now it is necessary to sling the object manually with unsuitable, improvised means, such as belts, ropes, chains, and wires. These means are wrapped around the object or inserted into through holes in order to be tied and tightened over the object.

[0004] Therefore, the manual intervention of the operator is required to tie and tighten the binding means, on which the hook of the machine used to lift the object is hooked.

[0005] Obviously, after moving the object, the operator must loosen and untie or cut the binders in order to release the object.

[0006] The purpose of the present invention is to realise a specific tool used to hold heavy objects moved with lifting devices, characterised by safe, easy operation both during application and removal, with the possibility of repeated use.

[0007] Another purpose of the present invention is to realise a tool as illustrated above, provided with a self-locking buckle in order to save the operator's time and effort required to tie the object to be lifted.

[0008] Finally, another purpose of the present invention is to realise a tool as illustrated above, provided with a self-locking buckle that can be opened quickly and easily, in order to save the operator's time and effort required today to untie and loosen the binding means, thus eliminating the risk of injury involved in manual interventions.

[0009] The tool according to the present invention consists in a resistant belt ending with two eyelets and inserted into a special buckle, provided with a hook and a clamp to hold the belt in place.

[0010] More precisely, the buckle comprises a box-like frame in which the belt is inserted and slides. The belt is tightened by a clamp pivoted on a transversal pin supported by the frame of the buckle and subjected to the constant thrust of a spring that pushes it against the belt.

[0011] The shape of the buckle allows the oscillating clamp to oppose to the free sliding of the belt in one direction only, meaning the direction that allows for loosening the belt. This means that by applying traction on the free end of the belt, the tightening pressure automatically increases gradually.

[0012] Conversely, in order to loosen it, the belt must be freed from the grip of the oscillating clamp. To do it, it is necessary to push the clamp strong enough to win the opposite force of the return spring, so as to determine the detachment of the clamp from the belt.

[0013] For major clarity the description of the tool according to the present invention continues with reference to the enclosed drawings, which are intended for purposes of illustration and not in a limiting sense, whereby:

- fig. 1 is a perspective view of the belt according to the invention inserted into the buckle;
- fig. 2 is a view of the buckle.

[0014] With reference to fig. 1, the tool according to the invention comprises a resistant belt (1) whose ends are folded and sewn to form two eyelets (2 and 3).

[0015] The belt (1) is inserted into a buckle (4) made up of a box-like frame (5), that externally features a hook (6) and internally a transversal pivoting pin (7) for an oscillating clamp subjected to the constant thrust of a return spring (not shown in the enclosed drawings).

[0016] The spiral spring is inserted into the pin (7) and exerts a pressure on the internal side of the clamp (8) that maintains the front edge (8a) of the clamp pressed against the bottom wall (5a) of the frame (5).

[0017] In order to move the front edge (8a) away from the wall (5a) it is necessary to press the clamp (8) on its rear edge (8b) to win the resistance of the return spring.

[0018] To use the tool according to the present invention, the operator simply introduces the hook (6) in the eyelet (3) of the belt (1) after wrapping the belt (1) around the object to be lifted in a safe grip.

[0019] It must be stressed that the operator does not need to tighten the belt (1) since the belt itself will automatically tighten against the object when lifting it.

[0020] As a matter of fact, when the hook of the lifting device inserted in the eyelet (2) of the belt (1) starts exerting a traction force upwards on the eyelet, the belt (1) starts sliding under the front edge of the clamp (8), thus progressively tightening the object wrapped with the section of belt between the hook (6) and the buckle (4).

[0021] In order to loosen the belt (1) after moving the object, the operator simply presses the rear edge (8b) of the clamp (8) to allow the belt (1) to slide backwards inside the buckle (4) freely.

Claims

1. A weight-lifting belt provided with a self-locking buckle, characterised by the fact that it comprises a resistant belt (1) ending with two eyelets (2 and 3) and inserted in a buckle (4) made up of a box-like frame (5) that externally features a hook (6) and internally features a transversal pivoting pin (7) for an oscillating clamp (8) subjected to the constant thrust of a return spring exerting a pressure on the internal side of the clamp (8) that maintains the front

edge (8a) of the clamp (8) pressed against the bottom wall (5a) of the frame (5).

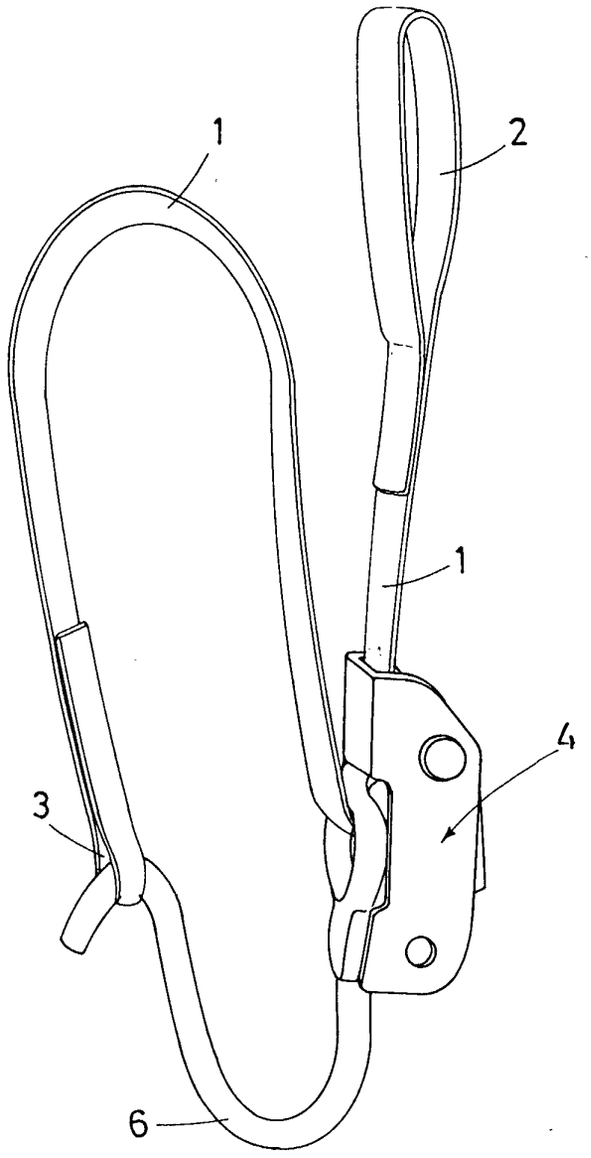

FIG. 1

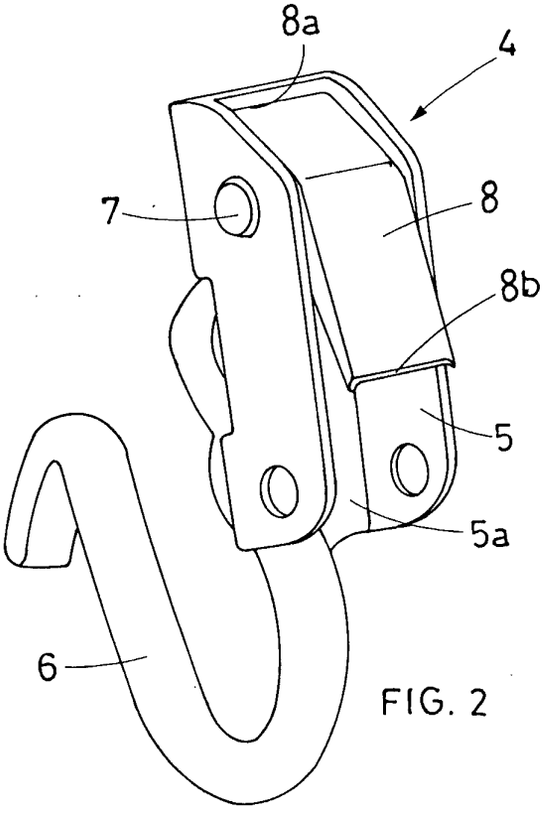

FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 83 0865

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.7)
Y	US 3 362 744 A (EK BENGT ARNE ARVID) 9 January 1968 (1968-01-09) * figures 2,3 * * column 2, line 6 - line 55 *	1	B66C1/18
Y	GB 329 439 A (W.H. BOASE) * figures * * page 2, left-hand column, line 42 - line 62 *	1	
Y	US 3 707 022 A (DIEHL ALAN) 26 December 1972 (1972-12-26) * figure 1 * * column 3, line 21 - line 33 *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 146 (M-1102), 12 April 1991 (1991-04-12) -& JP 03 023190 A (SANWA TEKKI CORP;OTHERS: 01), 31 January 1991 (1991-01-31) * abstract; figures 3-5 *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B66C F16G B60P A44B B65D
A	GB 1 515 107 A (GYRAC ENG PROD LTD) 21 June 1978 (1978-06-21) * figures 2,8 *	1	
A	US 4 525 007 A (CHAPALAIN JEAN-PIERRE) 25 June 1985 (1985-06-25)		
A	US 3 129 031 A (BRYANT) 14 April 1964 (1964-04-14)		
A	US 4 915 434 A (DOLEZYCH UDO ET AL) 10 April 1990 (1990-04-10)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	5 April 2001	Guthmuller, J

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 83 0865

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3362744 A	09-01-1968	DE 1456464 A	12-12-1968
		GB 1065471 A	19-04-1967
		NL 6601258 A	29-08-1966
GB 329439 A		NONE	
US 3707022 A	26-12-1972	NONE	
JP 03023190 A	31-01-1991	JP 2741245 B	15-04-1998
GB 1515107 A	21-06-1978	NONE	
US 4525007 A	25-06-1985	FR 2532637 A	09-03-1984
US 3129031 A	14-04-1964	NONE	
US 4915434 A	10-04-1990	DE 3722070 A	24-11-1988
		DE 3727918 A	17-11-1988
		CA 1287083 A	30-07-1991
		EP 0353325 A	07-02-1990

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82