



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/SE92/00268 (22) International Filing Date: 23 April 1992 (23.04.92)</p> <p>(71) Applicant (for all designated States except US): THE POTTER GROUP (HOLDINGS) PLC [GB/GB]; Melberby Industrial Estate Green Lane, Melberby, Ripon, North Yorkshire HG4 5HP (GB).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only) : LINDGREN, Leif, Sune, Edgar [SE/SE]; ängslyckan 41, S-427 00 Billdal (SE).</p> <p>(74) Agent: ÖRTENBLAD, Bertil; Noréns Patentbyrå AB, Box 27034, S-102 51 Stockholm (SE).</p> <p>(81) Designated States: CA, FI, NO, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE).</p>		<p>Published <i>With international search report. In English translation (filed in Swedish).</i></p>
<p>(54) Title: AN ARRANGEMENT PERTAINING TO THE TRANSPORTATION OF GOODS</p> <div style="text-align: center; margin: 20px 0;"> </div> <p>(57) Abstract</p> <p>An arrangement for the transportation of goods, such as paper rolls, comprising a load carrier which includes a goods-carrying bottom plate. The arrangement is mainly characterized by a lifting post (4) which is upstanding centrally from the bottom plate (2) and by means of which a loaded load-carrier can be lifted.</p>		

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An Arrangement Pertaining to the Transportation of Goods

5 The present invention relates to an arrangement pertaining to the transportation of goods, such as paper rolls.

The transportation of large paper rolls from the paper machine to the final consumer is encumbered with problems in the form of a large number of handling and trans-shipment or reloading operations, among other things. These operations are time-consuming, risk intensive and relatively often result in damage to the rolls.

The present invention provides a solution to these problems.

15 The invention thus relates to an arrangement pertaining to the transportation of goods, such as paper rolls, which includes a load carrier having a bottom plate intended for supporting said goods, for instance paper rolls.

20 The arrangement is mainly characterized by a lifting post by means of which the load carrier can be lifted, said lifting post being centrally located and protruding upwards from the bottom plate.

The invention will now be described in more detail with reference to exemplifying embodiments thereof and also with reference to the accompanying drawings, in which

- Figure 1 is a schematic, perspective view of a first embodiment of an inventive unloaded load carrier;
- Figure 2 illustrates the load carrier shown in Figure 1 carrying a load of four paper rolls;
- Figure 3 illustrates handling of a load carrier with the aid of a fork-lift truck;
- Figure 4 illustrates handling of the load carrier in accordance with the invention, with the aid of a crane arrangement;
- 35 - Figure 5 illustrates handling of load carriers in accordance with the invention with the aid of a traverse hoist arrangement;
- Figure 6 illustrates a combination of material handling situations;

- Figure 7 illustrates schematically a warehouse in accordance with Figure 6; and
- Figure 8 illustrates schematically a hoist fitting for an inventive lifting post.

Figure 1 illustrates a load carrier 1 which includes a bottom plate 2 intended to support paper rolls 3 for instance, and a lifting post 4 which extends centrally upwards from the bottom plate. Also shown in the Figure is a cover plate 5 which, according to one preferred embodiment, is intended to cover or generally cover the upper surfaces 6 of the rolls placed on the bottom plate 2 (Figure 2) and which includes an aperture 7 through which the lifting post 4 can be reached or project.

The bottom plate is provided with pockets 8 which accommodate the lifting forks of a fork-lift truck, said pockets preferably being provided on all sides 9 of the bottom plate.

It is preferred that the lifting post is removable from the bottom plate. In this regard, although not shown, the lifting post may be lockable to the bottom plate by means of a bayonet fitting or by some other suitable means. Subsequent to removing the lifting posts from respective bottom plates, the bottom plates can be stacked one upon the other for return to a depot, for instance. It is also preferred that the lifting posts can be extended and shortened, in order to be able to adapt the vertical extension of the post to differing heights/lengths of the paper rolls. For instance, the lifting post may have a telescopic construction in a suitable manner, although not shown.

Mounted on the upper free end 10 of the lifting post is a hoist fitting 11. The hoist fitting is preferably adapted for container handling, wherein according to a preferred embodiment the fitting is essentially of the kind that is disposed in the corners of the container and comprises a housing, Figure 8, having at least one upwardly facing elongated opening 12 through which a generally arrow-pointed lifting head 13 of a generally known kind can be inserted,

wherein the head can be locked in engagement with the fitting by turning the head. Further turning of the head will bring it to a position in which it can be removed through said opening. The lifting head may be arranged generally in accordance with the teachings of Swedish Patent Specification No. 7904086-1, in which case the head is rotated or turned by being pressed against an internal bottom surface in the fitting. The load can be lifted by means of a truck or like machine provided with at least one horizontally and forwardly extending lifting head, with the aid of openings on the sides of the fitting.

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The lifting post will preferably include a lashing 14 by means of which the load can be secured.

Figure 4 illustrates a lifting device 15 which is intended for coaction with a lifting arrangement 16, in the illustrated case a crane arrangement 16, and at least one load carrier, in the illustrated case four carriers. The Figure illustrates an embodiment in which the lifting device is provided with lifting heads 13 of the aforesaid kind. Shown in Figure 5 is a lifting device 15 of generally the same kind which is mounted, instead, on a lifting arrangement in the form of a traverse 17.

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Figures 4, 5 and 6 illustrate different loading and unloading situations in which inventive arrangements are used.

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The method in which the inventive arrangement works will be understood essentially from the foregoing. The intention is that the paper rollers are placed on the load carriers already in the proximity of the paper machine and are not removed from the load carriers until they are used finally in a printing hall or some like place. All reloading, trans-shipment and transportation shall be effected with the load carriers and not with the rolls themselves. Lifting is effected with the aid of the lifting post. The rolls are protected by the cover plate or cover sheet, which also forms a friction-enhancing element when stacking several load carriers one on the other.

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It will be evident from the foregoing that the invention provides advantages in the form of eliminating risks and damage, in comparison

with known techniques. The invention also enables loading/unloading operations, for example quay-side operations to be fully automated, thereby eliminating the need of separate stowing personnel.

5 Although the invention has been described in the foregoing essentially with reference to an exemplifying embodiment thereof, it will be understood that other embodiments and minor modifications are conceivable without departing from the inventive concept.

10 With regard to the construction of the bottom plates and the material from which they are made, the plates are preferably of lightweight construction, such as a sandwich-type construction, made of steel, lightmetal, fibreglass glass material or some similar appropriate material.

15 It is conceivable to use some other device than the lifting post, for instance an eye or the like which coacts with a lifting hook. The described and illustrated system, however, enables operations to be automated.

20 According to one embodiment which is preferred in certain cases, the bottom plate for instance is provided with devices which enable at least two adjacent load carriers to be connected together for supporting, for instance, long goods, such as packaged wood.

25 The load carrier is also suitable for carrying bag-like containers, such as so-called jumbo bags (not shown) containing, for instance, granular products. According to one embodiment of such sack-like containers adapted to the load carrier, the container has a centrally
30 located channel which is intended to be fitted over the lifting post and through which the lifting post is thus intended to extend, thereby holding the container to the load carrier.

The invention is thus not restricted to the aforescribed and illustrated
35 embodiments thereof since modifications are possible within the scope of the following Claims.

Claims

1. An arrangement pertaining to the transportation of goods, such as paper rolls, comprising a load carrier which includes a goods-carrying bottom plate; characterized by a lifting post (4) which is upstanding centrally from the bottom plate (2) and by means of which the goods-loaded load carrier can be lifted.
2. An arrangement according to Claim 1, characterized by a cover plate or sheet (5) which is intended to cover, or generally cover, the goods on the bottom plate, such as the upper surfaces (6) of paper rolls, and includes an aperture (7) through which the lifting post can be reached or protrude.
3. An arrangement according to Claim 1 or 2, characterized in that the bottom plate is provided with pockets (8) for handling with a fork-lift truck (9).
4. An arrangement according to Claim 1, 2 or 3, characterized in that the lifting post is removably mounted.
5. An arrangement according to Claim 1, 2, 3 or 4, characterized in that the lifting post can be extended and shortened.
6. An arrangement according to Claim 1, 2, 3, 4 or 5, characterized in that the lifting post includes a hoist fitting (11) having a housing which includes an upwardly facing, elongated opening (12) through which a preferably generally arrow-headed lifting head is intended to be inserted and locked by rotation and released by further rotation, said rotational movement preferably being effected by pressing the head against an internal bottom surface of the housing.
7. An arrangement according to Claim 1, 2, 3, 4, 5 or 6, characterized in that the lifting post preferably includes a lashing band for securing the load.

8. An arrangement according to Claim 1, 2, 3, 4, 5, 6 or 7, characterized by a lifting device (15) for coaction with a crane arrangement (16), a traverse hoist (17) or some like lifting arrangement, and at least one load carrier (1).
- 5
9. An arrangement according to Claim 1, 2, 3, 4, 5, 6, 7 or 8, characterized in that the bottom plate is generally quadratic and is constructed to accommodate four paper rolls of essentially quadratic configuration.
- 10
10. An arrangement according to Claim 1, 2, 3, 4, 5, 6, 7, 8 or 9, characterized by means for connecting at least two mutually adjacent load carriers together for supporting, for instance, long goods, such as packaged wood.
- 15
11. An arrangement according to Claim 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10, characterized in that the load carrier is intended for use in combination with bag-like containers intended, for instance, for handling granular goods.
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12. An arrangement according to Claim 11, characterized in that the container includes a centrally located channel which is intended to be inserted over the lifting post and in which the lifting post is intended to extend, therewith holding the container to the
- 25 load carrier.

Fig. 1

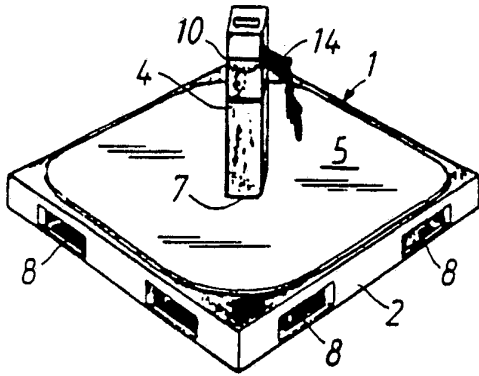


Fig. 2

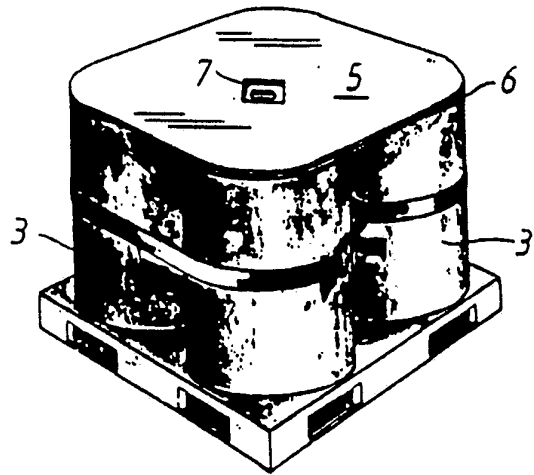


Fig. 4

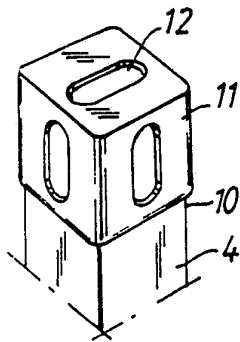
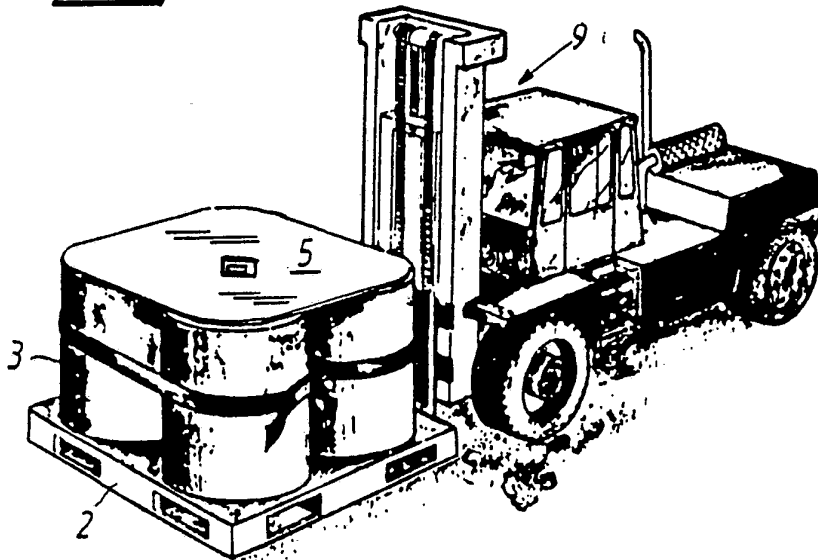


Fig. 3



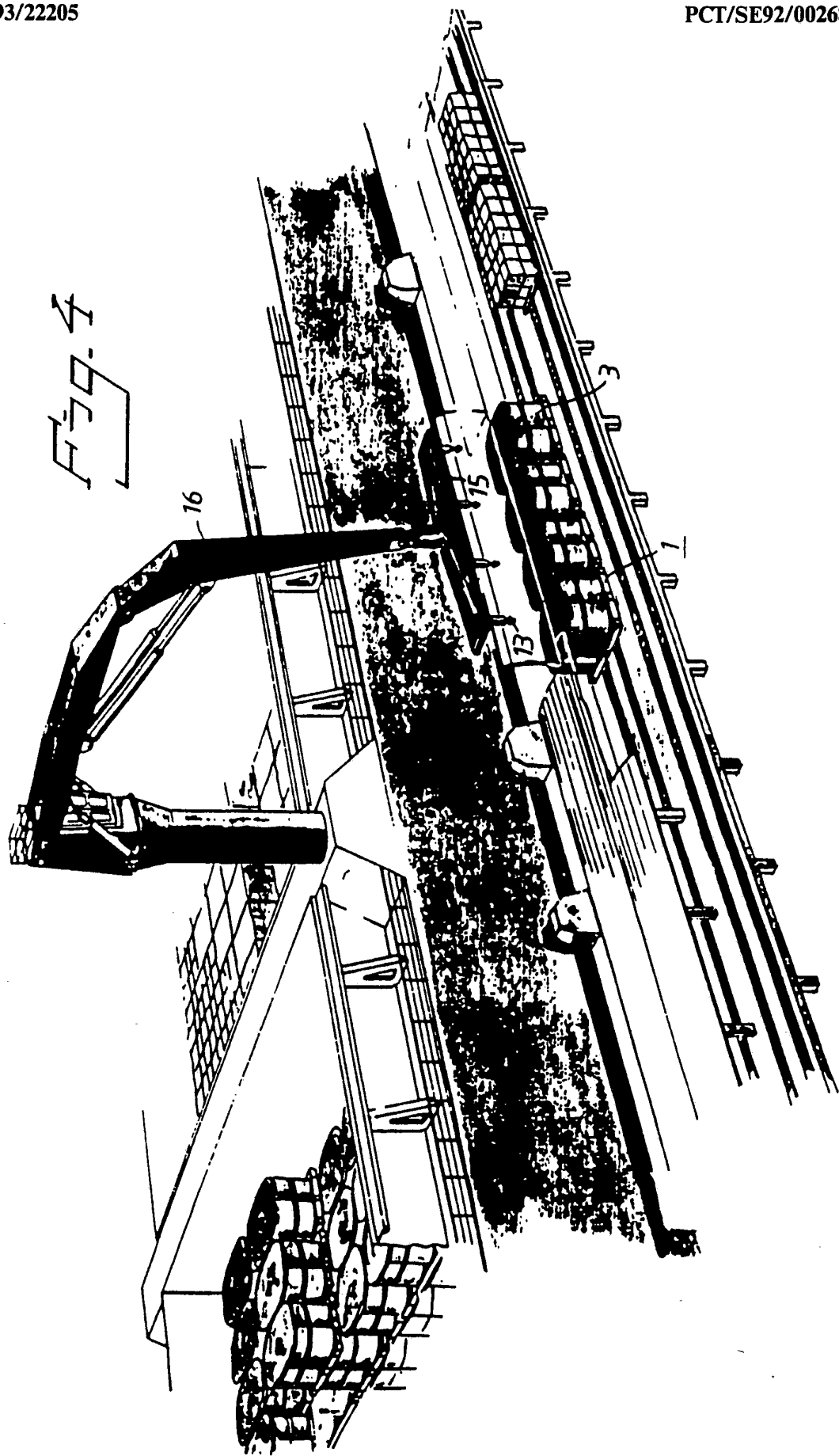


Fig. 4

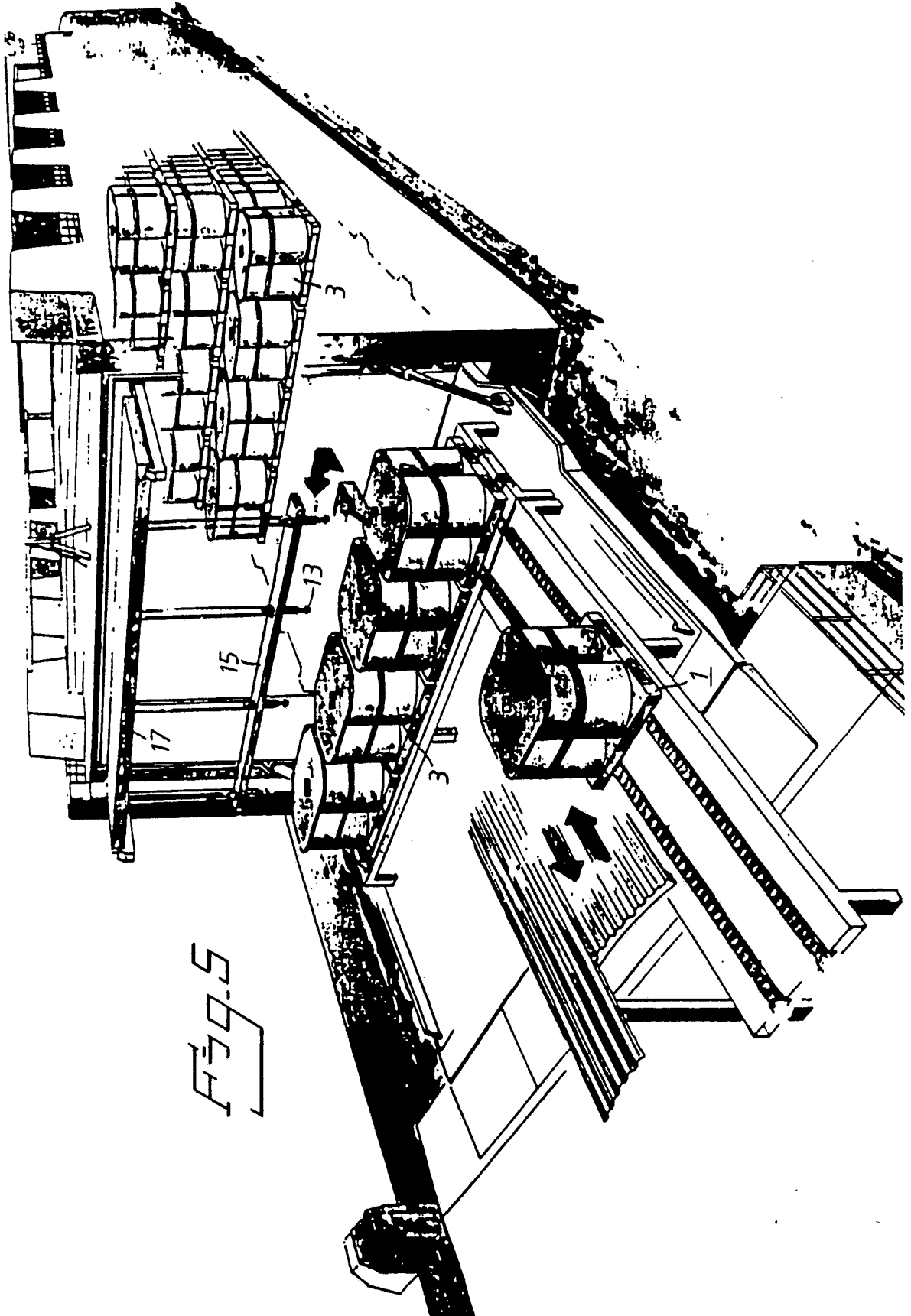
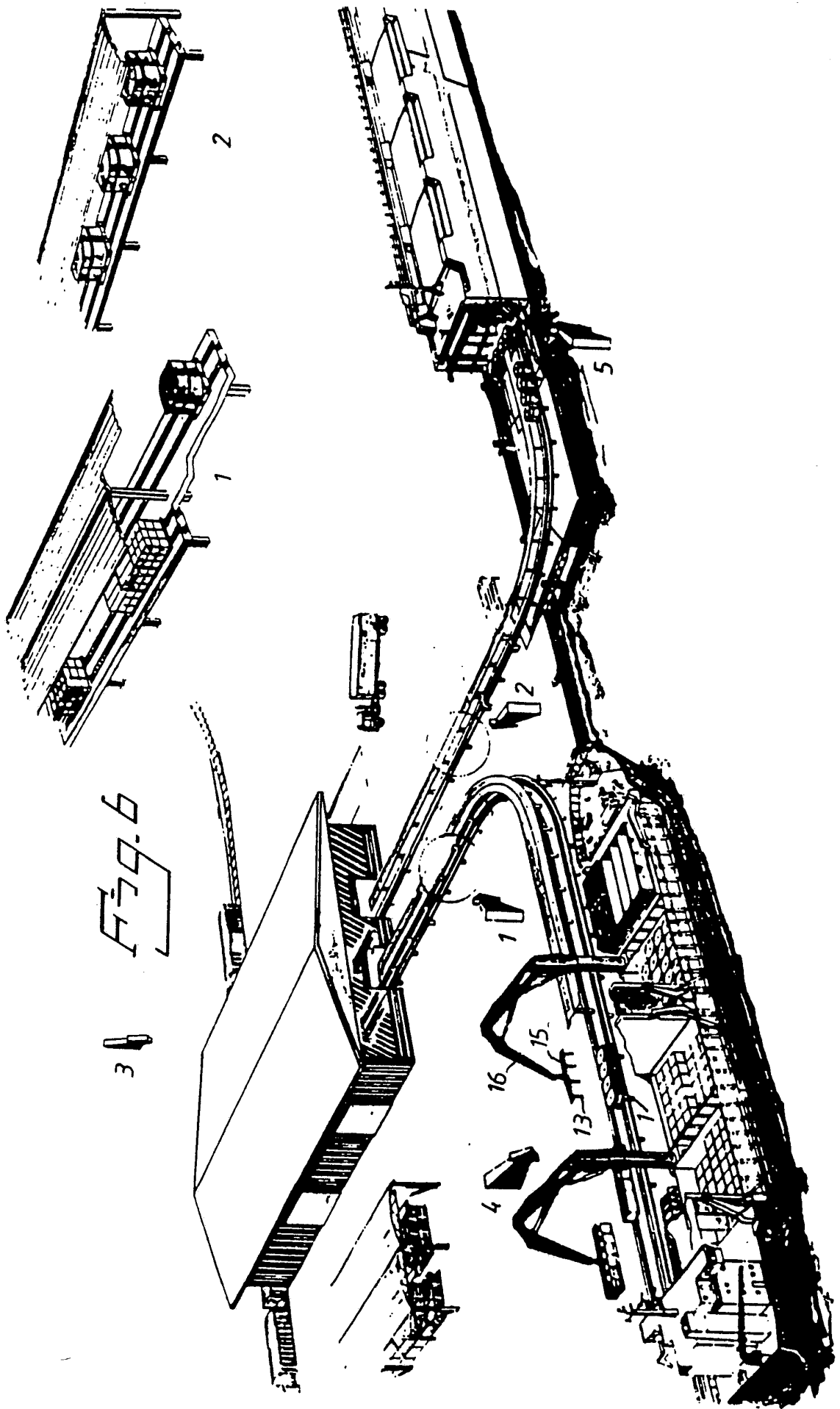


Fig. 5



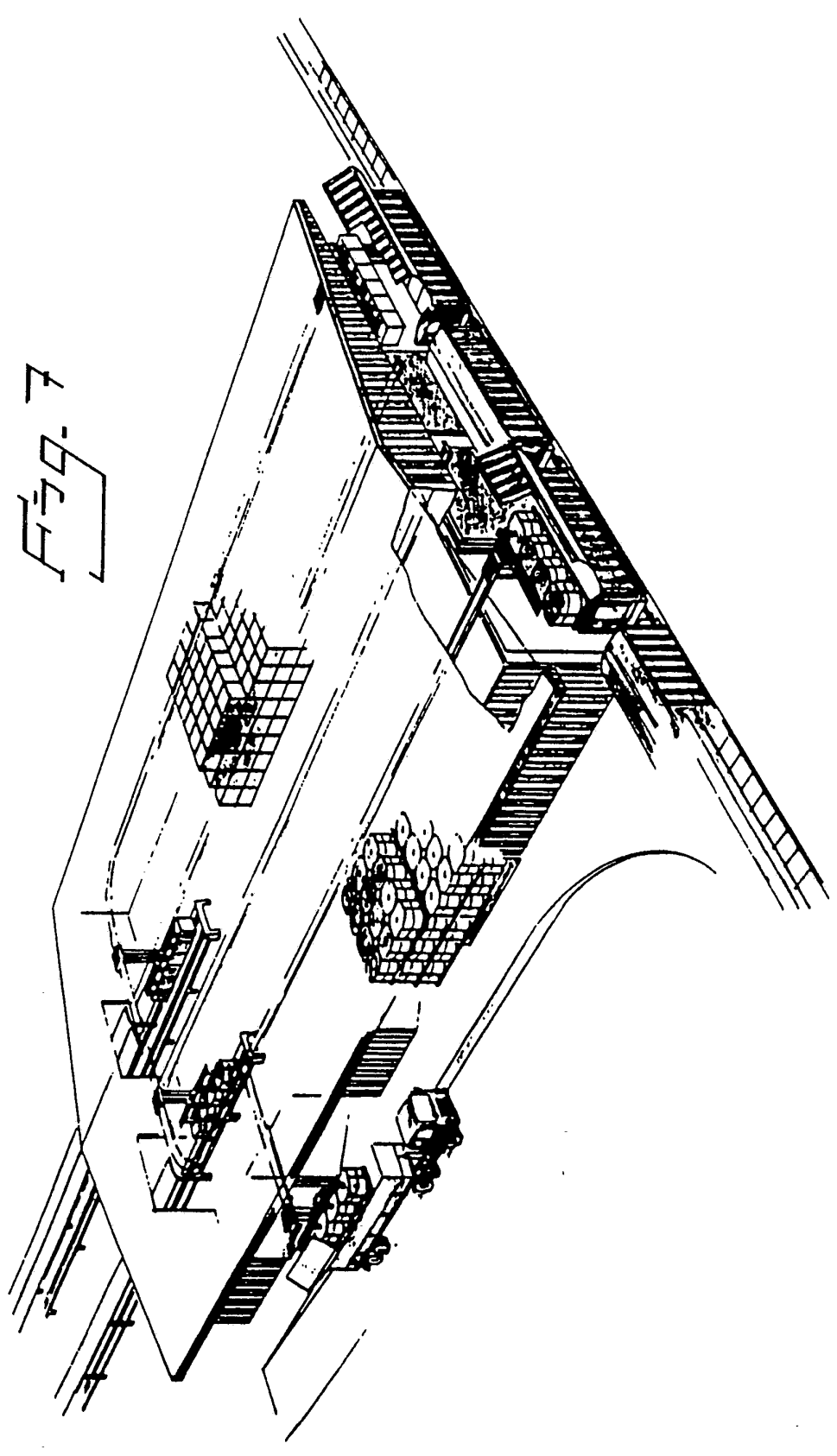


Fig. 7

INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 92/00268

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)⁶
 According to International Patent Classification (IPC) or to both National Classification and IPC
 IPC5: B 65 D19/38, 19/44, 88/22

II. FIELDS SEARCHED
 Minimum Documentation Searched⁷

Classification System	Classification Symbols
IPC5	B 65 D; B 62 B

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched⁸

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹

Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	SE, B, 414013 (SALÉNREDERIERNA AB) 14 April 1980, see the whole document	1,2,3,8, 9,10
Y	--	11,12
X	CH, A, 535678 (SAUERSTOFFWERK LENZBURG AG) 30 May 1973, see figure 1 See especially column 2, line 32 - line 37	1,3,7,8, 9
Y	--	2,4,5,6
Y	WO, A1, 8912580 (INDUSTRIAL SALES COMPANY (ISCO) A/S) 28 December 1989, see page 10, line 35 - page 11, line 8	2
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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
24th November 1992	01 -12- 1992
International Searching Authority	Signature of Authorized Officer
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
Y	US, A, 2443684 (D. LAZARUS) 22 June 1948, see column 2, line 17 - line 19 --	4
Y	FR, A, 1416891 (M WOLFGANG VOIGT) 27 September 1965, see page 2 right column line 11 - line 16 --	5
Y	US, A, 4358145 (SVENSSON) 9 November 1982, see figures 4,5 --	6
Y	DE, A1, 2924988 (SUPRA AB) 31 January 1980, see figure 1 see especially detail 15 --	11,12
A	DE, C2, 2657501 (SROKA, P.) 14 July 1977, see figures 1,2 --	11,12
A	WO, A1, 8909171 (OY FLUID-BAG AB) 5 October 1989, see especially fig. 2 detail 4 --	11,12
A	DE, A1, 2824929 (GEBRÜDER FRIEDRICH) 20 December 1979, see especially fig. 2 detail 16 --	11,12
A	US, A, 4890743 (POWEL ET AL) 2 January 1990, see the whole document -- -----	1

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
SE-B- 414013	80-04-14	SE-A- 7810692	80-04-14
CH-A- 535678	73-05-30	NONE	
WO-A1- 8912580	89-12-28	AU-D- 3834289 CN-A- 1039565	90-01-12 90-02-14
US-A- 2443684	48-06-22	NONE	
FR-A- 1416891	65-09-27	NONE	
US-A- 4358145	82-11-09	BE-A- 883187 DE-A-C- 3017692 FR-A-B- 2456066 GB-A-B- 2048821 NL-A- 8002654 SE-B-C- 420483 SE-A- 7904086	80-09-01 81-02-19 80-12-05 80-12-17 80-11-11 81-10-12 80-11-10
DE-A1- 2924988	80-01-31	AT-B- 366642 AU-D- 4876679 CA-A- 1088435 FR-A-B- 2430894 GB-A-B- 2026981 NL-A- 7905270 SE-B-C- 412055 SE-A- 7807730 SU-A- 1071219 US-A- 4222422	82-04-26 80-01-17 80-10-28 80-02-08 80-02-13 80-01-15 80-02-18 80-01-12 84-01-30 80-09-16
DE-C2- 2657501	77-07-14	AT-B- 349378 AU-B- 506445 AU-D- 2063876 BE-A- 849653 CA-A- 1048974 CH-A- 613905 FR-A-B- 2338195 GB-A- 1523019 JP-A- 52088471 NL-A- 7614468 SE-B-C- 391695 US-A- 4069852	79-04-10 80-01-03 78-06-22 77-04-15 79-02-20 79-10-31 77-08-12 78-08-31 77-07-23 77-07-15 77-02-28 78-01-24
WO-A1- 8909171	89-10-05	FI-A- 8603992	88-04-03

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WO-A1- 8909171	89-10-05	US-A- 5025925	91-06-25
DE-A1- 2824929	79-12-20	NONE	
US-A- 4890743	90-01-02	NONE	