

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 558 152 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
16.04.1997 Bulletin 1997/16

(51) Int. Cl.⁶: **B65D 88/12**

(21) Application number: **93200544.0**

(22) Date of filing: **25.02.1993**

(54) Container for the transportation of goods such as pipes

Container zum Transport von Gütern wie Rohren

Conteneur pour le transport de produits tels que des tubes

(84) Designated Contracting States:
DE DK GB NL

• **Endresen, Arne Johan**
N-4015 Stavanger (NO)

(30) Priority: **26.02.1992 NO 920757**

(74) Representative: **Bleukx, L.L.M.**
c/o NORSK HYDRO A.S.
Rue Neerveld 107
1200 Bruxelles (BE)

(43) Date of publication of application:
01.09.1993 Bulletin 1993/35

(73) Proprietor: **Norsk Hydro a.s.**
0257 Oslo 2 (NO)

(56) References cited:
EP-A- 0 152 290 **DE-A- 2 807 480**
DE-A- 3 220 859 **GB-A- 1 155 489**
GB-A- 2 072 627 **US-A- 3 382 998**
US-A- 5 044 544

(72) Inventors:
• **Naerland, Alf S.**
N-4052 Sola (NO)

EP 0 558 152 B1

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

The invention relates to a container for the transportation of goods or objects, especially longitudinal objects such as pipes or pipe parts, comprising a base construction, side walls, end walls and stays extending freely through channels disposed in the side walls, the upper end of each stay being provided with holes or lifting eyes for lifting hooks or the like, the lower end of each stay being detachably connected to the fixed portion of the container.

Containers of the above type, usually called baskets in the trade jargon, are used in connection with the transportation of goods or objects between supply plants on land and offshore installations. The containers are placed on the deck of a supply ship by means of trucks, cranes or other forms of lifting device and are freighted between the destinations by means of the ships.

When the containers are lifted by means of the cranes or winches, special wires or chain slings are used with hooks which are fixed in lifting eyes welded onto the containers' side walls. The lifting eyes become weak with time as a result of mechanical strain and stress during lifting and unforeseen impacts/knocks and must be checked annually and, if necessary, replaced. This check and the replacement, if necessary, must be carried out at an authorised workshop and this is both time-consuming and costly in itself. For the period during which a container is at the workshop, a spare container must be used instead, if necessary, and having to operate with a store of spare containers is a further additional cost.

In terms of strength, the existing, known containers are designed so that the forces generated by the weight of the goods and the container itself are taken up and transferred to the lifting eyes via the side walls. This represents a disadvantage with the known containers. Since the side walls are relatively weak for lateral loads, relatively weak impacts or knocks will be able to deform the walls so that the containers cannot bear the loads for which they are approved and, for this reason, they must be repaired or, at worst, destroyed. In addition, it will not be possible to provide the walls with openings or slots which might weaken the strength and thus the container's carrying capacity. Such openings are desirable, for example, in connection with the loading and unloading of long objects such as pipes. When loading pipes in the known containers, the pipes are lifted by a truck over the containers and dropped into them by gravitational force.

Such loading damages both the pipes and the containers. In addition, when unloading, the pipes must be lifted out of the containers individually which is both hard work and time consuming.

In GB - A - 1.155.489 there is described a container of the above described type. Each corner of said container is provided with a post including a lower section of hollow construction, which is finally attached to the floor

construction and to the side walls of the container, and an adjustable upper section which is telescopically received in the lower section to vary the height of the corner post, so that the goods contained by the container are always below the tops of the posts.

Lifting of this container is done through holes provided in the upper end of the upper sections. This means that during lifting the forces are transferred through the upper section to the lower sections and the side walls to the base construction. Therefore the side walls have an important contribution to maintain the loaded container in its shape while lifting.

In DE - A - 2.807.480 there is disclosed a container of the type have a base construction and two side walls. Each side wall is provided with two vertical hollow beams carrying hooks. These hooks are slidable guided by the hollow beams between two positions, a first one in which the hooks entered above the side walls and a second one in which the hooks are retracted to below the upper end of the beams. The beams are an integral part of the side walls and the forces generated while lifting a loaded container are transferred to the base construction through the beams and the side walls.

One aim of the present invention was to produce a transportation container for which time in a workshop in connection with the replacement of lifting eyes for the container would be eliminated and for which other workshop time in connection with repairs would be considerably reduced.

Another aim was to produce a container which has openings or slots in at least one of the side walls to make possible the lateral loading of goods, especially pipes and other long objects, by truck.

A further aim was to produce a transportation container which was of simple design and inexpensive to produce.

The container in accordance with the present invention is mainly claimed in claim 1 wherein the base construction is designed in such a way that it is capable of bearing most of the weight of the container and the goods to be transported as the forces generated when lifting the container are transferred from the base construction via stays, the lower ends of which are connected to, and detachable from, the base construction and which extend up freely through the openings or channels in the sides, and the upper ends of which are provided with holes or openings for lifting hooks, etc.

In accordance with the present invention, the base construction thus bears virtually all of the load and the forces are transferred to the lifting hooks via the lifting stays which are connected directly to the base construction. This represents a considerably simpler and more secure solution than that known from the existing containers, where the forces are transferred via the walls. In addition, instead of having lifting eyes welded to the walls, lifting stays are used which are fastened to, and may be detached from, the base construction by means of a nut and bolt. Both the lifting stays and the bolts can be rapidly checked and replaced in a few min-

utes without having to send the container to the workshop.

By having the base construction of the container bear most of the load it is also possible to provide the side walls with openings or slots so that goods can be loaded into the container and removed from it through the side. This and other advantageous features of the present invention are defined in dependent claims 2-10.

In the following, the invention will be described in more detail by means of examples and with reference to the drawings, of which:

- Fig. 1 shows the preferred design of a transportation container in accordance with the invention in perspective.
- Fig. 2 shows in large scale a tension stay shown in Fig. 1.
- Fig. 3 shows in large scale a folding side flap with hinge shown in Fig. 1.
- Fig. 4 shows in perspective a small box or container which is designed to be held securely between guides in the container shown in Fig. 1.
- Fig. 5 shows in large scale one end wall of the container designed as a folding flap.

Container 1 in accordance with the invention is, as shown in Fig. 1, rectangular in shape and includes a base construction 2 with side walls 3, 4 and end walls 5, 6. The base construction 2 is based on a rectangular frame with longitudinal supporting beams 17 and transverse supporting beams 18. The supporting beams are formed of hollow sections and dimensioned in such a way that, when being lifted via the stays 9 or the forks of a fork-lift truck through the openings 22, 23, they are easily capable of bearing the weight of the container in itself and the weight of the goods in the container. The longitudinal supporting beams 17 (one on each side) are, in addition to the transverse supporting beams 18, connected with several intermediate, transverse beams. On top of the beams there is an all-welded sheet base 25. The sides are built up around vertical and diagonal supports 26, 29 and an upper rectangular frame of hollow sections 27, 28 and, similarly to the base, are provided with all-welded sheets on the inside. With the construction described here the base bears most of the weight of the container and the load in it. To transfer the forces which are generated when lifting the container, four tension stays 9 are used which are attached to, and may be detached from, the supporting beams 17 by means of a threaded bolt with a nut. The tension stays are appropriately arranged to run freely in the diagonal supports 29 and partly reach up over the upper end of the walls, ie the frame section 28. The angle of the tension stays is appropriately chosen so that it is in accordance with the angle of the lifting wires or the chain sling to avoid transference of forces to the walls in connection with lifting the container. The upper ends of the tension stays 9 which are shown in detail in Fig. 2 are provided

with an opening 8 or holes for a lifting hook etc. (the lifting hook is not shown). The diagonal sections 29 in the walls 3, 4 form a protection for the tension stays against impacts and knocks. In addition, as an extension of the diagonal sections 29, on the upper side of the side walls protective tabs 10 have been welded on to rise above the walls for the part of the stays 9 which protrude above the side walls (see Fig. 1).

One side wall 4 is provided with two openings or slots 7 which extend right down to the base construction. Through these openings it is possible to insert the forks of a fork-lift truck to load in or lift out goods, especially long objects such as pipes, from the container. In the example shown here the container is provided with two openings, but alternatively it can be provided with one large opening or more than two openings. The openings can, as is appropriate, be provided with a door, or, as shown in Fig. 1, with a barrier in the form of a folding flap 11. The flap 11 is shown in large scale in Fig. 3. It is provided with pivot pins 12 which are located in L-shaped tracks 21 on each side of the opening in the side wall 4. At the top, the flap 11 has two overhangs 13 and on the underside of these overhangs are vertical pins 14 which are designed to correspond with the holes 30 on each side of the openings in the side wall. When the flap is closed the pins are located in the holes and the overhangs 13 rest on the notches 20 in the sides as shown for the right-hand flap 11 in Fig. 1. When the flap 11 is opened, the lower part of the flap is pressed in so that the pivot pins 12 are pushed against the vertical part of the L-shaped track 21. The flap can then be lifted up so that the upper locking pins 14 are removed from the holes and can then be lowered as shown for the left-hand flap 11 in Fig. 1.

For the container shown in Fig. 1, one of the transverse walls is also designed as a folding flap 6, and is hinged to the base construction at its lower end. A spring mechanism comprising one or more spiral springs as shown in Fig. 5 ensures that the flap can be lowered in a controlled manner without danger for the person operating it. In the upright position it is kept in place by means of a locking mechanism in the form of a pin 31 with a locking hook 32 or another type of locking mechanism.

When transporting small parts, for example pipe connections etc., with pipes, separate boxes or containers 33 (see Fig. 4) are often used which are placed on top of the pipes after they have been laid in the containers. The boxes 33 are loose and will be cast back and forth when the containers are freighted on board a ship which rolls or pitches on the open sea. They thus represent a danger to the crew on board the ship and can cause damage to the containers and the goods which are being freighted.

In accordance with the present invention it has been made possible to place these boxes 33 onto the containers using a fork-lift truck and guides 19 make it possible to keep the boxes in position in the containers without danger of them being cast back and forth during

transportation.

Claims

1. Container for the transportation of goods or objects, especially longitudinal objects such as pipes or pipe parts, comprising a base construction (2), side walls (3, 4), end walls (5, 6) and stays (9) extending freely through channels (29) disposed in the side walls (3,4), the upper end of each stay (9) being provided with hole or lifting eyes for lifting hooks or the like, the lower end of each stay (9) being detachably connected to the fixed portion of the container,
characterised in that,
the lower end of each stay (9) is directly connected to the base construction, such that the stays (9) directly transfer the lifting forces to the base construction having a strength which is sufficient to substantially maintain the loaded container in its shape while lifting.
2. Container according to claim 1,
characterised in that,
the stays (9) extend above the side walls (3,4), the holes or openings (8) thus being located above the upper edge of the side walls (3,4).
3. Container according to claim 1 and 2,
characterised in that,
the stays are connected to the base construction by means of a bolt and nut (15, 16).
4. Container according to claim 3,
characterised in that,
vertically extending protective tabs (10) are fitted on the upper ends of the side walls (3) close to the ends of the stays (9).
5. Container according to claims 1-4,
characterised in that
at least one of the side walls (3) is provided with one or more openings or slots (7).
6. Container according to claim 5,
characterised in that
the openings (7) are provided with doors or flaps (11).
7. Container according to claim 6 where the individual openings are provided with a flap (11),
characterised in that
the flap (11) swings vertically down by means of pins (12) which are located in L-shaped tracks (21) on each of the vertical sides of the hole in the side wall and that the upper edge of the flap is provided with an overhanging plate (13) with vertical pins (14) underneath which fit in the openings (30) in the side wall when the flap is in the closed position.

8. Container according to claims 1-7,
characterised in that
at least one short side (5) is a folding flap.
9. Container according to claim 8,
characterised in that
the flap's (5) swinging movement is controlled by a spring mechanism.
10. Container according to claims 1-9,
characterised in that
the end wall (5) can be lowered and is provided with a spring mechanism (31) which ensures that it can be lowered in a controlled manner.
11. Container according to claims 1-9,
characterised in that
there are vertical guides (19) on the inside of the side walls (3, 4) for fastening small containers, boxes (33) etc.

Patentansprüche

1. Container welche für den Transport von Gütern und von Gegenständen, insbesondere von längsgerichteten Gegenständen, wie etwa von Rohren oder Rohrteilen, bestimmt sind und welche eine Bodenkonstruktion (2), Seitenwände (3, 4), Kopfwände (5, 6) sowie Pfosten (9) aufweisen, welche letztere sich frei durch in den Seitenwänden (3, 4) angeordnete Kanäle (29) hindurch erstrecken, wobei das obere Ende eines jeden Pfostens (9) mit einem Loch oder mit Aufhängeösen für Lasthaken oder dergleichen Hilfsmittel ausgestattet ist, während das untere Ende eines jeden Pfostens (9) auf ausbaubare Weise mit dem festen Teil des Containers verbunden ist, dadurch gekennzeichnet, daß das untere Ende eines jeden Pfostens (9) unmittelbar mit der Bodenkonstruktion so verbunden ist, daß die Pfosten (9) die Hubkräfte direkt auf die Bodenkonstruktion übertragen, welche eine Festigkeit aufweist die ausreichend ist um den beladenen Container während des Hebens im wesentlichen in seiner Form zu halten.
2. Container gemäß Anspruch 1, dadurch gekennzeichnet, daß die Pfosten (9) sich über die Seitenwände (3, 4) hinaus erstrecken, demgemäß die Löcher oder Öffnungen (8) über dem oberen Rand der Seitenwände (3, 4) angeordnet sind.
3. Container gemäß Anspruch 1 und 2, dadurch gekennzeichnet, daß die Pfosten unter Zuhilfenahme eines Bolzens oder einer Mutter (15, 16) mit der Bodenkonstruktion verbunden sind.
4. Container gemäß Anspruch 3, dadurch gekennzeichnet, daß in vertikaler Richtung sich erstreckende Schutzstreifen (10) an den oberen Enden

der Seitenwände (3), in der Nähe der Enden der Pfosten (9), angebracht sind.

5. Container gemäß den Ansprüchen 1-4, dadurch gekennzeichnet, daß zum mindesten eine der Seitenwände (3) mit einer oder mit mehreren Öffnungen oder Vertiefungen (7) versehen ist. 5
6. Container gemäß Anspruch 5, dadurch gekennzeichnet, daß die Öffnungen (7) mit Türen oder Klappen (11) versehen sind. 10
7. Container gemäß Anspruch 6 bei welchem die einzelnen Öffnungen mit einer Klappe (11) versehen sind, dadurch gekennzeichnet, daß die Klappe (11) vertikal nach unten schwingt, wobei Bolzen (12) zu Hilfe genommen werden, welche in L-förmigen Spuren (21) in einer jeden der vertikalen Seiten der Aussparung in der Seitenwand gehalten sind, und daß der obere Rand der Klappe ausgestattet ist mit einer überstehenden Platte (13), die vertikale Stifte trägt, welche unter der erstgenannten angeordnet sind und welche in die Öffnungen (30) in der Seitenwand hineinpassen, wenn die Klappe sich in der geschlossenen Stellung befindet. 15 20 25
8. Container gemäß den Ansprüchen 1-7, dadurch gekennzeichnet, daß zum mindesten eine schmale Seite (5) eine ausschwenkbare Klappe darstellt. 30
9. Container gemäß Anspruch 8, dadurch gekennzeichnet, daß die Schwingbewegung der Klappe (5) über einen Federmechanismus geregelt wird.
10. Container gemäß den Ansprüchen 1-9, dadurch gekennzeichnet, daß die Endwand (5) heruntergelassen werden kann und mit einem Federmechanismus (31) ausgestattet ist, welcher gewährleistet, daß dieselbe in geregelter Art und Weise heruntergelassen werden kann. 35 40
11. Container gemäß den Ansprüchen 1-9, dadurch gekennzeichnet, daß vertikale Führungen (19) auf der Innenseite der Seitenwände (3, 4) vorgesehen sind, um kleine Container, Kisten (33) usw. zu befestigen. 45

Revendications

1. Conteneur pour le transport de marchandises ou d'objets, plus spécialement d'objets longitudinaux, tels que des tuyaux ou des parties de tuyaux, comprenant une construction d'un fond (2), des parois latérales (3, 4), des parois d'extrémité (5, 6) ainsi que des étais (9) s'étendant librement à travers des canaux (29) disposés dans les parois latérales (3,4), l'extrémité supérieure de chaque étau (9) étant pourvue d'un trou ou d'oeilletons de levage pour des crochets porte-charges ou des dispositifs 50 55
2. Conteneur suivant la revendication 1, caractérisé en ce que les étais (9) s'étendent par-dessus les parois latérales (3, 4), les trous ou ouvertures (8) étant ainsi placés au-dessus du bord supérieur des parois latérales (3, 4).
3. Conteneur suivant la revendication 1 et 2, caractérisé en ce que les étais sont reliés à la construction du fond au moyen d'un boulon ou d'un écrou (15, 16).
4. Conteneur suivant la revendication 3, caractérisé en ce que des pattes protectrices (10) d'extension verticale sont aménagées sur les extrémités supérieures des parois latérales (3) au voisinage des extrémités des étais (9).
5. Conteneur suivant les revendications 1-4, caractérisé en ce qu'au moins l'une des parois latérales (3) est pourvue d'une ou de plusieurs bouches ou encoches (7).
6. Conteneur suivant la revendication 5, caractérisé en ce que les bouches (7) sont pourvues de portes ou de trappes (11).
7. Conteneur suivant la revendication 6 dans lequel les bouches individuelles sont pourvues d'une trappe (11), caractérisé en ce que la trappe (11) bascule verticalement vers le bas par l'entremise de chevilles (12) qui sont installées dans des glissières (21) en forme de L dans chacune des faces verticales du perçage dans la paroi verticale et en ce que le bord supérieur de la trappe est pourvu d'une plaque en porte-à-faux (13) avec des ergots verticaux (14) qui sont situés au-dessous de cette dernière et qui viennent s'insérer dans les ouvertures (30) dans la paroi latérale lorsque la trappe se trouve dans la position fermée.
8. Conteneur suivant les revendications 1-7, caractérisé en ce qu'au moins un côté étroit (5) constitue une trappe repliable.
9. Conteneur suivant la revendication 8, caractérisé en ce que le mouvement de basculement de la trappe (5) est contrôlé par un mécanisme à ressort.
10. Conteneur suivant les revendications 1-9, caracté-

risé en ce que la paroi d'extrémité (5) peut être baissée et est pourvue d'un mécanisme à ressort (31) qui assure qu'elle peut être baissée d'une manière contrôlée.

5

11. Conteneur suivant les revendications 1-9, caractérisé en ce qu'il y a des guides verticaux (19) à l'intérieur des parois latérales (3, 4) pour fixer de petits conteneurs, des caisses (33) etc.

10

15

20

25

30

35

40

45

50

55





