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

(11) Publication number: **0 053 009**
A2

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **81305472.3**

(22) Date of filing: **19.11.81**

(51) Int. Cl.³: **B 66 F 9/12**
B 66 C 1/12

(30) Priority: **21.11.80 GB 8037368**

(43) Date of publication of application:
02.06.82 Bulletin 82/22

(84) Designated Contracting States:
AT BE CH DE FR IT LI LU NL SE

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(54) **A load lifting attachment for use with a fork lift truck, hoist, crane or the like.**

(57) This invention relates to a load lifting attachment serving as a jib for use with fork lift trucks. Existing attachments are either intended to replace the forks of a truck or involve sliding a jib on to the forks. The drawbacks of both known arrangements are that they are heavy, cumbersome and expensive. These drawbacks are eliminated by the present invention that provides an attachment comprising a member adapted to each end to be engaged with a fork of a truck and fitted between said ends with a swivel hook that can be engaged with a hoist or crane or have a load suspended therefrom, each end of said member being provided with a shackle to which lifting ropes, chains or the like can be engaged and the load evenly spread, balanced and controlled.

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TITLE

A load lifting attachment for use with a fork lift truck, hoist, crane or the like.

This invention relates to an attachment capable of being quickly and easily fitted to the forks of a fork lift truck so as to enable a load to be suspended from the said forks and lifted or lowered by raising and lowering the forks which serve as a jib.

As will hereinafter become apparent the attachment may also with advantage be used separately with a hoist or crane. With both its uses the load is spread evenly between lifting points on the attachment so as to be evenly balanced and manipulated and controlled.

According to the present invention there is provided a load lifting attachment for use with the fork lifts of a fork lift truck, or with a hoist or crane, that comprises a main member adapted at each of its two ends to be engaged with the forks of a fork lift truck and provided at each of said ends with a shackle or the equivalent to which load lifting chains, ropes or the like can be engaged and the load spread and distributed, said main member being fitted centrally between said ends with a hook mounted in such a manner that in one position in which it can depend from said member, it can be used as a lifting hook, or in an alternative position into which it can be swung upwardly to extend above said member,

can be engaged with a hoist or crane and a load raised by chain or ropes connected with said shackles.

The attachment thus enables a load to be lifted in say one of three different ways viz, by connecting the attachment to the fork lifts of a fork lift truck and coupling the load to the two end shackles; by coupling the attachment to said forks and using said centrally disposed hook in its downwardly directed position, or using the attachment separately from a fork-lift truck with the hook in an upwardly directed position and engaged with a hoist or crane and a load coupled to said two end shackles on the attachment.

According to a preferred embodiment of the invention tie members are provided that facilitate fixing of the attachment to the forks of a fork-lift truck to prevent unintended movement of the attachment relatively to said forks, and also facilitate use of the attachment with varying sizes of forks of different fork-lift trucks.

To enable the invention to clearly be understood and readily carried into effect a preferred embodiment thereof will now be described by way of example with reference to the accompanying drawings, wherein:-

Figure 1 is a perspective view illustrating the general principle of the invention and one way of using the attachment,

Figure 2 is a perspective view of the attachment drawn to a larger scale,

Figure 3 illustrates how the attachment is formed with sleeves to enable it to be slid into position on the forks of a fork-lift truck,

Figure 4 shows how the attachment may be used independently of a fork lift and solely in conjunction with a hoist or crane,

Figure 5 is a rear perspective view of tie members by which the attachment may be securely held in position on lift forks,

Figure 6 illustrates how the ties are fitted to lift forks and connected to the attachment after the latter is slid on to the forks, and

Figure 7 is a view showing the attachment used separately and engaged with a hoist or crane.

Referring firstly to Figure 1 which shows the attachment applied to a fork lift, the invention basically consists in providing a main member consisting of two laterally spaced apart angle section parallel beams 1 which are adapted, as hereinafter fully explained, to be quickly and esily securely attached, in a readily

removable manner, to the forks 2 of a fork lift truck so as to enable said forks to be utilized as a jib and raise or lower a load connected to the attachment. The beams 1 are formed centrally between their ends with aligned holes 3 for receiving a pivot pin 4 from which can be suspended a hook 5, preferably a swivel hook, with which a load (according to one use of the attachment) can be engaged. These beams 1 can be of angle, channel or other suitable section metal members to bear a load and spread the latter over the fork area to give stability.

Plates 6 (Figure 2) are fixed to the ends of the beams 1 and serve to hold the beams together and act as load spreaders, these plates 6 depending from the beams and each being formed adjacent to its lower end with a hole 7 through which can pass a suitable hook or shackle 8, the hole 7 preferably being triangular to take the pin end of the shackle 8 with which is engaged a load lifting chain or rope 8a.

As shown in Figure 3, two angle-section members 9 are used to join the plates 6 to the beams 1 where they meet to form sleeves that can be slid on to the forks 2.

Two angle section plates 10 (Figure 4) are fixed to the back of the beams 1 and these plates 10 are formed with bolt holes 10a through which bolts can be engaged

and passed through holes 15 at the front ends of ties 11 about to be referred to. This Figure 4 illustrates how the attachment, by its hook 5 (which is reversed so as to extend upwardly from the beams), can be suspended from a hoist, or crane, so as to serve as a load spreader as diagrammatically illustrated by Figure 7.

To enable the attachment to be secured to the forks 2 of a fork lift truck the side plates 6 and the angle plates 9 are formed with holes 6a and 9a respectively for the reception of bolts that can tighten the attachment sideways and vertically on the forks 2 where they pass through said sleeves. Due to the taper on the forks 2, ties 11 (Figures 5 (rear view) and 6 (front view)) are provided that are formed at their rear ends with abutments 12 that engage behind the forks to prevent the attachment sliding forwards and a bar 13 is fixed to the ties near the heel of the fork to prevent the tie 11 dropping down. A transverse member 14 at the front of each tie is formed with the bolt hole 15 (previously referred to) to faciliatate fixing of the angle plates 10 of the attachment to the ties and for adjustment purposes.

When used the ties 11 are first placed over the forks 2 of a fork lift truck and the attachment is then slid over the forks and the attachment bolted to said forks and tightened to fit the attachment to different

sizes of forks. The fork lift can then be used as a crane by raising and lowering the forks.

Existing known attachments for use with fork lift trucks are adapted to replace the forks with a jib attachment, or involve sliding of another jib, with sleeves attached, on to existing forks. Both these known attachments are heavy, cumbersome and expensive.

Advantages of the attachment of this invention are that (a) it can be safely used in all industries where fork lift trucks are used; (b) it is ideal for use on occasions where the odd lift has to be made and where fork lift forks themselves are not suitable; (c) it is light in weight and can be quickly and easily fitted to, and subsequently removed from, a fork lift truck and (d) by reversing the hook 5, i.e. swinging it upwardly from its downwardly directed position shown in Figures 1, 2 and 6 to its upwardly directed position shown in Figures 4 and 7, the attachment can be used as a load spreader for general purpose work on a crane or hoist in a workshop, warehouse or elsewhere.

Although the attachment has been described as being constructed from beams, end plates and angle pieces it will be appreciated that it may be designed to form these parts integrally as castings.

CLAIMS

1. A load lifting attachment for use with the fork lifts of a fork lift truck, or with a hoist or crane, characterised in that it comprises a main member (1) adapted at each of its two ends (9) to be engaged with the forks (2) of a fork lift truck and provided at each of said ends with a shackle or the equivalent (8) to which load lifting chains, ropes or the like (8a) can be engaged and the load spread and distributed, said main member (1) being fitted centrally between said ends with a hook (5) mounted in such a manner that in one position in which it can depend from said member, it can be used as a lifting hook, or in an alternative position into which it can be swung upwardly to extend above said member, can be engaged with a hoist or crane and a load raised by chain or ropes 8a connected with said shackles 8.

2. A load lifting attachment according to Claim 1, characterised in that tie members (11) are provided that facilitate fixing of the attachment to the forks (2) of a fork-lift truck to prevent unintended movement of the attachment relatively to said forks, and also to facilitate use of the attachment with varying sizes of forks of different fork-lift trucks.

3. A load lifting attachment according to Claim 1 or 2, further characterised in that said main member (1) comprises two laterally spaced apart parallel beams bridged between their ends by a pivot pin (4) on which is mounted a swivel hook (5) that when positioned to depend from said main member can be engaged with a suspended load and when raised to extend above said member can be engaged and suspended from a hoist or crane.

4. A load lifting attachment according to Claim 1, 2 or 3, characterised in that the main member (1) is formed with sleeves (9) that can be slid on to and engaged with the forks (2) of a fork lift truck.

5. A load lifting attachment according to Claim 3 and 4, characterised in that said beams constituting the main member (1) are connected together at each end by a plate, (6) said plate (6) and the adjacent sleeve (9) each being formed with a hole (6a and 9a respectively) for reception of bolts for tightening the attachment to said forks (2) where the latter pass through said sleeves (9).

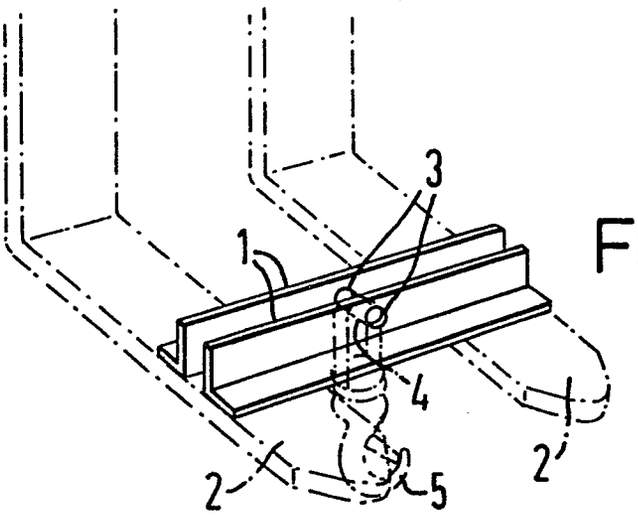

FIG.1

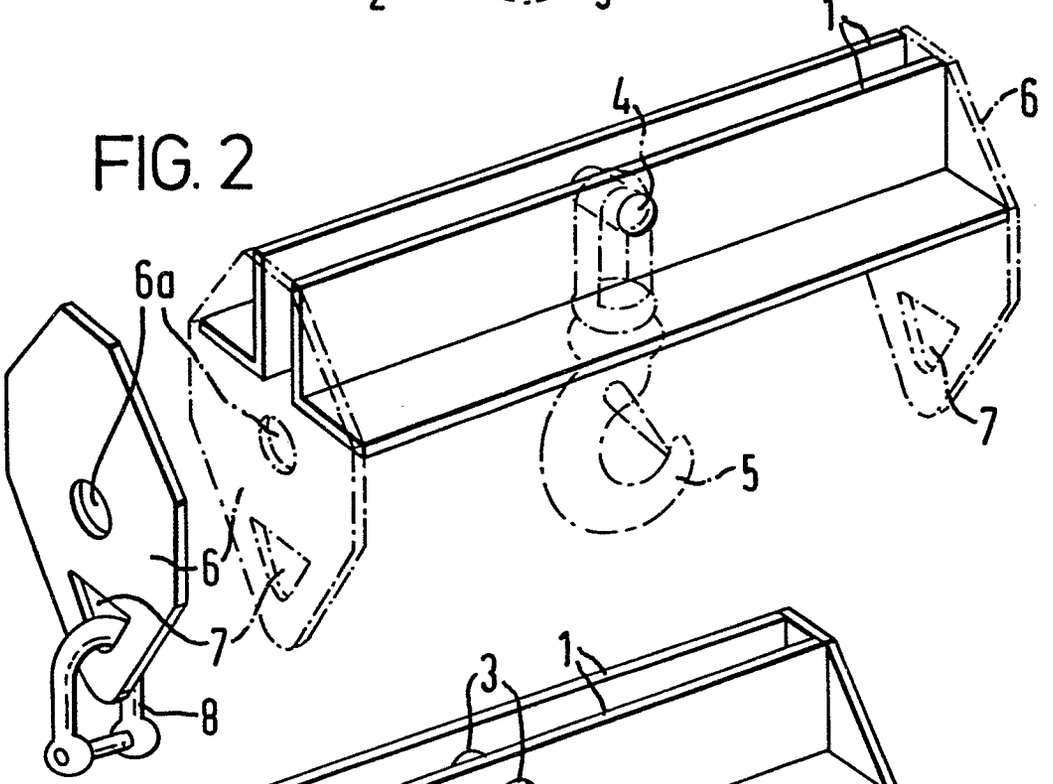

FIG. 2

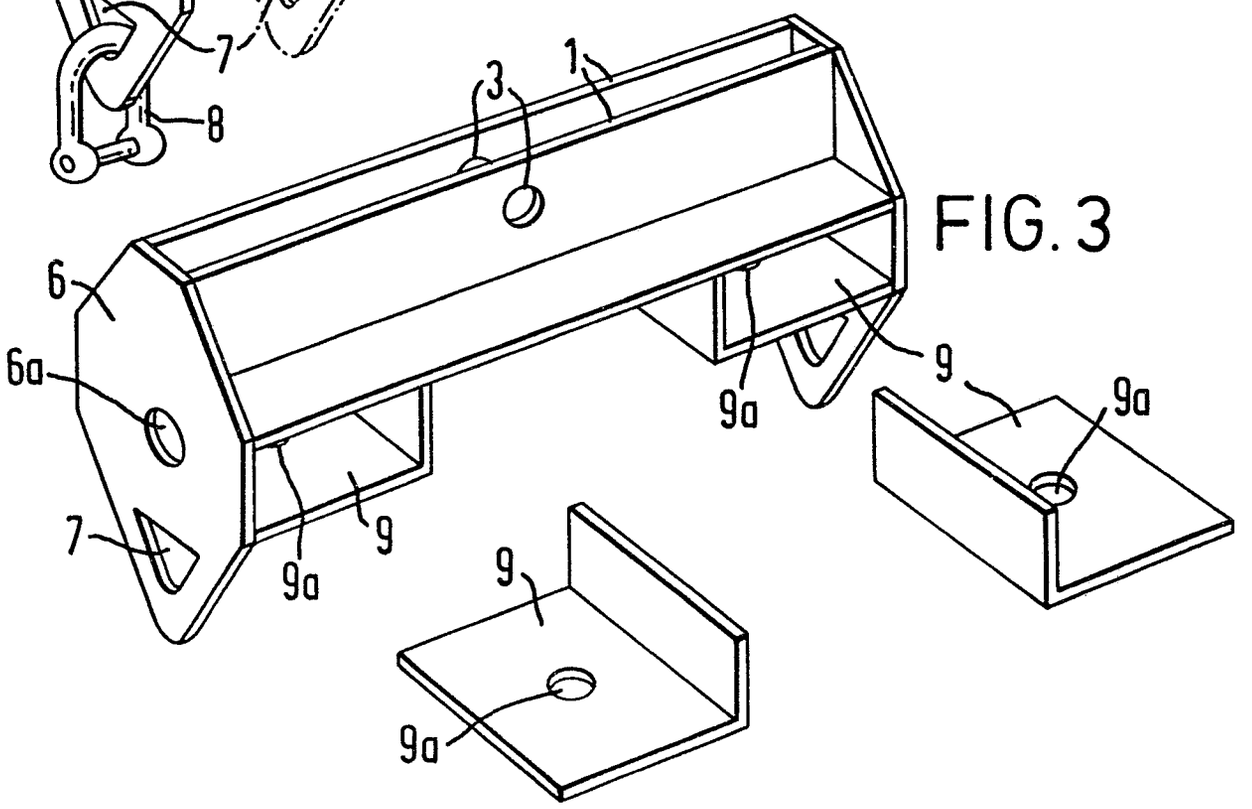

FIG. 3

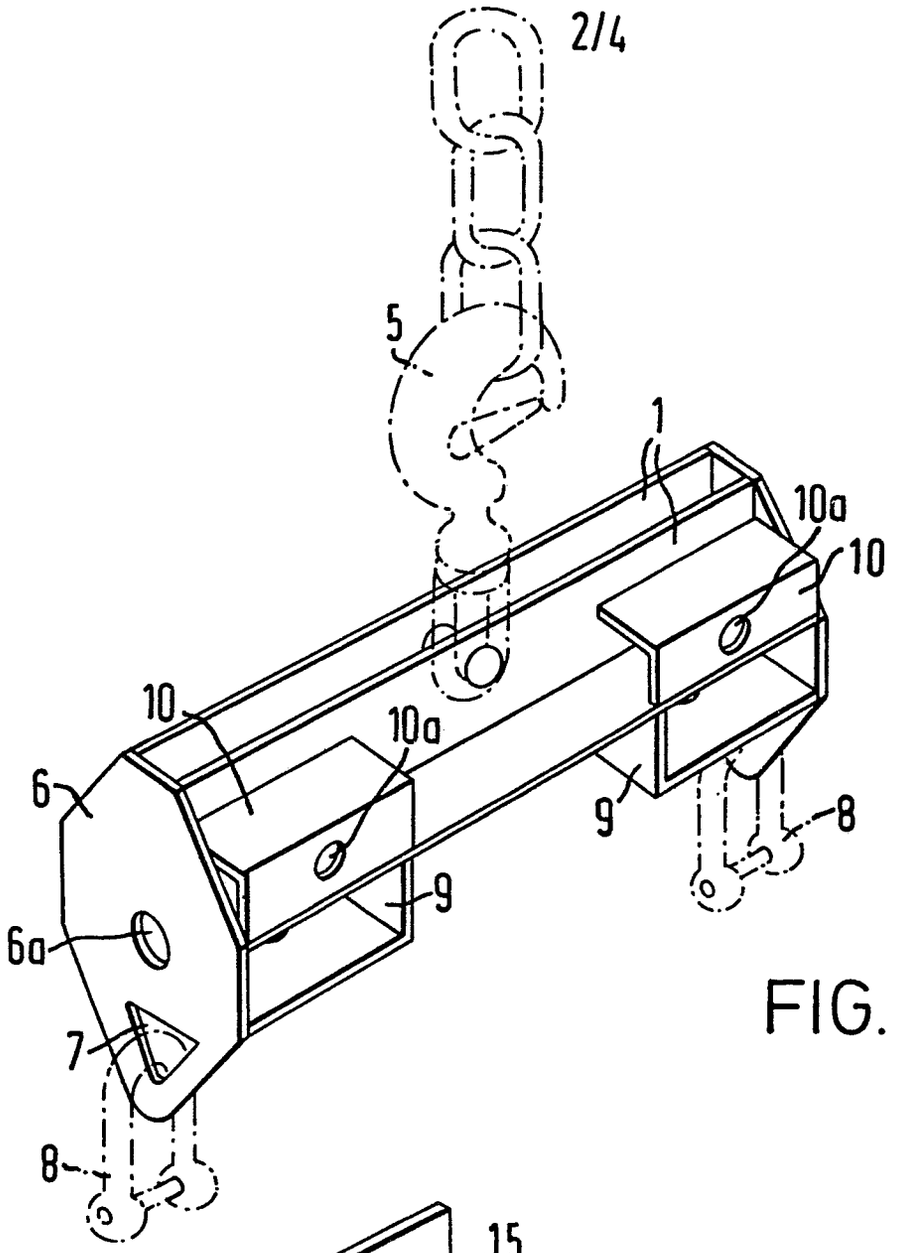

FIG. 4

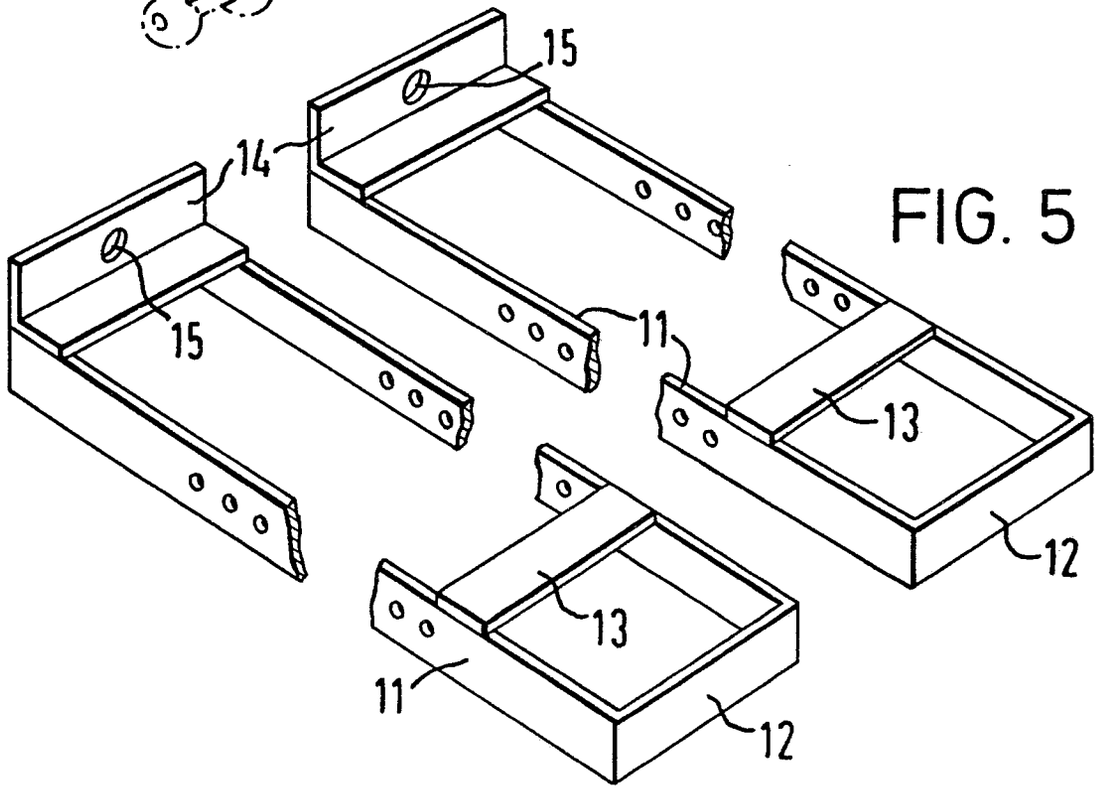

FIG. 5

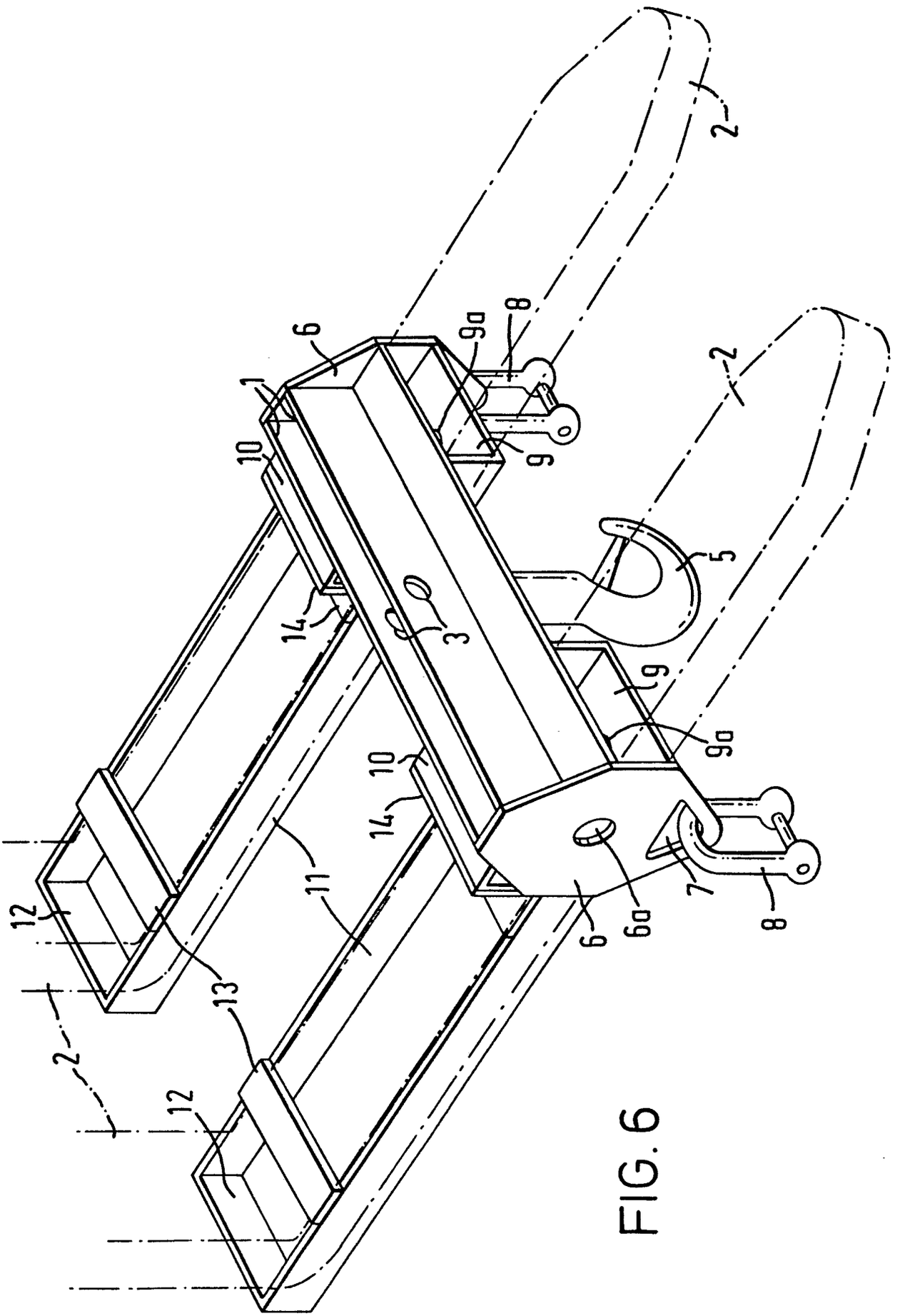

FIG.6

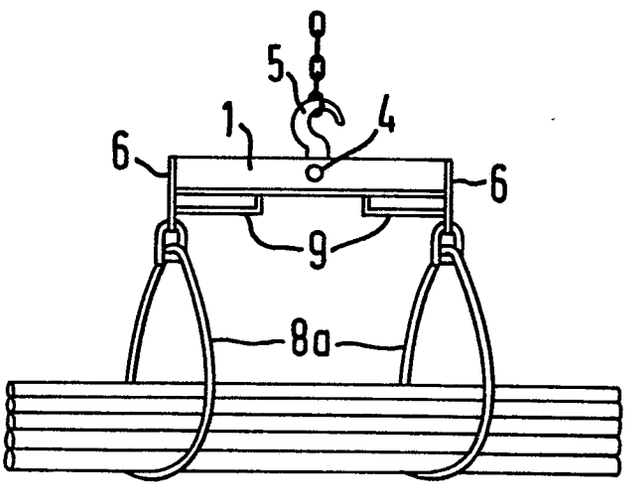

FIG. 7