connection between a skidding device and a skid beam according to the present invention.

Figures 8 to 10 are schematic top views of different embodiments of means for adjusting pin positions.

Figures 1 and 2 show a prior art skidding device installed on a drilling platform 1. The platform comprises skid beams 2 that extend the full length of the top of the platform and e.g. form the top member of a deck truss. A skid base 3 spans the two skid beams 2 and supports e.g. a drilling rig and equipment 4. The skid base 3 has two transverse I-beams 5 spanning the gap between the skid beams 2 and two further beams 6 to complete the rectangular skid base assembly. Hydraulic cylinders 7 have one end pinned to the skid base 3. The other ends of the cylinders are pinned to shoes, i.c. claws 8, to anchor the cylinders to the skid beams.

In this example, the claws ride upon cover plates 2' which form top surface of the skid beams 2. A row of holes 9 are cut through the cover plates 2' before they are welded to the top flanges of the skid beams 2. An elongate cylindrical pin (hidden from view) is slidably carried in each of the two claws 8. The bottom surface of each of two pins is sloped.

The various hydraulic lines, reservoirs, and controls to operate the hydraulic cylinders are not illustrated, as their selection, assembly, and usage is well known in the art.

During operation, the pin in each of the claws is lowered into a hole 9 in a cover plate 2' to positively connect (lock) the claws to the skid beams 2, and the rods of the hydraulic cylinders 7 are extended. The edges of the lower ends of the cylindrical pins thus bear against the sides of the holes in the cover plates, fixing the claws with respect to the platform, and the skid base will be moved as the rods extend. When the rods have been extended,

and the skid base 3 moved, as much as desired, the claws 8 are pulled toward the skid base 3. At this point, the sloped bottom surfaces of the pins are disposed against the edges of holes 9 of the cover plates 2'. The force on the claws 8 will cause the pins 26 to retract upwardly and the claws will be pulled toward the skid base.

Figure 3 shows a skidding device 10 according to the present invention for skidding a heavy object 4 supported on e.g. two parallel skid beams 2. The device 10 comprises at least one hydraulic cylinder, in this example two parallel hydraulic cylinders 7, one end of each of which is pinned to the object and the other end is pinned to a shoe 8 that is configured for connection to a skid beam 2. The shoe 8 comprises a plurality of pins 11, in this example four pins separated in the transport direction and arranged on an imaginary line that extends in that direction and parallel to the centerline of the skid beam 2. The skid beam 2 in turn comprises groups of openings 9 corresponding in number and mutual distance to the pins in the shoe.

The pins are slidably mounted in pin bearings 12 (shown in Figures 5 to 7) to enable extending the pins in the openings 9 in the skid beams to lock the shoe to the skid beam and retracting the pins outwards from these openings to unlock the shoe from the skid beam. The pin bearings 12 in turn are slidably mounted in or on the shoe, e.g. via a support frame, to enable adjusting the positions of the pins in the direction of transport.

Figure 4 illustrates (in an exaggeration to make the issue clearer) a misalignment between the openings 9 in the skid beam 2 and the pins 11 in the shoe. Such misalignment occurs if the tolerances in the positioning of the openings in the skid beam are not perfect. In this example, if the first pin and opening (seen from left to right in Figure 4) are the reference, the second and third openings are too far to the left and the fourth opening is

CLAIMS

1. Device (10) for transporting, in particular skidding or jacking, a heavy object (4) supported on at least one guide (2), comprising an actuator (7) for effecting transport, in particular at least one hydraulic cylinder, one end of which is configured for connection to the object (4) or a foundation and the other end is connected to a shoe (8) configured for connection to the guide (2), **characterised in that** the shoe (8) comprises at least two pins (11) configured to be inserted into openings (9) in the guide (2) to provide, at least in the direction of the guide (2) a positive connection between the shoe (8) and the guide (2), wherein the position of at least one pin (11) is adjustable in the direction of transport and/or in a direction opposite to the direction of transport.

2. Device (10) according to claim 1, wherein the positions of all pins (11) are adjustable in the direction of transport and/or in a direction opposite to the direction of transport.

3. Device (10) according to claim 1 or 2, wherein the shoe (8) comprises a support frame and the pins (11) are slidably mounted in or on the support frame.

4. Device (10) according to any one of claims 1–3, wherein the pins (11) are slidably mounted in pin bearings (12) to enable extending the pins (11) in the openings (9) in the guide (2) to lock the shoe (8) to the guide (2) and retracting the pins (11) from these openings (9) to unlock the shoe (8) from the guide (2) and/or wherein the pins (11) are slidably mounted in or on the shoe to enable adjusting the positions of the pins (11) in the direction of transport and/or in a direction opposite to the direction of transport.

5. Device (10) according to any one of claims 1–4, comprising at least one actuator (13; 14–18; 19) to slide and/or urge the pins (11) to one side of the openings (9).

6. System (10) for transporting, in particular skidding or jacking, a heavy object (4), comprising at least one guide (2), such as one or more rails or skid beams, attached to the object (4) or attached to a foundation, an actuator (7) for effecting transport, in particular at least one hydraulic cylinder, one end of which is connected to the object (4) or the foundation and the other end is connected to a shoe (8) which in turn is connected to the guide (2), **characterised in that** the shoe (8) comprises at least two pins (11) inserted or insertable into openings (9) in the guide (2) providing, at least in the direction of the guide (2), a positive connection between the shoe (8) and the guide (2), wherein the position of at least one pin (11), preferably all pins (11), is adjustable in the direction of transport and/or in a direction opposite to the direction of transport.

7. System (10) according to claim 6, comprising at least one actuator (13; 14–18; 19) to slide and/or urge the pins (11) to one side of the openings (9).

8. Method of transporting, in particular skidding or jacking, a heavy object (4) supported on at least one guide (2) comprising a series of openings (9), comprising the steps of:

connecting one end of a device (10) comprising an actuator (7) for effecting transport, in particular at least one hydraulic cylinder, to the object (4) or the foundation,

connecting the other end of the device (10) to the guide (2) by inserting at least two pins (11) from that end of the device (10) into openings (9) in the guide (2), and

extending the actuator (7) to transport the object (4), wherein, after inserting the pins (11) in the openings (9), the position of at least one pin (11), preferably all

pins (11), is adjusted in the direction of transport or in a direction opposite to the direction of transport.

9. Method according to claim 8, wherein the at least one pin (11), preferably all pins (11), is urged to the side of the opening where, during transport, the load is transferred, and locked.

10. Device (10) according to any one of claims 1–5, wherein the pins (11) are separated in the transport direction.

11. Device (10) according to any one of claim 1–5 and 10, wherein the guide (2) comprises groups of openings (9) corresponding in number and mutual distance to the pins (11) in the shoe (8).

12. System (10) for transporting, in particular skidding or jacking, a heavy object (4), comprising at least one guide (2), such as one or more rails or skid beams, attached to the object (4) or attached to a foundation, an actuator (7) for effecting transport, in particular at least one hydraulic cylinder, one end of which is connected to the object (4) or the foundation and the other end is connected to a shoe (8) which in turn is connected to the guide (2), **characterised in that** the shoe (8) comprises at least two pins (11) inserted or insertable into openings (9) in the guide (2) providing, at least in the direction of the guide (2), a positive connection between the shoe (8) and the guide (2), comprising at least one actuator (13; 14–18; 19) to slide and/or urge the pins (11) to one side of the openings (9).