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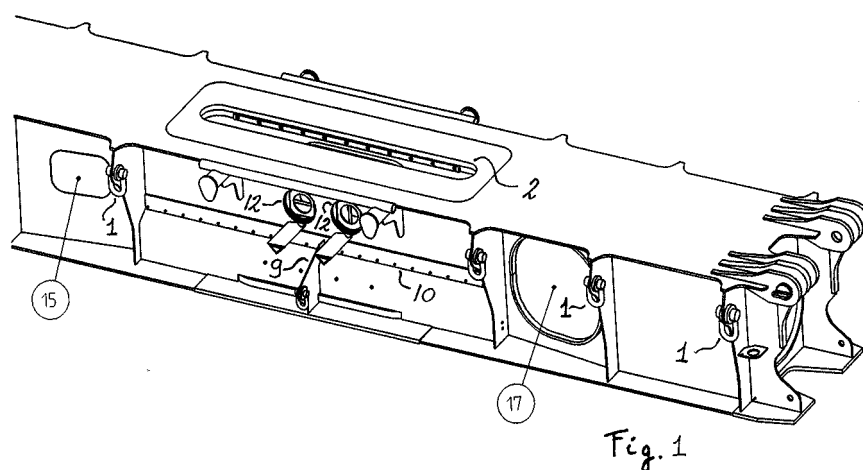
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(54) **Equalizer for displacing the engagement point of a hoist**

(57) The invention relates to an equalizer to lift a heavy load, e.g. a railway switch or part of it, with a hoist. It has means to displace the engagement point between equalizer and hoisting member longitudinally of the equalizer, preferably continuously. Said displacement

means are adapted such that said displacement is possible while the load suspends from the equaliser or is connected therewith. The displacement means have a linear driving element. The displacement means comprise a longitudinally extending guide track and a there along movable member



Description

[0001] The invention is concerned with an equalizer to lift heavy loads, e.g. a railway switch or part of it, with a (e.g. railway) hoist.

[0002] The object of the invention is to easily balance the hoisting load. A further object is to make the construction height of the assembly of equalizer and hoisting hook as small as possible with a view to lifting below the overhead power cable of a railway track.

[0003] The proposal is thus to equip the equalizer with means to displace the point of attachment between, equalizer and hoisting cable longitudinally of the equalizer, preferably continuously. Preferably said displacing means are adapted such that displacing is possible while the hoisting load suspends from the equalizer or is connected with it. The displacement means preferably have a linear driving element, such as hydraulic ram or electrically driven screw spindle. Preferably those means, or part of it, are at least partly embedded in the equalizer.

[0004] The displacement means comprise in a preferred embodiment a guiding track extending longitudinally of the equalizer, and an there along movable element. The hoisting cable of the hoist can be fixed to said element, e.g. through the hoisting hook.

[0005] A non-limiting example of the equalizer of the invention is now disclosed referring to the enclosed drawing, showing in:

Fig. 1 a perspective view, broken;
Fig. 2 a top view;
Fig. 3 a side view;
Fig. 4 a section along line IV-IV in fig. 3;
Fig. 5 a section along line V-V in fig. 2;
Fig. 6 a section along line VI-VI in fig. 3;
Fig. 7 a perspective view of a part.

[0006] The drawing shows the central, part of an equalizer, comprising a thin walled, prismatic element of e.g. welded steel plate, both ends of which are identical. An extension can be coupled to the ends. The hoisting load can be fixed to the eyes.

[0007] Centrally within the top plate there is a longitudinally extending gap 2 into which the hook of the hoisting cable can be inserted. Within the equalizer below the gap 2 there is a longitudinally movable coupling member 3 (fig. 7) with which the hook is coupled. A cylinder 4 (fig. 4) is coupled to the member 3 to move the member 3 to the front and back. The cylinder 4 obtains propulsion power from a motor unit within the equalizer, e.g. a combustion engine.

The member 3 has a sideways projecting edge 5 at both sides, each engaging below a supporting edge 6 at the equalizer. This provides a slide bearing, processed for low friction, e.g. by making the one edge 5, 6 from e.g. stainless steel and the other from Teflon. The member 3 also has a side guide 7 in the equalizer.

[0008] The member 3 can be moved by the cylinder 4,

wherein the pole of the hook slides within the gap 2 and is sideways guided by guides 8. The equalizer is externally provided with a pointer 9 and scale 10 or such display means, connected to the member 3, to indicate the relative position of the member 3. The gap 2 is e.g. 160 cm long, such that the hook can move 80 cm in both directions from the centre of the equalizer.

[0009] After engaging the hook, pins 11 (fig. 4) are inserted in the four holes in the member 3, to couple the hook and the member 3. These pins 11 are positioned through holes 11 in the equalizer.

[0010] In stead of a slide bearing of the member 3, e.g. a roller bearing can be selected. In view of the heavy loads (30 ton or more), a slide bearing is preferred.

[0011] Different embodiments are also feasible, e.g. obtained by combining one or more features (or its equivalent) of the one in here disclosed embodiment with one or more features (or its equivalent) of one or more different in here disclosed embodiments. Or by replacing a disclosed feature by a functional equivalent, or eliminating it.

Claims

1. Equalizer to lift a heavy load, e.g. a railway switch or part of it, with a hoist, comprising means to displace the engagement point between equalizer and hoisting member longitudinally of the equalizer, preferably continuously.
2. Equalizer according to claim 1, wherein said displacement means are adapted such that said displacement is possible while the load suspends from the equalizer or is connected therewith.
3. Equalizer according to claim 1 or 2, wherein the displacement means have a linear driving element, which are preferably at least partly embedded in the equalizer.
4. Equalizer according to any of claims 1-3, wherein the displacement means comprise a longitudinally extending guide track and a there along movable member, and/or a hoisting means is mounted to said member, e.g. through a hoisting member.
5. Equalizer according to any of claims 1-4, comprising one or more of the following: a thin walled, prismatic element with at both its ends an extension; a gap (2) into which the hook can be inserted; a displaceable coupling member (3) for the hook; a motor unit, e.g. combustion engine; a bearing (5, 6) and a side guide (7) for member (3); a guide (8) for the hook; a display means (10); locking means (11) associated with member (3).

