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GRAB

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2 Sheets-Sheet 1

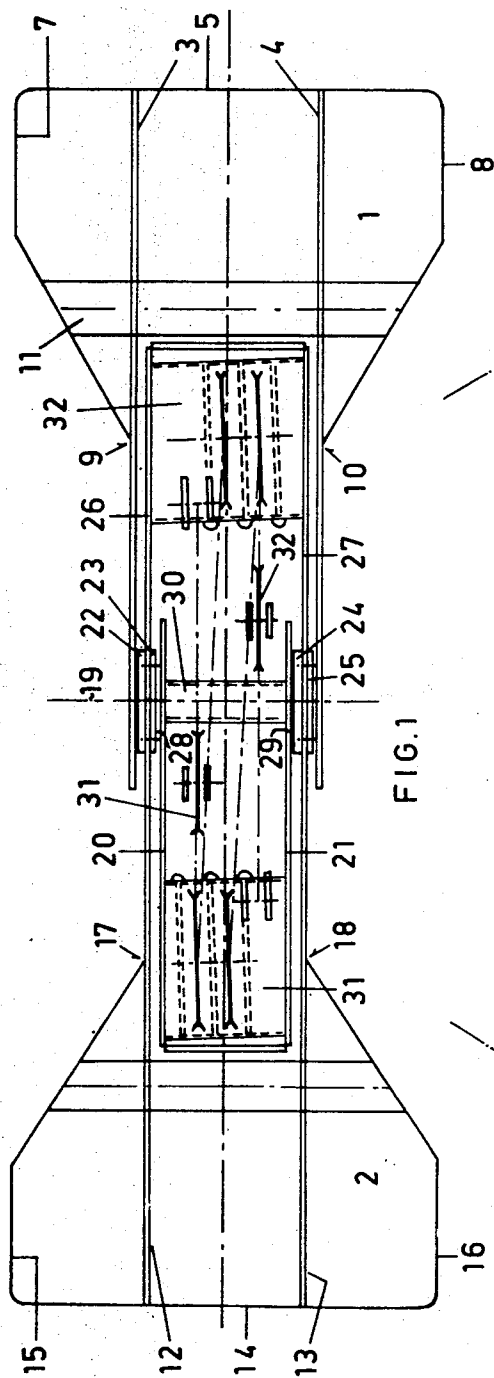


FIG. 1

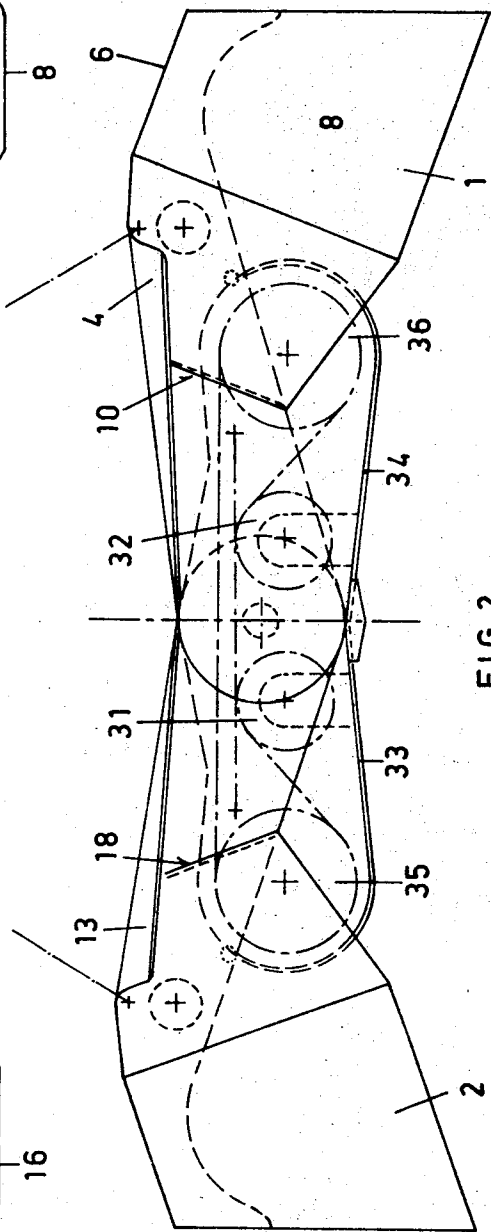


FIG. 2

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GRAB

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3 Claims

ABSTRACT OF THE DISCLOSURE

A grab comprising two mutual pivoted cisterns the supporting plates of which are extended beyond the fulcrum and at their ends are provided with means for by-passing and tying up the control cables. The pivot for the supporting plates is so designed, that the portion of the supporting plate of a cistern connected to said cistern is located on one side of that pivot and its extension carrying the by-pass and securing means for the controlling cable on its other side, whereas the portions of the other cistern substantially lie in the same plane.

This invention relates to a grab comprising two mutual-pivotal cisterns the supporting plates of which are extended beyond the fulcrum and at their ends are provided with means for by-passing and contingently tying up the controlling cable or cables.

The invention has for its object to provide a grab of the type described which normally is indicated as a grab, so that the construction as a whole is light in weight and easily manageable whereas from his control cabin the operator of the grab is in a position to properly survey the run of the controlling cable or cables and the filling and emptying of the grab, respectively.

According to the invention the pivot for the supporting plates is so designed that the portion of the supporting plate of a cistern connected to said cistern is located on one side of said pivot and its extension carrying the by-pass and securing means for the controlling cable or cables on its other side, whereas said portions of the other cistern substantially lie in the same plane.

By this measure the grab cisterns are capable of being opened to such an extent that with sufficient spread their bottoms will extend in the vertical plane. Furthermore, in this way a grab can be constructed which is of light-weight, nevertheless robust design. The pivotal construction as such can also be extremely simple.

In order to prevent as much as possible the by-pass pulleys and controlling cables, from being damaged, the elongated portions of the supporting plates of the cisterns, positioned on the side of the latter and supporting the by-pass pulleys of the controlling cable or cables, are connected at their edges by a plate to form a protective casing for said by-pass pulleys. A further advantage of said measure is that the grab in itself becomes somewhat more rigid.

The grab of the invention comprises no frame or housing in which the cisterns with their extended portions are received.

For according to the invention the grab cisterns have ears formed on their backs and spaced from their bottoms for tying up cables or the like which on the other hand are connected to a common point of suspension. This measure contributes to a material saving of weight in the grab construction.

The invention will be further explained below with reference to the drawing.

In the drawing:

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FIG. 1 shows a top view of an opened grab according to the invention;

FIG. 2 is a side view thereof; and

FIG. 3 shows the grab of the invention perspectively schematically represented also in half-opened position.

In the drawing the grab cisterns are represented 1 and 2. Cistern 1 is provided with supporting plates 3 and 4 which are secured to the bottom 5 of the cistern 1, e.g., by welding. At its back, at 6, the cistern is fully opened. The bottom 5 extends along and beyond both sides of the supporting plates 3 and 4 and is connected to the side plates 7 and 8 having the pattern shown in FIG. 1, i.e., at 9 and 10 they are connected again to the supporting plates 3 and 4, e.g., they are fixed to them by welding.

11 shows a stiffening element, e.g., a tube forming a connection between the side plates 7, 8 mutually, and the supporting plates 3 and 4, respectively.

In a corresponding way the cistern 2 is secured to supporting plates 12 and 13 which are fixed to the bottom 14 by welding, whereas said cistern is sideways defined by plates 15 and 16, secured at 17 and 18 to the supporting plates 12 and 13, respectively. The supporting plates 3 and 4, and 12 and 13, respectively, are hingedly secured to each other at 19. According to the invention this is achieved in a particular manner. For the supporting plates 3 and 4 are disposed on the outside of the pivot 19, whereas the extensions 20 and 21 are positioned exactly on the other side of that pivot, in this case on its inside. 22 and 23 represent box bushes secured to the supporting plate 12, the extension of which is indicated 26. As appears from FIG. 1, the supporting plate 12 and its extension 26 may contingently consist of one piece.

Box bushes 24 and 25 are secured to the supporting plate 13, the extension of which is indicated 27. The supporting plate 13 with its extension 27 may also contingently form one entirety. 28 and 29 are journals forming the fulcrum for the pivot 19.

The journal 28 forms a fixed connection between the supporting plate 3 and its extension 20 whereas the journal 29 forms a fixed connection between the supporting plate 4 and its extension 21. The pivot 19 as a whole can be designed as a roller bearing; however it is also possible to apply a so-called slide bearing. A box bushing, represented in the drawing 30, mutually connects the supporting plate extensions 20, 21 and can also serve for stiffening the pivot 19. Possibly the pivot shaft of the pivot 19 could be extended so as to render the box bush 30 superfluous.

At 31 and 32 by-pass pulleys for controlling cables are represented.

For the protection of these cables as also of the pulleys plate-shaped connections 33 and 34 are provided, forming a downwards cover and/or casing, respectively, which also encloses the guiding pulleys 35 and 36 for the controlling cables. The by-pass pulleys 35 and 36 could possibly be enclosed in a housing of thick plate material with contiguous correspondingly joining plates 33 and 34, respectively.

At its upper side the entire construction remains accessible and surveyable so that the operator of the grab is in a position to survey constantly the run of the controlling cables.

Instead of being comprised in a housing or frame the grab of the invention is held in cables 37, 38 and 39, 40, respectively, which are fixed to the cistern in ears formed on it for that purpose.

These cables 37, 38, 39 and 40 pass to a central point of suspension which may be fixed to one or more lifting cables 42. All this results in a very efficient construction whereas in addition a considerable saving of weight is obtained.

I claim:

1. A grab having two mutually pivotal cisterns comprising controlling cables for said cisterns, a fulcrum, supporting plates for said cisterns pivoted on said fulcrum, said supporting plates having extensions extending beyond said fulcrum, means on said plates for securing said controlling cables, means for by-passing said extensions around said cables, said fulcrum for said supporting plates comprising pivots so that a portion of the supporting plate of a cistern connected to said cistern is located on one side of a pivot and its extension carrying the by-pass and securing means for the controlling cables on its other side so that said portions of the other cistern substantially lie in the same plane.

2. A grab according to claim 1 wherein said extensions

of said supporting plates are positioned on the side of said cisterns and have by-pass pulleys for said controlling cables and a plate connecting said extensions to form a protective casing for said by-pass pulleys and cables.

3. A grab according to claim 2 wherein said cisterns have ears formed on their backs and spaced from their bottoms for tying up said cables and a common point of suspension for said cables.

References Cited**FOREIGN PATENTS**

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