June 15, 1965 D. DE VRIES 3,189,093

WELL DRILLING PLATFORM

Filed Sept. 13, 1962 7 Sheets-Sheet 1

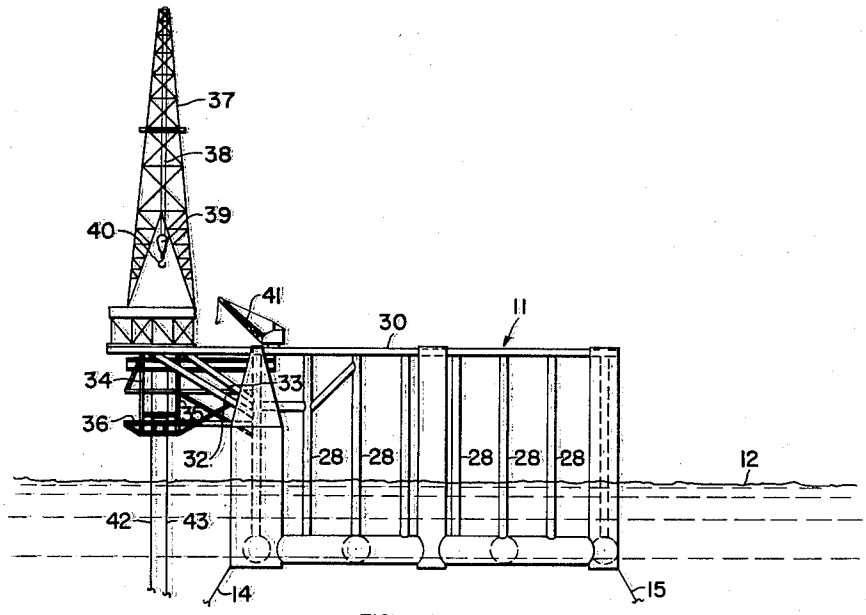

FIG. 1

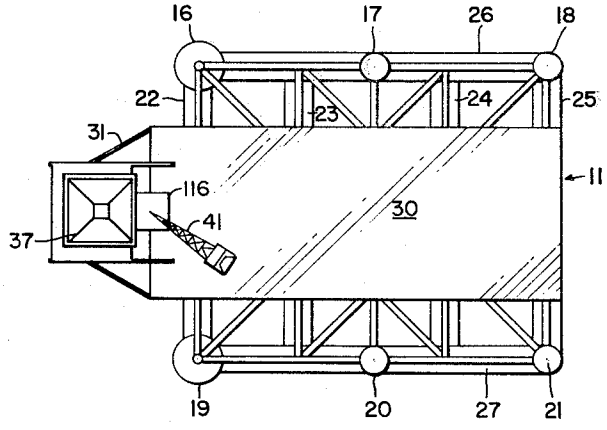

FIG. 2

INVENTOR:
D. DE VRIES
BY: D. I. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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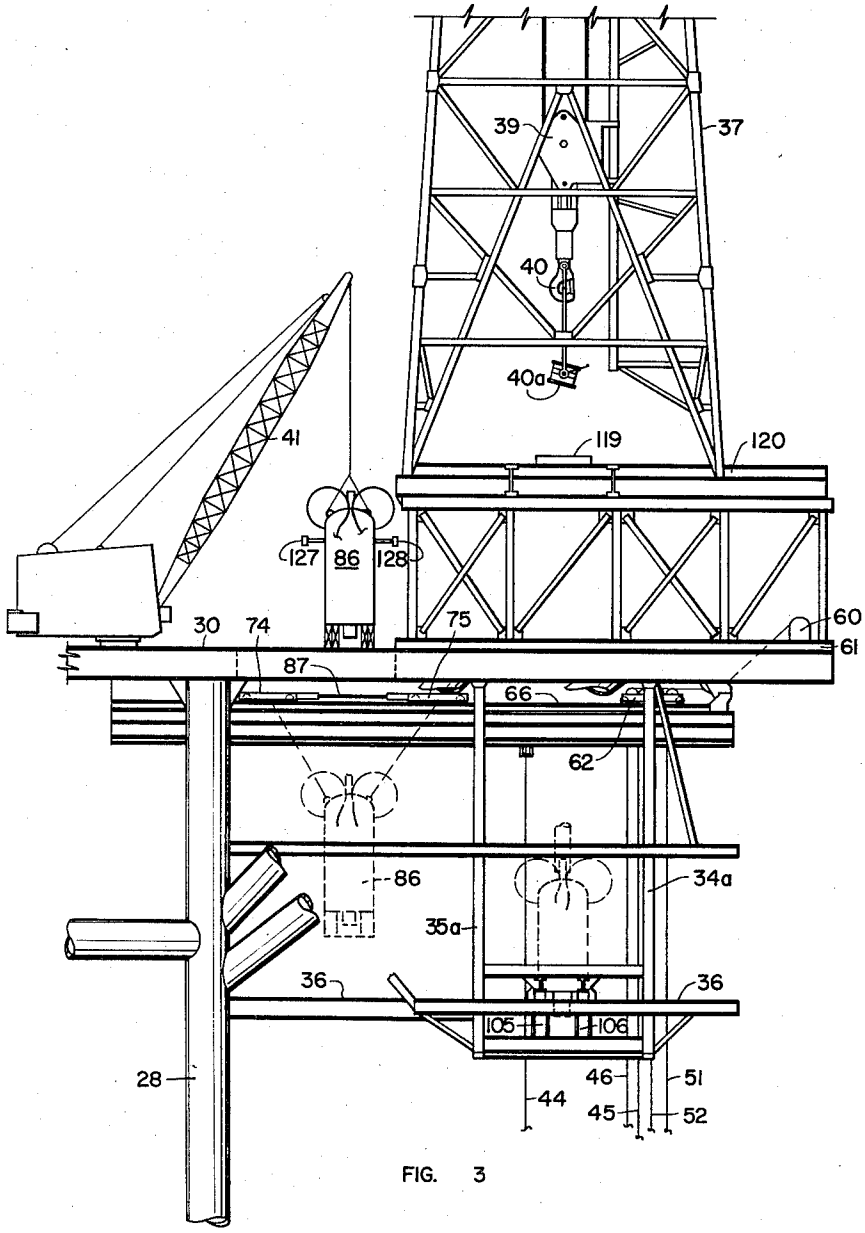

FIG. 3

INVENTOR:
D. DE VRIES
BY: J. H. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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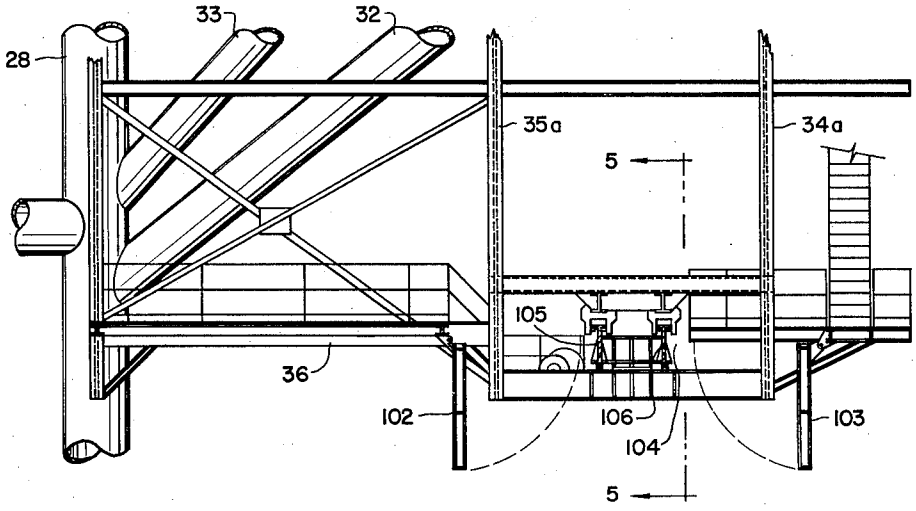

FIG. 4

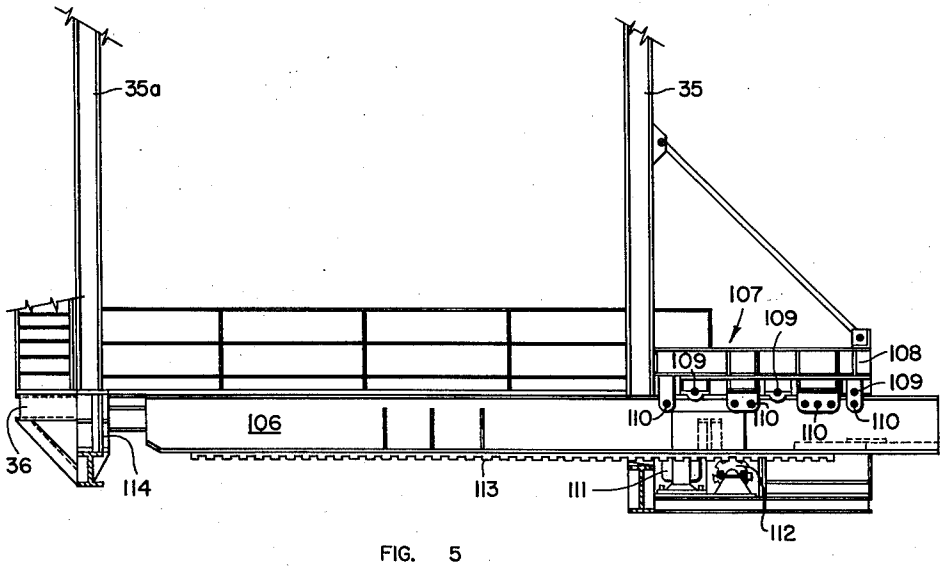

FIG. 5

INVENTOR:
D. DE VRIES
BY: A. H. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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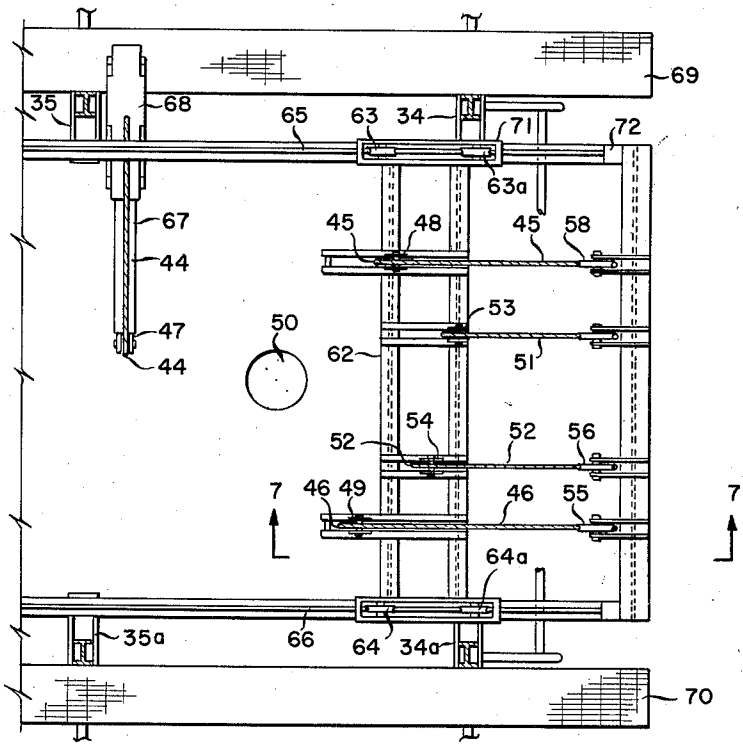

FIG. 6

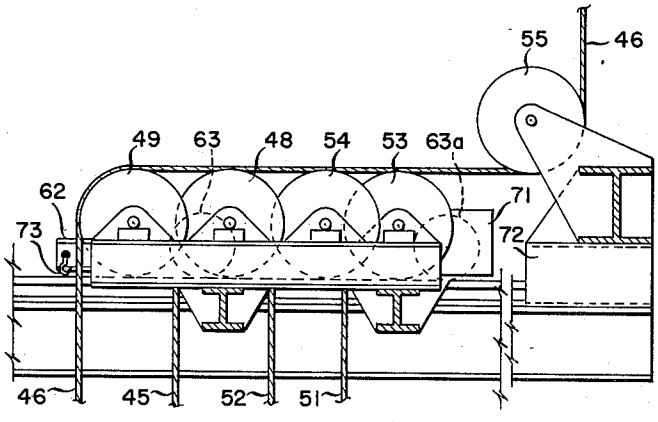

FIG. 7

INVENTOR:
D. DE VRIES
BY: J. H. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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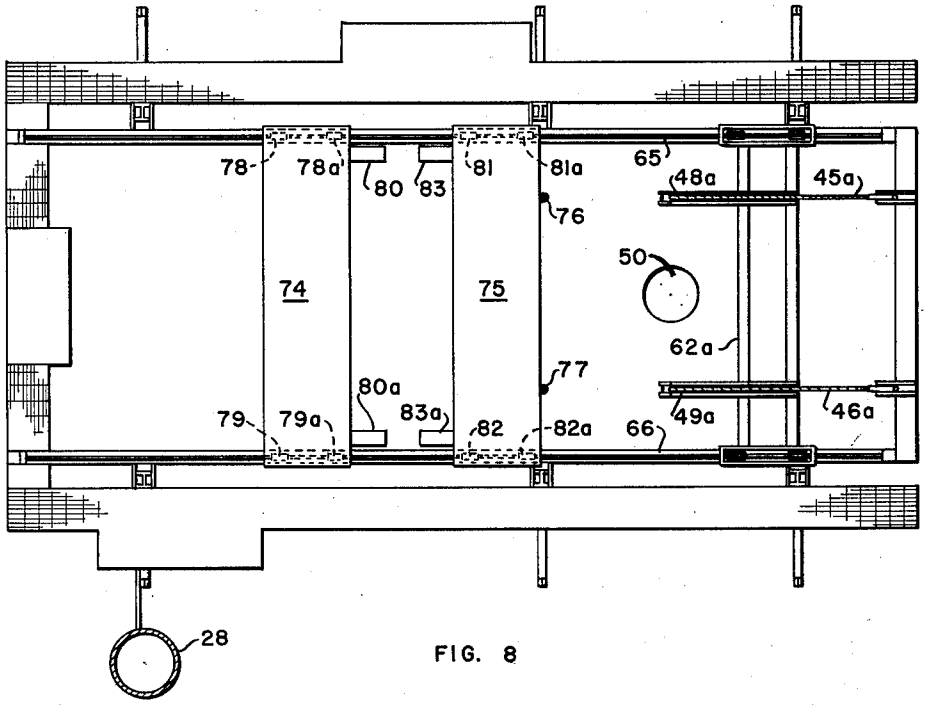

FIG. 8

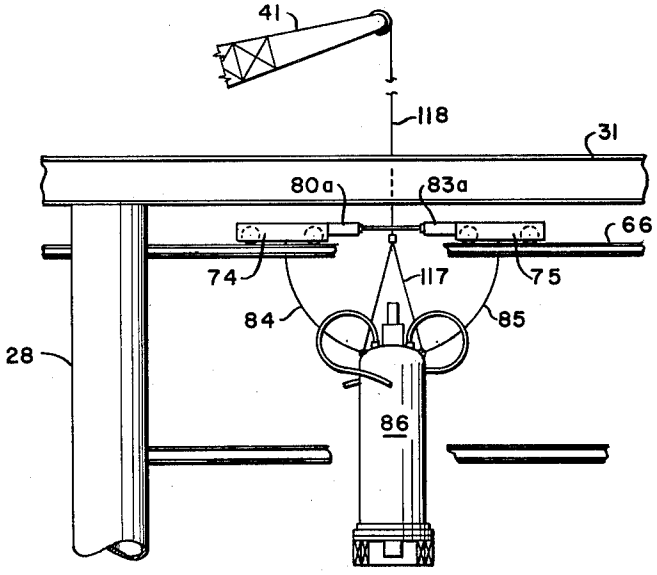

FIG. 9

INVENTOR:
D. DE VRIES
BY: J. H. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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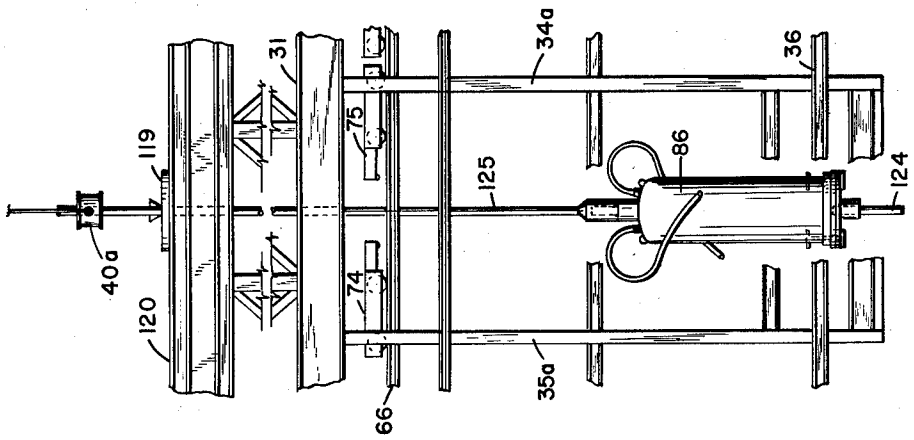

FIG. 12

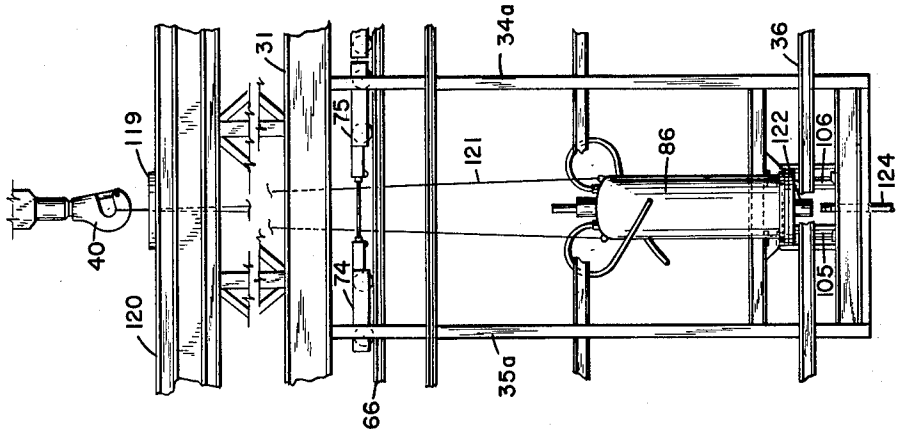

FIG. 11

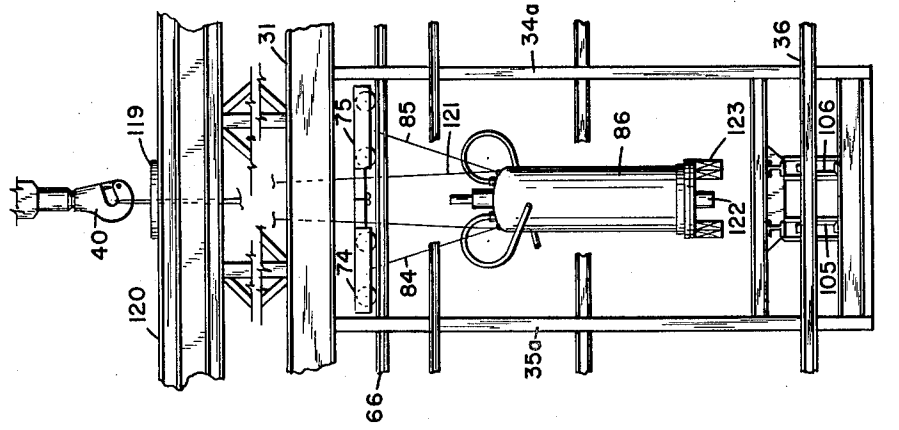

FIG. 10

INVENTOR:
D. DE VRIES
BY: A. H. McCarthy
HIS AGENT

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WELL DRILLING PLATFORM

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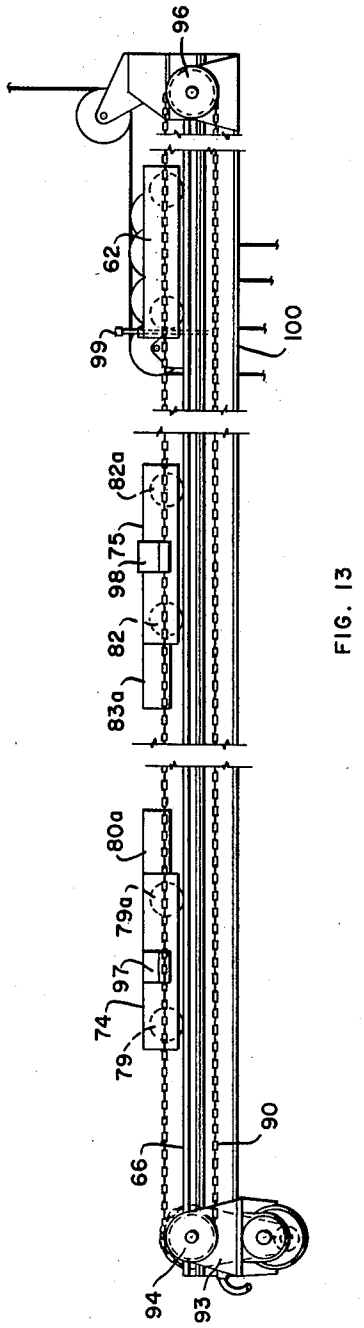

FIG. 13

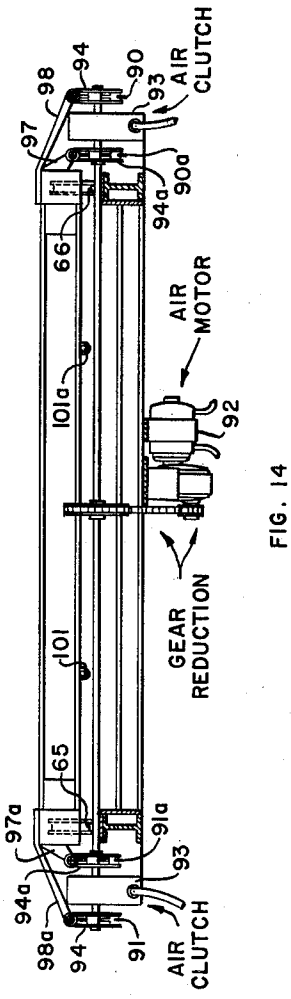

FIG. 14

INVENTOR:
D. DE VRIES
BY: A. H. McCarthy
HIS AGENT

United States Patent Office 3,189,093 Patented June 15, 1965

3,189,093

WELL DRILLING PLATFORM

Douwe de Vries, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1962, Ser. No. 223,385
8 Claims. (Cl. 166—46)

This invention relates to apparatus for use in drilling, completing and working over operations in oil and gas wells at offshore locations, and pertains more particularly to a method and apparatus for handling heavy well equipment on a drilling platform and subsequently lowering the equipment from the platform down through the water to a wellhead assembly.

In an attempt to locate new oil fields, an increasing amount of well drilling has been conducted at offshore locations, such for example, as off the coast of Louisiana, Texas and California. As a general rule, the strings of casing in a well, together with the tubing string or strings, extend to a point above the surface of the water where they are closed in a conventional manner that is used on land wells, with a conventional wellhead assembly being attached to the top of the casing. Recently, methods and apparatus have been developed for drilling and completing wells wherein both the well casinghead and subsequently the wellhead assembly and casing closure devices, are located underwater at a depth sufficient to allow ships to pass over them. Preferably, the casinghead and wellhead assemblies are located close to the ocean floor. In order to install well drilling equipment underwater at depths greater than the shallow depths at which a diver can easily operate, it has been necessary to design entirely new equipment for this purpose.

Time is of the essence in offshore well drilling operations which may cost in the order of $10,000 per day. Thus, it is desirable to have as much of the well equipment preassembled as possible so that the preassembled sections can be installed in the shortest time possible. The term "well equipment" as used hereinbelow refers to any piece or assemblage of equipment used in drilling or working-over a well, such for example, as a drilling wellhead assembly or a blowout preventer stack, which may comprise one or more blowout preventers connected together end to end above a wellhead connector or other device adapted to secure the blowout preventers to a casinghead. The term well equipment also includes production equipment, such for example, as a production wellhead assembly, commonly known as a Christmas tree, which controls the flow of oil or gas from a well and contains various components such as valves, valve operators, pressure-sensing devices, etc. For underwater wells, the essential components of a producing wellhead assembly are normally encased in a container to reduce corrosion or the accumulation of marine growth.

Well equipment in the form of a production wellhead assembly or production package, or in the form of a stack of blowout preventers for use in drilling a high pressure well, form a sizeable load or package of equipment which, depending upon the drilling conditions, may be 20 feet tall, 8 feet wide and may weigh as much as 80,000 pounds. It is most difficult to handle and maneuver an equipment package of this size and weight on a drilling platform, especially one that is in a floating position over the drill site. In order to lower equipment of this type into position at the wellhead, the hoist of the derrick on the drilling platform is generally used. However, due to the size of many of these equipment packages, it is not possible to lower the equipment package through the derrick floor as there is not enough room usually even between the structural members of the derrick floor to pass a package of this size. At the same time, costly delays would be

encountered in taking out a rig or derrick floor in order to lower an equipment package therethrough, and subsequently putting the floor back in place.

It is therefore a primary object of the present invention to provide a drilling vessel, platform or barge provided with suitable apparatus for handling large loads of equipment used during the drilling or working over of a well.

A further object of the present invention is to provide a drilling platform of suitable design whereby heavy loads of equipment may be preassembled on deck, or at another point, and subsequently transferred to a position below the derrick of the drilling platform whereby the necessary connections to the equipment may be made before lowering the equipment to a wellhead.

Another object of the present invention is to provide a method and apparatus for lowering a well equipment package through the main deck of a drilling platform to one side of a derrick thereon, moving the load to a position under the center line of the derrick, making the necessary equipment connections to the load, and subsequently lowering the equipment load into place at an underwater well assembly.

Still another object of the present invention is to provide guide lines between a floating drilling platform and an underwater wellhead assembly whereby equipment may be lowered on the guide lines from the vessel to the wellhead, the vessel also being provided with means for moving the guide lines to one side of the center line of the well and the derrick and maintaining constant tension on the guide lines in their offset position while moving equipment into place below the derrick of the barge prior to lowering the equipment to the wellhead.

These and other objects of this invention will be understood from the following description taken with reference to the drawing, wherein:

FIGURE 1 is a diagrammatic view taken in longitudinal projection illustrating a floating drilling platform positioned on the surface of the ocean;

FIGURE 2 is a plan view of the drilling platform of FIGURE 1;

FIGURE 3 is an enlarged diagrammatic view taken in longitudinal projection of a portion of the drilling platform of FIGURE 1 illustrating the lower portion of a derrick positioned on the drilling platform and an auxiliary deck positioned below the derrick;

FIGURE 4 is an enlarged diagramamtic view of the auxiliary deck of FIGURE 3 showing the load supporting means;

FIGURE 5 is a view taken along the line 5—5 showing in enlarged detail the retractable load supporting means on the auxiliary deck of FIGURE 4;

FIGURE 6 is a plan view taken in enlarged detail of the sheave dolly for the equipment guide lines shown in FIGURE 3;

FIGURE 7 is a view taken along the line 7—7 of FIGURE 6 showing in enlarged detail the arrangement of sheaves on the sheave dolly;

FIGURE 8 is a plan view showing the arrangement of another form of a sheave dolly mounted on tracks together with a pair of load carrying dollies;

FIGURES 9, 10, 11 and 12 are longitudinal views of a portion of the drilling platform illustrating successive steps in the transfer of an equipment load from a crane to load-supporting dollies, to retractable load-supporting means on the auxiliary deck and thence to the hoist system of the derrick;

FIGURE 13 is a side view taken in enlarged detail illustrating one form of a drive mechanism for the load carrying dollies on the present drilling platform; and,

FIGURE 14 is a view of the load-carrying dolly assembly and tracks of FIGURE 13 taken along line 14—14.

Referring to FIGURE 1 of the drawing, a drilling platform, vessel or barge, of any suitable floatable type, is generally represented by numeral 11 and is illustrated as floating on the surface of a body of water 12, and substantially fixedly positioned over a preselected drilling location by suitable barge or vessel positioning means, or by being anchored to the ocean floor by suitable anchors (not shown) connected to the anchor line 14 and 15. Equipment of this type may be used when carrying on well drilling operations in water depths varying from about 100 to 1500 feet or more. A typical drilling platform may comprise a hull made up of vertical buoyant members 16, 17, 18, 19, 20 and 21 secured to their lower end to horizontal buoyant members 22, 23, 24, 25, 26 and 27. The vertical buoyant members 16–21, together with additional vertical support members 28, form a support for the main deck 30 of the drilling platform 11. The main deck 30 may be provided with a conventional drilling slot (not shown) or may be provided with an outwardly extending section 31 which overhangs the hull member 22 on one side of the drilling platform. Suitable braces 32 and 33 may be utilized to support the overhang or extension section 31 of the main deck 30.

Hanging from the overhang or extension portion 31 of the main deck 30 are vertical support members 34 and 35 which support an auxiliary deck 36 below the main deck overhang 31. The drilling platform 11 is provided with a suitable derrick 37 having conventional fall lines 38, traveling block 39 and hook 40 or elevator 40*a* (FIGURE 3). A crane 41 is positioned on the main deck 30 of the drilling platform 11 for hoisting equipment from barges or smaller boats drawn along side the drilling platform. In the arrangement of the present invention, FIGURE 1 illustrates drilling operations being carried on with the use of a pair of guide lines 42 and 43 for guiding equipment from the drilling platform down to an underwater wellhead or other underwater installation. It is to be understood, however, that the drilling platform of the present invention could also be employed to drill underwater wells without the use of guide lines 42 and 43.

Instead of using a two line guide system as shown in FIGURE 1, the guide line system shown in FIGURES 3 and 6 comprises three main guide lines 44, 45 and 46 passing over sheaves 47, 48 and 49 (FIGURE 6) which are arranged in a triangle during lowering and/or drilling operations about the axis of the well represented by numeral 50. The main guide lines 44, 45 and 46 are employed to guide the major portion of apparatus from drilling platform 11 down to the underwater wellhead. Thus, all of the component parts of a drilling wellhead assembly or a production wellhead assembly which are mounted in an end to end relationship on the same axis are sent down the main guide lines. In addition, if desired, a pair of auxiliary guide lines 51 and 52 passing over sheaves 53 and 54 may be employed and are positioned generally to one side of the main guide lines 44, 45, and 46 whereby equipment mounted to one side of a wellhead assembly may be lowered into place. All of the guide lines 44, 45, 46, 51 and 52 are run over suitable sheave arrangements, such for example as sheaves 55, 56, 57 and 58 to constant-tension hoist means 60, diagrammatically shown in FIGURE 3 as being positioned on the base 61 of the derrick 37 for ease of illustrating purposes. It is to be understood, however, that the constant-tension hoist means could be mounted in any other suitable location, preferably on the main deck of the drilling platform 11 to facilitate repairs on the guide line system.

As shown in FIGURE 6, the sheaves 48, 49, 53, and 54 are fixedly secured to a sheave dolly or carriage 62 provided with two sets of wheels 63 and 64 which are mounted for movement along horizontal tracks 65 and 66. The support pulley 47 for guide line 44 is positioned at the end of a telescoping or retracting arm 67 which is retractable in a housing 68 which in turn is fixedly secured below track 65. Thus with the arm 67 retracted in the housing 68 and the sheave dolly moved to the right in FIGURE 6 a substantial distance, a greater amount of space is provided directly over the center line 50 of the well whereby large packages of equipment can be lowered through the vertical opening in the auxiliary deck 36 (FIGURE 1). In FIGURE 6, the vertical support members for the auxiliary deck 36 are shown as elements 34, 35, 34*a* and 35*a*. Suitable cat-walks 69 and 70 may be provided. In FIGURE 7 the end of the housing 71 around the wheels 64 and 64*a* is shown as extending to the right beyond any of the sheaves 49, 48, 54 and 53 to serve as a bumper against the stop member 72. The sheave dolly 62 may be provided with suitable hooks 73 by which the sheave dolly 62 (FIGURE 7) may be hooked to a pair of load carrying dollies 74 and 75 (FIGURE 8). The hooks 73 would be attachable to rings 76 and 77 on the adjacent edge of the nearest load-carrying dolly 75 so that the two dollies could be moved together.

In FIGURE 8 the sheave dolly 62*a* differs from that illustrated in FIGURE 6 in that only two main guide lines 46*a* and 45*a* are employed which pass over sheaves 48*a* and 49*a* respectively. When equipment was being lowered to or raised from a wellhead with the sheave system of FIGURE 8, the sheave dolly 62*a* would be positioned on the tracks 65 and 66 so that the guide lines 45*a* and 46*a* would pass over their respective sheaves 48*a* and 49*a* at points diametrically opposite the center line 50 of the well.

As shown in FIGURE 8 the load carrying dolly 74 is provided with wheels 78 and 78*a* which ride on tracks 65, and wheels 79 and 79*a* which ride on tracks 66. In addition, the dolly 74 may be provided with a pair of bumpers 80 and 80*a* adapted to engage corresponding and oppositely-faced bumpers 83 and 83*a* carried by the other load carrying dolly 75. The latter dolly 75 is provided with wheels 81 and 81*a* which ride on track 65 and wheels 82 and 82*a* which ride on track 66. In FIGURE 9 it may be seen that the tracks 65 and 66 are preferably mounted close to the deck of the drilling vessel or its overhang extension deck portion 31. Secured to the bottom of the dollies 74 and 75 (FIGURE 9) are suitable load-connecting means such for example as a pair of slings 84 and 85. Although two slings are illustrated, it is preferred that at least three be employed so as to reduce the tendency of an equipment package or load 86 to swing when it is secured to the lower end of the slings. If three slings are used, two would be secured to one of the dollies and one to the other. The slings are preferably secured to the dollies midway between the wheels in order to get better weight distribution. If desired, a spacer bar (FIGURE 9) may be connected between the bumpers 80*a* and 83*a* to secure the load-carrying dollies 74 and 75 together when a load is slung therefrom. The length of the spacer bar would be determined by the size of the package or load 86 which is being handled.

Any suitable form of prime mover means may be employed to move the load-carrying dollies or carriages 74 and 75 along their tracks 65 and 66. Thus, for example hydraulic jacks, screw drives, or electrically-driven gear drives may be employed. One suitable form of drive mechanism for the dollies 74 and 75 is illustrated in FIGURES 13 and 14. In this arrangement the drive mechanism comprises two sets of drive chains 90 and 90*a*, and 91 and 91*a*. Preferably, an air-driven motor 92 is employed to reduce the fire hazard in well drilling operations. This motor drives two pairs of sprockets 94 and 94*a* which drive pairs of chains 90 and 91 and 90*a* and 91*a*, respectively. As shown in FIGURE 13 the drive chain 90 extends the length of the track 66 and passes over an idler sprocket 96 positioned at the other end of the tracks 66. It is to be understood that each of the chain drives 90, 90*a*, 91 and 91*a* is a continuous chain

having an idler sprocket at the outer end thereof. Preferably, the air driven motor **92** is provided with proper reduction gearing and air-actuated clutches whereby either one of the dollies could be driven independently of the other. Dolly **74** is provided with a pair of outwardly and downwardly-extending arms **97** and **97***a* which are operatively connected to the drive chains **90***a* and **91***a* so that the chains will propel the dolly **74** along the tracks **65** and **66**. In a like manner, the other dolly **75** is provided with a pair of outwardly-extending arms **98** and **98***a* which are operatively connected to the other pair of drive chains **90** and **91**, respectively. With this and other similar arrangements the load-carrying dollies **74** and **75** can be either driven simultaneously or one at a time, or one dolly can be driven to push or pull the other dolly and/or pull the sheave dolly **62**. Normally, the sheave dolly **62** is provided with suitable means for anchoring it to the track or track support means in a fixed position such, for example, as by one or more locking pins **99** which would extend downwardly through the dolly carriage and the I-beam **100** supporting the tracks **66**. Each dolly **74** may be provided with sling rings or other connections **101** and **101***a* by which slings can be secured to the under portion of the dolly.

In order to provide a large opening, say 20 feet square through the auxiliary deck **36** and directly underneath the hoist system of the derrick of the drilling platform, that portion of the auxiliary deck **36** (FIGURE 4) directly below the hoist system is made removable or openable, preferably in the form of a pair of trap doors **102** and **103** which drop downwardly but normally are locked in a horizontal position. To facilitate the handling of large and heavy loads beneath the derrick of the drilling platform, the auxiliary deck **36** is preferably provided with load-supporting platform means which is movable and/or retractable from a position in which it extends across the center of the opening **104** through the auxiliary deck **36**, to a position where it is retracted entirely from the opening leaving the full opening through which equipment may be lowered. As shown in FIGURES 4 and 5 the retractable platform comprises a pair of parallel spaced beams **105** and **106** hung from a suitable support assembly **107** which is positioned outside the vertical support member **35**. The space between the vertical support members **35** and **35***a* is equal to the opening through the auxiliary or spider deck **36**. The support assembly **107** comprises, for example, a support beam **108** to which is fixedly secured a series of roller bearing mountings **109** above the beam **106** and **110** below the beam. Suitable prime mover means are provided for extending or retracting the beam **106** across the opening in the spider deck **36**. For example a motor **111** is provided to drive as through a worm gear, a drive gear **112** which engages a gear rack **113** on the bottom of the beams **106** and **105**. In FIGURE 5, the beam **106** is shown in its nearly extended position, being adapted to seat in recess **114** prior to placing a load thereon.

The method of the present invention is illustrated with reference to FIGURES 2, 3, 10, 11 and 12 of the drawing. As shown in FIGURE 2, the crane **41** can be turned so as to project out over the side of the drilling platform deck **30** so as to hoist an equipment load or package from an auxiliary barge or vessel on the surface of the water and deposit the load or package on the deck **30**. Adjacent the derrick **37**, a portion of the deck **30** and extension **31** is removable to form a vertical opening **116** through the main deck. This opening **116** may be of any size, preferably in the order of 20 feet square, depending upon the equipment loads to be lowered therethrough. The tracks **65** and **66** (FIGURE 8) are positioned on either side of the vertical opening **116** (FIGURE 2) and below the main deck **30** and extension **31** thereof. In FIGURE 3, the crane **41** is shown as it lowers the equipment package or load **86** to the deck level above the

vertical opening **116** (FIGURE 2) therein. At this time the dollies **74** and **75** (FIGURE 3) would be spaced apart sufficiently to allow the load **86** to be lowered between them by the crane to the position shown in FIGURE 9 of the drawing. At this time the equipment package **86** would be supported by the sling **118** depending from the crane **41**. At the time of lowering if the spread bar **87** separates the load-carrying dollies **74** and **75** sufficiently the load **86** may be lowered through the dollies. If necessary, the spacer bars **87** may be disconnected at the time the load **86** is being lowered between the dollies **74** and **75**.

With the load in the position shown in FIGURE 9, the slings **84** and **85** are connected between the load **86** and the load-carrying dollies **74** and **75**. After installing the spacer bars **87** the hoist line **118** of the crane **41** is slacked off slowly until the load **86** is suspended from the slings **84** and **85**. The sling **117** is then disconnected from the load **86** and pulled out of the way with the crane **41**. The motor **92** (FIGURE 4) and drive chains are actuated to move the load-carrying dollies **74** and **75** and the load **86** from a position beneath the vertical opening **116** (FIGURE 2) in the deck **30** to a position beneath the rotary table **119** (FIGURE 3) positioned on the derrick floor **120**. In the event that the rotary table **119** has been removed to provide an opening through the entire platform during this equipment handling operation, the load **86** is hung from the dollies **74** and **75** beneath the center line of the derrick, or the center line of its hoist system, as shown in FIGURE 10.

At this time a sling **121** is connected to the equipment load **86** and runs over the hook **40** of the derrick hoist system. The weight of the equipment load **86** is picked up by the hook **40** slightly so that the weight is slacked off of the slings **84** and **85** which are then disconnected from the equipment package **86**.

The equipment package **86** used for illustration purposes comprises a production wellhead assembly having connector means **122** depending from the bottom thereof for connecting it to a well casinghead. In order to protect this downwardly-depending wellhead connector **122**, a base stand **123** is temporarily connected to the load **86**. Prior to setting the load, on the load supporting beams **105** and **106** (FIGURE 11) the base stand **123** (FIGURE 10) has been removed. The hook **40** is then lowered until the load **86** is positioned on the load-supporting retractable beams **105** and **106** as shown in FIGURE 11. Subsequently, if desired, a pipe string or tubing string **124** may be run up from the undesirde of the auxiliary or spider deck **36** and the upper end of the tubing string **124** connected to the wellhead connector **122**.

The hook **40** is then lowered slightly to slack off tension on the sling **121** which is then removed from the equipment load **86**. A pipe string **125** (FIGURE 12), commonly known as a running string, is secured in any suitable manner to the top of the equipment package **86** and is used for lowering the equipment package down through the vertical opening in the auxiliary deck positioned below the rotary table **119**. The elevator **40***a* carried by the traveling block **39** (FIGURE 3) of the hoist system of the deck engages the running string **125** (FIGURE 12) as it is lowered downwardly from the drilling platform together with the equipment package **86**. Additional length of pipe are added to the top of the running string **125** as the running string **125** and the package **86** are moved in stages downwardly into position at the underwater well. Prior to lowering it through the auxiliary deck **36** the elevator picks up the load slightly so that the load supporting beams **105** and **106** may be retracted in a manner described hereinabove with regard to FIGURES 4 and 5. Subsequently, with the vertical opening in the auxiliary deck now clear, the equipment package **86** is free to move down into the water. While the above method has been described with regard to hanging the equipment package **86** from the load-carrying dollies **74** and

75 moving on tracks 65 and 66, it is quite apparent that the tracks 65 and 66 could be located on or close to the auxiliary deck 36 at the level of or above the load-supporting beams 105 and 106 so that the equipment package 86 could rest on the dollies 74 and 75 rather than being suspended from the dollies. However, it is preferred to hang the equipment load from the dollies 74 and 75 as better control of the package is provided on a drilling platform which may be heaving and rolling with the motion of the sea. It would be more difficult to tie the vertical package down to one or more dollies or platforms positioned beneath it. Additionally, it is pointed out that while the above apparatus and method is described with regard to employing a pair of load-suporting beams 105 and 106, it is to be understood that for certain operations, after moving the dollies 74 and 75 and its load 86 to the position shown in FIGURE 10, the pipe string 125 (FIGURE 12) could at that time be connected to the top of the equipment package 86 rather than first lowering the package 86 down on the load supporting beams 105 and 106. However, in the event that any substantial operations are to be carried out or adjustments to be made with regard to the equipment package 86 it is preferred that the package 86 be lowered down to rest on the retractable load-supporting platform or beams 105 and 106. At the time the equipment package is being positioned over the vertical opening extending through the drilling barge, that is, through the rotary table through the deck portion below the table and through the auxiliary deck 36, the sheave dolly 62 (FIGURES 3 and 6) and the retractable sheave arm 67 are moved away from the center line of the well 50 so that the guide lines 44, 45, 46, 51 and 52 are moved out of the way so as to facilitate placing the package 86 on the retractable support means 105 and 106. To aid in lowering the equipment package 86 (FIGURE 3) to an underwater well, the package 86 may be provided with two or more guide arms 127 and 128 adapted to engage and slide along the guide lines 44, 45 and/or 46. When the package 86 is ready to be lowered the sheave dolly 62 and the retracting arm 67 are returned to their normal position shown in FIGURE 6, and the guide arms are engaged to the guide lines.

I claim as my invention:

1. In well drilling, completion and work-over operations carried on at offshore location from a drilling platform having a derrick and a hoist system therein, a method of handling equipment prior to running said equipment to an underwater wellhead, said method comprising

(a) positioning an equipment load to one side of a derrick on a drilling platform,

(b) lowering said equipment load from the level of the derrick base to a level on said drilling platform entirely below said derrick base and to one side thereof,

(c) positioning said equipment load at said lower level for lateral movement thereat,

(d) moving said equipment load laterally at said lower level to a position underneath the hoist system of said derrick,

(e) transferring said equipment load from said load moving position to load-support means,

(f) supporting said equipment load beneath said derrick,

(g) connecting lowering means to said equipment load,

(h) lifting said equipment load off said load-support means,

(i) retracting said load-support means from beneath said equipment load, and

(j) lowering said equipment load from the drilling platform into the water to an underwater wellhead.

2. The method of claim 1 including the step of connecting a pipe string to the lower end of the equipment load prior to lowering said equipment load to said wellhead, said pipe string extending through said wellhead into the well.

3. In well drilling, completion and work-over operations carried on at offshore locations from a drilling platform having a derrick and a hoist system therein, a method of handling equipment prior to running said equipment to an underwater wellhead, said method comprising

(a) positioning an equipment load to one side of a derrick on a drilling platform,

(b) lowering said equipment load by a first hoist means from the level of the derrick base to a level on said drilling platform entirely below said derrick base and to one side thereof,

(c) positioning said equipment load at said lower level for lateral movement thereat,

(d) moving said equipment load laterally at said lower level from beneath said first hoist means to a position underneath second hoist means,

(e) transferring said equipment load by said second hoist means from said load moving position to load-support means,

(f) supporting said equipment load beneath said derrick on said load-support means,

(g) connecting lowering means to the top of said equipment load and connecting pipe means to the bottom of said load, said pipe means extending down through the water into an underwater well,

(h) lifting said equipment load off said load-support means,

(i) retracting said load-support means from beneath said equipment load, and

(j) lowering said equipment load from the drilling platform into the water to an underwater wellhead.

4. A drilling platform for drilling oil and gas wells at offshore locations, said platform comprising

a buoyant hull adapted to float in a body of water,

a main deck fixedly secured to the hull,

a derrick including hoist means positioned on said main deck, there being an unobstructed vertical opening through said drilling platform below said derrick hoist means at least of a size to facilitate passage of well casing therethrough,

an auxiliary deck positioned beneath the main deck and the derrick thereon of a size to support heavy well equipment, said auxiliary deck having a vertical opening therethrough forming a portion of the vertical opening of said drilling platform, said main deck having a second vertical opening therethrough to one side of said derrick,

load-carrying means movably secured to said platform between said main deck and said auxiliary deck and extending laterally between said second opening in said main deck and said vertical opening in said platform and main deck beneath said derrick,

said load-carrying means comprising horizontally-disposed track means secured to said platform between said main deck and said auxiliary deck, and carriage means mounted on said track means for transporting a load thereon,

prime mover means operatively secured to said carriage means for driving it along said track means,

said track means comprising a pair of spaced tracks positioned on opposite sides of said second opening in said main deck and secured to the underside of said main deck and extending laterally to a point on opposite sides of the opening through said drilling platform, and wherein said carriage means comprises at least two separable load-supporting dollies.

5. The apparatus of claim 4 wherein said dollies are provided with sling means connectible to the undersides of said dollies for hanging a load therefrom, and connector means attachable at opposite ends to said dollies for connecting said dollies together in fixed relationship.

6. The apparatus of claim 4 wherein said track means are mounted on said platform close to the underside of the main deck and wherein said auxiliary deck is provided with laterally-movable load-supporting means extending

across said vertical opening therein for temporarily supporting a load below said track means and said derrick.

7. The apparatus of claim 6 wherein said load-supporting means comprises at least a pair of laterally-retractable beams positioned laterally on opposite sides of the vertical opening through said platform and normal to said track means positioned thereabove, said load-supporting means being supported by said auxiliary deck, and base means secured to said auxiliary deck for supporting said beams in their retracted position to one side of said vertical opening.

8. The apparatus of claim 4 including a sheave dolly mounted for sliding movement along said track means, said sheave dolly including a plurality of vertically-positioned sheaves, at least two guide cables passing over two of said sheaves and extending downwardly to an anchored position below the surface of a body of water, means for

applying substantially constant tension to the other ends of said guide cables, said sheave dolly being normally positioned on said track means so that the guide cables are positioned substantially vertically in the vertical opening of said drilling platform beneath the hoist means of said derrick, said sheave dolly and said guide cables being adapted to be moved to one side of said normal position.

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CHARLES E. O'CONNELL, *Primary Examiner.*