March 5, 1968 R. C. CROOKE ET AL 3,371,728

KELLY STABBER

Filed Oct. 18, 1965 5 Sheets-Sheet 1

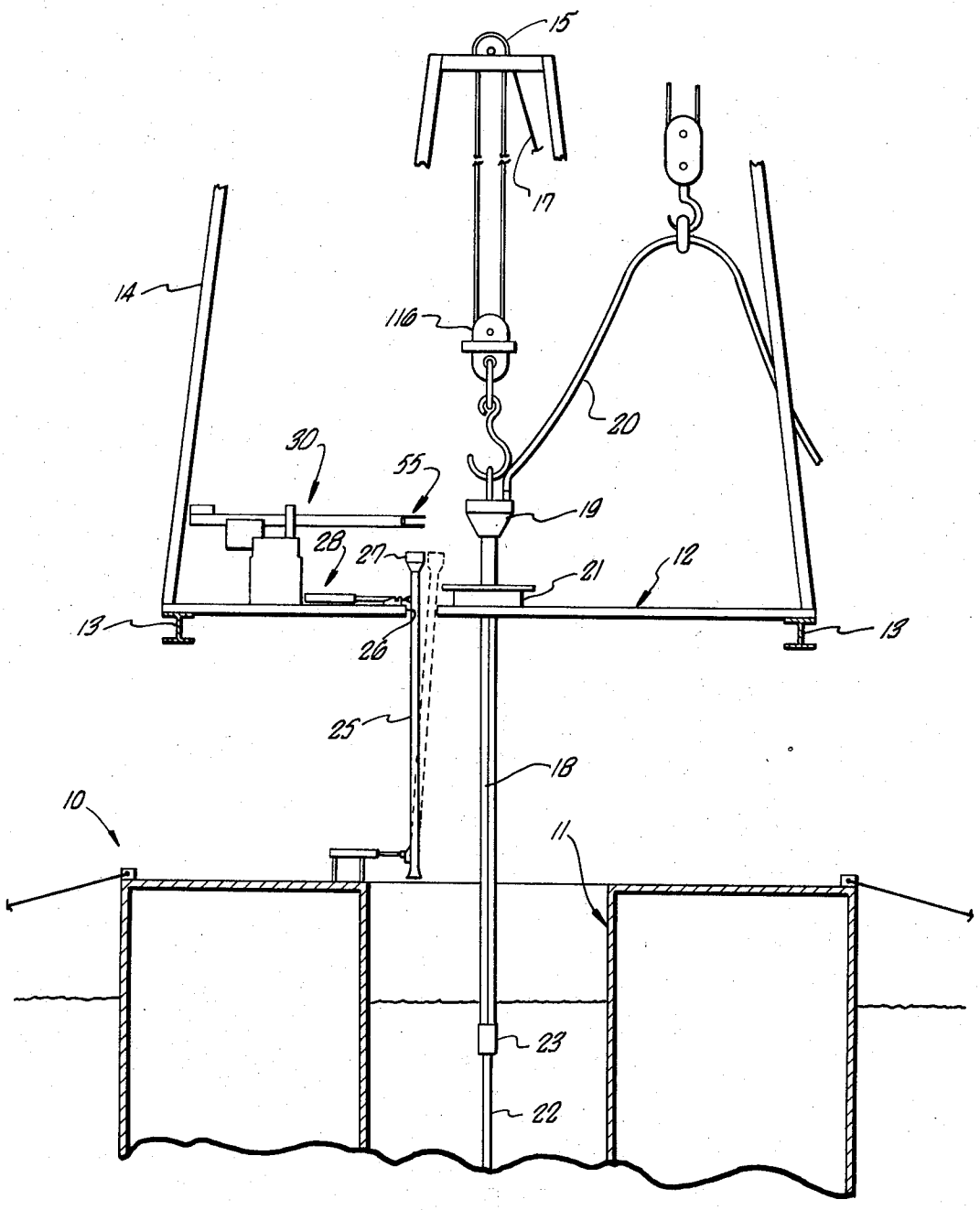


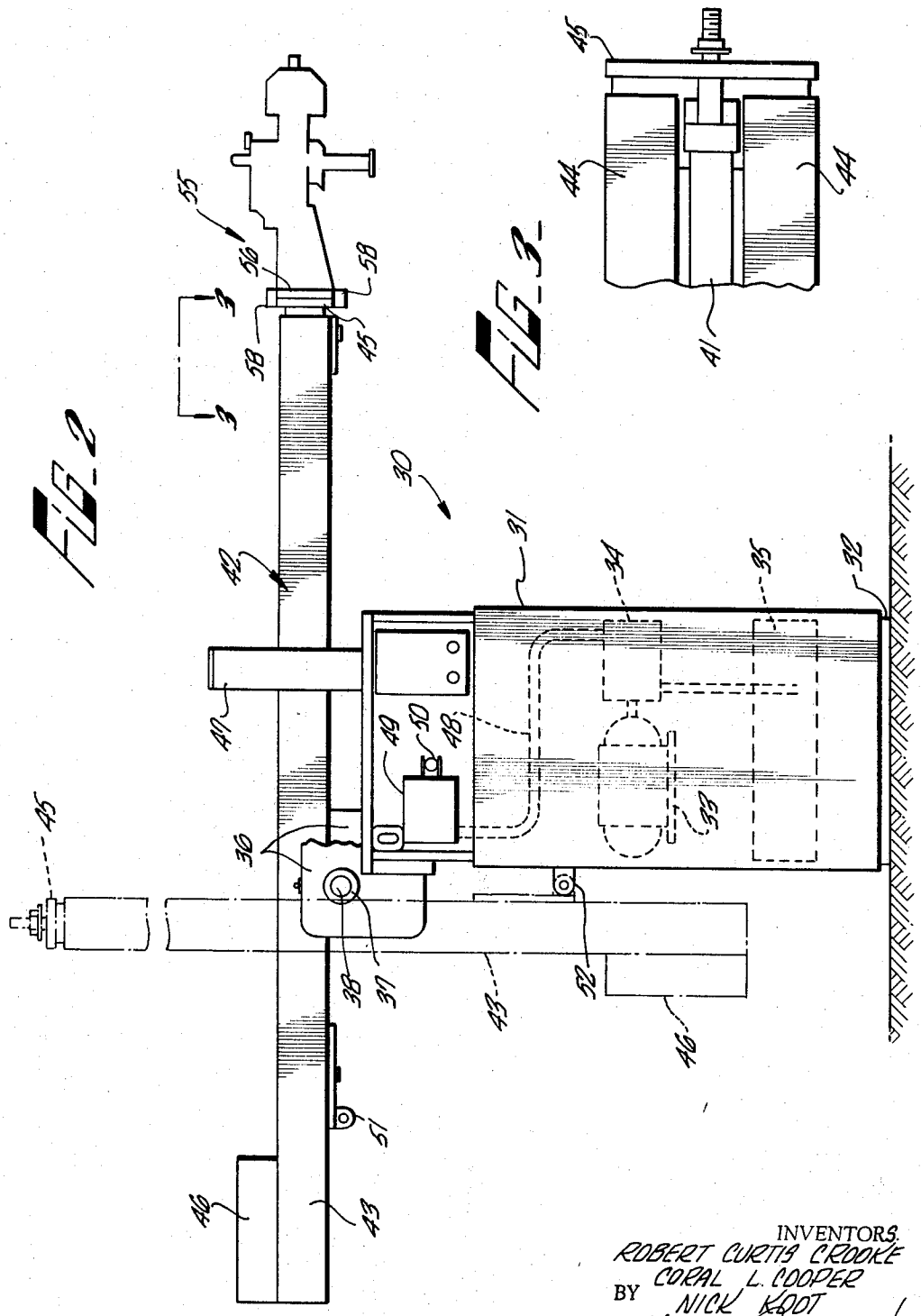
FIG. 1

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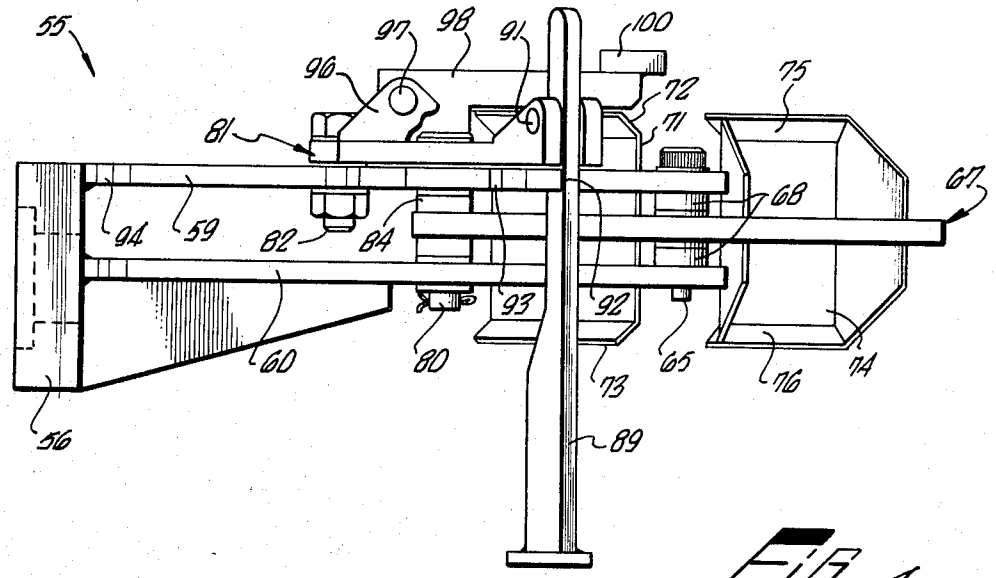


FIG. 4

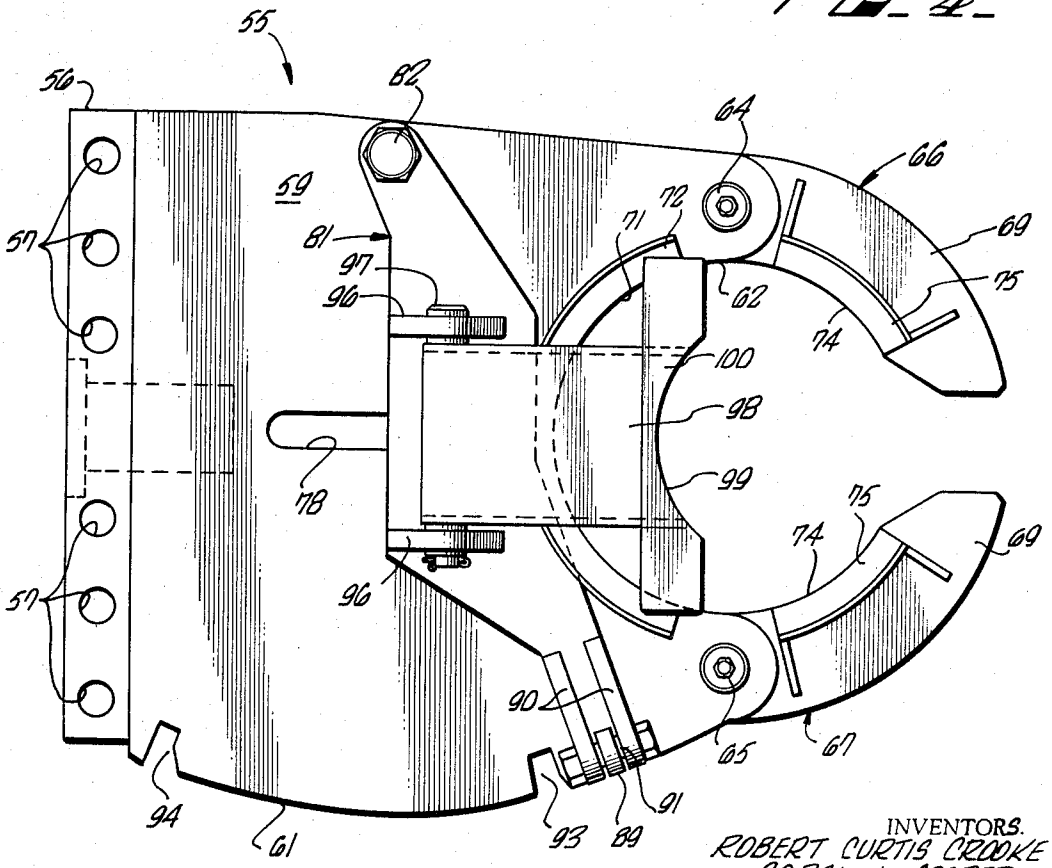


FIG. 5

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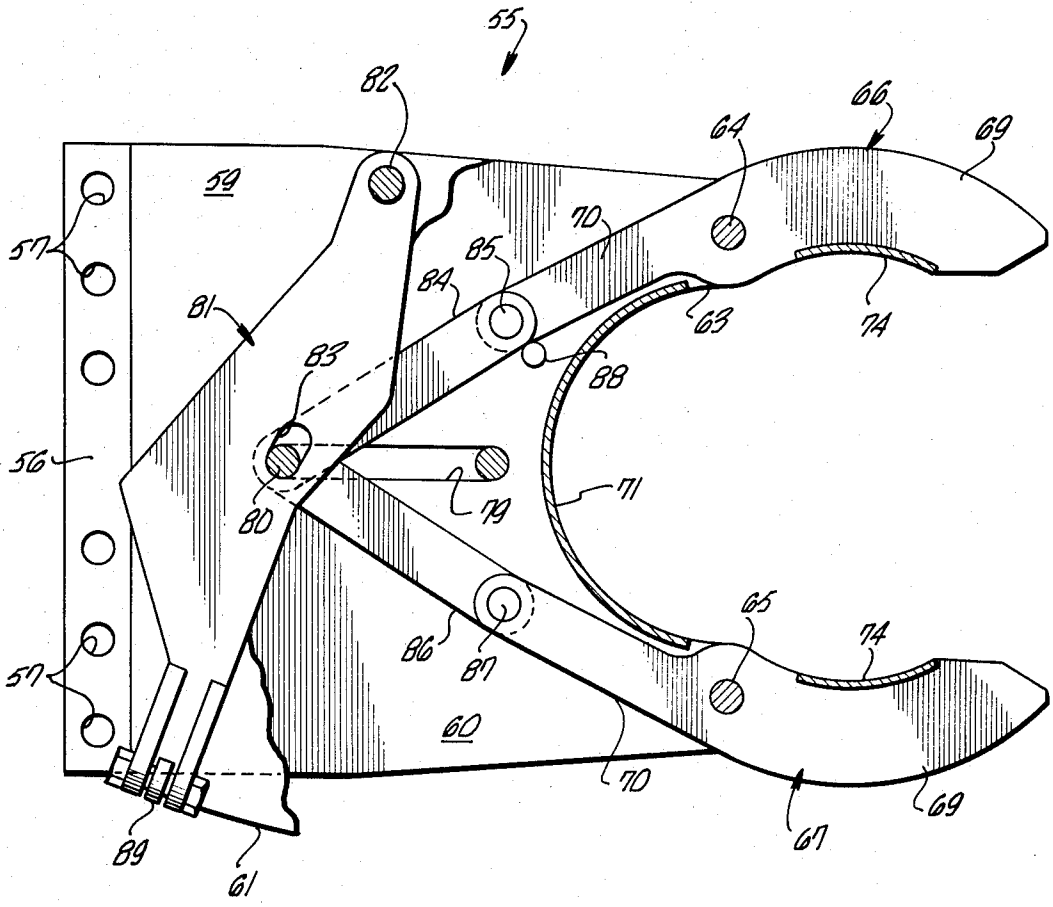


FIG. 6.

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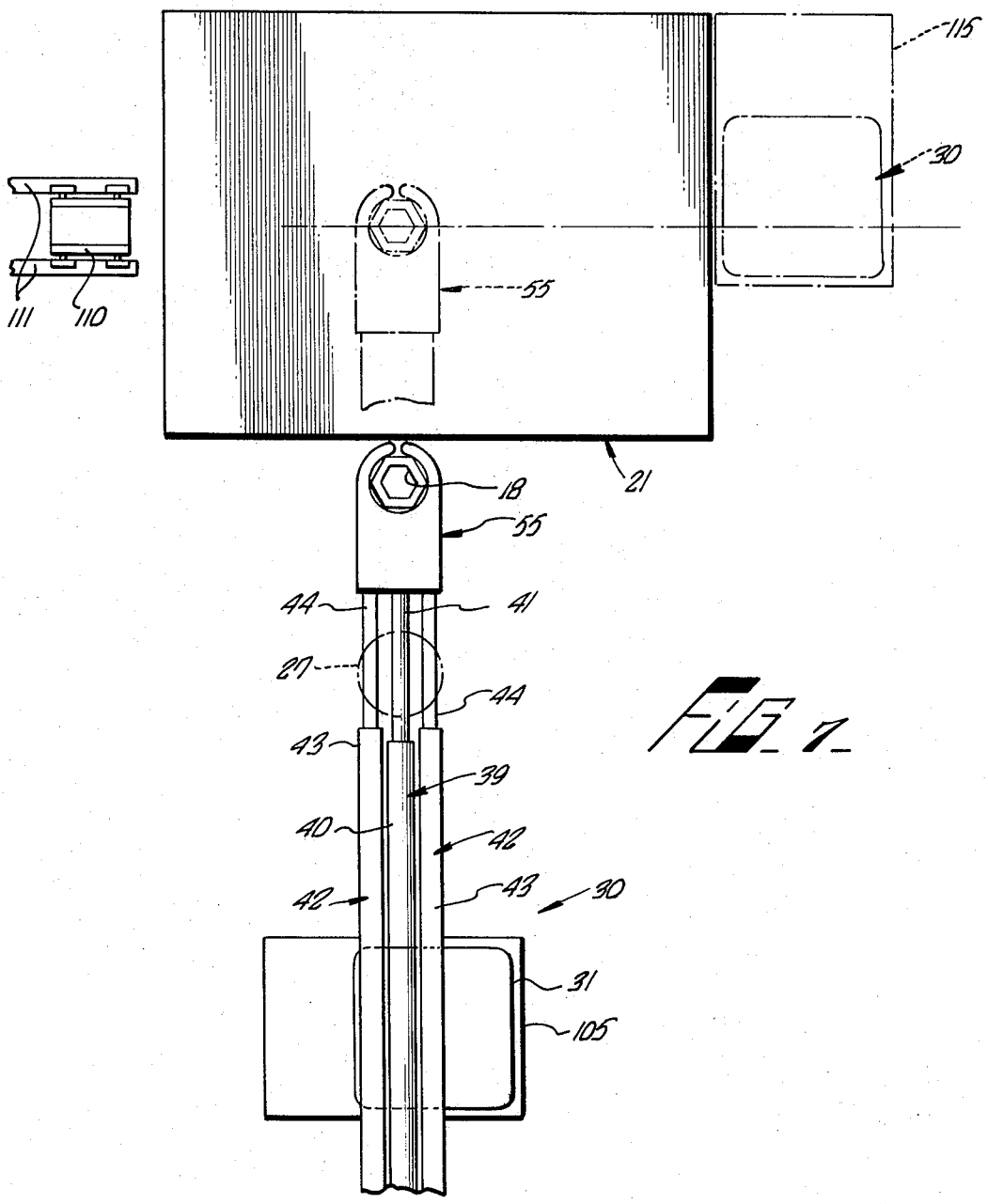


FIG. 7

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United States Patent Office 3,371,728 Patented Mar. 5, 1968

3,371,728

KELLY STABBER

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Filed Oct. 18, 1965, Ser. No. 496,949
7 Claims. (Cl. 175—85)

ABSTRACT OF THE DISCLOSURE

A base is fixed relative to a rotary table in a drilling rig as a part of apparatus for handling pipe and kelly joints during drilling operations. The apparatus includes jaw means movable toward and away from each other for releasably engaging a kelly joint. The jaw means are fitted with an adapter hingeable into cooperation therewith for converting the jaw means to grasp a drill pipe. The apparatus also includes means for reciprocating the jaw means toward and away from the base to and from the rotary table.

This invention relates to drilling oil wells and the like. More particularly, it relates to apparatus for handling a kelly joint and/or a joint of drill pipe during the drilling operation.

During the drilling of an oil well by means of a rotary tool, it is necessary to add a joint of pipe to the drill string each time the tool advances an amount equal to the length of a joint of pipe. In the past, substantially all aspects of the procedure of adding a new joint to the drill string have been performed manually. Since the kelly joint (also known simply as a "kelly") and the joint of pipe to be added to the drill string are heavy and cumbersome pieces of equipment, the process of adding a joint to a drill string involves hard physical labor. Moreover, this procedure can become dangerous where the drilling rig is exposed to wind. The likelihood of injury is especially high where the oil well is being drilled from a floating vessel which may experience rolling, pitching and heaving motions.

This invention provides efficient and effective apparatus for safely and rapidly moving a kelly or a joint of drill pipe during the procedure by which the joint is added to the length of the drill string. This apparatus, known as a kelly or pipe stabber, is also useful in safely and rapidly handling drill pipe when the string is being run into or out of the hole, as when it is necessary to replace a cutting tool. The pipe stabber assures that the kelly or joint will be positioned exactly where it is desired regardless of the effects of wind and sea conditions on the drilling rig.

Summary of the invention

Generally speaking, this invention provides apparatus for handling drill pipe and the like in a drill rig during drilling operations. The apparatus includes a base fixed relative to the drill rig and jaw means operable for grasping and holding a drill pipe or a kelly. The apparatus also includes selectively operable means mounting the jaw means to the base. The selectively operable means are operable for moving the jaw means reciprocally toward and away from the base along a predetermined line.

The above-mentioned and other features of the present invention are more fully set forth in the following detailed description of a presently preferred embodiment of the invention, the description being presented with reference to the accompanying drawings, wherein:

FIG. 1 is a cross-sectional elevation view, with parts broken away, of a floating vessel and a drilling rig, equipped with a pipe stabber, mounted to the vessel;

FIG. 2 is an elevation view of the pipe stabber shown in FIG. 1;

FIG. 3 is a fragmentary plan view of the pipe stabber taken along lines 3—3 of FIG. 2;

FIG. 4 is a side elevation view of the jaw mechanism of the pipe stabber shown in FIG. 2;

FIG. 5 is a top plan view of the jaw mechanism shown in FIG. 4, illustrating the jaw mechanism in its closed position for engaging a joint of drilling pipe;

FIG. 6 is a top plan view, with parts broken away, of the jaw mechanism in its open position; and

FIG. 7 is a top plan view of a rotary drilling table showing the position of the pipe stabber when the stabber is used during a drilling operation.

FIG. 1 shows a floating vessel **10** fitted with an inboard drilling well **11**. A drilling platform **12** is mounted over the deck of the vessel on a pair of spaced, longitudinal beams **13**. A derrick **14** is mounted over the drilling platform and includes a crown block **15** and a travelling block **16** which are interconnected by a cable **17**; the cable extends from the crown block to the drum of a drawworks, not shown. A kelly joint **18** is supported from the travelling block by a swivel **19**. A drilling mud supply hose **20** is connected to the swivel and extends to a drilling mud pump, not shown. The kelly joint is engaged in the drive chuck of a rotary table **21** mounted to the drilling platform. The kelly joint extends through the rotary table into connection with the upper end of a drill string **22** by a collar **23**. The drill string is comprised of a number of lengths (joints) of drill pipe secured together by collars. A rotary cutting tool (not shown) is mounted to the lower end of the drill string and operates to penetrate the earth in response to rotation of the drill string.

A combination rathole-mousehole tube **25** is located adjacent the rotary table. Alternatively, independent rathole and mousehole tubes may be employed. The lower end of the rathole tube is pivotally mounted to the vessel adjacent the open upper end of drilling well **11**. The rathole tube extends to its upper end through an opening **26** in the drilling platform. The upper end of the rathole tube is enlarged at **27** to accommodate the collar secured to the upper end of a joint of drill pipe received in the rathole tube. An extensible ram **28** is interconnected between the drilling platform and the rathole tube so that the rathole tube may be pivoted between a vertical position (shown in solid lines in FIG. 1) and a tipped position (shown in dashed lines in FIG. 1). A pipe stabber **30** is mounted to the drilling platform in such a position that the upper end of the rathole is disposed between the pipe stabber and the rotary table.

As shown in FIGS. 2 and 3, pipe stabber **30** includes a housing **31** mounted on a base plate **32**. Within the housing are located a motor **33**, a hydraulic pump **34** driven by the motor, and a reservoir **35** for hydraulic fluid. A pair of spaced ram pivot brackets **36** are secured to the upper end of the housing at one corner of the housing and mount a pair of coaxially aligned bearings **37** for a pivot axle **38**. The pipe stabber also includes a double-acting hydraulic ram **39** (see FIGS. 3 and 7) having a cylinder **40** and a piston **41**. The ram is mounted between and supported by a pair of rectangularly cross-sectioned telescoping guide tube assemblies **42**. The guide tube assemblies are connected to pivot axle **38**. Each guide tube assembly includes an outer member **43** connected to the pivot axle and an inner member **44** slidably engaged within the outer member. The outer ends of the inner tube members are rigidly interconnected by a tie plate **45** to which the outer end of ram piston **41** is also connected. The inner tubes slide in the outer tubes upon operation of ram assembly **39**. The opposite ends of the outer tubes of the guide tube assemblies are interconnected by a counterweight **46**. The guide tube assemblies

provide the required structural strength to carry any loads imposed on the stabber during operation of the stabber, and also assure that jaw assembly **55** carried by the tie plate is not rotatable about a horizontal axis.

When the pipe stabber is in position for use, the ram and the guide tube assemblies extend horizontally across the top of housing **31** and rest in a U-shaped, upwardly open support **47** extending upwardly from the housing. The support prevents lateral movement of the ram and guide tube assemblies.

A duct **48** for hydraulic fluid extends from pump **34** to the ram via a control valve **49** which is operated in response to movement of a control lever **50**.

As shown in FIG. 2, the ram and guide tube assemblies can be pivoted as a unit about axle **38** into a vertical position (shown in dashed lines in FIG. 2) when the pipe stabber is not in use. The ram is held in its vertical position by a pin (not shown) passed through registering apertured lugs **51** and **52** secured to the guide tube assemblies and housing **31**.

A jaw assembly **55** (illustrated in greatest detail in FIGS. 4, 5 and 6) is mounted to tie plate **45** for reciprocal movement toward and away from the pipe stabber housing in response to operation of ram **39**. The jaw assembly includes a bolting plate **56** which extends horizontally across the rear end of the assembly. The bolting plate defines a plurality of bolt holes **57** vertically through its extent. The bolting plate is mated to the forward face of tie plate **45** and secured to the tie plate by means of bolts (not shown) passed through bolting flanges **58**, secured to and extending forwardly from the upper and lower surfaces of the tie plate, and through bolt holes **57**, the bolting plate being disposed between the bolting flanges.

The jaw assembly also includes a top plate **59** and a bottom plate **60** which are secured, as by welding, to the bolting plate. The top and bottom plates are spaced from each other and extend horizontally forwardly from the bolting plate. One edge **61** (the lower edge as the jaw assembly is depicted in FIG. 5) of the top plate is circularly curved convex away from the jaw assembly; otherwise, the top and bottom plates are substantially identical in configuration. The ends of the top and bottom plates opposite from the bolting plate define circularly curved recesses **62** and **63**, respectively, which open away from the bolting plate. Left and right pivot pins **64** and **65**, respectively, are passed vertically through the top and bottom plates at locations substantially diametrically opposite from each other relative to recesses **62** and **63**. A line passing through the axes of the pivot pins lies parallel to bolting plate **56**.

Left and right jaw levers **66** and **67** are pivotally mounted to pivot pins **64** and **65**, respectively, for movement toward and away from each other in a common horizontal plane. The jaw levers are mounted substantially midway between the top and bottom plates by spacer washers **68** engaged with the pivot pins above and below the jaw lever. Forwardly of their respective pivot pins, each jaw lever has an arcuately curved portion **69**; the curvature of the opposing edges of the jaw levers is the same as the curvature of recesses **62** and **63**. The curved portions of the jaw levers subtend an arc of greater than 45° and less than 90°. On their sides opposite the pivot pins, the jaw levers define straight portions **70** which terminate at the rear ends of the jaw levers. The jaw levers are connected to an operating linkage which is operable to move the jaw levers between a closed position (see FIG. 5), wherein the curvature of the opposing edges of the jaw levers is continuous with the curvature of recesses **62** and **63**, and an open position (see FIG. 6) wherein the forward ends of the jaw levers are spaced apart a distance greater than the distance across the openings of recesses **62** and **63**.

A circularly curved cylindrical face plate **71** is secured in a vertical relation between the top and bottom plates

around the major portion of the extents of recesses **62** and **63**, as shown in FIGS. 5 and 6. Face plate **71** extends above the top plate to a rearwardly angled lip **72** which extends along the upper edge of the face plate; similarly, the face plate at a location below bottom plate **60** defines a lower rearwardly angled lip **73**. A jaw face plate **74** is mounted to the concave edge of each jaw lever. Each jaw face plate has a circularly curved, vertical cylindrical portion secured to the respective jaw lever and upper and lower outwardly angled lips **75** and **76**. Lips **75** and **76** lie in the same horizontal planes as lips **72** and **73**, respectively, of face plate **71**.

Rearwardly of recess **62**, top plate **59** defines an elongated slot **78** oriented along a line perpendicular to and bisecting a line between pivot pins **64** and **65**. An identical slot **79** is formed through bottom plate **60** directly below slot **78**. A pivot pin **80** is passed through slots **78** and **79** and is carried by an actuator lever **81**. The actuator lever is disposed above the top plate and is pivotally mounted to the top plate adjacent the left side of the top plate by a pivot pin or bolt **82**. The actuator lever extends across the top plate to adjacent curved edge **61** of the top plate. Pivot pin **80** is passed through an elongated slot **83** in the top plate, the slot being oriented in the top plate so that an extension of its length passes through the axis of pin **82**.

Between the top and bottom plates, left jaw lever **66** is connected to pivot pin **80** by a link **84**. One end of link **84** journals pin **80** and the other end of the link is pivotally connected to the rear end of jaw lever **66** by a pivot pin **85**. Link **84** lies between the top plate and jaw lever **66**. A second link **86** has one end pivotally connected to the rear end of a jaw lever **67** by a pivot pin **87**, the other end of link **86** journals pin **80**. Link **86** is disposed between the bottom plate and jaw lever **67**.

A locking handle **89** is pivotally connected to actuator lever **81** above the top plate. A pair of parallel, spaced, vertically oriented brackets **90** are secured to the upper side of the actuator lever adjacent the curved edge of the top plate. The brackets extend beyond the end of the actuator lever. A pivot pin **91** is passed horizontally through the brackets inwardly of the top plate from edge **61** but beyond the end of the actuator lever. The locking handle, at a location spaced from one end thereof, journals pin **91** between the brackets. The locking handle normally hangs downwardly from pin **91** to be engaged in one of a plurality of notches **92**, **93** and **94** formed in curved edge **61** of the top plate. Engagement of the locking handle in one of the notches determines the extent to which the jaw levers are opened, and also locks the jaws in such a position. Notch **92** corresponds to the closed position of the jaw levers, and notch **94** corresponds to the open position of the jaw levers. When the actuator lever is aligned with notch **94** so that the jaws are open, jaw lever **66** engages a stop pin **88** adjacent pin **85**. The stop pin assures that pin **85** does not pass over-center between pins **64** and **80** to join the linkage.

The jaw levers are moved toward and away from each other by moving the locking handle into a horizontal position so that the upper end of the handle is engaged between brackets **90**. The actuator lever then may be pivoted about pin **82** to cause the forward ends of the jaw levers to move relative to each other by reason of their connection to the actuator lever via links **84**, **86** and pin **80**.

The circularly cylindrical, open ended receptacle defined by face plates **71** and **74** when the jaw levers are in their closed position (as shown in FIG. 5) is sized to accord with the cross-sectional configuration of kelly **18**. Normally the kelly has a hexagonal cross-sectional configuration, the maximum transverse dimension of the kelly being greater than the diameter of the drill pipe to which the kelly is connected. Thus, it is apparent that

jaw assembly **55** is adapted to be engaged in gripping engagement with kelly **18**.

Jaw assembly **55** is also adapted to be engaged with a joint of drill pipe, such as a joint of pipe to be coupled between kelly **18** and drill string **22**. The drill pipe is smaller in diameter than the kelly. Accordingly, jaw assembly **55** is equipped with means for adapting it to securely grip the drill pipe.

A pair of parallel, spaced vertical brackets **96** are secured to the upper surface of actuator lever **81**. The brackets are positioned on the actuator lever at locations such that, when the actuator lever is in line with notch **92**, the brackets are disposed equidistantly from, parallel to, and on the opposite sides of slot **78**. A pivot pin **97** passes horizontally between the brackets transversely of slot **78**. An adapter plate **98** is journalled at one of its ends to pin **97** between the brackets so that the adapter plate may be pivoted about the pin between a position in which it extends horizontally toward the jaw levers and a position in which it extends toward bolting plate **56**. The end of the adapter plate defines a circular recess **99** having a curvature conforming to the outer diameter of the joints of drill pipe from which drill string **22** is formed. An extender bar **100** is secured to the upper surface of the adapter plate and extends laterally from each side of the adapter plate. The extender bar, in combination with the adapter plate, defines recess **99**.

When the jaw assembly is being used to grip kelly **18**, the adapter plate is hinged about pin **97** so that recess **99** opens toward bolting plate **56**. When the jaw assembly is being used to grip a joint of drill pipe. the adapter plate is moved into the position shown in FIGS. 5 and 4 so that recess **99** cooperates with jaw face plates **74** to grip the joint.

The pipe stabber is mounted to a foundation plate **105** located in drilling platform **12** to part of the rotary table so that ram **39** extends from housing **31** toward the center of the rotary table. Preferably, the base plate of the pipe stabber is bolted to foundation plate **105**.

The operation of the pipe stabber in "making up" a new joint in a drill string is as follows. Periodically during the drilling of an oil well or the like from floating vessel **10**, a new joint of drill pipe must be inserted into the drill string just below kelly **18**. Preliminaries for this procedure are carried out by retracting stabber ram the maximum amount so that the jaw assembly of the stabber is disposed over the upper end of the rathole-mousehole tube, with the tube being in its vertical position as illustrated in FIG. 1. (The tilted position of the rathole assembly is illustrated in dotted lines in FIG. 7.) The jaws of the jaw assembly are almost closed by moving the actuator lever of the jaw assembly so that it is aligned with notch **93**, and the adapter plate is positioned so that recess **99** opens toward the face plates **74**. The next joint of drill pipe to be added to the drill string is inserted into rathole tube **25** through the nearly closed jaw assembly, the jaw assembly serving as a guide for the joint during this operation. The joint is kept in the rathole until it is time to insert the joint into the drill string.

When the drilling tool has advanced the length of one joint of drill pipe into the formation over which the floating vessel is positioned, the drilling operation is temporarily interrupted and a new joint of drill pipe is added to the drill string. The draw works of the drilling rig are operated to raise the kelly and the drill string until the drill string just below collar **23** is exposed above the surface of the rotary table. Slips are then engaged with the drill string at the rotary table to hold the drill string in place while the kelly is disconnected from the drill string. As the slips are set, the pipe stabber is operated to move the jaw assembly into engagement with the kelly. At this time the jaws loosely engage the kelly. The kelly may be disconnected from the drill string by engaging the lower end of the kelly with a set of tongs to break the connection between the kelly and the upper end of the drill string. As soon as the lower end of the kelly is disconnected from the upper end of the drill string, the jaw assembly actuator lever is moved into alignment with notch **92** to close the jaw levers and securely grip the lower end of the kelly. The kelly cannot then swing as a pendulum from the swivel in response to the action of wind upon the kelly, or in response to pitching, rolling or heaving motions of the vessel. Also, at this time, ram **28** is operated to move the rathole tube into its tipped position shown by the dotted lines in FIG. 1. The position of the upper end of the rathole when the rathole is in its tipped position is substantially immediately below the position of the jaw assembly represented by the solid line illustration of FIG. 7.

The pipe stabber is then operated to retract the stabber ram until the lower end of the kelly is aligned with the upper end of the joint disposed in the tilted rathole tube. In this position, the kelly is inclined relative to the elongate extent of the drill string since the upper end of the kelly is supported from the travelling block. The jaws of the kelly stabber jaw assembly are opened slightly by moving the locking handle to notch **93** from notch **92** so that the kelly can be slid downward into engagement with the collar at the upper end of the joint disposed in the rathole. The kelly is then rotated to connect the kelly to the joint. The jaws of the jaw assembly are then fully opened until the collar which connects the lower end of the kelly to the new joint are raised above the jaw assembly. As soon as the collar between the kelly and the new joint have passed above the jaw assembly, the adapter plate is pivoted into the position shown in FIG. 5 and the actuator plate is moved into alignment with notch **93**. This condition of the jaw assembly serves to guide the drill pipe as the travelling block is raised to free the lower end of the joint from the rathole.

As soon as the lower end of the joint emerges from the upper end of the rathole, the actuator lever is locked in alignment with notch **92** so that the jaw assembly securely grips the lower end of the new joint. The kelly stabber is then operated to extend the stabber ram until the lower end of the new joint is aligned with drill string **22** and collar **23**. The jaw assembly is then opened slightly to allow the new joint to be brought into engagement with the collar. The new joint is then made a part of the drill string by securely threading the new joint into the collar. The rathole is then tilted back into its vertical position and the ram of the kelly stabber is retracted so that the apparatus is in the position shown in FIG. 1. The drilling process may then be resumed and the rathole loaded with the next joint of drill pipe.

When the pipe stabber is not available, it is apparent that the movement of the lower end of the kelly into alignment with the upper end of the rathole, and the movement of the lower end of the new joint from over the rathole to over the center of the rotary table, must be accomplished manually by roughnecks as in the past. It is apparent that such manual operations involve considerable physical effort and may be dangerous, even when performed on land, since the drilling operation may be carried out in inclement weather where wind forces upon the kelly and the joint may be considerable. The safety hazards to the roughnecks are even more pronounced where the drilling operations are performed on a floating vessel which may be heaving, pitching and/or rolling during even moderate sea conditions. Under such conditions, the kelly and/or the joint may swing so much that the crew of roughnecks cannot control the movement of the swinging mass, thereby resulting in lost time in the drilling operation. With the use of the pipe stabber, however, the process of inserting a new joint into the drill string can be accomplished rapidly and with utmost safety since the rugged construction of the kelly stabber assures that the mass supported from the travelling block cannot move from a designated position.

The pipe stabber is also useful in handling serially-connected multiple joints of drill pipe when it is necessary to recover a drilling bit. When the drill string is being run into or out of the hole, current drilling practice is to break every third joint of drill pipe. Normally a joint of drill pipe is approximately 30 feet long. Thus, the manual movement of three connected joints from over the rotary table into a pipe racking mechanism has the same hazards which are attendant to the insertion of a new joint of pipe into the drill string.

As noted above, pipe stabber **30** preferably is bolted to foundation plate **105** so that it can be quickly disconnected from its foundation when desired. When the drilling operations are being carried out aboard a floating vessel, the vessel may be equipped with a pipe racking apparatus such as that disclosed in the U.S. Patent 3,083,842. Such pipe racking apparatus includes a carriage, such as carriage **110** (see FIG. 7) mounted for movement along rails **111** which extend forward along the center line of the vessel from rotary table **21**. To facilitate the safe transfer of multiple joints of drill pipe from over the rotary table to the carriage, the pipe stabber is moved to an auxiliary foundation plate **115** which is mounted to the drilling platform adjacent the aft side of the rotary table. Foundation plate **115** is provided with bolting holes so that the pipe stabber may be secured to it with the axis of ram **39** lying along the center line of the vessel. As each three-joint unit of drill string is disconnected from the portion of the drill string held by slips in the rotary table, the jaws of the pipe stabber are engaged with the lower end of the severed portion of the drill string. Stabber ram **39** is then operated to move the suspended unit of drill string into engagement with carriage **110**. Movement of the pipe stabber from foundation plate **105** to foundation plate **115** can be accomplished easily by the use of air tuggers which normally are provided as components of the equipment of the drilling rig.

A modification of the pipe stabber described above may be provided in a mechanism wherein jaw assembly **55** is mounted to a horizontal extensible beam secured to the upper end of a pillar which is mounted for rotation about an axis fixed relative to the drill rig, the pillar being mounted in such a position that the jaw assembly can be moved from over the axis of the rotary table to over the upper end of the rathole by extending the beam and rotating the pillars. Such a device is not preferred, however, since the angular motion of the pillar is not easily controlled when the device is used on a rolling floating vessel. Accordingly, it is prefered that a pipe stabber according to this invention be constructed so that the jaw assembly is reciprocable along a fixed path, which path cannot be moved angularly relative to the structure to which the pipe stabber is mounted.

The invention has been described in cooperation with conventional use of a kelly. It is apparent that the unit is also useful in conjunction with turbo drill or power sub techniques. Where a kelly is not employed, as in these practices, the apparatus herein described finds use in making up or disconnecting drill pipe sections as the drilling operation proceeds or as the drill bit is round tripped in the hole.

While the invention has been described above with reference to particular structure, this structure has been described in the context of a drilling rig on a floating vessel to most clearly present the utility of the invention. It is apparent that the pipe stabber may also be used to advantage on a land-based drilling rig or on a "Texas-Tower" type offshore drilling platform to more easily, rapidly and safely perform the operations described which are now performed manually with considerable effort and hazard. Accordingly, the foregoing description has been presented by way of explanation rather than by way of limitation, and this description should not be considered as limiting the scope of this invention.

What is claimed is:

1. Apparatus for handling a joint of drill pipe and a kelly in a drill rig including a rotary table during drilling operations and the like comprising:

(a) a base fixed relative to the rotary table,

(b) jaw means including

(i) a pair of jaw members pivotally movable toward and away from each other between an open position and a closed position in which the jaw members are disposed for engaging and holding a kelly, and

(ii) means movable into cooperating relation with the jaw members in the closed position thereof for adapting the jaw means for engaging and holding a joint of drill pipe,

(c) selectively operable means mounting the jaw means to the base operable for reciprocating the jaw means toward and away from the base along a substantially horizontal line.

2. A kelly stabber comprising:

(a) a base,

(b) a housing supported on the base and extending upwardly therefrom,

(c) a double-acting extensible hydraulic ram having a cylinder and a piston reciprocable therein,

(d) telescoping guide tube means disposed adjacent and parallel to the ram,

(e) tie means rigidly interconnecting the guide tube means and the end of the piston opposite from the cylinder so that the guide tube means telescopes in response to operation of the ram and so that structure rigidly mounted thereto maintains a selected angular relation relative to the ram,

(f) means pivotally mounting the ram and guide tube means to the housing for movement about a horizontal axis between a first position wherein the ram and guide tube means extend horizontally of the housing and a second position in which the ram and guide tube means extend vertically of the housing,

(g) a hydraulic pump for the ram in the housing, and

(h) a jaw assembly rigidly mounted to the tie means for reciprocal movement relative to the base in response to operation of the ram, the jaw assembly including

(i) a pair of jaw levers mounted for pivotal movement toward and away from each other about axes normal to said horizontal axis between a closed position and an open position,

(ii) selectively operable means coupled to the jaw levers operable to move the jaw levers between the open and closed positions thereof,

(iii) jaw lever support means pivotally mounting the jaw levers to the tie means and including means cooperating with the jaw levers in the closed position thereof to define a receptacle sized to receive and grip a substantially cylindrical object of predetermined transverse dimension, said receptacle extending normal to said horizontal axis, and

(iv) an adapter member mounted to the jaw lever support means for movement into a selected position relative to the support means in which the adapter member cooperates with the jaw levers in the closed position thereof to define a receptacle sized to receive and grip a substantially cylindrical object having a maximum transverse dimension less than said predetermined transverse dimension.

3. A kelly stabber according to claim **2** wherein the selectively operable means includes means for locking the jaw levers in the opened and closed position thereof.

4. A kelly stabber according to claim **3** wherein the selectively operable means includes means for locking the jaw levers in a partially open position.

5. In an oil well drilling rig and the like including a drilling platform, a rotary table mounted to the platform for rotating a kelly engageable therein, and a rathole hav-

ing an open upper end adjacent the rotary table substantially at the level of the drilling platform for receiving a joint of drill pipe, apparatus for handling the kelly and the joint during the connection of the joint to a drill string disposed in a hole below the rotary table comprising:

(a) jaw means operable for grasping and holding the kelly or the joint,

(b) a base mounted to the drilling platform adjacent the rotary table, and

(c) means connected between the jaw means and the base operable for moving the jaw means from a first position over the rotary table to a second position over the upper end of the rathole.

6. In an oil well drilling rig and the like including a drilling platform, a rotary table mounted in the platform for rotating a kelly engageable therein to rotate a string of drill pipe connected to the lower end of the kelly, and a rathole having an open upper end adjacent the rotary table substantially at the level of the drilling platform for receiving a joint of drill pipe to be connected to the string, apparatus for handling the kelly and the joint during the connection of the joint to the string,

(a) openable jaw means including means adapting the jaw means to engage and grip either the kelly or the joint,

(b) a base mounted to the drilling platform opposite the upper end of the rathole from the rotary table, and

(c) means connected between the jaw means and the base operable for reciprocating the jaw means between a first position over the rotary table and a second position over the upper end of the rathole.

7. In the process of inserting a new joint of drill pipe into a drill string suspended below a rotary table of a drilling rig, the process including raising the drill string in a hole below the rotary table until the lower end of a kelly connected to the upper end of the drill string is exposed above the rotary table, disconnecting the kelly from the drill string, moving the lower end of the kelly into alignment with the upper end of the new joint received in a rathole adjacent the rotary table and connecting the kelly and the new joint, and aligning the joint with the drill string and connecting the same, the method of handling the kelly and the joint comprising the steps of:

(1) providing an operable jaw means and controllable means for reciprocating the jaw means between a position over the rotary table and a position over the rathole,

(2) disposing the jaw means around the lower end of the kelly when the lower end of the kelly is exposed above the rotary table with the drill string held in the table,

(3) rotating the kelly in the jaw means to disconnect the kelly from the drill string,

(4) securely gripping the lower end of the kelly in the jaw means,

(5) operating the controllable means to move the lower end of the kelly linearly into alignment with the joint disposed in the rathole,

(6) loosening the jaw means around the kelly so that the kelly is held in the jaw means but is axially movable in the jaw means,

(7) lowering the kelly into engagement with the joint using the jaw means as a guide,

(8) raising the kelly and the joint after the joint and kelly have been interconnected to free the joint from the rathole using the jaw means as a guide,

(9) tightening the jaw means about the joint to securely grip the joint,

(10) operating the controllable means to move the joint linearly into alignment with the drill string,

(11) loosening the jaw means around the joint so that the joint is held in the jaw means but is axially movable in the jaw means,

(12) lowering the joint into engagement with the drill string using the jaw means as a guide, and

(13) removing and retracting the jaw means from the joint after the joint has been connected to the drill string.

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