ABSTRACT

TITLE: ' A TUBING HANGER FOR HANDLING TUBINGS OF OIL WELLS WITH MULTIPLE PORTS FOR EASE OF OPERATION AND CONTROL OF DOWN HOLE OPERATION'

The invention relates to a Tubing hanger for handling tubings of oil wells with multiple ports for ease of operation and control of down hole operations, comprising : a hanger body configured with tubing handling bore at least two exit ports for allowing easy installation and retrieval of ESP cables; at least four exit ports additionally provided for four control lines for injection of water and chemicals; wherein a first plurality of pockets are constructed on the top surface of the hanger body for easy installation and retrieval of the control lines through said four exit ports, and wherein a second plurality of pockets is provided on the bottom surface of the hanger body.

{ FIGURE 1 }

WE CLAIM :

1. A Tubing hanger for handling tubings of oil wells with multiple ports for ease of operation and control of down hole operations, comprising :

   - a hanger body configured with tubing handling bore;

   - at least two exit ports for allowing easy installation and retrieval of ESP cables;

   - at least four exit ports additionally provided for four control lines for injection of water and chemicals;

   wherein a first plurality of pockets are constructed on the top surface of the hanger body for easy installation and retrieval of the control lines through said four exit ports, and wherein a second plurality of pockets is provided on the bottom surface of the hanger body for easy installation and retrieval of ESP cables through said two exit ports.

2. The tubing hanger as claimed in claim 1, wherein the hanger is provided with threaded portions for suspending and lifting the tubings during drilling operation.

3. The tubing hanger as claimed in claim 1, comprising arrangement to Internally accommodate a back pressure valve.

4. The tubing hanger as claimed in claim 1, comprising an anchor screw for energizing the hanger by tightening on a spool which in turn compresses the gland packing to prevent leakage.

Dated this 12th day of December 2013

(P.D.GUPTA)
OF L.S.DAVAR & CO
APPLICANTS AGENT

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BHARAT HEAVY ELECTRICALS LIMITED

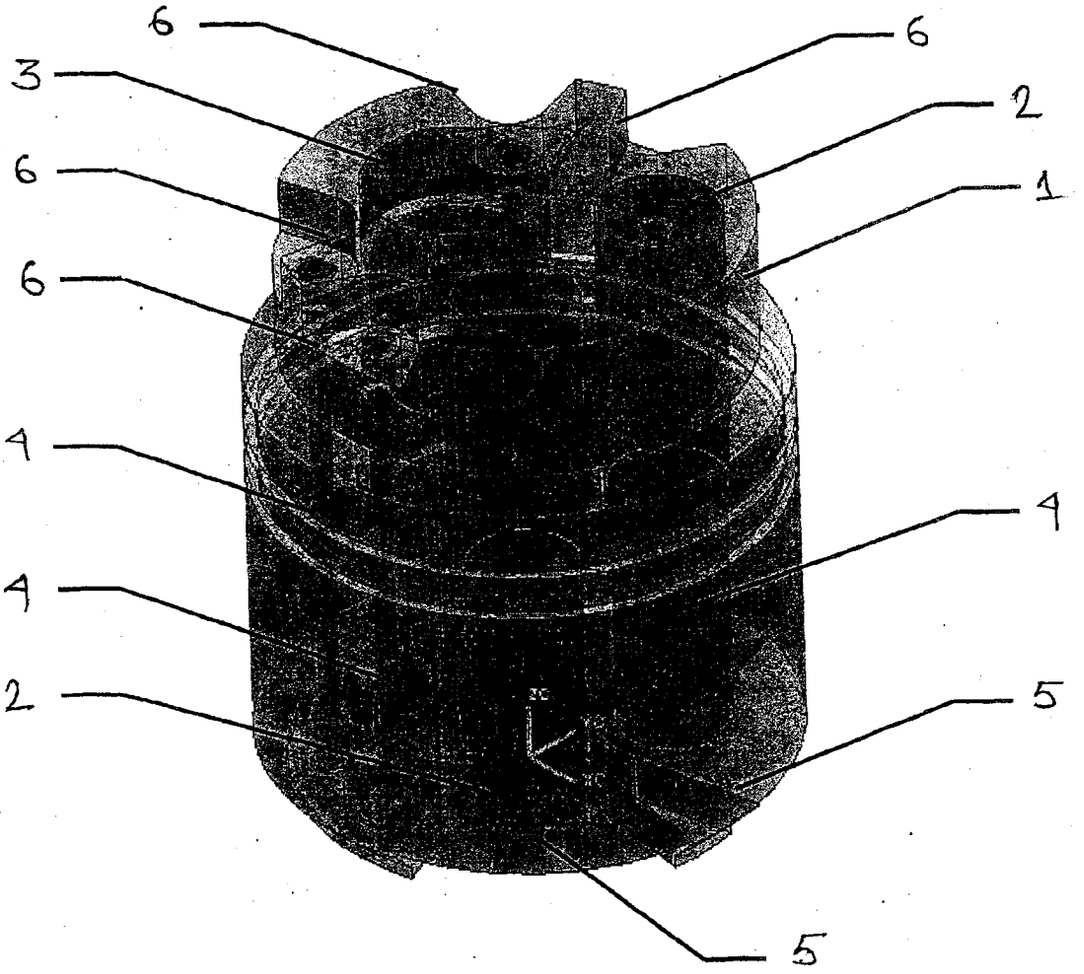


Figure-1

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FIELD OF THE INVENTION

The present invention generally relates to oil field equipment namely tubing hanger where the top and bottom of the hanger body is configured as a threaded box for suspending the tubing and lifting the tubing, with at least one each control line for electric submersible pump, and other associated operations. More particularly, the invention relates to a tubing hanger with at least two control lines assigned for electric submersible pump cable.

BACKGROUND OF THE INVENTION

Tubing hangers are mainly designed for suspending the tubing and having multiple ports for down hole operations including control lines with bores for accessing a back pressure valve. Tubing hangers are of different types namely extended neck type of hanger, short neck hangers and suspending type, tubing hanger capable to implement various sealing methods for example, packing energisation by gland of 's' seals for sealing or 'or' rings for sealing.

According to the prior art, the tubing hangers are provided with a tubing bore with maximum of 2/3 ports for allowing exit of the control line and inserting the cable for Electric Submersible Pump. These ports and bore are used for handling the tubing and the exiting the control line. The disadvantage of this tubing hanger is that the same is not suitable for more than one electric submersible

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pump (ESP). Accordingly, four control lines are required to be operated for down hole operations.

OBJECT OF THE INVENTION

It is therefore an object of the invention to propose a Tubing hanger for handling tubings of oil wells with multiple ports for ease of operation and control of down hole operations, which reduces yield time consumption.

Another object of the invention is to propose a Tubing hanger for handling tubings of oil wells with multiple ports for ease of operation and control of down hole operations, which is applicable for all kinds of penetration cables.

A further object of the invention is to propose a Tubing hanger for handling tubings of oil wells with multiple ports for ease of operation and control of down hole operations, which is provided with plurality of pockets in the hanger body for easy accessibility for exiting the control lines for the cables.

SUMMARY OF THE INVENTION

Accordingly, there is provided, a Tubing hanger comprising tubing handling bore, at least two numbers of ports for handling Electric Submersible Pump cables (ESP), and four safety valve control lines exiting for a sub surface safety valve, for injection of water and chemicals along with electric cable.

Special metallic pockets are machined on top and bottom of the tubing hanger for easy accessibility for handling the control lines and ESP cables. The tubing hanger is energized by tightening the anchor screws in a spool which + in turn compresses the gland packing.

ADVANTAGES

The advantage of the invention is that maximum four control line operations namely chemical injection, feed cable insertion, electric cable for sub surface operations, water injections and two electric submersible pump cables which will reduce the rig time in testing and exploration of the oil well.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWING

Figure 1 – shows an isometric view of a Tubing Hanger with multiple ports for tubing, control lines and ESP.

DETAIL DESCRIPTION OF THE INVENTION

As shown in figure 1, the tubing hanger (1) is provided with ports for at least two cables (2) of four control lines of Exit ports (4) for at least sizes between 1/8 inch to 1/8 inch which are also provided. The hanger body is provided with a first plurality of pockets (6) on the top surface for easy installation and retrieval of the control lines through the exit ports (4). A second plurality of pockets (5) is configured on the bottom surface of the hanger body for installation and

retrieval of ESP cables (2). The body of the hanger is configured with threaded portion to allow suspending and lifting of the tubing during drilling and exploration operation. Further the hanger (1) is provided with arrangement to accommodate a back pressure valve with the hanger body to enable fast repair of the X-mas tree down the oil well when needed.