Feb. 27, 1923. 1,446,789.

L. D. DODD.

DRILLING HEAD FOR OIL WELL CASINGS.

FILED APR. 7, 1922.

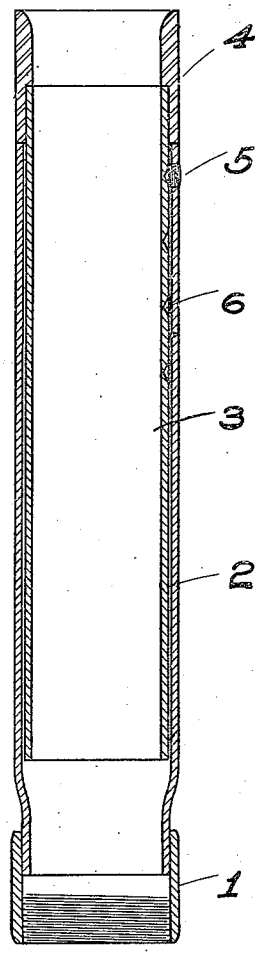


FIG. 1.

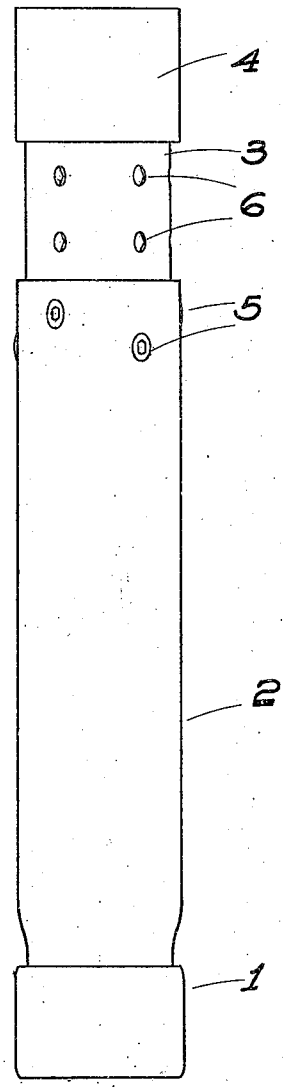


FIG. 2.

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UNITED STATES PATENT OFFICE.

LOVELL D. DODD, OF FRANKLIN, PENNSYLVANIA.

DRILLING HEAD FOR OIL-WELL CASINGS.

Application filed April 7, 1922. Serial No. 550,341.

To all whom it may concern:

Be it known that I, LOVELL D. DODD, citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Drilling Heads for Oil-Well Casings, of which the following is a specification.

The object, construction and application of my improved drilling head for oil well casing are herein set forth with sufficient clearness to enable others skilled in the arts to which its construction and use respectively relate, to make and use the same.

In the operation of drilling oil wells, as the drilling operation progresses, casing is inserted into the drill hole to shut out the water which would otherwise flood the well and it is expedient that the top of each run of casing that is inserted should be flush with the upper surface of the derrick floor when the drilling is resumed and continues.

As the casing is being inserted into the well, the regular commercial lengths are usually employed, and these lengths may vary somewhat, and sometimes this variation is considerable, hence it is frequently not possible to cause the upper end of the well casing proper to be flush with the upper surface of the floor of the derrick, but it is always possible to select a section of such length that its upper end, when inserted in the well will be below the upper surface of the floor of the derrick. In this case my improved drilling head is attached to the upper end of said well casing, and by reason of the adjustable, telescoping section, the upper end thereof may be easily and quickly adjusted to a position which coincides with the upper surface of the floor of the derrick, and secured, by means provided for that purpose, in said position.

In the drawings,

Fig. 1 is a longitudinal section of my improved drilling head, and

Fig. 2 is an elevation thereof in an extended position.

The construction of my improved drilling head for oil well casing is substantially as follows, and for the purpose of this description, certain sizes of casing will be specifically designated, merely for the purpose of illustration, but in no way as contemplating a limitation of the embodiment of my invention, since a drilling head may be formed of any two consecutive sizes whether they are those specifically mentioned, or any others, and oil well casing is made in sizes ranging in diameter from two inches up to fifteen and one-half inches.

We will assume that a five and five-eighths inch casing is being inserted in the well. The nominal diameter of casing is the inside diameter of same.

Under the assumption above selected, the coupling 1 will be a standard coupling for a five and five-eighths casing. The outside diameter of a five and five-eighths casing is six inches. For the outer shell 2 of my drilling head, a section of six and one-quarter inch casing will be used, and for the inner shell 3 of said head, a section of five and five-eighths casing will be utilized, the lower end of the outer shell 2 is swedged down to screw into said coupling 1. However, in lieu of this particular construction, a special coupling might be employed.

The upper end of said inner, telescoping shell 3 is supplied with a terminal 4 which is rigidly attached thereto, and consists of a ring of high carbon steel which is preferably tempered to a degree of hardness which will best enable it to withstand wear, shocks, blows, and other use and abuse which is characteristic of work that is being done around drilling oil wells.

Said inner shell 3 is freely movable longitudinally within said outer shell 2.

For the purpose of securing said inner shell at various positions of said longitudinal movement, or vertical adjustment, set screws, as 5, are inserted through said outer shell 2; said set screws are preferably of the cone-point, socket or safety type, and seats are formed in the periphery of the inner shell for the reception of the points of said screws, said seats being indicated at 6 in Fig. 2, a section of same being shown in Fig. 1.

From the above description, it will be readily understood that, when the top of the well casing proper is positioned below the derrick floor, my improved drilling head may be attached to said casing and the member 3 adjusted vertically so as to position its upper end flush with the derrick floor, and said member 3 secured at this desired height by means of said set screws 5.

After the drilling operation is completed, my improved drilling head is removed, and a section of well casing proper is supplied to remain permanently in position.

The use of my improved drilling head for

casing, is conducive to a considerable saving of time, expense, and casing, and may be regarded as a permanent piece of equipment for drilling oil wells, to be used and re-used for the drilling of many wells.

I claim the following:

1. A drilling-head for oil well casing comprising in combination, a casing coupling suitable for connection to the well casing, an outer shell consisting of a section of casing of larger diameter than said well casing carried by said coupling, an inner shell arranged to telescope within said outer shell and consisting of a section of casing of the same diameter as said well casing, securing means adapted to secure said inner shell at various positions of said telescopic movement, and a terminal for the upper end of said inner, telescoping section comprising a ring of high-carbon steel.

2. A drilling-head for oil well casing comprising in combination, a casing coupling suitable for connection to the well casing, an outer shell consisting of a section of casing of larger diameter than said well casing carried by said coupling, an inner shell consisting of a section of casing of the same diameter as said well casing arranged to be longitudinally adjustable within said outer section, securing means carried by said outer shell adapted to secure said inner shell in various positions of adjustment, and a terminal for the upper end of said inner section, comprising a ring of hardened steel.

In testimony whereof I affix my signature.

LOVELL D. DODD.