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M. J. HEALD

CHOKE NIPPLE FOR OIL LINES

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Fig. 1.

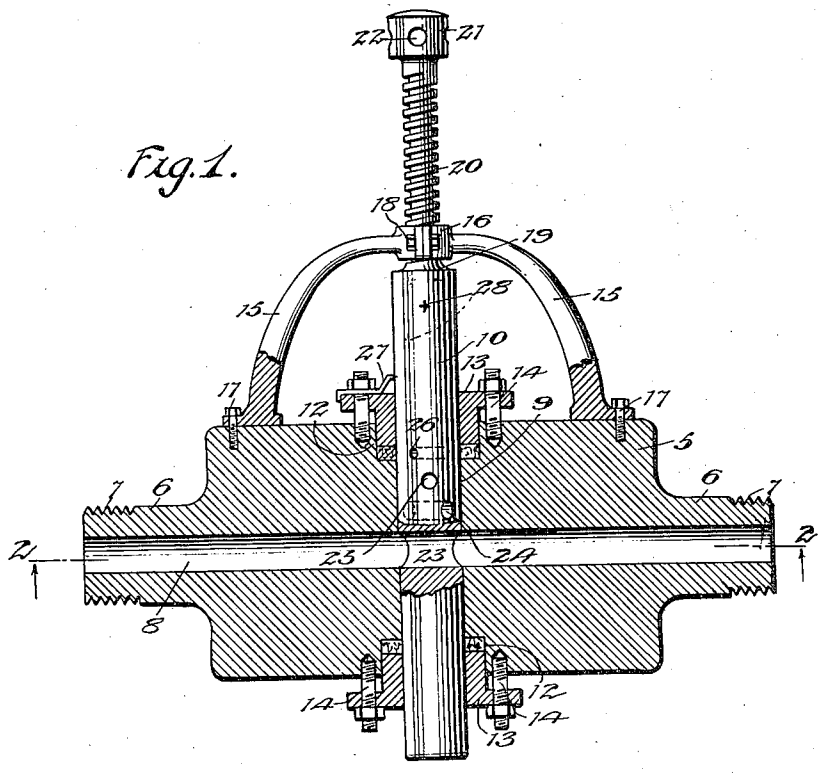
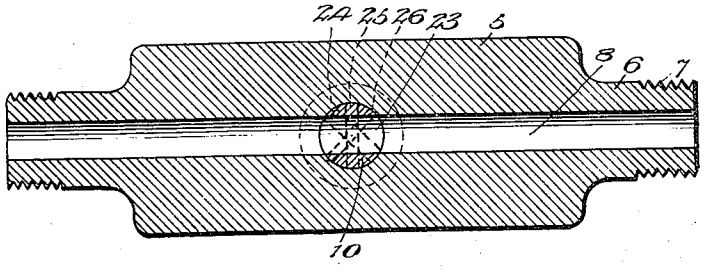


Fig. 2.



WITNESSES

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CHOKE NIPPLE FOR OIL LINES.

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To all whom it may concern:

Be it known that I, MERL JEROME HEALD, a citizen of the United States, and a resident of Tulsa, in the county of Tulsa and State of Oklahoma, have invented a new and Improved Choke Nipple for Oil Lines, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in oil well apparatus, and it pertains more particularly to a new and improved device adapted to replace the ordinary type of choke nipple.

It is customary in handling and operating oil wells which produce large volumes of oil and water under pressure, to place in the pipe lines connecting the well to the tanks, a nipple having a greatly reduced opening. This nipple is commonly called a choke nipple. The purpose of this choke nipple is to control the amount of fluid discharged from the well, and the size of the opening in the nipple depends upon the character of the well. It is often necessary that various sizes of choke nipples be experimented with in order to determine the proper size of nipple to be used in connection with the well being drained, and to carry out these experiments it becomes necessary to make various changes in the choke nipples. To make these changes it is necessary to disconnect the lead lines having first shut the well in with the control gate. This operation requires the breaking of the flange unions and replacing the choke nipple that has been in use with one of a different size.

It is an object of the present invention to provide a device which is placed in the line between the well and the tank and in which various sizes of openings may be employed without removing the device from the said line.

It is a further object of the invention to provide means by which the various sized openings may be associated with a common passage to control the flow of fluid therethrough.

It is a still further object of the invention to provide means associated with the device for indicating which of the passages is in communication with the passage through the body of the device.

With the above and other objects in view, reference is had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a choke nipple constructed in accordance with the present invention;

Fig. 2 is a horizontal sectional view taken on the line 2—2 of Fig. 1.

Referring more particularly to the drawings, the device comprises a main body portion 5 formed preferably of hardened steel, and said main body portion is provided with end extensions 6, each of which is screw-threaded as indicated by the reference character 7, the screw-threaded portions providing for attachment of the body 5 in a pipe line. The body 5 has extending therethrough a passage 8, said passage also extending through the portions 6.

The body portion 5 is provided with a passage 9 which extends through the body portion at right angles to the passage 8, and said passage 9 is adapted to receive a turning plug 10 or the like. At each end of the passage 9 it is enlarged as indicated by the reference character 12, to form stuffing boxes, and glands 13 are received within the stuffing boxes and secured therein by means of bolts 14 or the like. Extending from the upper wall of the body 5 is a yoke 15, and said yoke 15 has a collar 16. The yoke comprises two members secured to the body 5 by means of bolts 17 or the like, and the two parts of the collar 16 of the yoke are secured together by means of bolts 18.

The upper end of the turning plug member 10 is reduced as indicated by the reference character 19, and said reduced portion is screw-threaded as indicated at 20. The upper end of the reduced portion 19 is enlarged to provide a head 21, which is formed with apertures 22 for the reception of a suitable tool for rotating the member 10. The collar 16 heretofore mentioned is internally screw threaded and the threads of the reduced portion 19 of the member 10 are adapted to mesh with the internal threads of the collar 16.

The member 10 is provided with a plurality of openings designated by the reference characters 23, 24, 25 and 26, the reference characters 23 being the opening of largest diameter and the opening 26 being the opening of smallest diameter, and the

openings 24 and 25 both being smaller than the opening 23 but larger than the opening 26. These openings are so arranged in the member 10 that they may be singly placed in communication with the passage 8 extending through the body 5. That is, when any one of the openings is in register with the passage 8, no other one will be in communication therewith.

Secured preferably to the upper stuffing box carried by the gland 13, is an indicator 27, and said indicator 27 is adapted to coincide with marks 28 on the member 10 to cause a visual indication of which of the several openings is in register with the passage 8.

The device operates in the following manner:

The body portion 5 is placed in the pipe line between the well and the tank and as the oil passes through to the tank the character of said oil determines as to whether or not the flow thereof is properly controlled. With the parts in the position shown in Fig. 1 of the drawings, if it is deemed necessary that the passage 8 through the body 5 should be restricted, it is only necessary to rotate the member 10 by engaging a suitable tool with one of the openings 22 and rotate said member until the opening 23 passes out of register with the passage 8 and the opening 24 passes into register therewith. The opening 24 being of smaller diameter than the opening 23, it is apparent that the passage 8 will be constricted and the passage of oil therethrough will be reduced. If it be desired to still further reduce the flow of oil through the passage 8, it is only necessary to again turn the member 10 until one of the smaller openings 25 and 26 is placed in register with the passage 8. In each of the positions in which one of the openings registers with the passage 8, a visual indication of the fact is given by registration of the pointer 27 with the proper mark 28 on the upper portion of the member 10, thus indicating to the operator when the correct positioning of the member 10 to cause proper registration of the desired opening with the passage 8 is had.

Although I have illustrated one of the preferred embodiments of my invention, it will be evident that various slight changes and alterations might be made in the general form and arrangement of the parts described without departing from the invention and hence I do not wish to limit myself to the precise details set forth but shall consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of the appended claim.

What is claimed is:

A choke nipple for oil lines comprising a body portion having a screw-threaded nipple projecting from each end thereof, a passage formed in the body portion and extending longitudinally thereof through said screw-threaded nipples, a second passage formed in the body portion and arranged at right angles to the first-mentioned passage and intersecting the same, a plurality of arms secured to one face of said body portion, said arms forming a yoke member overlying the second-mentioned passage, a valve member having a plurality of valve openings mounted in the second-mentioned passage and arranged to intersect the first-mentioned passage, and a screw-threaded extremity engaging the said yoke member, said screw-threaded extremity serving to move the valve through its passage upon operation of the valve member in a rotary direction.

MERL JEROME HEALD.