

May 26, 1925.

1,539,236

M. S. BLACK

CASING HEAD FOR OIL WELLS

Filed July 19, 1924

Fig. 1.

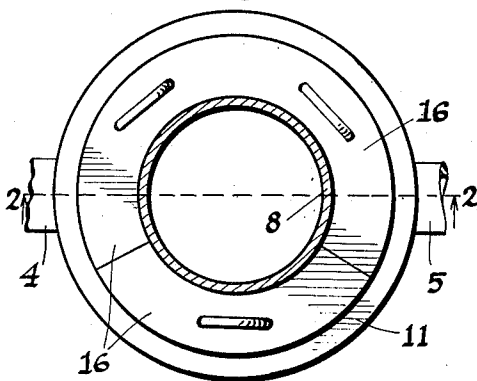
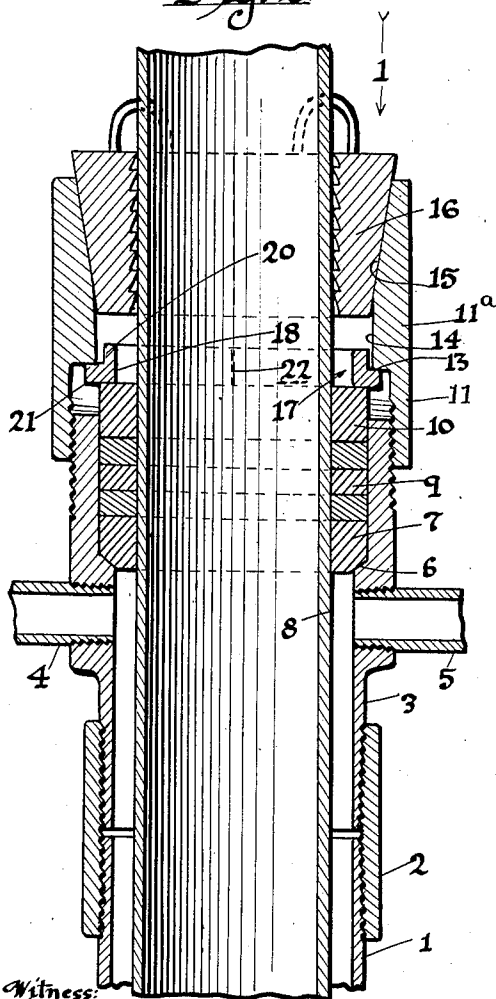


Fig. 2.



Witness:
W. H. Hall.

Fig. 4.

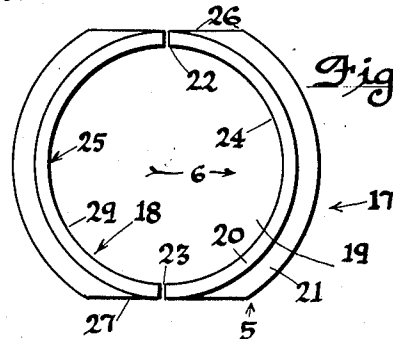


Fig. 5.



Fig. 6.

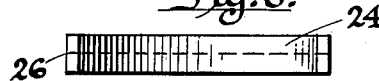
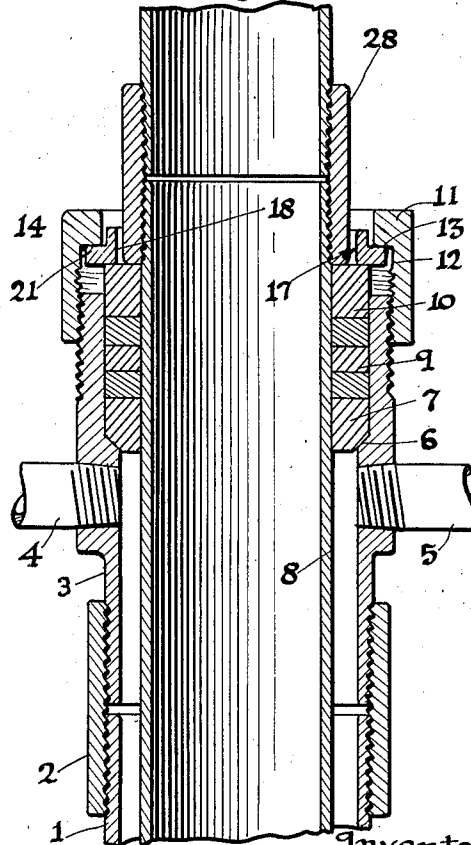


Fig. 3.



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UNITED STATES PATENT OFFICE.

MILLARD S. BLACK, OF HUNTINGTON PARK, CALIFORNIA.

CASING HEAD FOR OIL WELLS.

Application filed July 19, 1924. Serial No. 727,000.

To all whom it may concern:

Be it known that I, MILLARD SUMTER BLACK, a citizen of the United States, residing at Huntington Park, in the county of Los Angeles and State of California, have invented new and useful Improvements in Casing Heads for Oil Wells, of which the following is a specification.

An object is to make a casing head for oil wells so that when the time comes for setting an oil string and holding the gas the packing and compression means may be quickly applied.

Another object is to make a casing head having a packing compression ring made in two pieces so that the ring may be quickly inserted through the spider.

Other objects and advantages will appear from the drawings and specification.

The drawings illustrate a casing head embodying the principles of my invention.

Figure 1 is a top plan view of the casing head, the view being taken looking in the direction indicated by the arrow 1 in Fig. 2.

Fig. 2 is a vertical diametrical sectional detail on the line 2—2 of Fig. 1 and looking in the direction indicated by the arrows and showing the casing head packed and ready to hold the gas pressure in the well.

Fig. 3 is a view analogous to Fig. 2 and showing a step in the operation of applying the packing, and showing a modified form of compression member.

Fig. 4 is a plan of the two-piece compression ring shown in Figs. 2 and 3.

Fig. 5 is an edge view looking in the direction indicated by the arrow 5 in Fig. 4.

Fig. 6 is an inside view in elevation of one piece of the ring shown in Fig. 4, the view being taken looking in the direction indicated by the arrow 6.

The details of construction and operation shown in the drawings are as follows:

The oil well casing 1 has a coupling 2 screwed upon its upper end and the casing head extension 3 is screwed into the coupling 2. The casing head extension 3 has outlet pipes 4 and 5. A packing ring supporting seat 6 is formed above the pipes 4 and 5, a two-piece packing ring 7 fits upon the seat 6 around the oil pipe string 8, packing sections 9 fit upon the packing ring 7, and a two-piece metal gland 10 fits against the packing 9. A compression member ring or sleeve 11 is screwed upon the upper end of the extension 3 and has an enlarged bore

12 extending from its lower end to a compression shoulder 13 and a smaller bore 14 inside of the shoulder 13. This compression member serves primarily for compressing 60 or holding the packing as shown in Fig. 3, and secondarily it may serve as a base upon which a spider 11^a may be formed integrally as shown in Fig. 2. When the spider is used the spider bore 15 leads to the bore 14 and 65 is flared outwardly to form a seat for the slips 16.

The bore 14 is larger than the parts 7, 9 and 10 so that these parts may be inserted downwardly through the bore 14.

The two-piece compression ring 17 has an opening 18 considerably larger than the oil pipe 8. The compressing ring 17 is L-shaped in cross section and has a vertical inner wall 20 surrounding the opening 19 and 70 smaller than the opening 14 and has a horizontal flange 21 extending outwardly from the bottom of the wall 20 and adapted to fit the shoulder 13. The ring 17 is parted on the diametrical lines 22 and 23, thus producing the portions 24 and 25. The ends 80 of the flanges 21 of the portions 24 and 25 are cut away on straight lines 26 and 27 to make clearance for the insertion of the pieces into the casing head.

After the oil pipe string 8 has been inserted and it is desired to set the string to hold the gas, the parts 7, 9 and 10 are quickly inserted downwardly through the bore 14 and the oil pipe string 8 may be lowered 90 until the oil pipe coupling 28 engages the gland 10 and presses the packing firmly in place. Then the two-piece compression ring 17 is inserted one piece at a time. Take the piece 25, for instance, and place the inner 95 face 29 against the coupling 28 with the piece held at an incline with the ends upwardly and pass the piece down between the coupling 28 and the face of the bore 14 until the flange 21 hooks under the shoulder 13, 100 and then press the ends of the piece downwardly until the flange 21 is well seated under the shoulder 13. Then the other piece 24 may be inserted in the same way. After the ring 17 has been inserted, the flange 21 105 engages the shoulder 13 and the lower face of the ring overlaps the gland 10 so that the compression member 11 holds the packing in place and so that the packing may be tightened by screwing the compression member 11 110 down upon the extension 3.

Another way that the ring 17 may be ap-

plied is to lower the oil pipe string 8 until the coupling 28 presses the packing firmly into place; then momentarily raise the oil string to raise the coupling 28 high enough to be out of the way while the pieces 24 and 25 are inserted.

Thus I have produced a casing head for oil wells which may be quickly packed when the time approaches for the well to blow in, the casing head comprising a casing extension having a packing seat, a compression member screwed upon the extension and having an opening large enough for the insertion of the packing through the spider, and a two piece compression ring insertable through the compression member to hold the packing.

Various changes may be made without departing from the spirit of the invention as claimed.

I claim:

1. A casing head comprising a casing extension having a packing seat, a compression member screwed upon the extension and having a bore large enough for the insertion of packing through the bore into the packing seat and having a compression ring seat, and a two-piece compression ring insertable through the bore into the ring seat to overlap the packing and hold the packing in place.

2. A casing head comprising a casing extension having a packing seat, a compression member screwed upon the extension and having a bore large enough for the insertion of packing through the bore into the packing seat and having a compression ring seat, a packing supporting ring inserted through the bore into the packing seat, a packing inserted through the bore into the packing seat against the supporting ring, a gland inserted

through the bore into the packing seat against the packing, and a two-piece compression ring inserted through the bore into the ring seat and against the gland to hold the packing in place.

3. A casing head comprising a casing extension having a packing seat, a compression member screwed upon the extension and having a bore large enough for the insertion of packing through the bore into the packing seat and having a compression ring seat and so that an oil pipe may pass through the casing head, packing in the packing seat, a gland at the top of the packing so that the packing may be compressed by lowering the oil pipe until a coupling engages the gland, and a two-piece compression ring insertable through the bore around the oil pipe into the ring seat and to engage the gland to hold the packing in place.

4. A casing head comprising a casing extension having a packing seat, a compression member screwed upon the extension and having a bore large enough for the insertion of packing through the bore into the packing seat and having a compression ring seat, a spider formed integrally with and extending upwardly from the compression member and adapted to receive slips, a packing supporting ring inserted through the bore into the packing seat, a packing inserted through the bore into the packing seat against the supporting ring, a gland inserted through the bore into the packing seat against the packing, and a two-piece compression ring inserted through the bore into the ring seat and against the gland to hold the packing in place.

In testimony whereof I have signed my name to this specification.

M. S. BLACK.