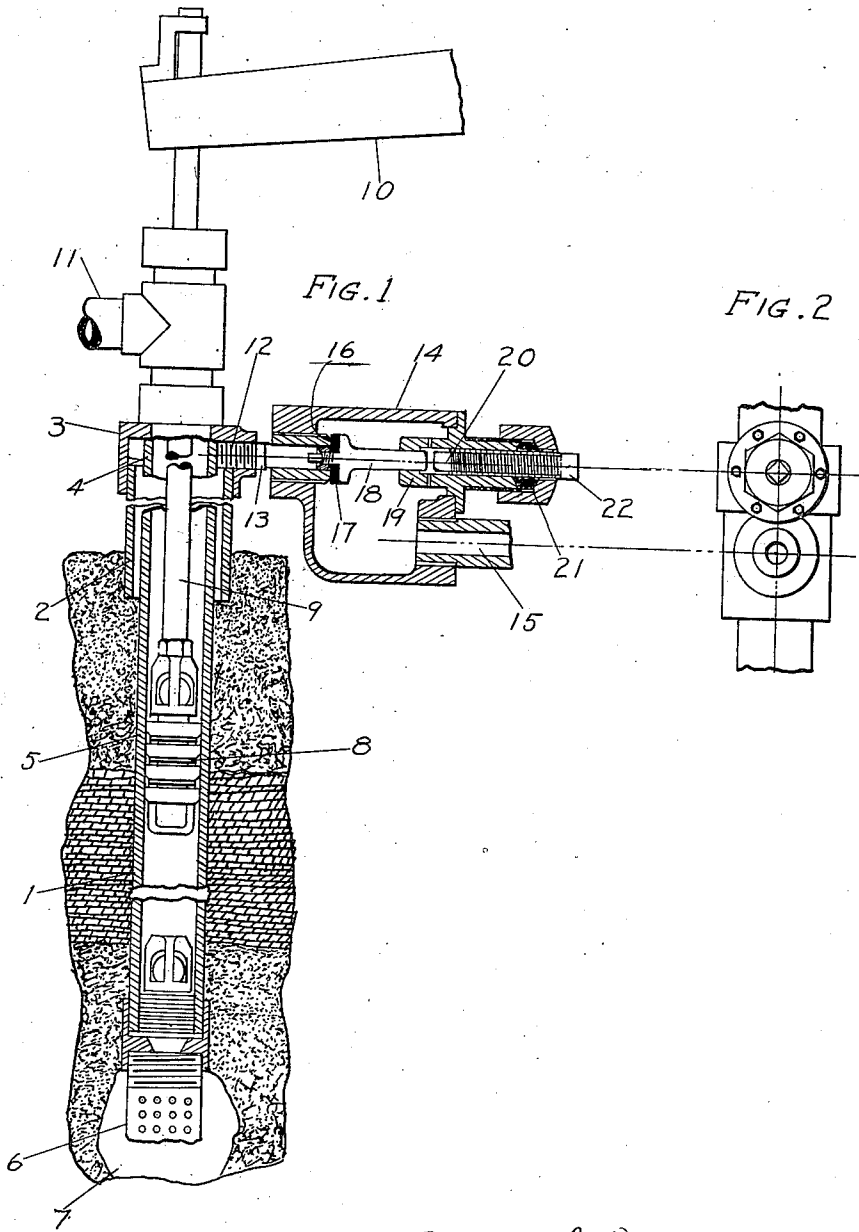


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METHOD OF AND APPARATUS FOR OPERATING OIL WELLS.  
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# UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR OPERATING OIL WELLS.

Application filed July 20, 1920. Serial No. 397,665.

*To all whom it may concern:*

Be it known that I, RUDOLPH CONRADER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Method of and Apparatus for Operating Oil Wells, of which the following is a specification.

In the operation of oil wells it is desirable to maintain a constant pressure on the well in order to increase the ultimate production of the well. In carrying out my method I ascertain by tests the normal production of gas in the well and restrict the discharge from the well sufficiently to affect the discharge of the normal production of gas of the well at the pre-determined pressure. In this way a given pressure may be maintained in a very simple manner. Preferably in carrying this out I provide an apparatus which will prevent a return flow of gas to the well.

I have illustrated a mechanism forming the apparatus of my invention which is adapted to carry out my method as follows:—

Fig. 1 shows a central section of a well with a controlling valve thereon.

Fig. 2 an end view of the controlling valve.

1 marks the well which extends through the usual earth formations into the oil bearing sand, 2 the well casing, 3 the casing head, 4 the tubing, 5 the pump, 6 the strainer, 7 the usual cavity in the well sand, 8 the pump plunger, 9 the sucker rod, 10 the walking beam or jack, 11 the discharge for oil from the tubing, and 12 the discharge from the casing head for gas.

The controlling valve operates the body 14 which leads to a discharge 15 and is con-

ected by means of a nipple 13 with the casing head. The valve has the seat 16 on which operates a check valve 17. A stem 18 extends from the check valve into a guide 19. An adjusting screw 20 is arranged back of the stem 18 and extends through a gland 21 and is provided with a squared end by means of which the screw may be adjusted so as to limit the lift of the valve 17.

By adjusting the lift of the valve 17 the discharge from the well may be so restricted that the normal production of gas from the well will escape at the pre-determined pressure. If a higher pressure is desired the restriction is slightly increased, if a lower pressure the restriction is more open. In this simple manner an approximately constant pressure may be maintained in the well.

While I have stated that I maintain a constant pressure in the well it will, of course, be understood that this is practical constancy rather than theoretical and the device only operates with variations of pressure but with such variations it does operate so as to maintain approximate constancy.

What I claim as new is:—

1. The method of operating oil wells which consists in maintaining a constant pressure upon the well by restricting the discharge to a capacity which will discharge the normal gas production of the well at the pre-determined pressure.

2. The combination with an oil well casing of a controlling valve which comprises a check valve and means for adjusting the lift of the valve.

In testimony whereof I have hereunto set my hand.

RUDOLPH CONRADER.