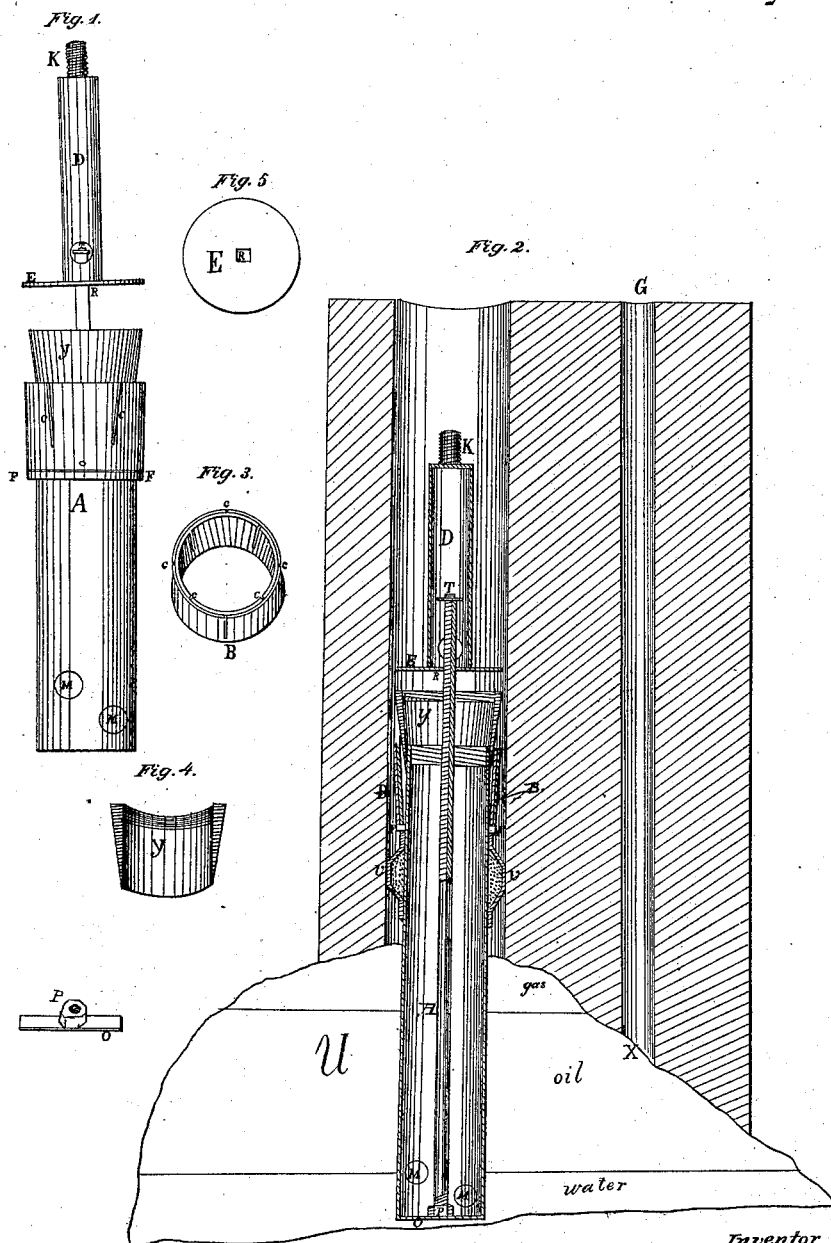


J. B. Christian,

Oil Pump,

N^o 54,859.

Patented May 22, 1866.



Witnesses
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L. B. Hammond

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JOHN B. CHRISTIAN, OF MOUNT CARROLL, ILLINOIS.

IMPROVEMENT IN APPARATUS FOR INDUCING THE FLOW OF OIL FROM WELLS.

Specification forming part of Letters Patent No. 54,859, dated May 22, 1866.

To all whom it may concern:

Be it known that I, JOHN B. CHRISTIAN, of Mount Carroll, in the county of Carroll, in the State of Illinois, have invented a new Device for Oil-Well; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing an oil-well that is not a flowing well with a device constructed in such a manner that the gas that forms in oil-wells will be confined in the well and utilized for the purpose of causing the oil to flow to the top of the well.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a perspective view. Fig. 2 is a sectional view, and Fig. 3 is a view of the hollow double copper cylinder. Fig. 4 is a section of the sharp-edged hollow cylinder.

I use a piece of gas-pipe, or its equivalent, for the tube A, Fig. 1, having perforations near its lower end, as shown at M M, for the purpose of admitting the oil, and having a flange, F, Figs. 1 and 2, near its upper end, to receive and hold the hollow copper cylinder to its place, and having a screw-thread cut on the inside of it at the top, for the purpose of removing it from the well when empty, or whenever desired, and having a metallic strip, O, across the bottom of the tube A, and having a nut attached to it near the center to receive the rod H, which is screwed into it. I then construct a double hollow cylinder of copper or other suitable metal or material, having slots *cc* in the sides of it, arranged so that the slots will be covered in each cylinder by the other, even when the cylinders are expanded against the sides of the well so as to be nearly air-tight. These cylinders are secured together by rivets or otherwise. The slots are for the purpose of having the metal or other material expand readily, as shown at B, Fig. 3. I also construct a hollow cylinder, *y*, of iron or other suitable metal, sharp at the lower extremity, to operate as a wedge in forcing out the copper cylinders against the rocky sides of the well, for the purpose of securing and holding the pipe A instantly to its place in the bottom of the well when pressure is applied from the

weight of the drill-rods used in boring the well. This cylinder also has a screw-thread on the inside of it at the top, so it can be withdrawn readily when desired. (Shown at *y*, Figs 1, 2, and 4.) I also construct a tube, D, having a circular base, E, at the lower end of it, and a screw, K, at the top of it to connect it to the drill-rods. I also use a rod, H, having the upper part of it square, as shown at N, Fig. 2, and extending through the square hole R, Fig. 5, in the circular base E into the tube D, Figs. 1 and 2, and having a nut, T, secured to the top of it, so that it cannot be withdrawn when the pipe A is being lowered into the well by it. I also use the common seed-bag. (Shown at *vv*, Fig. 2.)

The operation of lowering and fastening the tube A in the well is as follows: The slotted double hollow copper cylinder is placed over the pipe A, resting on the flange F. Then the sharp-edged hollow cylinder *y* is placed with the sharp edge resting between the pipe A and the copper cylinder B. Then the rod H N, with the tube D attached, is screwed into the nut P on the strip O, at the bottom of the tube A, and the whole is attached to the drill-rods by inserting the screw K, at the upper end of the tube D, into the lower end of the drill-rod. It is then lowered to its place in the bottom of the well, and the weight of the drill-rods rested for a moment on it, when the circular base E will press on the sharp-edged hollow cylinder *y*, which will expand the double hollow cylinder of copper against the rocky sides of the well, when the tube A will be instantly secured firmly in the well. The drill-rods are then turned several rounds, when the rod H will be detached from the tube A by unscrewing at the nut P. The tube D and the rod H are then drawn up out of the well with the drill-rods.

U in Fig. 2 represents a cavity in the rocks at the bottom of an oil-well. As the gas generated by the oil is lighter than water, it will occupy the upper space in the cavity. The oil is lighter than water, and will float on its surface, and will remain, if undisturbed, between the two. Therefore, if a well is bored into the upper or gas portion of the cavity the well will not be a flowing well, but will require a pump; but if the device A and its accompaniments are inserted in the well, as shown at Fig. 2, down through the gas into the oil-strata, then a flowing well will be the result. Again,

if a well is sunk at G down to X, a flowing well will be the result; but when the surface of the oil becomes lowered on a level with the bore at X the flow will cease. Then if the device A and accompaniments are inserted, as above described, and reaching down to the bottom of the oil, and shutting off the escaping gas, a flowing well will again be the result; and as the oil generates gas constantly, wells that have been pumped for some time could possibly be changed into flowing wells, by using this device, in a short time.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the flanged pipe A with the slotted double hollow cylinder B and the hollow cylinder y, as arranged in relation to each other, substantially as and for the purpose specified.

2. Lowering the pipe A, or its equivalent, and securing it firmly to its place in the well, by means of the tube D, with its circular base E, in combination with the rod H, substantially as set forth.

JOHN B. CHRISTIAN.

Witnesses:

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