G. T. PARRY.

Device for Oil Wells.

No. 48,994.

Patented July 25, 1865.

Fig. 1.

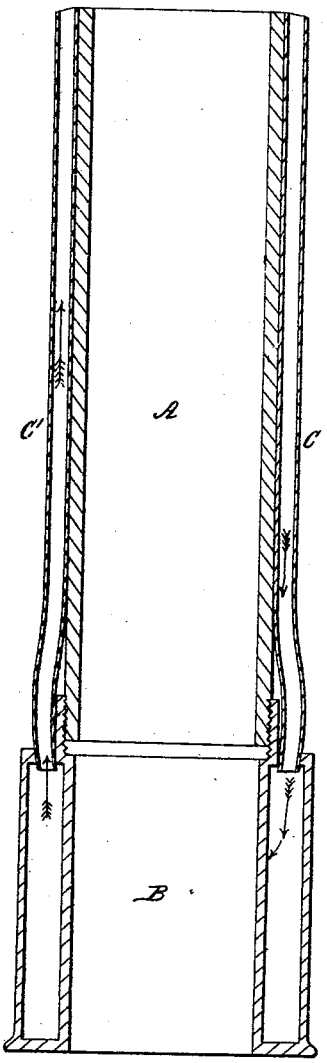


Fig. 2.

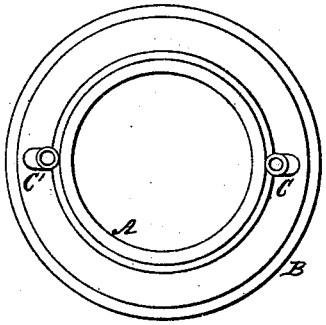
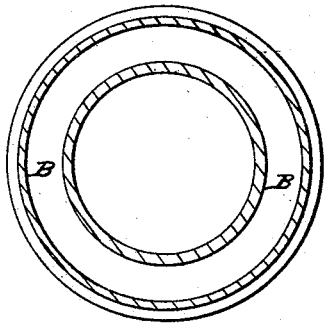


Fig. 3.



Witnesses:

R. Campbell

Inventor:

Geo. T. Parry

by his attys

Mason, Fenwick & Lawrence

UNITED STATES PATENT OFFICE.

GEORGE T. PARRY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN DEVICES FOR OIL-WELLS.

Specification forming part of Letters Patent No. **48,994**, dated July 25, 1865.

To all whom it may concern:

Be it known that I, GEORGE T. PARRY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and improved mode of warming the lower extremities of oil-well tubes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a diametrical section through the lowermost section of an oil-well pipe having my invention applied to it. Fig. 2 is a top view of this section of pipe. Fig. 3 is a horizontal section through the heater.

Similar letters of reference indicate corresponding parts in the several figures.

The object of my invention is to prevent the paraffine at the lower ends of oil-well tubes from becoming indurated, and thus choking up these tubes and preventing the free flow of the oil through them.

It is found that on account of the peculiar character of the paraffine it frequently prevents the oil below the lower ends of the oil-well tubes from entering these tubes, notwithstanding the most powerful pumps are employed for raising the oil; and it is also found that this substance can be softened and kept soft by the application of a moderate degree of heat. This I propose to do by flowing a stream of heated water, steam, or gas about the lower ends of the tubes at the points of entrance of the oil into these tubes, as will be hereinafter described.

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

In the accompanying drawings, A represents the lowermost section of the tube of an oil-well, applied to the lower end of which in any suitable manner is a hollow cylindrical box, B, which is closed at top and bottom.

C C′ are small pipes leading from the top of the well outside of the well-tube and communicating with the cylindrical box B. The pipe C is connected at its upper end outside of the well with a steam-generating apparatus or any ordinary boiler, and the pipe C′ leads up from the box B to the top of the well. When the water in the boiler becomes heated it is allowed to flow into the pipe C, which conducts it to the box B. From this box the heated water is conducted upward and out of the well again by means of the escape-pipe C′, as indicated by the course of the red arrows in Fig. 1. By this arrangement I am enabled to keep up a constant circulation of heated water in the box B, which is so constructed that it constitutes the lower extremity of the well-tube, and by keeping up a flow of heated water or steam I constantly supply new increments of heat to the box B, which is submerged in the oil immediately surrounding the entering end of the tube, and by giving off its heat to this oil all choking up of the pipe at its lower end is prevented; and not only is this the case, but the heated box B will keep the oil in a very liquid state, so that it will flow freely through the tube and pumping apparatus.

Instead of applying a cylindrical box as the heater, I propose to use a coil of pipe in its stead, so arranged as not to interfere with the flow of oil into the well-tube.

I do not confine my invention to the use of heated water as a means for conveying heat to the lower end of the well-tube from the top of the well, as steam in a highly-elastic state may be employed; or gas or heated air will answer a very good purpose. I prefer, however, to employ water and to keep up a constant stream into and out of the well.

If desirable, the heaters B or their equivalents may be arranged at different points along the length of the well-tube—say at the junction of each section of tubing—and these heaters may all communicate with each other or be provided with separate and independent induction and eduction pipes.

I hereby disclaim the broad principle of heating oil-wells by air and steam.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement of the heater B, with the induction and eduction pipes C C′, and the oil-well tube A, substantially as described.

Witness my hand in the matter of my application for a patent on the mode of heating oil-wells by circulating hot fluids or gases about the tubes of the same, this 20th day of May, 1865.

GEORGE T. PARRY.

Witnesses:

R. T. CAMPBELL,

E. SCHAFER.