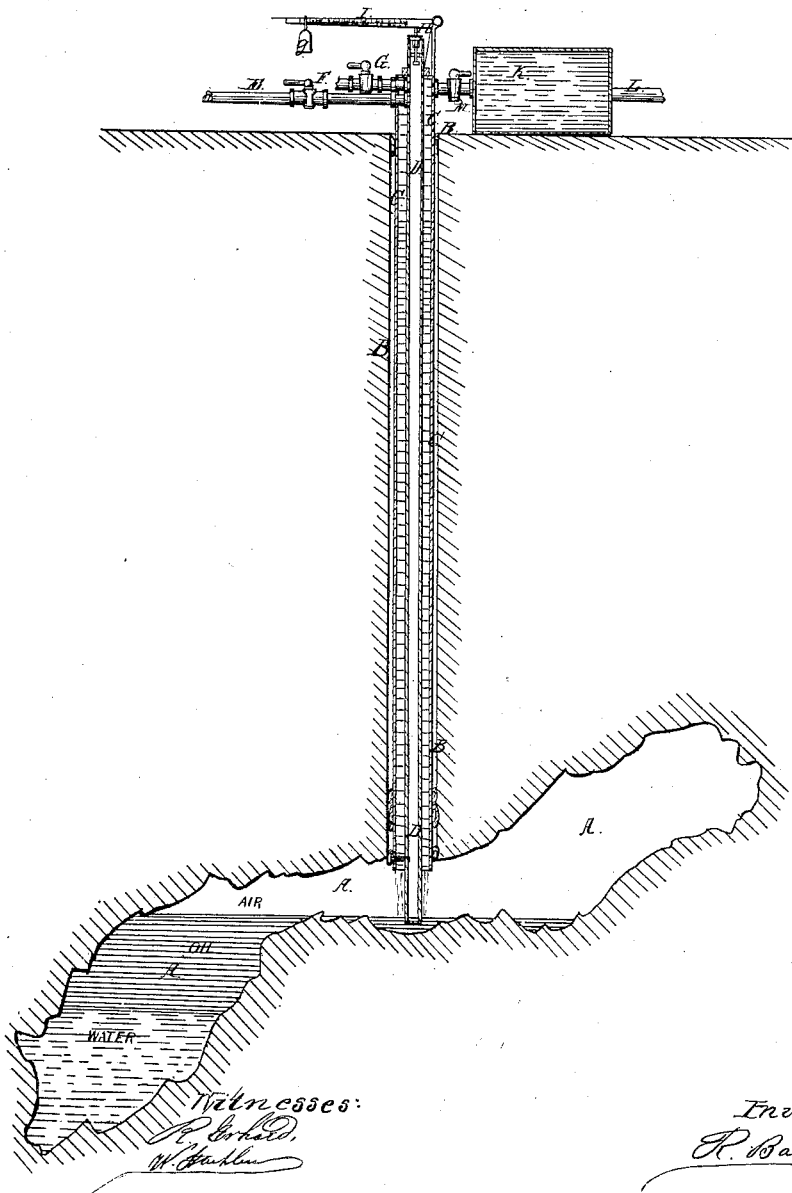


R. BOEKLEN.  
OIL EJECTOR.

No. 51,008.

Patented Nov. 21, 1865.



# UNITED STATES PATENT OFFICE.

REINHOLD BOECKLEN, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN OIL-EJECTORS.

Specification forming part of Letters Patent No. 51,008, dated November 21, 1865.

*To all whom it may concern:*

Be it known that I, REINHOLD BOECKLEN, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new Mode of Elevating Petroleum from its Wells; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which represents a vertical central section of a well to which my device for elevating the petroleum is applied.

Similar letters of reference indicate corresponding parts in the drawing.

The nature of my invention consists in an apparatus whereby the petroleum is raised to a proper discharging-point upon a body of water and against a body of air, and from this point discharged through a tube of said apparatus at the top of the well.

One form of apparatus which is adapted for carrying out my invention may consist of two tubes, one within the other concentrically, the inner tube having a weighted indicating-valve at its top, the outer tube admitting an influx of water, the inner an influx of air, until the oil in the well rises above openings near the bottom of the central and deepest tube, when the influx of air ceases and the continued influx of water through the outer tube, or the increase of oil in the well from its surrounding sources, causes the oil to ascend through the center tube, and by its pressure overcome the resistance of the graduated weight upon the valve, and thus expel all resisting air in the tube, and by flowing through the valve-passage indicate to the superintendent that all is going on right, and that the escape or discharge cock at or near the top of the tube should be opened.

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

A represents an oil-well; B, the mouth or bore of the same.

C is a tube, which is as large as the bore less the space required for it, to be packed in the usual way with seed-bags, but with a great deal more care, and as near as possible to the entrance into the well, in a manner to make an air-tight joint at the aforesaid place. This may be done by using a packing which may be expanded by means of having a stuffing-box connected with the top of the bore, or having

an air-tight bag around the said tube C, which may be expanded by charging the same with compressed air or water.

D is an air-tube, and is within the tube C.

E is a pipe provided with a stop-cock, F, and connected with an air-pump. G is a stop-cock, also connected with the air-tube D.

H is an air-valve on the top of the tube D, and is held to its seat by a lever, I, and weight J, the said lever being marked to indicate the pressure against the valve in pounds or otherwise; but the valve is made in a manner that it can be removed.

K is a water-reservoir connected with a pump by a pipe, L, and connected with the tube C by a stop-cock, M.

The operation upon the well is as follows: The depth of the well is first determined properly and from this is calculated the necessary pressure to raise a column of oil from it to the top of the tube D. The apparatus is then set ready for operation, all the stop-cocks closed, and the weight J placed on the lever I to press on the valve H with a pressure equal to raise the oil in the tube D corresponding with the calculation made before. Now the air-pump is set to work and the stop-cock F opened and the air compressed in the well until the weight J is raised. Then the cock F is closed and the air-pump stopped, the cock M opened and the water-pump set in motion, whereby the water from the reservoir K flows down to the bottom of the well and gradually raises the oil until the same appears coming out through the valve H, at which time the cock G is opened and the pressure in the tube D entirely removed, whereby the oil will flow freely off the cock G. The water should not be supplied any faster to the well than the oil escapes from it, and the valve H should be carefully watched so as not to be loaded too little or too much before the oil is coming to it.

From the foregoing the mode of raising may be clearly perceived. The compressed air has to take the place of the gases usually contained in the well when the operating is first begun, and the water-pressure is used to elevate the oil and to take the place of the oil formerly contained in it.

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

1. Raising petroleum from its wells by means

of a combined air and water apparatus, which is constructed and operated substantially as set forth.

2. Introducing the petroleum into the tube which conducts it to the top of the well from between a body of water and a body of air or other light gas, substantially in the manner and for the purpose set forth.

3. The valve H, or its equivalent, in combination with an apparatus which operates substantially as described, for the purpose set forth.

R. BOEKLEN.

Witnesses:

ANDREW I. TODD,

CHARLES L. NOE.