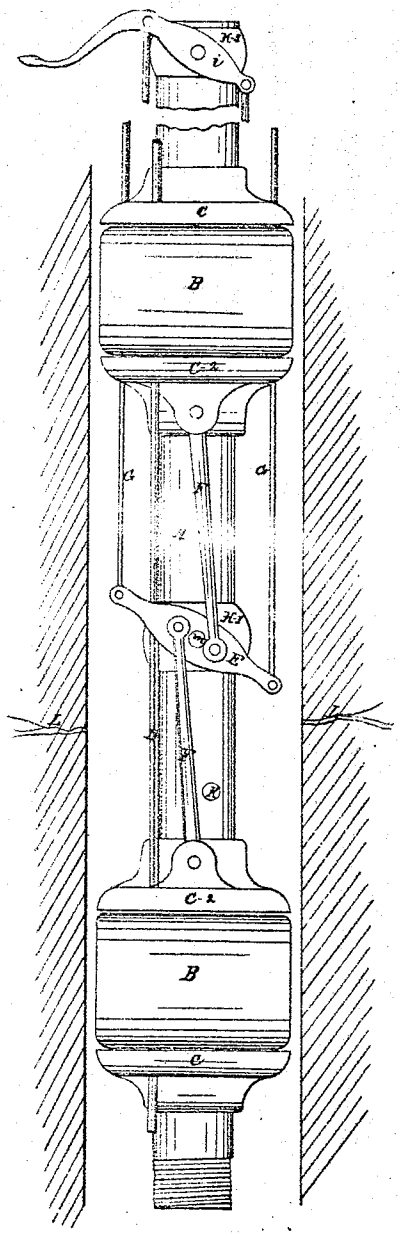
Burr & Wakelee,

Oil Pump,

No. 68,350. Patented Sep. 3, 1867.



Witnesses.
Geo. H. Burrall
John Hamilton Burleigh

Inventors.
D. Theodore Burr
Theodore Wakelee

United States Patent Office.

THEODORE BURR AND THEODORE WAKELEE, OF BATTLE CREEK, MICHIGAN.

Letters Patent No. 68,350, *dated September* 3, 1867.

IMPROVEMENT IN APPARATUS FOR TESTING DEEP WELLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, Doctor THEODORE BURR and THEODORE WAKELEE, both of the city of Battle Creek, n the county of Calhoun, and State of Michigan, have invented a new and useful Apparatus for Exploring, esting, and Pumping in Oil and Saline Wells; and we do declare that the following is a full and exact descrip- ion thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists in providing an apparatus that will (in the first place) explore and est the properties of the well at all points from top to bottom, and enable us to ascertain the exact locality of ach and every siphon or mineral vein in said well. Secondly, when the exact locality of the desired vein or iphon is found, by the mechanical operation of this invention (hereafter described) we are enabled to shut off verything foreign to the object sought for, both above and below, thereby enabling us to apply the whole force f our suction directly upon the object, whether oil or mineral-water. Third, the nature of this invention is such iat it overcomes the difficulties so frequently found in oil and mineral wells, caused by the gas being confined elow the seed-bag, which is now used to shut off the water above the vein; thus, by the expansive force of the as, it overpowers the current of oil and finds its way into the siphon, carrying with it oil, water, and loose par- cles of earth, damming up the siphon and rendering the well useless, or otherwise it will throw out the pump id cause a trouble in that form. The gas pipe (hereinafter described) removes that difficulty, and makes it rmless.

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

We use any of the metallic piping already introduced for pumping oil or mineral-water. This pipe, marked on the drawings, is fitted at the ends so as to be attached to other joints of piping of similar dimensions; ereby it becomes a component part of the pump. Then two flanges, marked C [illegible] firmly secured to the pe A, at any proper distance apart for operating purposes, with the face sides towards the centre, as seen in e drawings. Then two flanges being placed on the pipe A, and marked C–2 C–2, are fitted loose, so as to slide th ease on the pipe A, and facing from the centre, thus forming two pairs of flanges. Then two India-rubber nds, marked B B, are placed on the pipe A, between the flanges of each pair (using soft vulcanized rubber at will yield to the pressure when applied by the means hereafter described.) This forms two packing-bands be used for the purpose of shutting off the water from above and below the siphon L L. Then a band, rked H 1, is secured firm to the pipe A, equidistant from either packing-band B B. This band H 1 is pro- led with a pivot, *m*, on its opposite sides, protruding out from the band H 1 sufficient to form a fulcrum and pport upon which the brake E operates. The brake E is constructed in an irregular elliptical form, encircling e band H 1, and resting on the pivot *m* at its shortest central diameter. Then four extension-rods, marked F, (two of which are not shown in the drawings,) have one end connected to the brake H 1 near the fulcrum, pairs, the upper rods connecting with the upper flange C–2 being placed opposite each other on the flange d brake; (only one is shown on the drawings.) The lower rods F are connected to the lower flange C–2. ch rod is attached to the flanges by means of a pin, the rods F being attached to the brake E opposite the lcrum, so that by the movement of the brake each pair of rods will move in an opposite direction, thereby using the flanges C–2 C–2 to press tightly against the rubber bands, or otherwise loosen the pressure. Two ls, marked G G, one attached to the brake at its longest central diameter, pass up through the upper packing d connect to the lever *i* at the top of the pump. This lever encircles a band, H 2, similar to the one described low, except a handle is applied to increase the power necessary to operate the brake below. By bearing down this handle of lever H 2 we press the rubber out so as to fill the cavity of the well at both upper and lower cking-flange, thus shutting off all above and below the packing. Then, to provide for the suction, an aper- re, K, is made in the pipe A between the two packing-flanges, with the bottom end of the pipe A stopped. this arrangement we concentrate the whole of the suction-power direct upon the siphon L. Then, to avoid difficulty arising from gas below, we place a gas pipe on the outside of the pump pipe, which is marked D the drawings, which passes up through both packings, thereby conveying the gas up by the siphon upon which are operating. In order to loosen the packings we simply raise the lever *i* at the top of the well. Then,

when the siphon is at the bottom of the well, one packing operated by one pair of extension-rods, at the same time closing the aperture K in the side of the pipe, and opening at the end of the pipe A.

Having thus described our invention, what we claim, is—

1. The packing-boxes B B, C C, C–2 C–2, constructed and operating substantially as described and for the purpose set forth.

2. The gas pipe D, in connection with the packing-bands, substantially as and for the purpose set forth.

3. The lever *i*, in combination with the connecting-rods G G, brake E, extension-rods F F, and packing-bands B B, C C, C–2 C–2, substantially as described and for the purpose set forth.

THEODORE BURR,
THEODORE WAKELEE.

Witnesses:

GEO. P. BURRALL,
JOHN A. VAN VALKENBURGH.