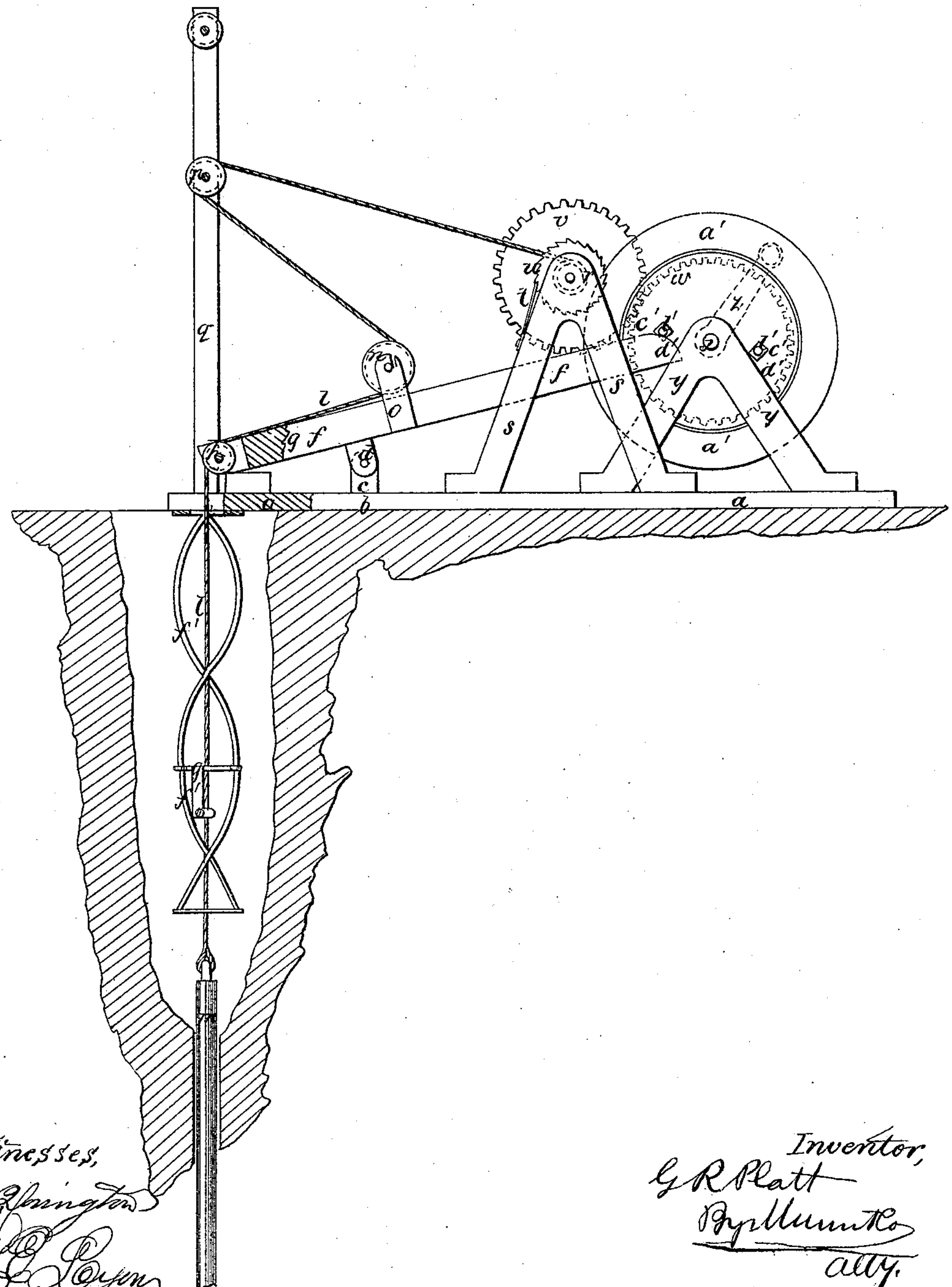
G. R. Platt,

Boring Artesian Wells.

No. 54,011. Patented Apr. 17, 1866.



Witnesses,

[signature]

[signature]

Inventor,

G R Platt

By Munn & Co

atty.

UNITED STATES PATENT OFFICE.

G. R. PLATT, OF BROOKLYN, NEW YORK.

IMPROVED OIL-WELL DRILL.

Specification forming part of Letters Patent No. 54,011, dated April 17, 1866.

To all whom it may concern:

Be it known that I, GEORGE R. PLATT, of the city of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Drilling-Machines for Oil and other Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The present invention consists, first, in hanging the drill-rod, by means of a rope or other suitable device, to the outer end of the walking-beam, the inner end of which is so connected with the driving power used that the drill-rod can be raised either to a greater or lesser height, as may be desired; second, in connection with the above, passing the rope or other device by which the drill-rod is hung to and around a pulley upon the walking-beam, and from thence to the windlass upon which it is wound, so that as the walking-beam raises the drill-rod an additional movement in the same direction shall be given thereto, thus greatly facilitating the same, as will be hereinafter more fully explained; and, third, in a novel manner of imparting the necessary rotary movement to the drill-rod, so as to cause it to strike the bottom of the well as it falls at different points thereof.

In accompanying plate of drawing, my improvements are illustrated, the figure representing a side view of a drilling-machine constructed according thereto.

a a in the drawing represent the bed-plate of the machine, having at *b* a standard, *c*, in and to which is hung, upon a fulcrum, *d*, the walking-beam *f*, having in the outer end of its short arm *g* a pulley, *h*. Over this pulley *h* passes a rope, *l*, to which is hung the drill-rod *m*, said rope passing from said pulley to and around the pulley *n*, hung at *o*, of the walking-beam, and from thence to and partially around the pulley *p* of the derrick *q* to and around the windlass *r*, turning in bearings of the uprights *s* of the bed-plate *a*, upon which windlass it is wound, a pawl, *t*, engaging with a ratchet-wheel, *u*, of the windlass, preventing the windlass from so turning as to unwind the said rope.

v is a gear-wheel fastened to the windlass and interlocking with another gear-wheel *w*, upon the driving-shaft *x*, turning in bearings of uprights *y*, to which shaft a crank-arm and handle, *z*, is secured for convenience in turning the same.

a' is a wheel attached to the shaft *x*, having projecting outward from one of its sides two arms, *b' b'*, placed by their inner ends in radial slots *c' c'* of the same, so that by moving said arms in the slots they can be set at any desired position from the center of the wheel, either near to or far from the same, nuts *d' d'* being used for fastening the same. These arms *b b*, as their wheel revolves, abut, in turn, against the inner end of the walking-beam, and, pressing down upon it, consequently raise its outer end, the distance to which it is raised being, as is obvious by an inspection of the drawings, either greater or less according as the arms *v'* are far from or near to the center of the wheel, thus correspondingly raising the drill-rod to a greater or lesser height, as the case may be, the drill, as the arms free themselves from the walking-beam, being then left free to fall, as is apparent without further description. During this movement of the pulley *a'* the gear-wheel *v* of the windlass is thrown out of connection with the driving-gear *w*.

By passing the rope around a pulley upon the walking-beam, as described, it is obvious that as the beam is operated to raise the drill, its upward movement is also greatly facilitated thereby, thus enabling it to be raised with much less power than would be the case if the rope passed directly from the end of the walking-beam to the windlass. The drill can be lowered to any desired depth by simply releasing the pawl from the ratchet-wheel of the windlass, when it will fall by its own weight and the pawl can be reset, thus enabling the drill to be lowered as the depth of the well increases.

Below the bed-plate of the machine, and extending for a short distance below the same, are secured two similar spiral-bent rods, *f' f'*, twisted around each other, to and on which is placed and moves a clasp, *g'*, in which the drill-rope is clinched or secured in any proper manner, so that as the drill-rod rises through the upward play of the end of the walking-beam to which it is hung, the drill shall be revolved, and thus caused to strike the bottom of the well at different points thereof as it drops.

More than two of the arms can be used, or only one, if so desired, and therefore I do not intend to limit myself to the use of any particular number, those employed, however, being all arranged so as to be susceptible of adjustment, substantially as described.

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

1. Hanging the drill-rod to the outer end of the walking-beam, operated at its inner end by and through a series of one or more adjustable arms, b', arranged together and operating substantially as herein described.

2. The combination of the pulleys h, n, and p, with the drill-rope l, or its equivalent, arranged together and operating as and for the purpose specified.

3. The slide-catch g' of the drill-rod rope, in combination with the spiral or twisted guide rod or rods f' f', arranged and operating as and for the purpose described.

The above specification of my invention signed by me this 5th day of August, 1865.

G. R. PLATT.

Witnesses:
M. M. LIVINGSTON,
WM. DEAN OVERELL.