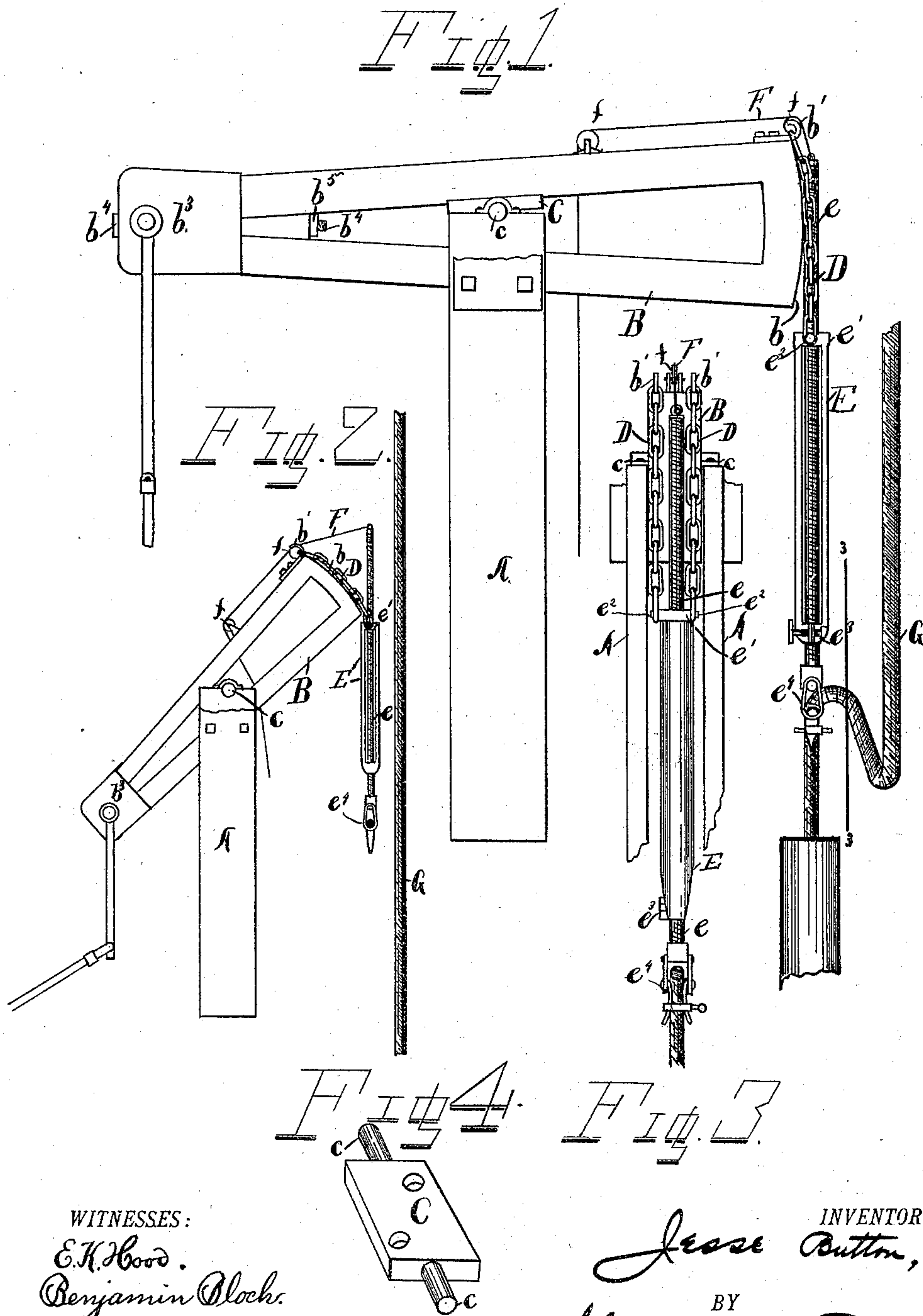


(No Model.)

J. BUTTON.
WELL DRILLING MACHINE.

No. 542,725.

Patented July 16, 1895.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JESSE BUTTON, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO GEORGE D. LOOMIS, OF TIFFIN, OHIO.

WELL-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 542,725, dated July 16, 1895.

Application filed April 25, 1894. Serial No. 508,976. (No model.)

To all whom it may concern:

Be it known that I, JESSE BUTTON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Well-Drilling Machines, of which the following is a specification.

One great objection to the portable well-drilling machines heretofore used is the frequency with which it is necessary to attach and release the gripping devices and raise the screw.

The objects of my invention are to provide a well-drilling machine in which, without increasing the height of the machine, the distance drilled at each clamping may be greatly increased, and to improve the construction of the machine; and the invention consists in the parts and combination and arrangement of parts hereinafter described and claimed.

My invention is more especially adapted for use in connection with portable well-drilling machines, such as are described in Letters Patent No. 506,204, granted me October 10, 1893.

In the drawings, Figure 1 is an elevation of a walking-beam provided with my improvement; Fig. 2, a reduced elevation showing the walking-beam thrown up so as to lift the screw out of engagement with the drill-rope; Fig. 3, an end elevation on line 3 3 of Fig. 1; Fig. 4, a detail view of the means for supporting the walking-beam.

A represents a supporting-frame, upon which is mounted a walking-beam B by means of a plate C, provided with pivoting extensions c. The plate is secured to the under side of the upper bar of the walking-beam and the pivots are mounted in bearings on the supporting-frame A. The walking-beam has a segmental end b. On the walking-beam above the segmental end are hooks b', to which are fastened lift chains or cables D connected with the supporting-frame E of the screw in such manner as to throw the center of the frame out of line with the end of the walking-beam, thus allowing a screw mounted in the frame E to pass above the end of the walking-beam. The screw e is mounted in the frame E, which has at its top a collar e'

provided with lugs e², with which the chains D are connected. The lower end of the frame E carries a split-nut e³ provided with the usual clamping mechanism. When the screw has been run down to its limit the clamp on the split-nut is released and the screw can be raised by means of a cord F passing over suitable guide-pulleys f and run down to within easy reach of the operator. The lower end of the screw is provided with the usual clamping mechanism e⁴ to engage the drill-rope G.

In the form shown the chains D are of a diameter such as to hold the screw clear of the path of the walking-beam. On the tapering end of the walking-beam a counterweight b³ is secured by means of a bolt b⁴ passing through the weight and that end of the walking-beam and a nut b⁵. This method of attachment permits the balance-weight to be drawn onto the tapering end of the walking-beam to take up any space caused by the shrinkage of the timbers. To this weight is pivotally fastened a pitman, which is connected with suitable driving mechanism. The counterweight is sufficient to slightly overbalance the weight of the temper-screw when the grip on the drill-rope is released.

In Fig. 2 I have shown the walking-beam thrown back so as to lift the temper-screw out of engagement with the drill-rope and allow the tool to be raised. The walking-beam being balanced the screw can be handled with great ease.

I claim as my invention—

1. In a well drilling machine the combination of a walking beam, B, a screw, e, a frame, E, adapted to support the screw and open to permit it to play through both ends, and chains, D, to support the frame, E, and hold the screw in a plane outside of the arc of travel of the walking beam, substantially as described.

2. In a well drilling machine, the combination of a walking beam; a screw; a frame suspended from the walking beam and open at its upper end to permit the screw to play therethrough; a split nut thereon adapted to engage or disengage with the screw, and a cord attached to the screw and carried over a sheave or sheaves to a position within reach of the operator whereby the temper screw may be

raised, substantially as and for the purpose set forth.

3. In a well drilling machine the combination of a walking beam, B; a screw, *e*; a frame, E; open at its upper end to permit the screw to play therethrough flexible supports, D, adapted to support the frame, E and hold the screw in a plane outside the arc of travel of

the walking beam, a slip nut, *e*³, on the frame adapted to engage or disengage the screw, and a cord, F, whereby the screw may be raised, substantially as and for the purpose set forth.

JESSE BUTTON.

Witnesses:

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