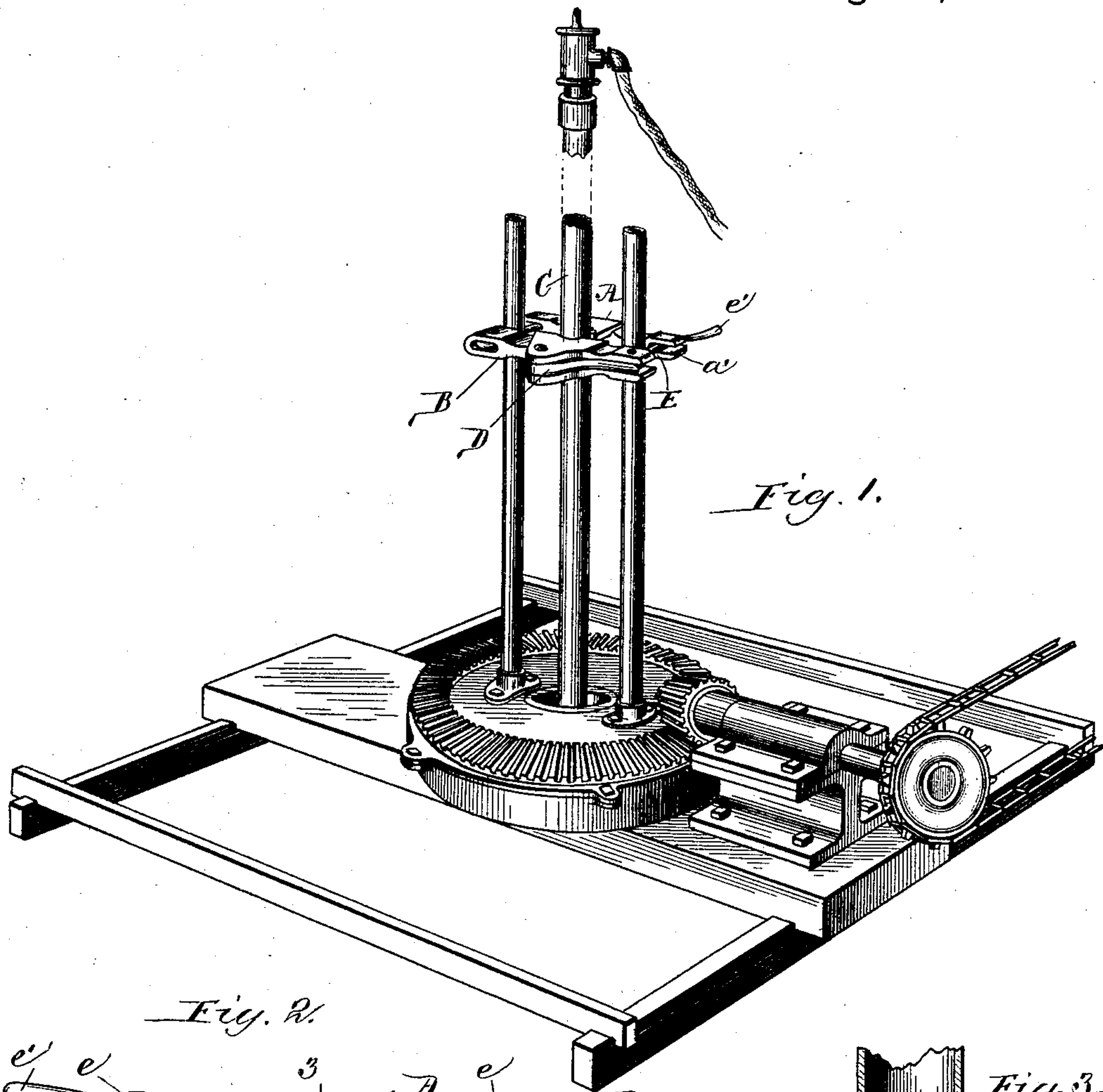


(No Model.)

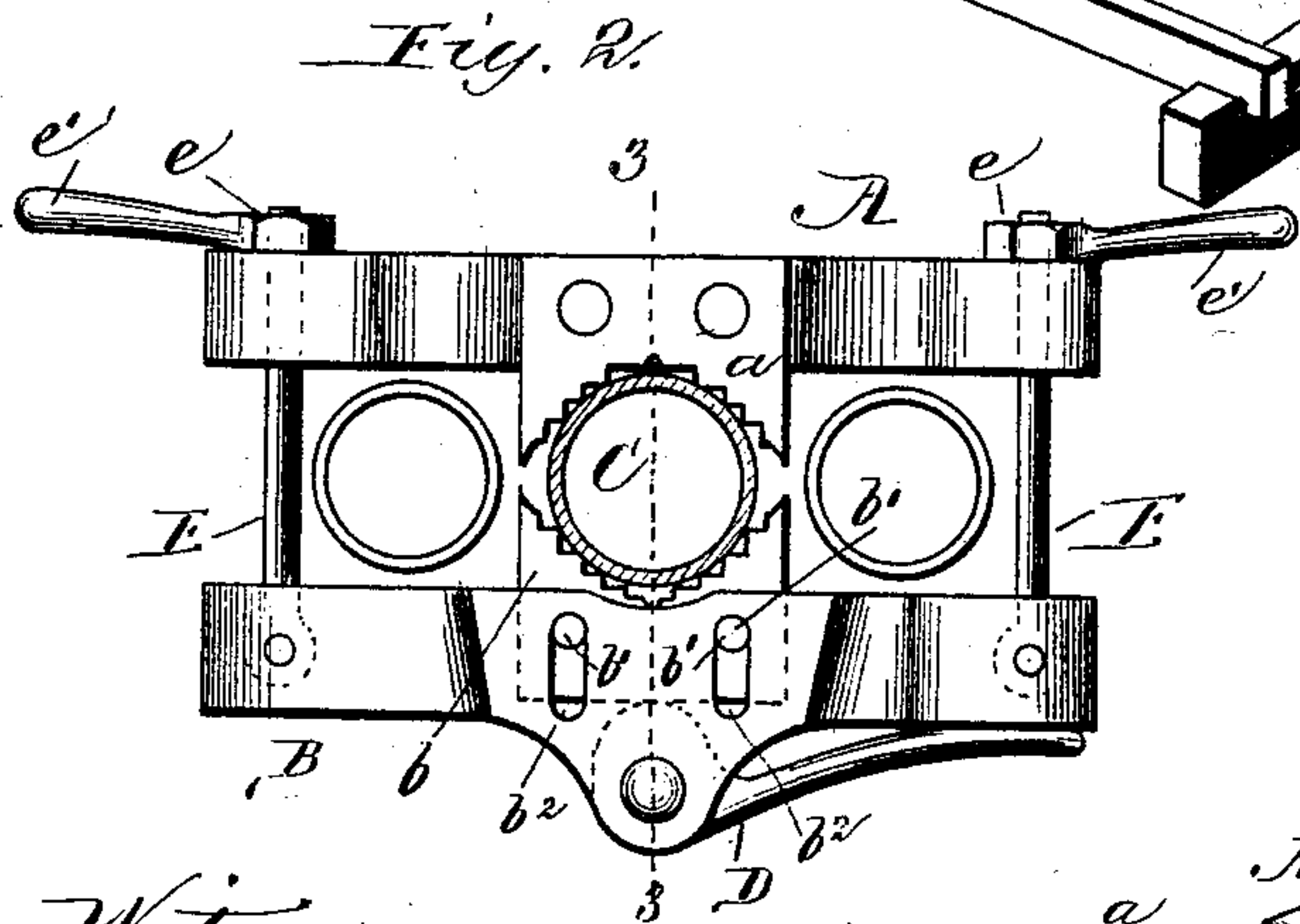
T. G. CHAPMAN & J. W. HUNT.  
WELL SINKING MACHINE.

No. 480,904.

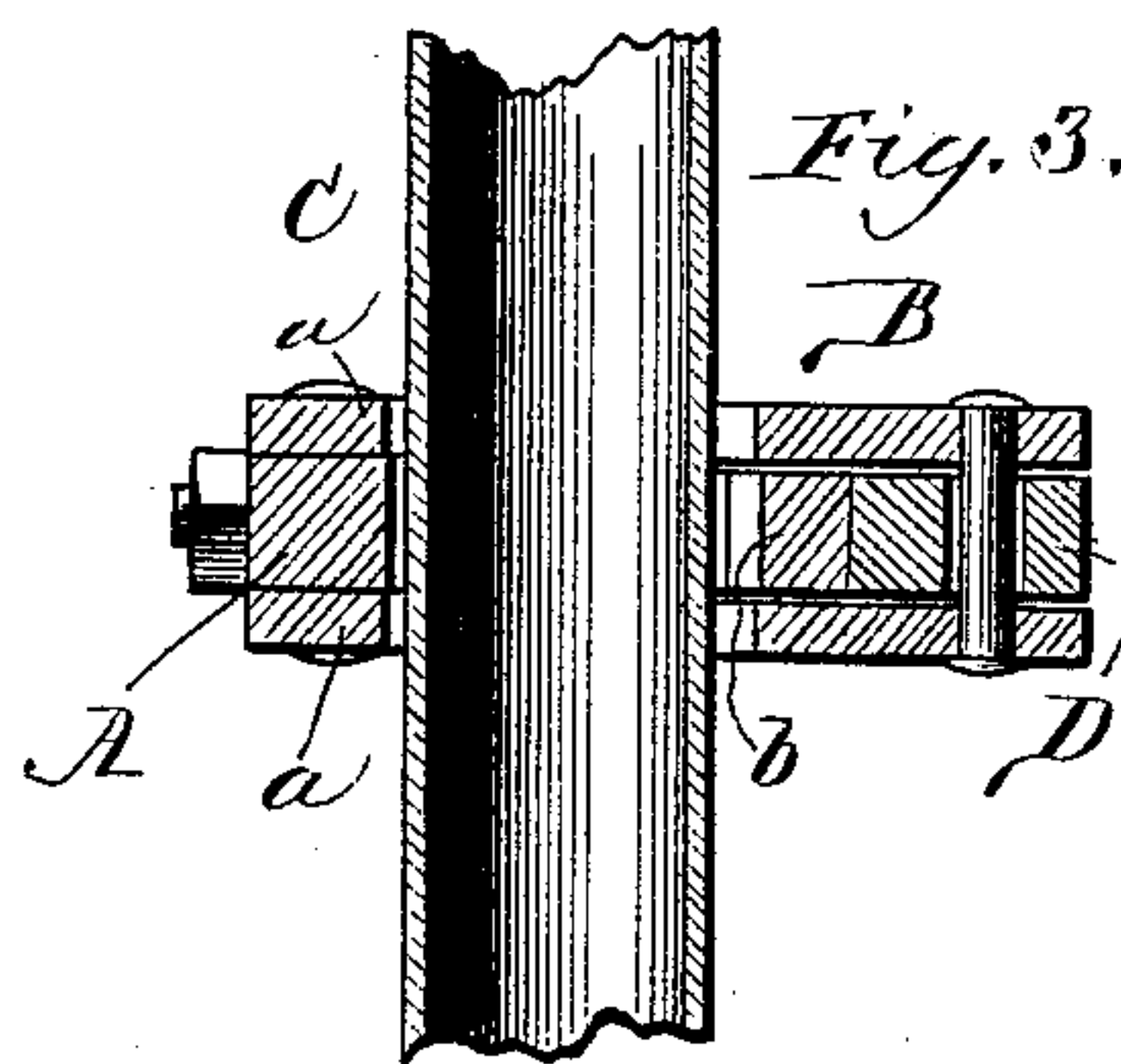
Patented Aug. 16, 1892.



*Fig. 1.*

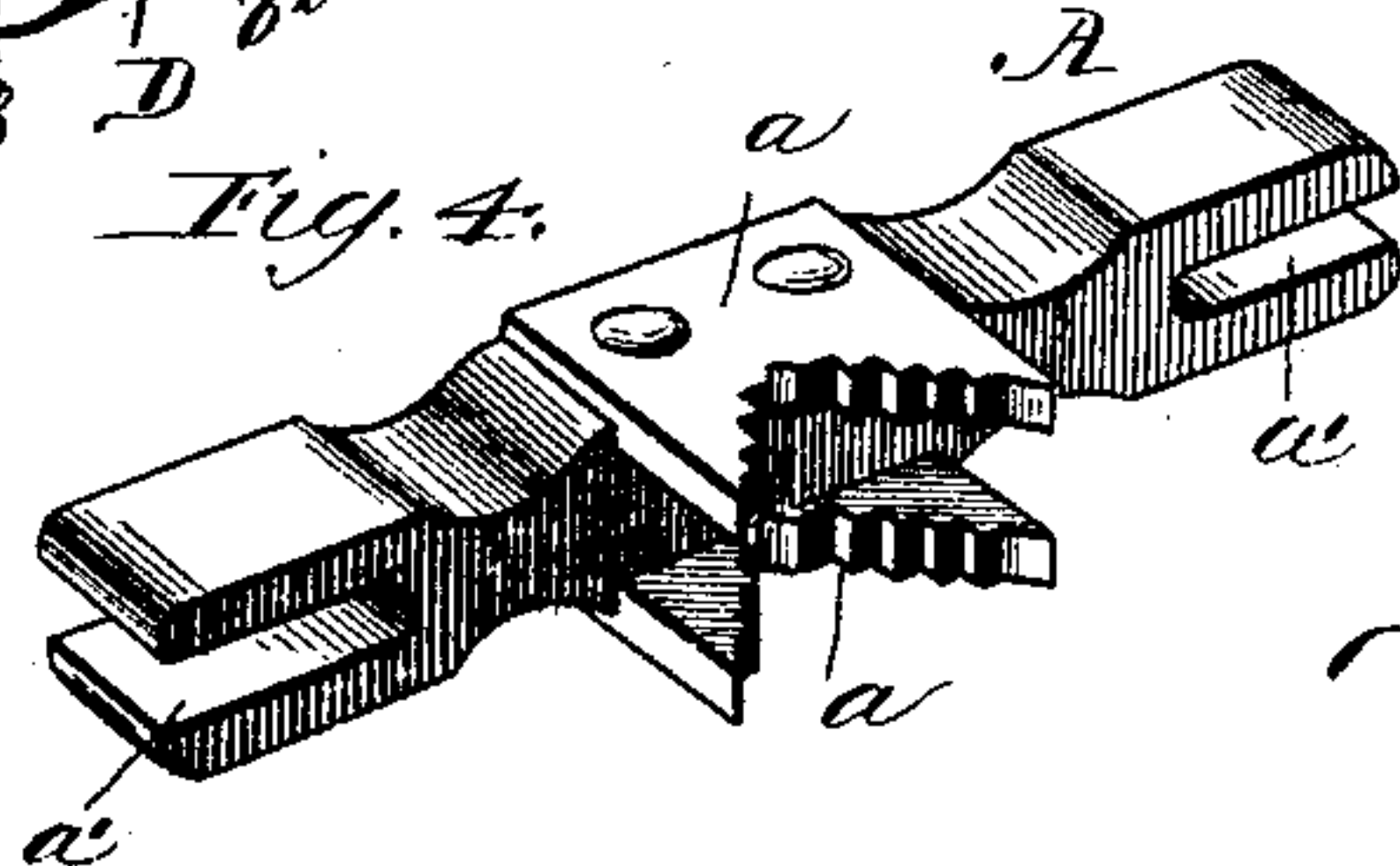


*Fig. 2.*



*Fig. 3.*

Witnesses  
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*Fig. 4.*

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Atty.



# UNITED STATES PATENT OFFICE.

THOMAS G. CHAPMAN, OF CHICAGO, AND JAMES W. HUNT, OF SANDWICH,  
ILLINOIS, ASSIGNORS, BY MESNE ASSIGNMENTS, TO ANNA B. AUSTIN.

## WELL-SINKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,904, dated August 16, 1892.

Application filed October 21, 1889. Serial No. 327,682. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS G. CHAPMAN, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, and JAMES W. HUNT, a citizen of the United States, residing at Sandwich, in the county of De Kalb and State of Illinois, have invented a certain new and useful Improvement in Well-Sinking Machines, of which the following is a specification.

Our invention relates to well-sinking machines of that kind in which the drilling-tool is connected with the well-tube and the latter caused to alternately rise and fall and simultaneously therewith to revolve, so as to give the requisite action to the drilling-tool, it being understood that the well-tube in such case constitutes a drill-holder, which may, however, be a rod.

The object of our invention is to provide a simple, efficient, and convenient construction of clamp for gripping the well-tube and connecting the same by a sliding connection with standards, which in well-sinking machines of the aforesaid character have been arranged upon a rotary support, which is turned during the vertical reciprocating action of the well-tube, so as to cause the rotation of the latter.

A further object is to so construct the clamp that it can be readily and conveniently applied to loosely embrace the standards and firmly grip the well-tube, and also to adapt the clamp for quick and convenient detachment from the well-tube, so that when the well-tube has sunk to an extent to require a shift on the part of the clamp it can be readily adjusted to a higher point on the well-tube.

To the attainment of the foregoing and other useful ends our invention consists in matters hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents in perspective a portion of a well-sinking machine comprising a clamp embodying our invention. Fig. 2 is a plan view of the clamp with the well-tube in cross-section. Fig. 3 is a section on line 3 3 in Fig. 2. Fig. 4 represents one of the jaw-holders in perspective.

The clamp comprises a couple of jaw-hold-

ers A and B, provided with jaws adapted for gripping a well-tube C. The jaw-holder A may carry one of more fixed jaws, but is preferably provided with a couple of stationary jaws, or, more properly speaking, it is provided with a divided jaw having its two members or divisions *a*, which are set apart, as in Fig. 4, so as to steady the clamp when it is applied to the well-tube. The jaw-holder B is provided with a movable jaw *b* and means for tightening the same against the well-tube, so that when the jaw-holders are arranged, respectively, at opposite sides of the well-tube, as in Figs. 1 and 2, and tied or connected together in any suitable way, the tightening up of the movable jaw on the well-tube will cause the latter to be firmly clamped between the opposing jaws. The movable jaw *b* is desirably arranged opposite the space between the jaws *a* when two of the latter are employed, and to such end the jaw *a* is conveniently confined within a recessed portion of its allotted holder. The studs *b'* (shown in Fig. 2) are rigid with the movable jaw and arranged to extend therefrom through slots *b<sup>2</sup>* in the jaw-holder for the purpose of steadying the jaw and maintaining its connection with the jaw-holder.

The cam-lever D is pivoted within the jaw-holder B, and arranged to act against the movable jaw so as to force the same forward and against the well-tube. This cam-lever is herein shown as having been swung into position to throw the movable jaw forward and place the cam-lever in a locked condition. It will be obvious that the cam-lever can be quickly swung out from such locked condition, and that its handle portion is at all times readily available to an operator. The tie-bolts E serve to maintain the jaw-holders in proper relative position, and as a means for drawing the jaw-holders toward one another the tie-bolts are provided with nuts *e*, which can be tightened up against one of the jaw-holders. The nuts are also desirably provided with handles *e'* in order that they can be quickly and conveniently manipulated.

In order to permit the clamp to be readily opened, the tie-bolts are pivoted to one of the jaw-holders and detachably connected with



the other, and to such end either one of the jaw-holders is notched at its ends, so as to provide recesses adapted to receive the free ends of the tie-bolts. The tie-bolts can be pivoted to the jaw-holder A, and the jaw-holder B can have notched ends, or, as herein shown, the tie-bolts can be pivoted to the jaw-holders B, and the jaw-holder A can be provided with end notches *a'*, adapted to receive the free ends of the tie-bolts. With such arrangement the nuts can be tightened against one of the jaw-holders, as in Fig. 2, while, on the other hand, by loosening the nuts either or both of the tie-bolts can be swung out from their allotted notches.

When the clamp is applied for gripping the well-tube, as in Figs. 1 and 2, the standards F, which rise from a rotary support G, extend between the jaw-holders A and B. The jaw-holders do not, however, grip the standards, but are held apart when the well-tube is clamped between their jaws. The well-tube extends down through a central opening in the rotary support for the standards, in which way, while the rotary action of support and standards as a whole will necessarily cause the standards to engage the jaw-holders, and thereby revolve the clamp and well-tube, the well-tube and clamp thereon can be alternately raised and dropped, since the jaw-holders will slide up and down upon the standards.

What we claim as our invention is—

1. The combination, substantially as hereinbefore set forth, in a well-sinking machine, of a pair of standards F, arranged to rise from a rotary support, and a vertically-movable clamp arranged to slide upon but revolve with the standards and constructed with a pair of oppositely-arranged jaw-holders connected together so as to provide between them a space in which the standards are received, said jaws positioned upon said jaw-holders

so as to grip the well-tube or drill-holder at a point between the standards, one of said jaws being adjustable upon its allotted holder, so that the well-tube can be clamped tightly between the jaws without clamping the jaw-holders upon the standards.

2. The combination, substantially as hereinbefore set forth, of the jaw-holders connected together and adapted to provide between them a space for the herein-described standards in a well-sinking machine, a divided jaw *a*, rigidly secured to one of said holders, and a jaw *b*, adjustable upon the remaining one of said holders and arranged opposite the space between the divisions of the other jaw.

3. The combination, substantially as hereinbefore set forth, of jaw-holders A and B, respectively provided with fixed and movable jaws and connected together to form a clamp having at opposite sides of its jaws suitable space for the herein-described standards in a well-sinking machine, and a cam-lever D for adjusting the movable jaw.

4. The combination, in a well-sinking machine, of a pair of standards F, arranged to rise from a rotary support, and a vertically-movable clamp arranged to slide upon but revolve with the standards and constructed with a pair of oppositely-arranged jaw-holders provided with jaws adapted to grip and hold the well-tube or drill-holder at a point between the standards, rods E, hinged to one jaw-holder and arranged to engage in notches *a'* in the ends of the opposite jaw-holder, and nuts *e*, applied to the free ends of the rods so as to engage said last-specified jaw-holder, substantially as described.

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Witnesses:

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