

(No Model.)

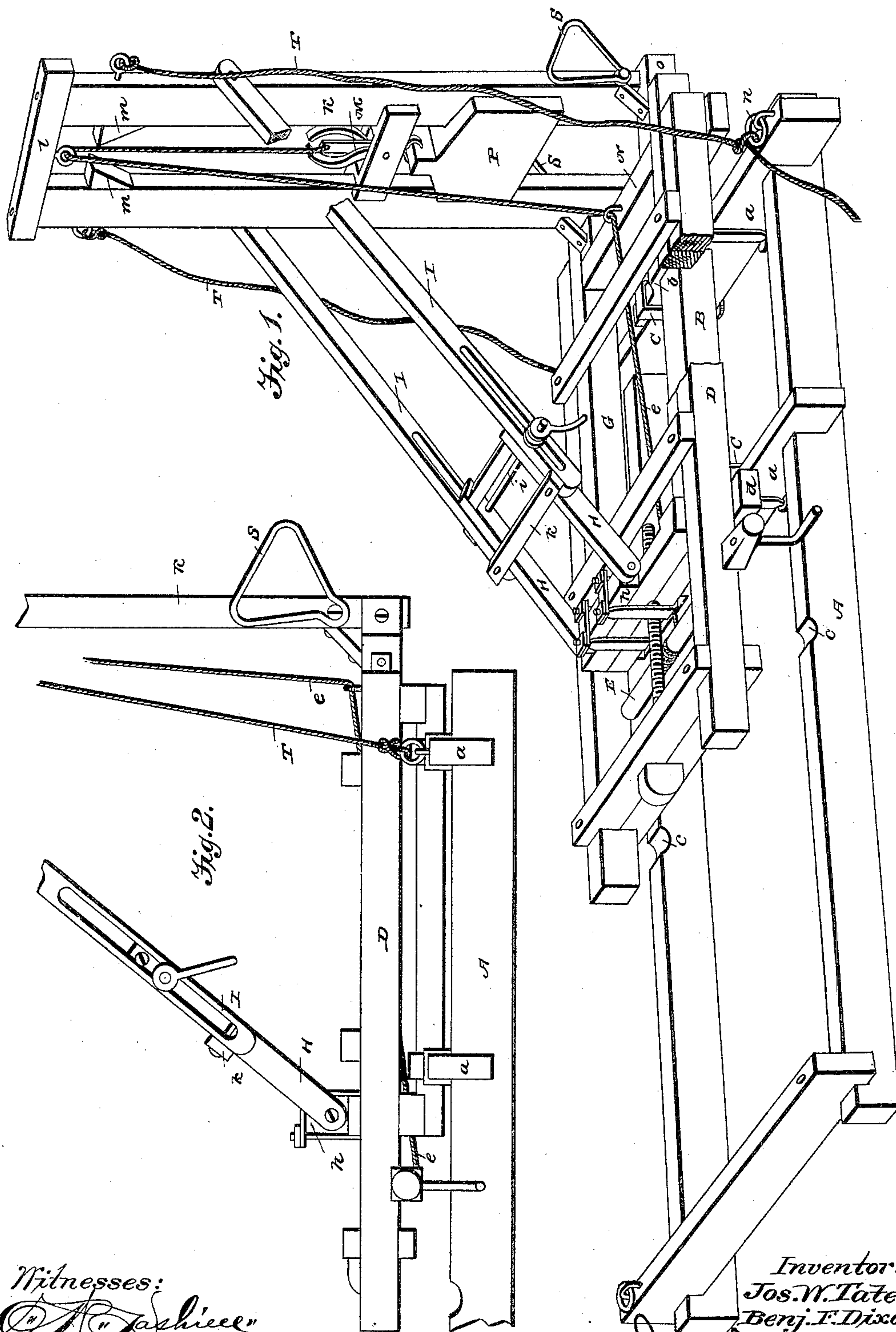
3 Sheets—Sheet 1.

J. W. TATE & B. F. DIXON.

FENCE POST OR PILE DRIVING MACHINE.

No. 391,823.

Patented Oct. 30, 1888.



Witnesses:
J. E. Turpin
J. E. Turpin.

Inventors,
Jos. W. Tate.
Benj. F. Dixon.
By, *James J. Sheehy*,
Attorney.

(No Model.)

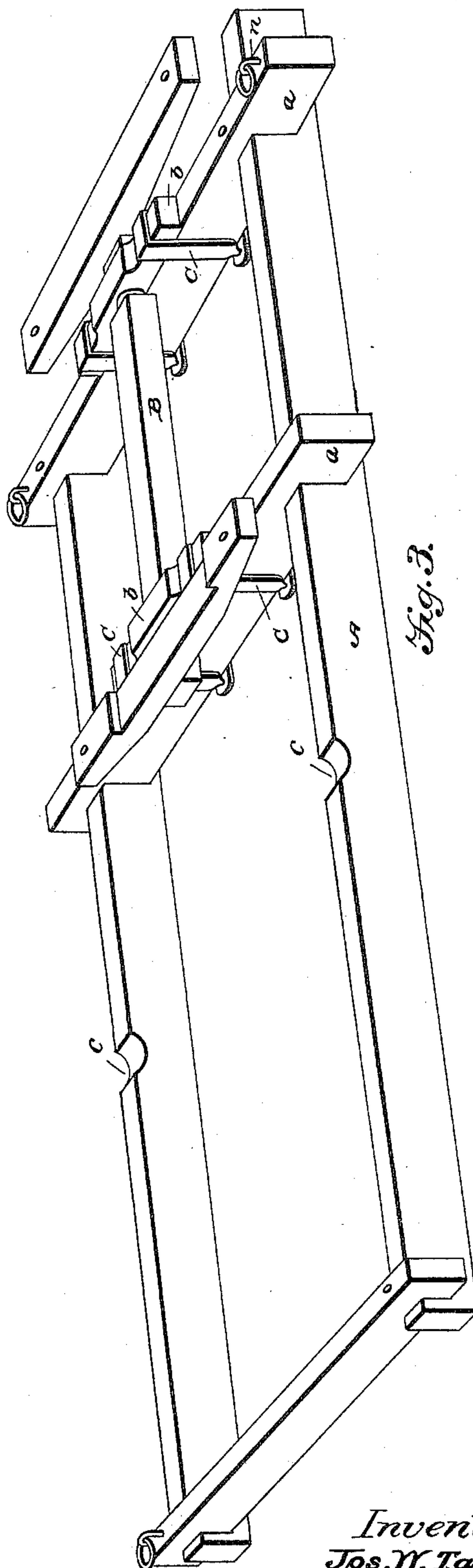
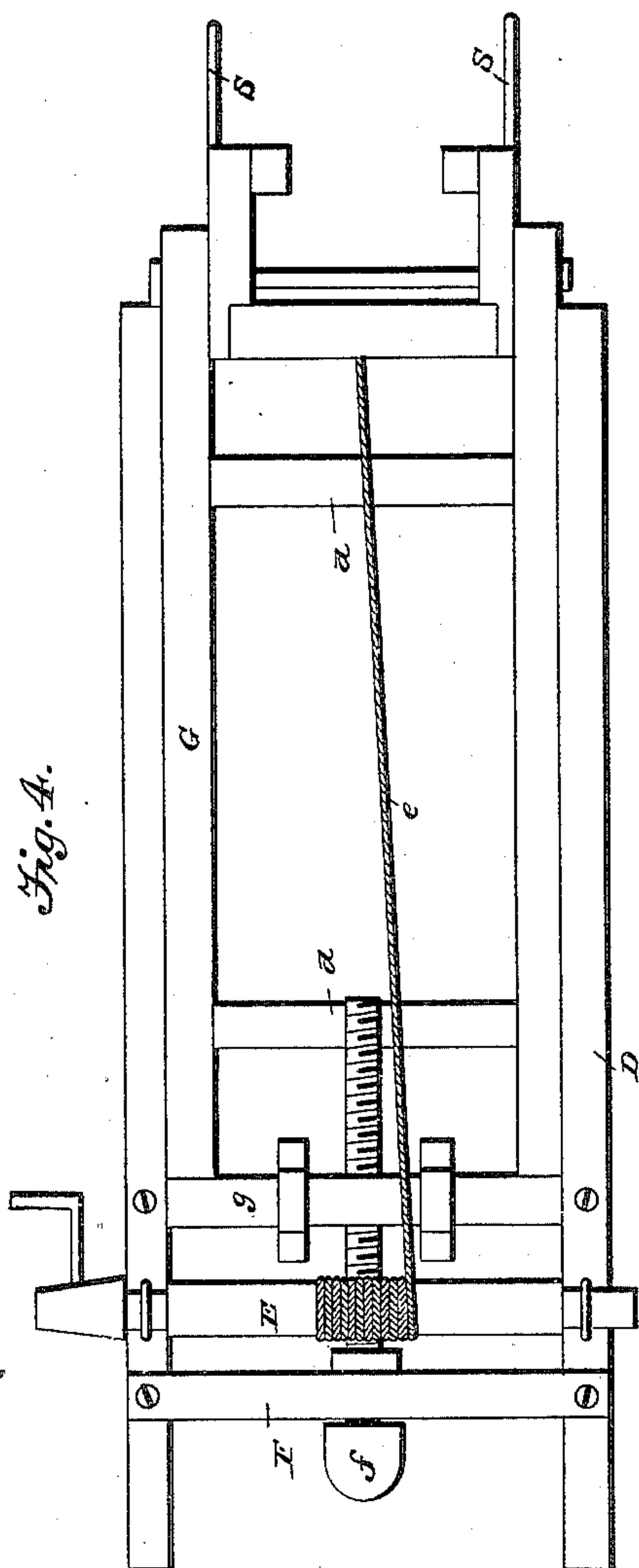
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By *James F. Sheehy.*
Attorney.

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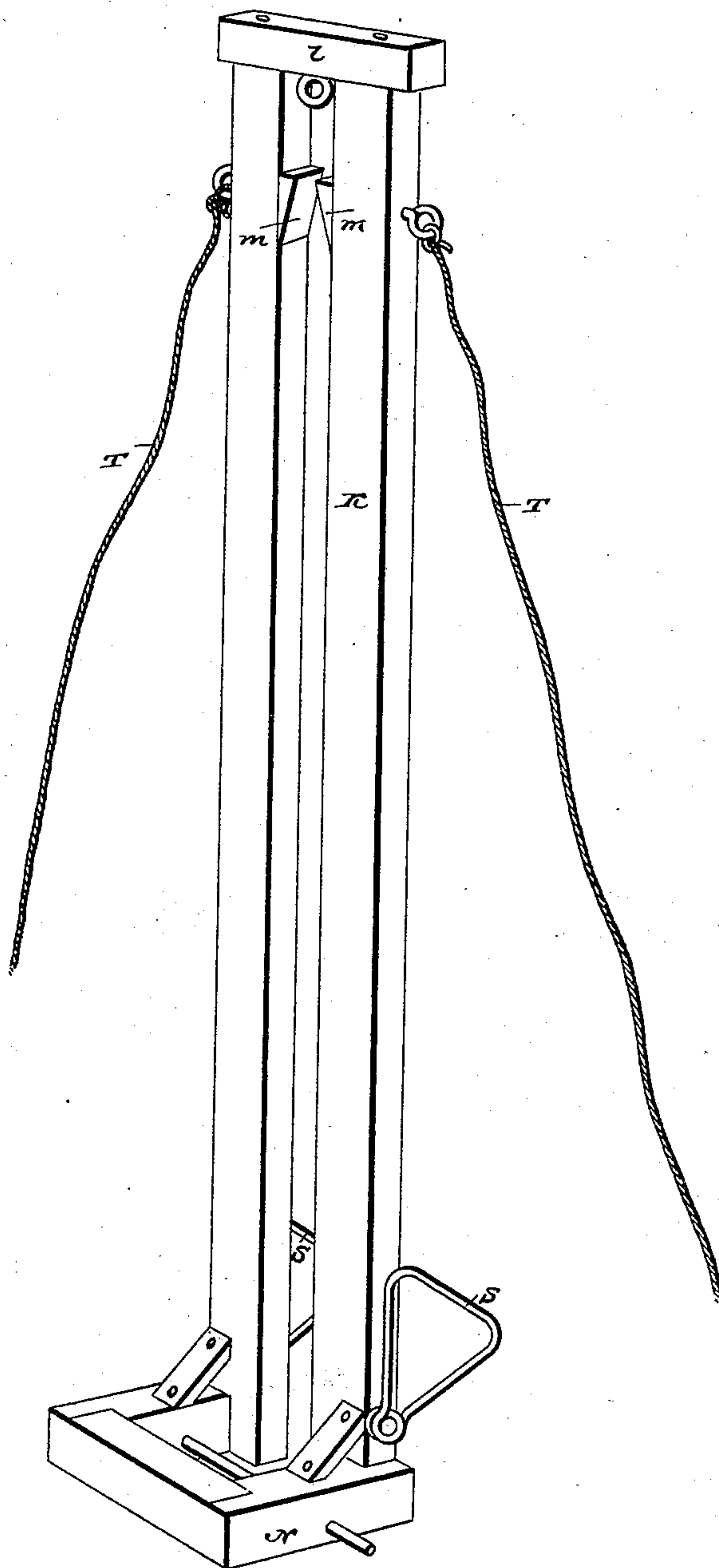


Fig. 5.

Witnesses:

D. E. Impin
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Inventors.

Jos. W. Tate.

Benj. F. Dixon.

By, *James Shielby*
attorney.

UNITED STATES PATENT OFFICE.

JOSEPH W. TATE AND BENJAMIN F. DIXON, OF MINEOLA, MISSOURI.

FENCE-POST OR PILE DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 391,823, dated October 30, 1888.

Application filed July 2, 1888. Serial No. 278,787. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH W. TATE and BENJAMIN F. DIXON, citizens of the United States, residing at Mineola, in the county of Montgomery and State of Missouri, have invented certain new and useful Improvements in Fence-Post and Pile Driving Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to machines for driving piles and posts for fences, and is more particularly adapted for driving the latter.

The invention will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of our improved machine with some of the parts broken away and in a position ready to be mounted on a wagon or other means of conveying. Fig. 2 is a detail view of a portion of one side of the machine, showing the adjustable braces and the hammer-guide frame broken away. Fig. 3 is a perspective view of the rectangular frame for supporting the various parts, with the rock-shaft in position thereon. Fig. 4 is a plan view of the rocking frame and its parts removed from the main or base frame, and Fig. 5 is a perspective view of the hammer-guide frame.

Referring by letter to the said drawings, A indicates the main or base frame, which is of a rectangular form, as shown, and is adapted to be supported upon a wagon or other conveyance, as will be hereinafter more fully set forth. This base or main frame is provided at or near one end with a pair of rigid parallel cross-bars, *a*, which are designed to furnish bearings for a longitudinal rock-shaft, B, journaled therein. The cross-bars are provided about midway of their length on their upper sides with recesses to receive the bearing parts of the rock-shaft, which should be rounded, and this shaft is held in position upon the said cross-bars by means of cap-blocks *b*, which are secured thereto by means of yokes C, provided with securing-nuts or other fastening devices. The longitudinal beams of this main frame are provided at opposite points with re-

cesses *c*, which are designed to receive the rock-shaft when driving from the side, as will be presently explained.

D indicates a rectangular frame, which we shall denominate the "rock-frame." This rock-frame is provided with a plurality of cross-bars, *d*, which are laterally extended to furnish bearing for a slide-frame which is arranged within the rock-frame. The under cross-bars, *d*, of this rock-frame are firmly fixed to the opposite ends of the rock-shaft, so as to move therewith. Journaled in the forward under side of this rock-frame is a transversely-arranged winding-drum, E, which is provided at one end with an operating-handle and receives upon it the rope *e*, the opposite end of which is connected with the tongs or gripping device which engages the power-hammer, as more fully shown in Fig. 1 of the drawings. This rock-frame is furthermore provided at its rear end with a cross-bar, F, in which is swiveled one end of a screw-shaft, *f*, which is designed to operate a sliding frame, so as to give it a longitudinal movement, as will be next explained.

G indicates the sliding or movable frame which is arranged within the rock-frame, and while allowed a longitudinal movement independent of the said rock-shaft, yet it is intended to also have a rocking movement with its outer frame. This sliding frame is provided with a transverse bar, *g*, in its end adjacent to the winding-drum, and this transverse bar is provided with an internally-threaded eye to receive the threaded shaft *f*, which is swiveled in the rock-frame D. It will thus be seen that by manipulation of the threaded rod the frame G may be moved back and forth within the outer frame, D. Fixed to the rear end of this sliding frame G is a short cross-bar, *h*, which has pivoted to its opposite ends brace-arms H, which latter are designed to co-operate with slotted arms I in forming an adjustable brace for the hammer-guide frame, as will be presently explained. The forward portion of the arm H is provided with a transverse shaft or rod, *i*, which rod is headed at one end and threaded at its opposite end, and carries on its threaded end a lever-nut, as shown, whereby the said rod, after passing through the slots in the lower ends of the arms I, may be fixed

thereto at any desirable point. The lower ends of these arms I are provided with a cross-bar, *k*, which is designed to bear upon the upper sides of the arms H, and the outer ends of the said arms I are pivoted to the upper portion of the hammer-guide frame. By this construction it will be seen that the hammer-guide frame, which will be presently explained and which is pivoted at its lower end in the sliding frame G, may be held firmly at any desired angle of inclination by manipulation of the lever-nut on the rod *i* of the arms H.

K indicates the power-hammer guide-frame, (more fully shown in Fig. 5 of the drawings,) which is composed of two parallel beams connected at their upper ends by the cross-head *l* and provided on their inner sides near their upper ends with two oppositely-inclined lugs, *m*, which are designed to serve as a tripping or releasing device for the hammer-grip M, which is secured to the free end of the elevating-rope *e*, which latter passes through a guide-pulley in the under side of the cross-head *l*, and thence down and through suitable guides in the movable frame and to the winding-drum. This hammer-guide frame, as more fully shown in Fig. 5, is provided at its lower end with a rectangular base, N, which is journaled in the forward ends of the longitudinal beam of the sliding frame G, the object of which is to offset the said hammer-guide frame from the other parts, so that the hammer may move unobstructed in driving a pile or post.

P indicates the power-hammer, which is adapted to slide and be guided in a frame, K, having grooves in its opposite sides to embrace the vertical beams of the said guide-frame.

M indicates the hammer-gripping device, which is here shown as composed of two pivoted jaws journaled in a slide block or frame, R, which is also guided in the said frame K, and the upper ends of these pivoted jaws are formed so as to be engaged by the inclined lug *m* of the frame K. It will thus be seen that the hammer or weight P, having been gripped by the device M, will be elevated by the winding of the rope on the drum, and when the arms of the gripping-jaws come in contact with the said inclined lug they will release their hold on the weight and allow the same to fall upon the pile or post beneath.

S indicates loops, which we have here shown as of approximately triangular form, and are pivoted at their lower angle to the outer side of the vertical beams of the frame K, so that they may form a loop which will coincide with each other in a transverse plane and be exposed on opposite sides of each vertical beam of the frame K. The object of these loops S is to receive a bar or stick, which stick will embrace the upper end of the post to be driven when the latter has been placed in position between the vertical beams of the frame K and at the lower end thereof.

T indicates stay-ropes, which are secured at one end to the upper end of the hammer-guide

frame, and the lower ends may be attached to rings *n* and *r*, fixed to the base or main frame. By these ropes it will be seen that the sliding and rock frame may be stayed laterally at any desired position, and that the hammer-guide frame may be fixed longitudinally in any desired position.

The operation of our invention is as follows: In driving a fence-post the entire machine is placed upon a wagon-body, so that the hammer-guide frame will be extended sufficiently at the rear thereof. Now, when it is desirable to drive the post, the same is placed in an upright manner on the ground, with its upper end between the vertical beams of the guide-frame K. Two sticks or bars should then be employed to hold the post in a true vertical position, the sticks being passed through the loops S on opposite sides of the upright beams. The hammer being now gripped by the jaws of the device M and properly connected with the rope *e*, the operator should wind the drum to lift the weight or hammer. When the hammer has reached the desired height or elevation, the arms of the gripping-jaws will come in contact with the inside inclined lugs *m*, which will cause the said jaws to release themselves from the weight or hammer and allow the latter to fall forcibly upon the top of the post to be driven. After the post has been sufficiently driven the machine may be moved to drive another, when the operation is simply repeated.

After use, when it is desired to carry the machine from place to place, the stay-ropes may be released, the lever-nut on the rod *i* loosened, and the hammer-guide frame let down, so as to avoid obstructions during travel.

As it is often desirable and in some localities necessary to drive from the side instead of the end of the vehicle or machine, we have adapted our improvements for such purposes as well as for driving on uneven surfaces.

When it is desirable to drive from the side, it is simply necessary to change the bearing of the rock-shaft B from the notches in the cross-bars *a* to the recesses *c*, and employ cap-blocks, such as shown, to retain the same transversely in the main frame A. It will thus be seen that the rocking and sliding frame, and also the hammer-guide frame, will assume a position transverse to the main frame.

Having described our invention, what we claim is—

1. In a machine for driving fence-posts, the combination, with a main frame, of a rock-frame mounted thereon, a reciprocating frame arranged in the rock-frame, a pivoted hammer-guide frame at one end of the reciprocating or sliding frame, and adjustable braces connecting the said sliding frame with a hammer-guide frame, substantially as specified.

2. In a machine for driving fence-posts, the combination, with a main frame, of a rock-frame thereon, a reciprocating frame arranged in the rock-frame, a screw-shaft swiveled in the rock-frame and engaging a threaded bear-

ing in the reciprocating frame, a winding-drum also journaled in the rock-frame, the weight-gripping device and the rope connecting the same with the winding-drum, substantially as specified.

3. In a machine for driving fence-posts, the combination, with the main frame, of a rocking and reciprocating frame mounted thereon, a hammer-guide frame pivoted to the said rocking and reciprocating frame, and means for elevating and tripping a power-hammer, substantially as specified.

4. In a machine for driving fence-posts, the combination, with a rocking and reciprocating frame, of a hammer-guide frame pivoted thereon, and an adjustable brace connecting the said frame with the hammer-guide frame, substantially as specified.

5. In a machine, substantially as described,

the combination, with the hammer-guide frame, of the pivoted loops on the sides thereof adapted to receive sticks or the like to hold the post to be driven, substantially as specified.

6. In a machine, substantially as described, the combination, with a frame having bearings for a rock-shaft, of a frame secured to the said rock-shaft, a sliding or reciprocating frame arranged therein, a screw-shaft for moving the inner frame with relation to the outer frame, and suitable means for operating a power-hammer, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOS. W. TATE.

BENJ. F. DIXON.

Witnesses:

ISHAM McMAHAN,

HORACE McDANIEL.