

No. 615,330.

Patented Dec. 6, 1898.

H. J. WHITENER.

POST DRIVER.

(Application filed Jan. 30, 1898.)

2 Sheets—Sheet 1.

(No Model.)

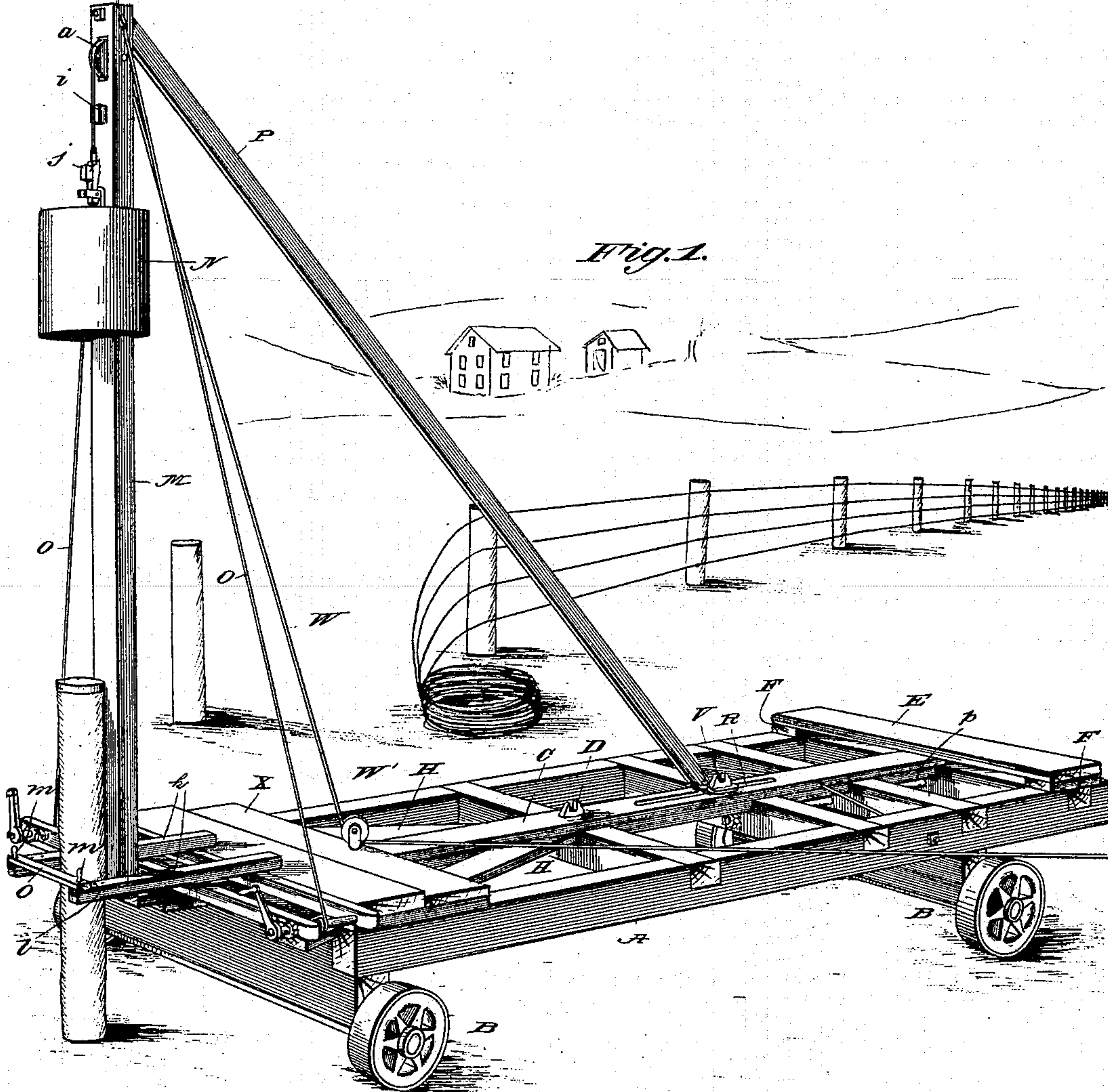


Fig. 1.

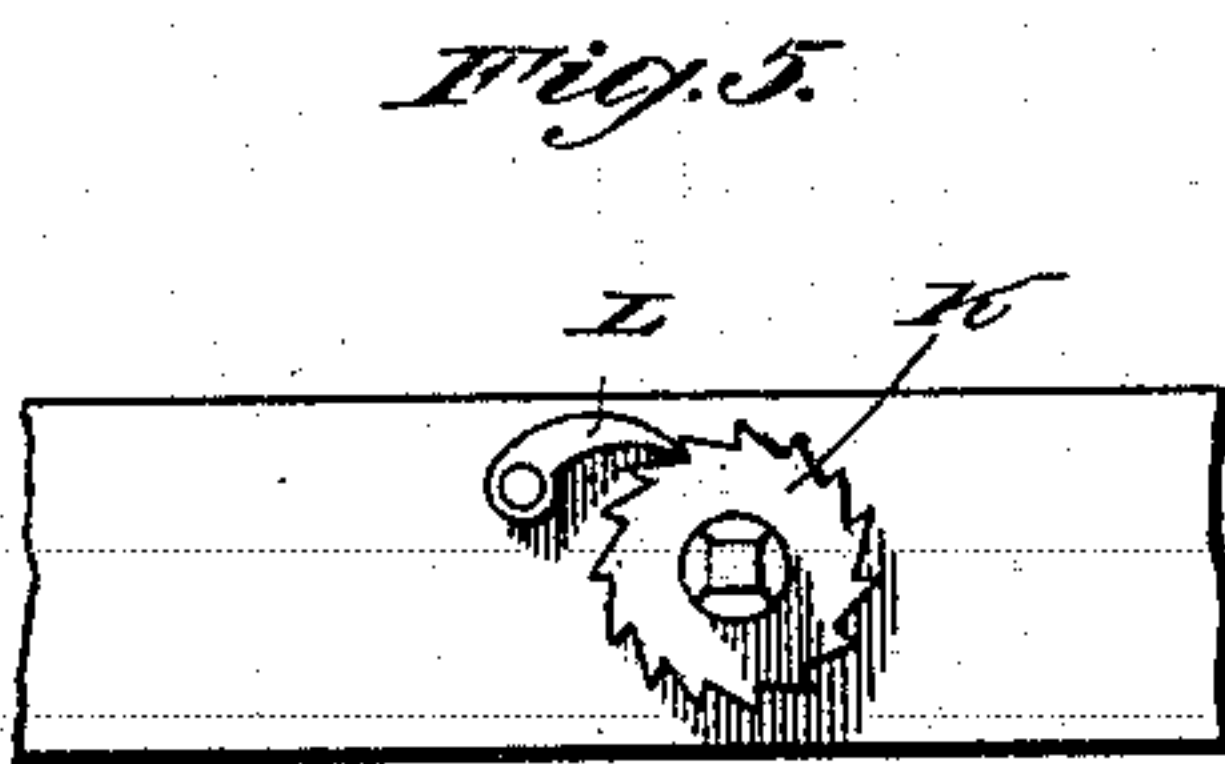


Fig. 5.

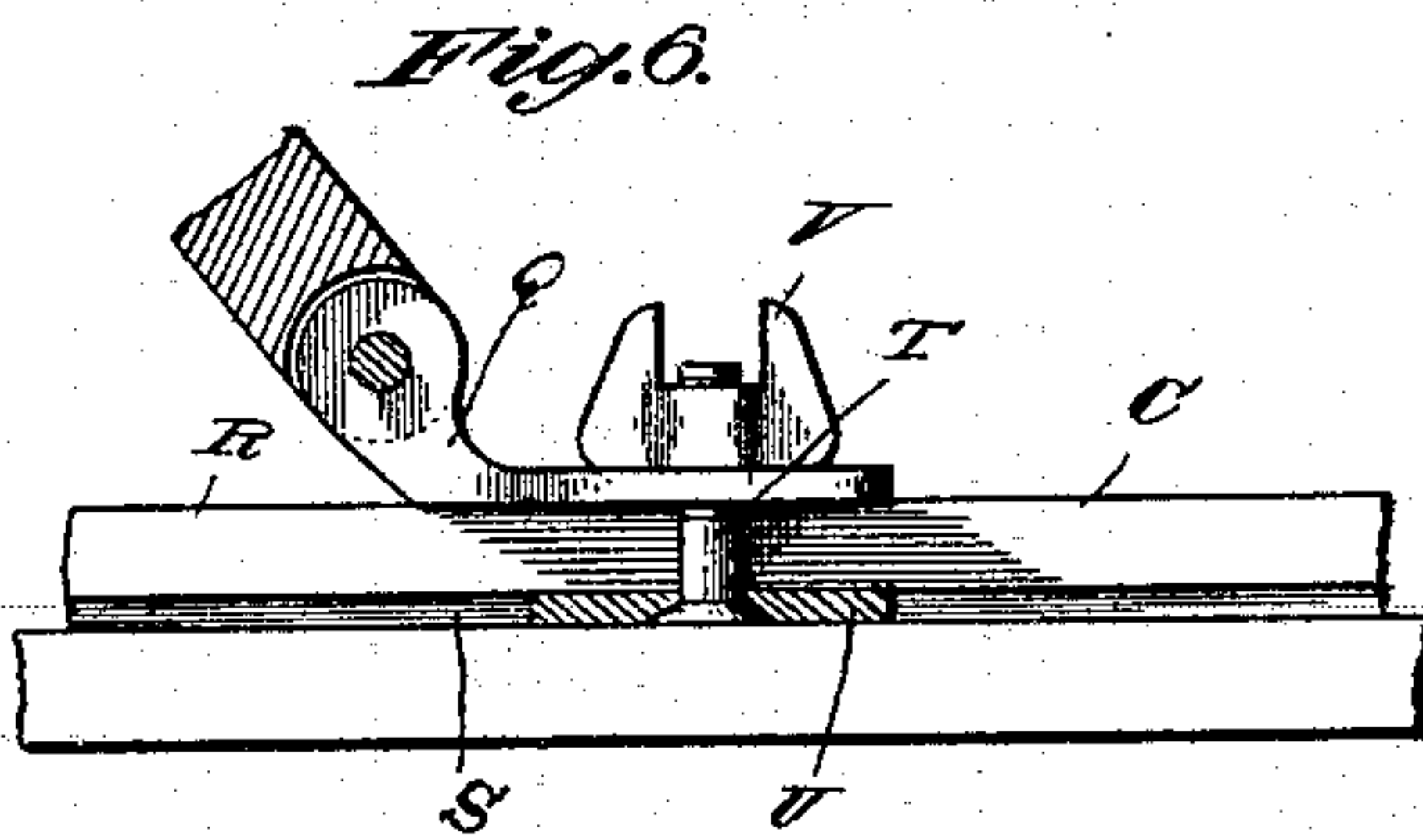


Fig. 6.

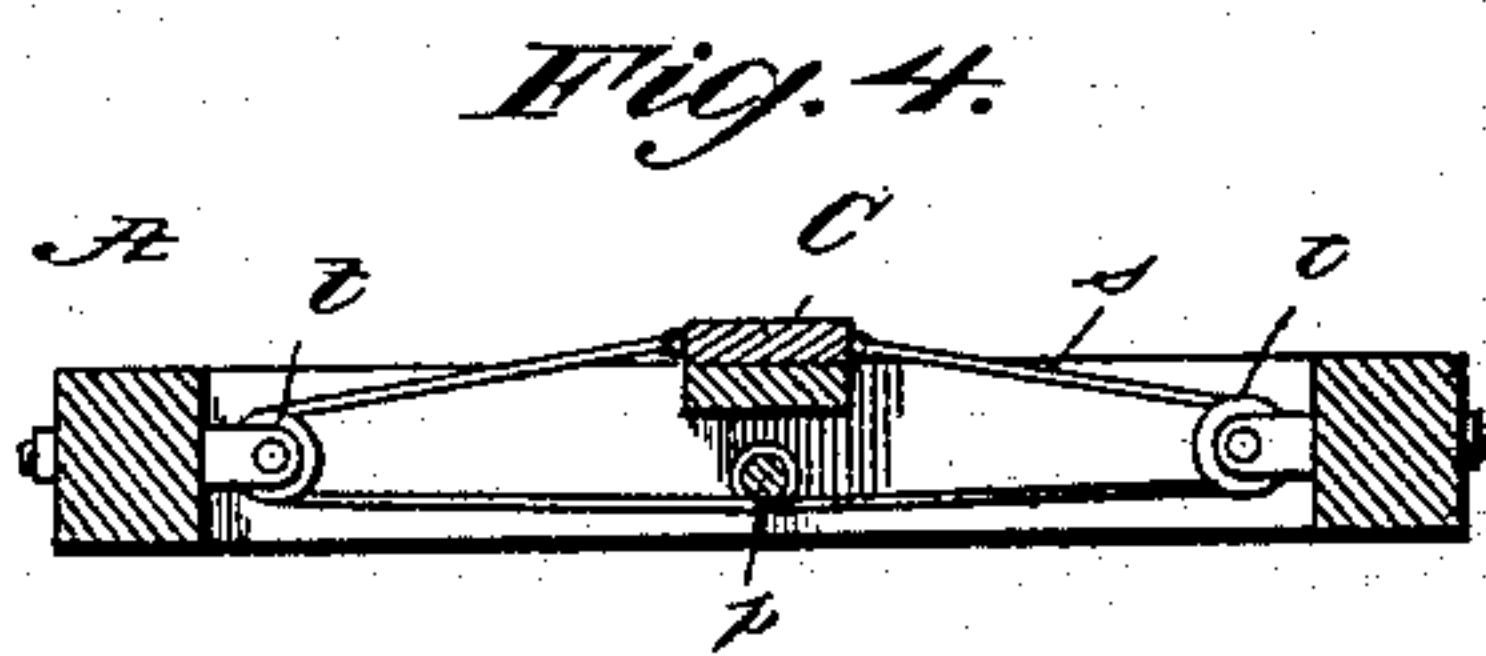


Fig. 4.

Witnesses

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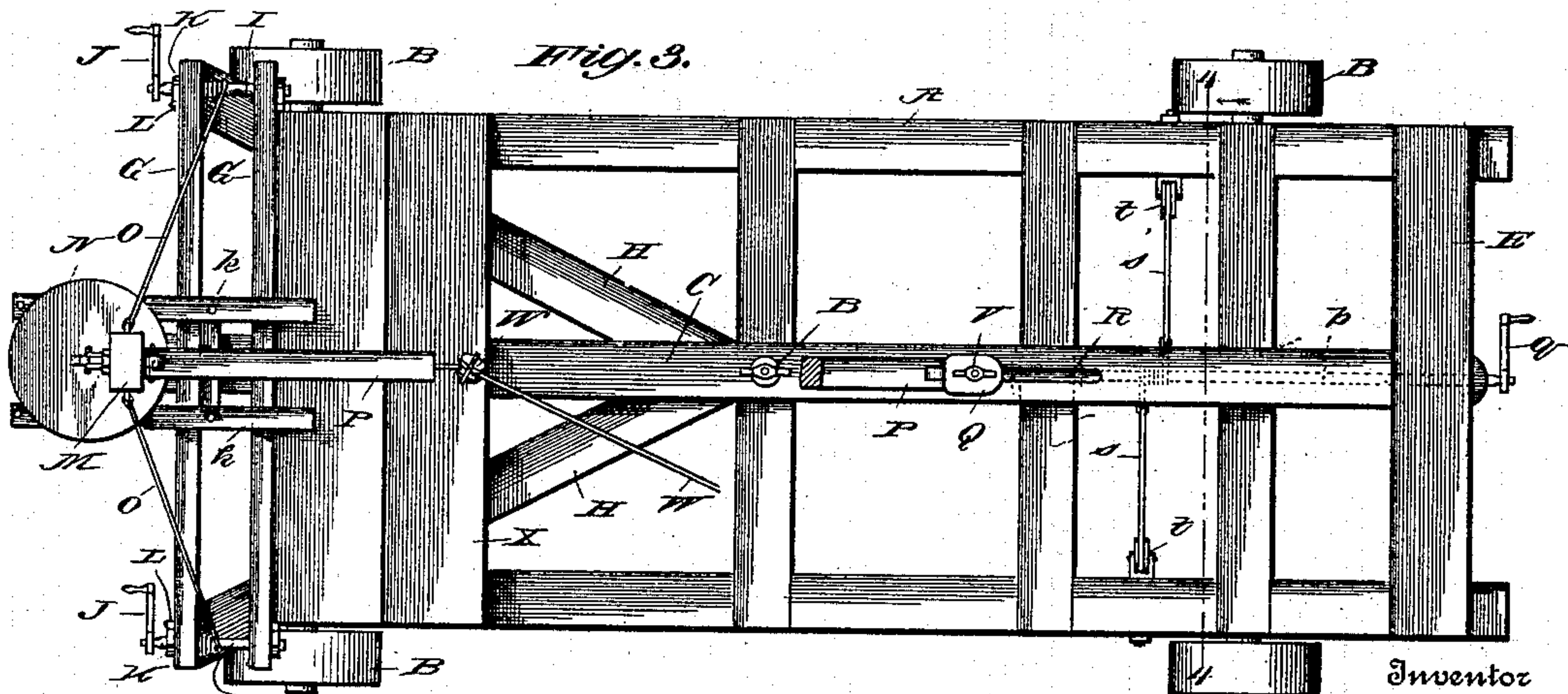
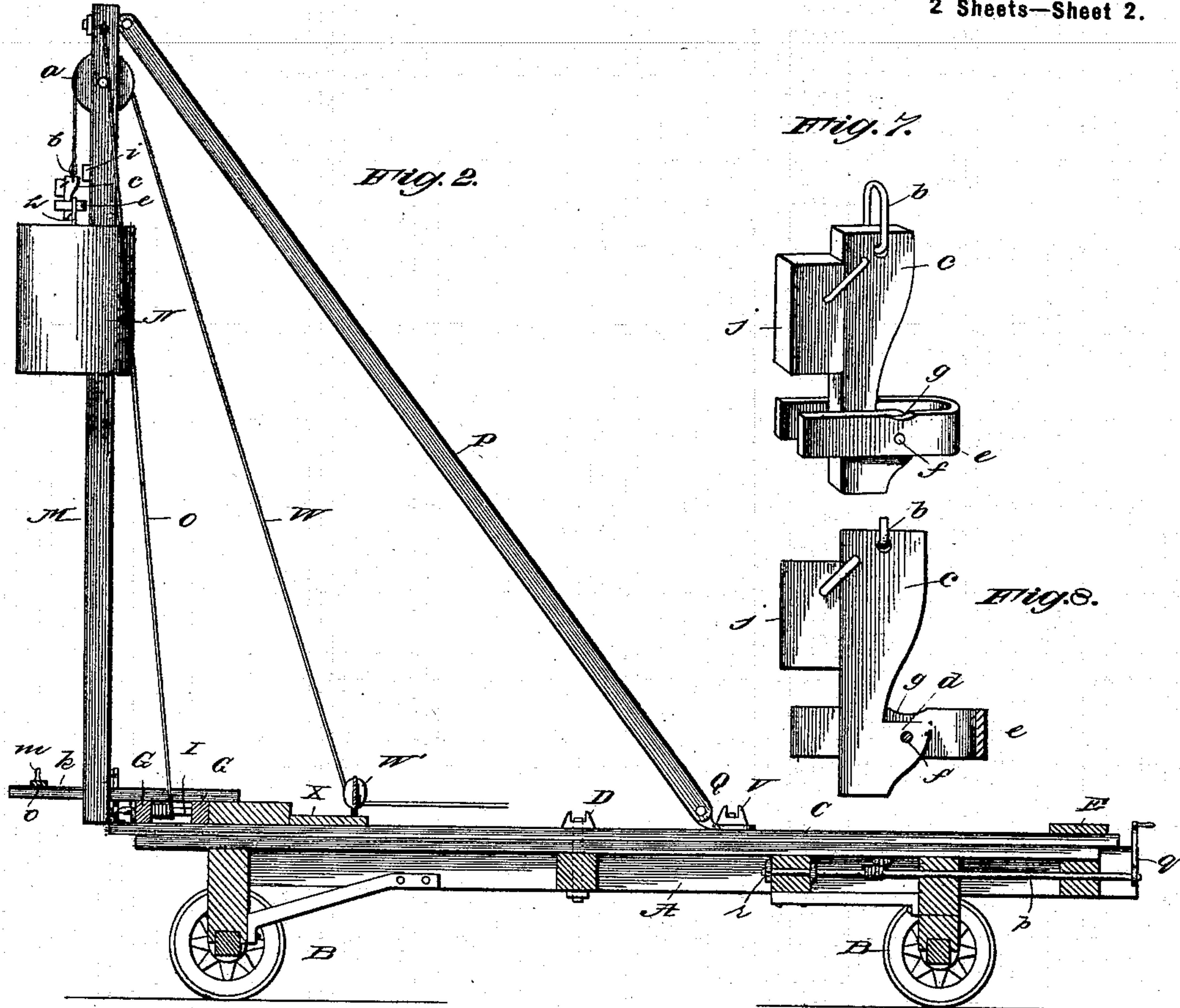
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

HENRY J. WHITENER, OF MARQUAND, MISSOURI.

POST-DRIVER.

SPECIFICATION forming part of Letters Patent No. 615,330, dated December 6, 1898.

Application filed January 20, 1898. Serial No. 667,368. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. WHITENER, a citizen of the United States, residing at Marquand, in the county of Madison and State of Missouri, have invented a new and useful Pile-Driver, of which the following is a specification.

This invention relates to improvements in pile-drivers; and the object thereof is to provide a simple and cheap construction which may be quickly and conveniently operated for driving posts or piles.

A further object is to so construct the machine that it may be readily adjusted to operate in an effective manner regardless of the plane of the ground upon which it is being used.

Another object of the invention is to provide a machine which may be so operated that a number of posts may be driven when the machine has been positioned without changing the position thereof.

A still further object is to provide an improved construction of trip for releasing the hammer.

With the above objects in view the invention consists of a supporting-frame, a lead or guide pivoted at its lower end and upon which the hammer is adapted to move, a brace secured at its upper end to the lead and at its lower end adjustably upon the frame, whereby the lead may be adjusted so as to be maintained at all times perpendicular to the post which is to be driven, guy-ropes secured at their upper ends to the upper end of the lead and at their lower ends adapted to be wound upon reels, so that their lengths may be varied according to the adjusted position of the lead.

The invention further consists of a reach intermediately pivoted upon the frame and carrying the lead and adjustable brace and an improved means for operating said reach to cause the same to swing laterally, whereby a number of posts may be driven without altering the position of the machine.

The invention further consists of an improved trip to which the line leading to the motive power is attached, said trip consisting of a block having a bar pivoted thereto and adapted to receive the hammer at a point above its pivotal point, so that said hammer

will be raised thereby until a stop positioned in the lead is encountered, when said bar will swing downwardly and release the hammer, the trip also being weighted, so that the same will readily descend to have the hammer again attached thereto.

My invention further consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved pile-driver. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a top plan view, the adjustable brace being broken away. Fig. 4 is a vertical transverse sectional view on the line 4-4 of Fig. 3. Fig. 5 is a detail view showing the ratchet and pawl for holding the reels in proper position. Fig. 6 is a detail view showing the sliding connection of the brace with the reach. Fig. 7 is a perspective view of the trip. Fig. 8 is a vertical longitudinal sectional view of the same.

Like letters of reference indicate the same parts wherever they occur in the different figures of the drawings.

Referring to the drawings, A indicates the frame of the machine, provided with supporting-wheels B and having the reach C pivoted thereto intermediate its ends, the pivotal bolt of said reach having the thumb-nut D, whereby the reach may be secured in proper position. The rear end of the reach is movable in a guideway formed between the under side of board E and the frame, said board being mounted upon the blocks F.

Supported at the forward end of the reach are the transversely-extending parallel bars G, which are separated, as illustrated, the same being secured upon the braces H. Mounted in these parallel bars G are the shafts I, having the crank-handles J, by means of which they are rotated, and the ratchets K, which are engaged by pawls L.

These shafts constitute the reels for the guy-ropes, hereinafter described.

Hinged at its lower end to the forward end of the reach is the lead or guide-post M, upon which the hammer N is movable.

Secured at their upper ends upon the opposite sides of the lead and at the upper end thereof are the guy-ropes O, which at their lower ends are adapted to be wound upon the reels before described.

Pivotally secured at its upper end to the upper end of the lead is a brace P, which at its lower end is pivoted to a sliding plate Q. The reach is formed with the longitudinally-extending slot R and the guideway S. The plate U is movable in the guideway S, and through this plate a bolt T passes, said bolt passing through plate Q and receiving the thumb-nut V.

By means of the construction just described the lead may be adjusted in relation to the supporting-frame or truck, so that it will at all times be maintained perpendicular to the post, being driven regardless of the plane of the ground upon which the truck is resting, all that is necessary being to slacken the guy-ropes and adjust the brace upon the reach, when the guy-ropes may be again tightened to support the lead firmly and rigidly in its adjusted position.

W is a rope which is connected at one end to the motive power, the same passing around a pulley W', positioned in the transversely-extending board or platform X, secured upon the reach at its forward end. Said rope passes upwardly over a pulley a, mounted in the upper end of the reach, and at its end is secured to the ring b, carried by the upper end of the block c of the trip. Block c is notched inwardly, forming the upwardly-faced shoulder d, as illustrated in Fig. 8.

A U-shaped bar e has its legs embracing the block and is pivoted thereto, the pivotal pin f passing through the block at a point below the notch or shoulder d, so that said bar is intermediately pivoted to the block. The upper edges of the legs of the bar are provided with the depressions g to receive the ring h, carried by the hammer, said depressions being just above the pivotal point, so that when the hammer is positioned thereon it will be retained thereby owing to the fact that the weight is applied to the pivoted bar at a point above and directly over its pivotal pin. When, however, the trip in its upward movement encounters the stop i, positioned near the upper end of the lead, the inner end of the pivoted bar will be retained thereby, while the block in its upward movement will raise the outer end of said bar, thus permitting the hammer to slip therefrom and descend. A weight j is attached to the block, so that when the rope W is slackened the trip will descend, so that it may be again attached to the hammer for the purpose of elevating the same.

k k are clamping-arms extending forwardly

from the reach on opposite sides of the lead, said arms being provided at their outer ends with a series of perforations or passages l to receive the pins m, which extend through the bar o, connecting said clamping-arms. This construction constitutes an adjustable clamp to retain the posts in an upright position to receive the descending hammer.

For swinging the reach, and consequently the lead and other mechanism, I provide the shaft p, which is journaled in the frame and extends longitudinally thereof, said shaft being provided at its outer end with an operating-crank q and at its inner end with a ratchet r, which engages a pawl carried by the frame. The rope s is secured at its ends to each side of the reach, said rope passing downwardly over pulleys t, mounted in the frame and engaging the shaft, so that as said shaft is revolved the rope is wound thereon and the reach swung laterally to either side of the frame or truck, so that several piles or posts may be driven without altering the position of the truck.

From the foregoing description it will be seen that I have produced a very simple construction of post or pile driver which is inexpensive and effective in operation, the same being capable of adjustment, so that the hammer may be maintained in every instance perpendicular to the post or pile operated upon, and also by means of which several posts may be driven without changing the position of the machine, as well as providing an extremely simple trip for the hammer, the same being positive and reliable in its action.

While I have illustrated and described the best means now known to me for carrying out my invention, I do not wish to be understood as restricting myself to the exact details of construction shown and described, but hold that any slight changes or variations, such as might suggest themselves to the ordinary mechanic, would properly fall within the limit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a pile-driver the combination with a supporting-frame, of a reach intermediately pivoted thereon, a lead hinged at its lower end to the forward end of said reach, a brace pivoted at its upper end to the upper end of said lead, and at its lower end adjustable longitudinally upon said reach, and means for swinging said reach laterally, substantially as set forth.

2. In a pile-driver, the combination with a frame, of the reach pivoted thereon, a lead pivoted to said reach, guy-ropes connected at their respective ends to said lead and reach and means for adjusting said ropes for tightening or slackening the same, substantially as set forth.

3. In a pile-driver, the combination with the supporting-frame, a reach intermediately pivoted thereon and carrying the driving

mechanism, a shaft mounted in the frame, extending longitudinally thereof, and a rope attached to opposite sides of the reach and adapted to be wound upon the shaft, whereby
5 the reach may be swung laterally, substantially as set forth.

4. In a pile-driver, the combination with the lead and hammer movable thereon, of a trip consisting of a block, a bar intermediately pivoted thereto and adapted to suspend
10 the hammer from a point above its pivotal point, and a stop carried by the lead and interposed in the pathway of said pivoted bar, substantially as set forth.

15 5. In a pile-driver, the combination with

the lead and hammer movable thereon, of a trip consisting of a block carrying a weight, a U-shaped bar embracing said block and intermediately pivoted thereto, said bar adapted to receive and suspend the hammer at a point
20 above its pivotal connection with the block, and a stop interposed in the pathway of said bar and adapted to be engaged thereby, whereby the rear end of the bar is moved upwardly and the hammer permitted to slip therefrom,
25 substantially as set forth.

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Witnesses:

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