

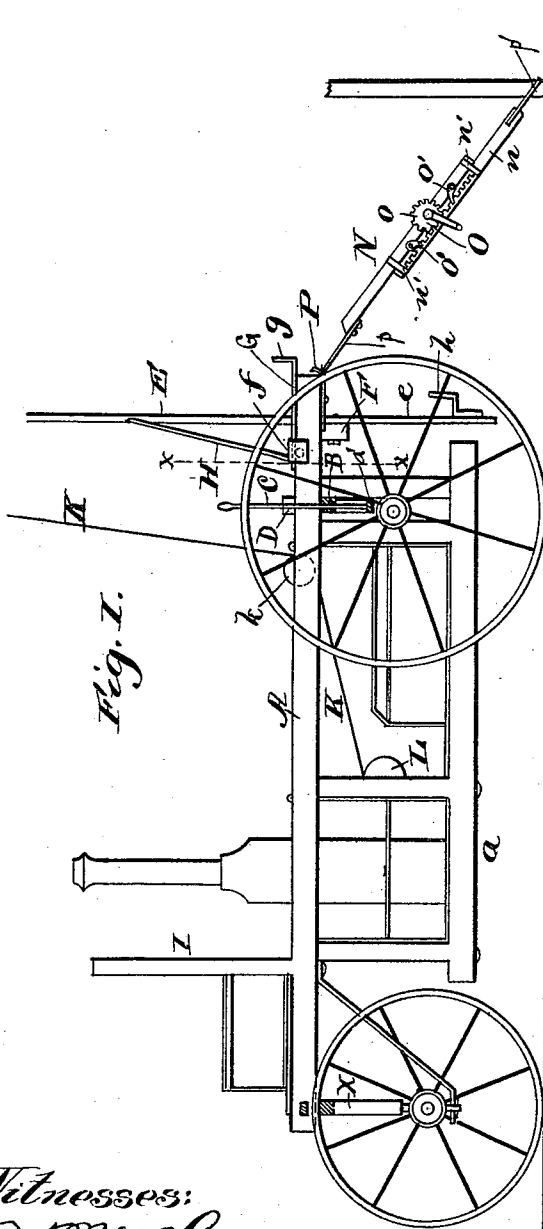
(No Model.)

3 Sheets—Sheet 1.

C. E. McAULEY.
POST OR PILE DRIVER.

No. 470,252.

Patented Mar. 8, 1892.



Witnesses:
J. B. McGirr.
William O. Belt.

Fig. III.

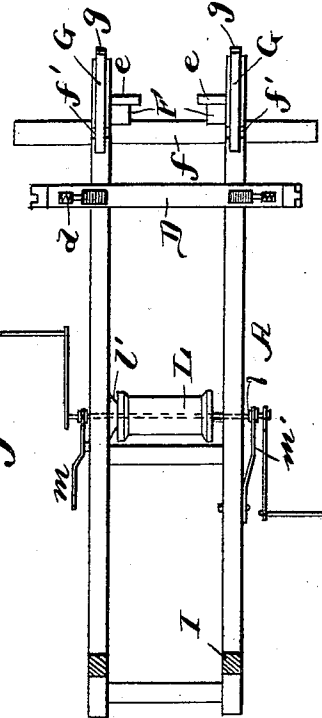
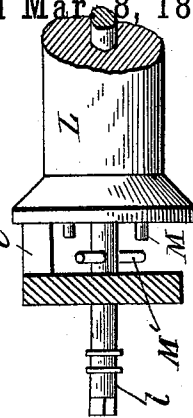


Fig. X.



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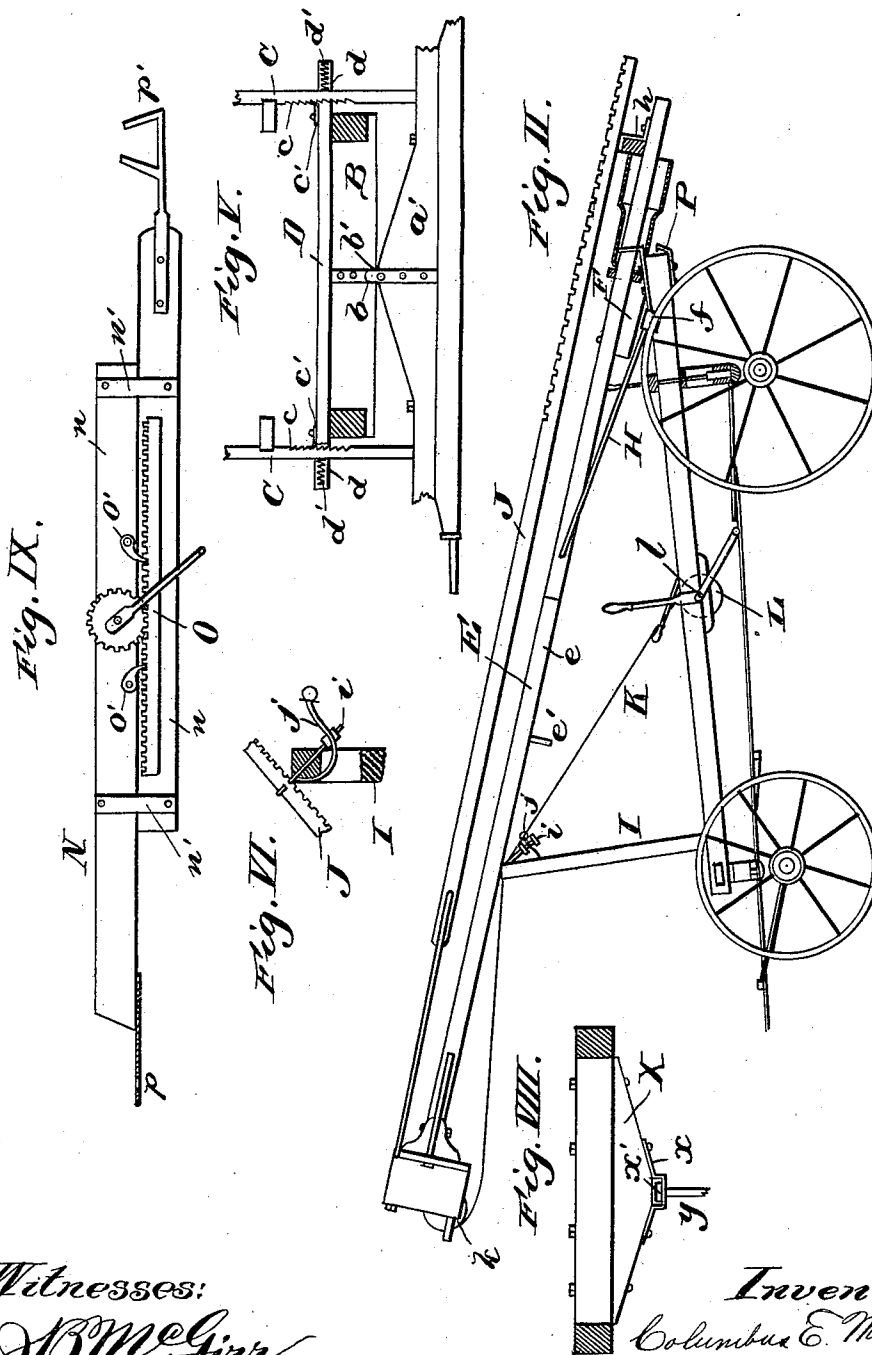
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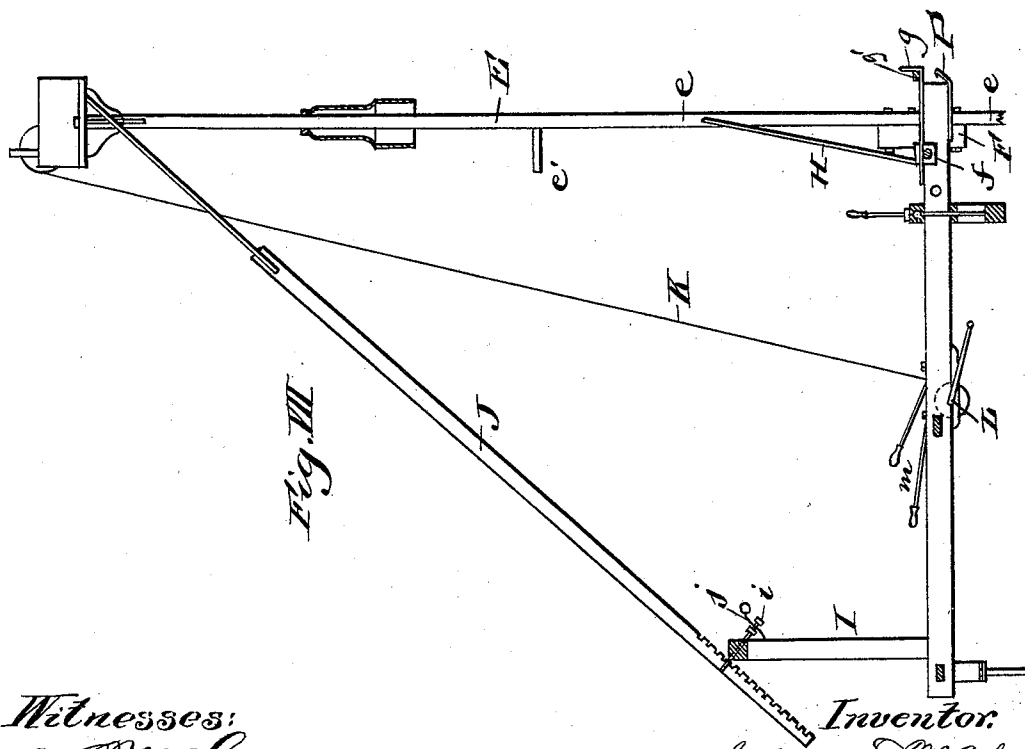
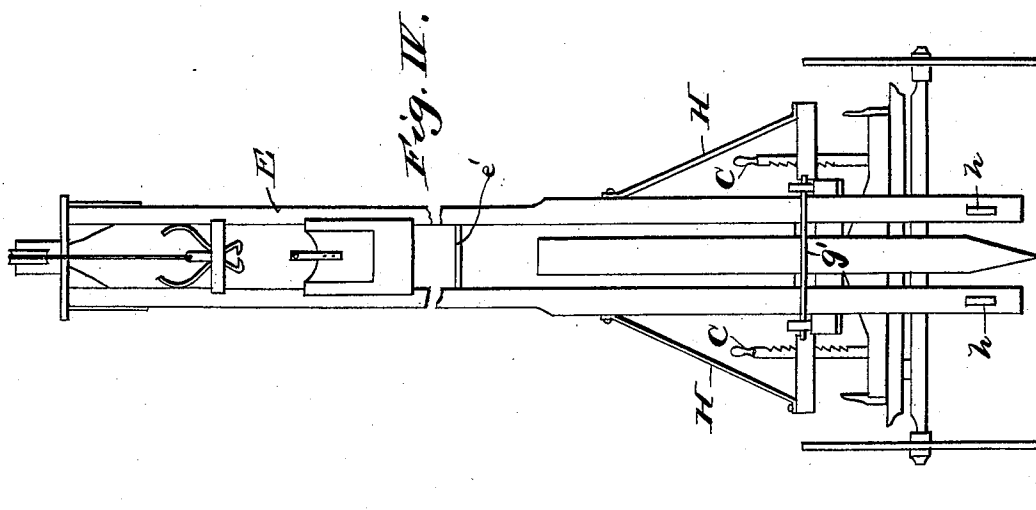
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

COLUMBUS E. MCAULEY, OF ERIN, TENNESSEE.

POST OR PILE DRIVER.

SPECIFICATION forming part of Letters Patent No. 470,252, dated March 8, 1892.

Application filed May 8, 1891. Serial No. 392,050. (No model.)

To all whom it may concern:

Be it known that I, COLUMBUS E. MCAULEY, a citizen of the United States, residing at Erin, in the county of Houston and State of Tennessee, have invented certain new and useful Improvements in Post or Pile Drivers; and I do hereby 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.

My invention relates to improvements in pile or post drivers; and the object is to provide a simple machine for driving piles, posts, &c., which can be readily moved from place to place and secured in firm, steady position for use.

With these ends in view my invention comprises a suitable frame mounted on wheels and carrying an engine and the necessary coal and water receptacles. An upright frame is pivotally secured on the rear end of the vehicle, which frame is arranged to be folded on an upright fixed in the forward part of the vehicle, and this frame is elevated, when it is desired to use the machine, by the weight of the hammer, which hangs below the pivotal point, or any other suitable means. Secured on the rear axle is a bolster, and another bolster is pivoted thereon, to which is secured a cross-piece, which projects beyond the ends of the bolster on which it is secured. Two vertical ratchet-bars are pivotally fastened to the bolster on the axle, and they extend upward through openings in the cross-beam, whereby the main frame on the wagon can be pitched sidewise to adapt the machine to the direction of the pile and any unevenness in the ground. A drum is arranged midway of the frame, and a rope is connected to the hammer and passes over a pulley on the top of the upright frame and is adapted to be wound on the drum by suitable connections with the engine. An adjustable brace on the rear end of the frame is adapted to be secured to a post or other convenient place to hold the machine steady, and another brace is secured to the top of the upright frame, and it can be secured in place to steady said frame and adjust it in position.

My invention further consists of certain details of construction and arrangement of parts, as will more fully appear hereinafter.

To enable others to more readily understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure I is a side view of my invention, showing the upright frame elevated and broken away. Fig. II is a side view, partly in section, showing the frame applied to an ordinary farm-wagon and the upright frame in a folded position. Fig. III is a top plan view of the main frame partly in section. Fig. IV is a front elevation of the machine with the upright frame elevated. Fig. V is a sectional view on the line *xx* of Fig. I. Fig. VI is a detail view of the yoke securing the brake to the upright on the front end of the wagon. Fig. VII is a side elevation, partly in section, of the machine in an elevated position with the running-gear removed. Fig. VIII is a detail view of the front bolster and iron. Fig. IX is a side view of the brace. Fig. X is an enlarged detail view of a portion of the drum, partly in section, and showing the clutch mechanism.

Referring to the drawings, in which like letters of reference denote corresponding parts in the several figures, A designates the main frame, rectangular in shape, and it has a hanging portion *a*, adapted to receive and carry an engine and fuel, &c. The forward end of this frame is secured on a rocking bolster X, which is ironed on the under side, as at *x*, and provided with an opening *x'*, through which a coupling-pin *y* is passed to secure it on the front axle. A side spring may be used instead of the bolster, and it will then permit of the rocking movement desired.

The rear end of the frame is pivotally supported on a bolster *a'*, secured on the rear axle, and the bolster B, joining the rear end of the main frame, has a recess *b* near the center thereof, in which fits a knuckle *b'* on the bolster *a'*. Thus the main frame is secured firmly in place; but it is substantially pivoted on the axles, and a limited movement thereof is permitted. As before stated, the front portion of the frame may be fixed on a spring, and thus secured to the axle; but a bolster is preferably used instead of the spring and bolted to the axle in such a manner that the frame may be adjusted and a limited swinging movement permitted.

Pivotally secured in the rear bolster *a'* are

two vertical ratchet-bars C, which have teeth *c* on their inner sides, and these bars pass through slots *d* in a transverse piece D, secured on the bolster B, and which projects
 5 over and is fastened to the longitudinal side pieces of the frame A. Arranged in these slots or openings *d* are two spring actuated bolts *d'*, which bear against the ratchet-bars C and force the teeth or cogs into engagement with two plates *c'*, fastened in the transverse piece D. Thus the frame may be adjusted
 10 sideways and secured firmly in its proper position by operating the ratchet-bars, and the bolts in the slots keep the teeth in engagement with the plates *c'* to secure the frame rigidly.

The rear portion of the main frame A projects beyond the rear axle, and the upright frame E is pivotally secured therein. This
 20 upright frame consists of two parallel standards *e*, joined together at the top, and by suitable braces *e'*, and the lower ends of the standards are secured to two blocks F, which blocks are in turn secured rigidly to a transverse
 25 piece *f*. The transverse beam *f* projects outwardly beyond the sides of the frame A, and it has two rounded portions *f'*, which fit in recesses in the sides of the frame, and plates or straps G are fastened in the sides over the
 30 beam *f*, and thus form a bearing for said beam, which may then turn partially in said bearing, and as the upright frame is secured thereto it can be readily elevated and lowered. The ends of the plates are turned up,
 35 as at *g*, at the extremities of the sides, and a cross-piece *g'* is placed adjacent to the same and guides the pile or post, which operates between the transverse beam *f*, the upright standards *e*, and said cross-piece *g'*. Suitable
 40 braces H are secured to the projecting ends of the beam *f* and the standards *e*, and a metallic stirrup *h* is fastened to the lower end of each standard, which receives the hammer when the machine is not in operation and
 45 prevents it from slipping out of its proper place.

In the forward part of the main frame is an upright standard I, on which the upright frame rests when it is lowered and the machine is not in use or is being moved around.
 50 A brace-rod J is also loosely secured to the top of said upright frame, and it has a series of incisions on its lower end, which engage with the standard I to adjust the upright in one
 55 direction and hold it firmly in place. To accomplish this I provide an arm *i*, which passes through the standard diagonally and has a yoke in its end which encircles the brace-rod, and this yoke is held in engagement with the
 60 brace by a weighted spring-arm *j* operating on one side of the arm *i* to force the brace against the standard. By this construction and arrangement the upright frame may be
 65 adjusted in one direction and held rigidly in place, and by means of the ratchet-rods a limited sideways movement of the frame is permitted, which also turns the upright frame in

the other direction, and thus said frame can be adjusted at any angle to suit the direction taken by the pile. 70

The hammer is constructed in any approved style and is adapted to be tripped in the usual manner, and it is operated by a rope or cable K, which passes over a pulley *k*, fixed on the top of the upright standard, and is wound on
 75 a drum L, journaled in the sides of the main frame near the center thereof.

The shaft *l*, on which the drum is loosely mounted, projects beyond the sides of the frame and has cranks fastened thereon, by
 80 which the drum is operated. The drum is provided with a number of projections M at one end, and the shaft *l* has a bolt or bar M' passing diametrically through it, which engages with and bears against the projections
 85 on the drum when the latter is in position to elevate the hammer. To maintain the drum in its normal position, I provide a spring-lever *m'*, which holds the bar M' in engagement with the projections M, and when it is desired
 90 to allow the hammer to fall a lever *m* on the frame is operated to move the shaft *l* endwise and disengage the bar M' and projections M. Then the drum, being loose on its shaft, can rotate as the hammer falls, and to prevent it
 95 from flying in contact with the bar M' a block *l'* is secured on the frame, against which the end of the drum may impinge, and which effectually protects the bar M' from being engaged with projections M. The operation of
 100 this mechanism is obvious. As the shaft revolves, the drum, being locked thereto by the bar M' and projections M, rotates and elevates the hammer. Then the bar is disengaged by operating the lever *m* and the hammer falls,
 105 the drum revolving loosely on the shaft.

In order to hold the machine in a firm and rigid position, I provide an extension-brace N, which is fastened to the rear end of the machine and to any convenient pile or tree.
 110 This brace consists of two pieces *n*, arranged to slide on each other in suitable sleeves or clamps *n'*, and a rack O is secured on the side of one piece, on which a gear-wheel *o* operates to adjust the braces longitudinally, after
 115 which they are held rigid by two pawls *o'*. The end of one of these pieces *n* is provided with an eye *p*, by means of which it can be readily secured on a hook P on the main frame of the machine, and the opposite end
 120 of the other piece has an arm *p'*, by which it can be secured to any convenient place. When this brace has been primarily secured in place, the gear-wheel *o* is operated by a crank thereon and the pieces tightened and
 125 locked with the pawls *o'*, to make the machine firm and rigid in position.

The construction of the several parts of my machine present many practical advantages, and they are so arranged that they can be
 130 readily adapted to an ordinary farm-wagon or running-gear, and it can also be easily moved from place to place with the upright folded in a compact position on the main frame.

I am aware that changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having therefore described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pile-driving machine, the combination of a main frame, an upright frame pivotally secured on the rear end thereof and extending below the same, the plates *G*, secured on the main frame and forming a journal for the upright frame, a hammer adapted to move vertically in said upright frame, and a rope fastened to the windlass and the hammer, substantially as described.

2. In a pile-driving machine, the combination of a main frame, a bolster secured on the rear axle, a transverse beam pivotally secured on the bolster and having the slots or openings, the vertical ratchet-bars pivoted on the bolster and projecting upward through the openings in the beam, and the spring-actuated bolts in said openings adapted to force the bars into engagement with fixed plates on the beam, substantially as described.

3. In a pile-driving machine, the combination of a main frame, an upright frame pivotally secured therein, a standard in the forward end of the main frame, a brace-rod pivotally secured to the top of the upright frame and having recesses to fit on the top of said

standard, an arm extending through the standard and having a yoke on the upper end adapted to engage the brace-rod, and a spring-arm operating on said arm to force the brace against the standard, substantially as described.

4. In a pile-driving machine, the combination, with a main frame, of a brace consisting of two longitudinal pieces arranged to slide on one another, the sleeves on said pieces, a rack on one piece, a pinion on the other engaging with said rack to adjust the pieces lengthwise, the pawls on either side of said pinion, the plate on the upper end of one piece having an eye to engage a hook on the main frame, and the hooked arm on the lower end of the other piece, substantially as and for the purpose described.

5. In a pile-driving machine, the combination of a main frame, an upright frame pivotally secured in said main frame, the straps *G*, forming the journal for the upright frame and having the upturned ends, the hammer adapted to move vertically in the upright frame, the stirrups *h*, the bolster *a'*, the transverse beam *B*, pivotally secured thereon and adapted to be adjusted vertically, the windlass, and the rope connecting the windlass and hammer, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

COLUMBUS E. McAULEY.

Witnesses:

CHAS. N. PARKER,
EWING RICHARDSON.