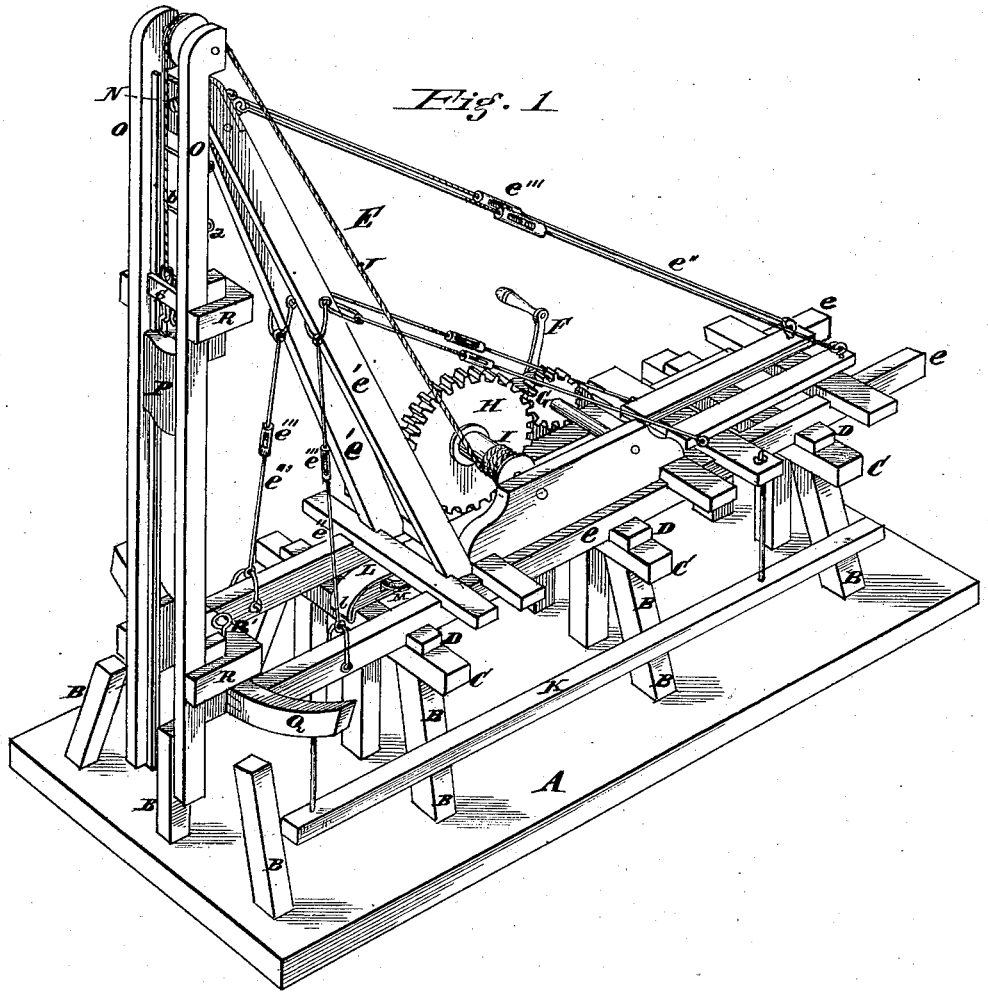
2 Sheets--Sheet 1.

M. McDERMOTT.
Pile-Driver.

No. 163,226. Patented May 11, 1875.

Fig. 1



Attest
Edgar J. Gross
John C. Jones

Inventor
Martin McDermott
By Y. Millward
Attorney

2 Sheets--Sheet 2.

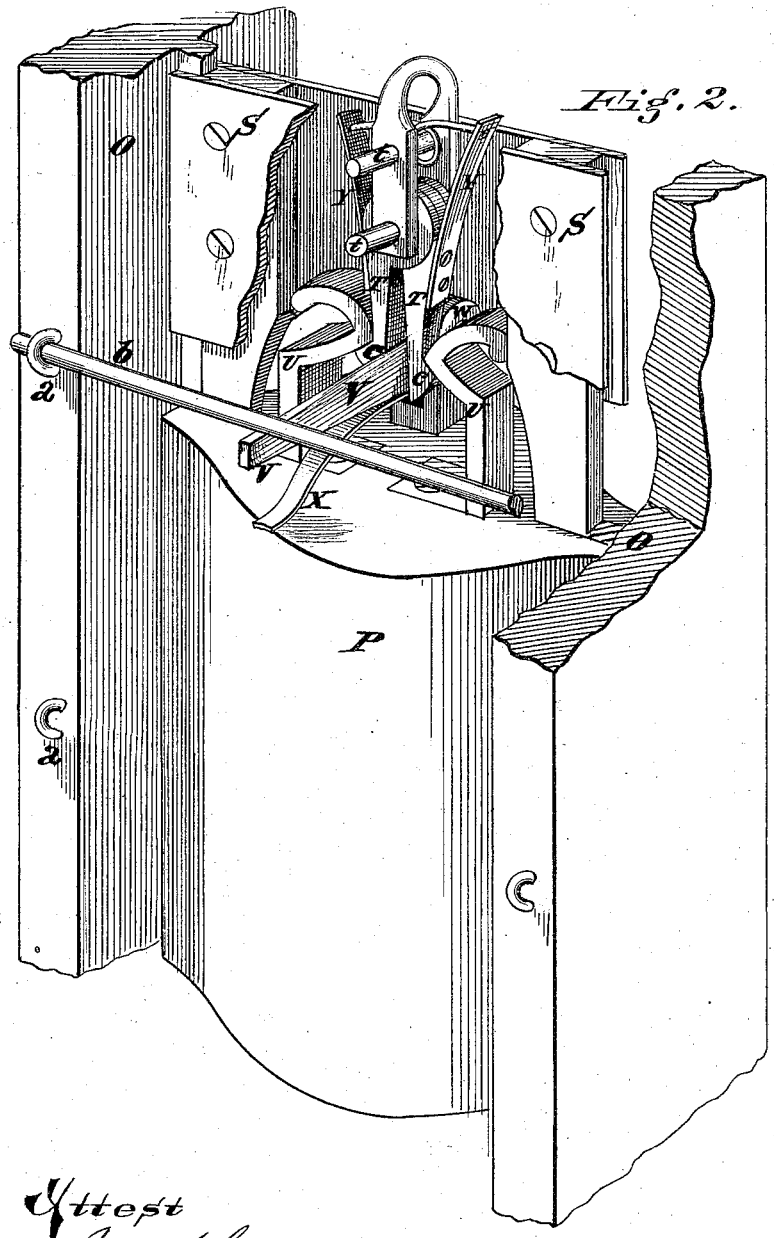
M. McDERMOTT.

Pile-Driver.

No. 163,226

Patented May 11, 1875.

Fig. 2.



Attest
Edgar F. Gross.
John C. Jones.

Inventor
Martin McDermott
By F. Millward
Attorney

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

MARTIN McDERMOTT, OF GALVESTON, TEXAS.

IMPROVEMENT IN PILE-DRIVERS.

Specification forming part of Letters Patent No. **163,226**, dated May 11, 1875; application filed January 22, 1875.

To all whom it may concern:

Be it known that I, MARTIN McDERMOTT, of Galveston, Galveston county, State of Texas, have invented an Improvement in Pile-Drivers, of which the following is a specification:

My invention consists in a peculiar device for releasing the driving hammer or weight when lifted, and engaging it for lifting; and it further consists in a device for advancing the machine longitudinally as the work progresses.

Figure 1 is a perspective view of a pile-driver embodying my invention. Fig. 2 is an enlarged perspective view of a portion of the hammer-ways, the hammer itself, and its lifting and releasing device, illustrating plainly parts which it is impracticable to show in Fig. 1, owing to the smallness of the latter figure.

The base A, as shown in Fig. 1, does not exist in practice, and may be simply assumed to represent the face of the earth into which the piles are to be driven. When the machine is first put to work on a job of pile-driving for dock-walls, railroad-track, or other use, it is supported for the first few piles upon the earth itself, or on a temporary foundation; but, as the work progresses, the piles B, as driven, become the foundation to support the machine, and form the track over which the machine moves to progress with the work, the cross-ties C of the piles directly receiving the foundation-beams of the machine, and the temporary blocks D preserving them from lateral displacement.

The derrick or main frame E is composed of foundation-beams *e*, extending beams or poles *e'*, and tie-rods *e''*, in the latter of which the tighteners *e'''* are used to line up and stiffen the structure. F G H I represent, respectively, the handle, gear-wheels, and drum of the windlass, and J the lifting-rope. Staging K may be suspended from the works for the operators to stand on. A portable beam, L, is provided, armed with a hook, *l*, at its forward end to engage over the cross-ties C. In this beam an idler-pulley, M, is located, over which a rope from the windlass may pass to be attached to the back end of the frame E, for the purpose of enabling the windlass to propel the machine forward after the driving of all the piles within its lateral play. To a central bolt, N, at the top of the derrick, the slides or ways O O for the hammer P are attached loosely, so as to swing laterally upon it as a center, and outward at the bottom from the derrick, to enable the ways to be disengaged longitudinally (or in the direction of the progress of the work) from the head of the last pile driven, and adjusted laterally for the driving of the next pile at the side of the last one driven. To secure the ways at the bottom a curved beam, Q, is used, against which the ways swing, a pin, B', serving to secure them when adjusted. Yokes R, through the lower one of which the pin B' passes, connect the ways firmly together. Staples *a*, for the insertion of a bar, *b*, at any point in the vertical height of the ways, are provided, the bar serving, as hereinafter described, to release the hammer, and the location of the bar determining the height of fall. The sides of the hammer P are grooved to fit the ways O O, and a slide, S, is fitted to move in the same ways. The slide S carries the nippers T T by means of connecting-pins *t t*, the lower one of which forms a pivot, on which the nippers open and close. The springs Y, yoked together at the top by wire *t'*, and secured at the bottom to the jaws T T of the nippers, tend to expand the jaws. The hammer P carries the permanent jaws U, which receive the nippers, the opening to the jaws and the passage from them being flaring, as shown. The hammer also carries a lever, V, pivoted to joint W, and kept in the direction of the opening between jaws U by spring X. The top of the lever V is sharpened to enter the jaws T T.

The weight of slide S, when the rope is lowered, causes the jaws of the nippers to enter the jaws U, and the spring X, which gives as the jaws T descend, rises again when the projections *c* are below the narrow passage of jaws U, so as to force the lever between the jaws T, and lock them to jaws U. In this position the hammer is supported for lifting; but as soon as the end of lever V strikes a bar, *b*, it is caused to compress the spring X,

and allow the nippers to contract and escape, and the weight to fall.

I claim—

1. The combination of slide S, weight P, spring-nippers T T Y Y *c c*, jaws U U, lever V, and spring X, operating substantially as and for the purpose specified.

2. In combination with the portable frame E and windlass F G H I J, the beam L *l* and pulley M, connected and operating substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

MARTIN McDERMOTT.

Witnesses:

FRANK MILLWARD,

J. L. WARTMANN.