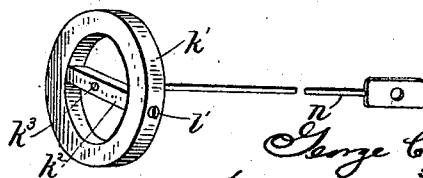
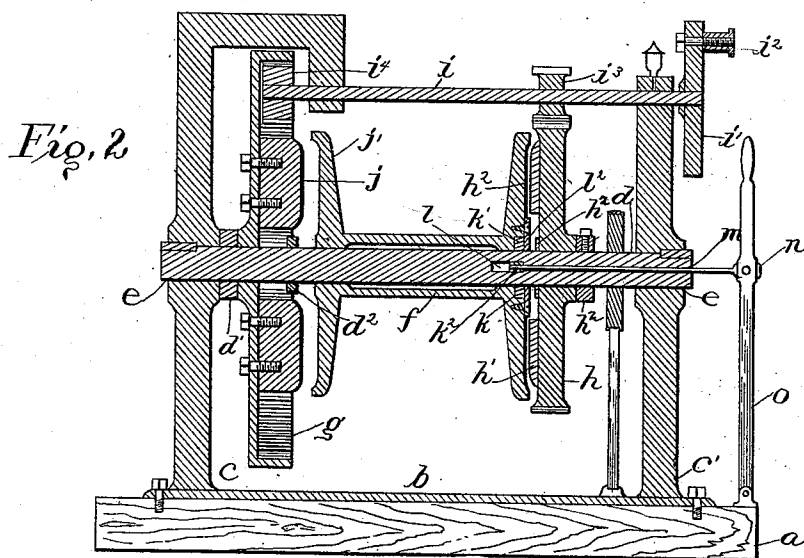
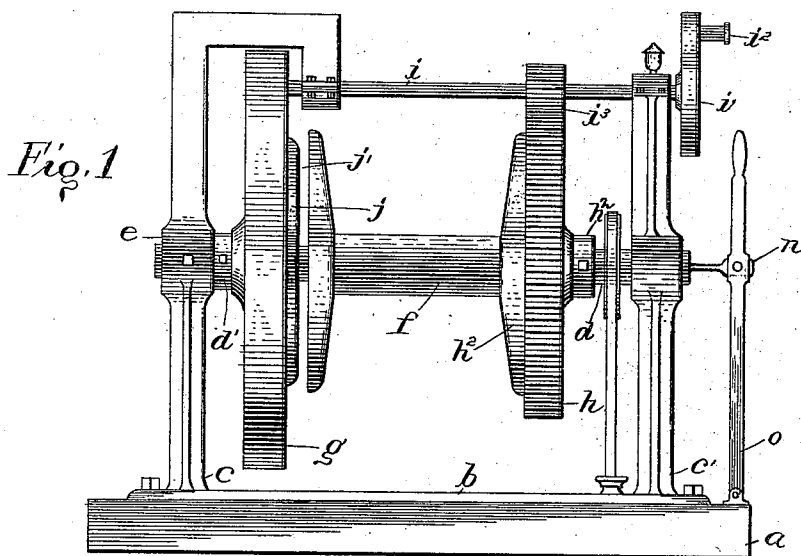


(No Model.)

G. C. MURREY.
HOISTING MACHINE.

No. 512,258.

Patented Jan. 2, 1894.



Witnesses
G. C. Burlingame
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UNITED STATES PATENT OFFICE.

GEORGE C. MURREY, OF SEATTLE, WASHINGTON.

HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 512,258, dated January 2, 1894.

Application filed September 22, 1892. Renewed December 12, 1893. Serial No. 493,506. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. MURREY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful improvements in Hoisting-Machines; and I 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in that class of hoisting machines used to operate pile drivers and similar machinery.

My object is to produce a device which may be quickly started and stopped and one which will occupy as small a space as possible.

To this end my invention consists of certain novel features and combinations of parts more fully described hereinafter and pointed out in the claim.

Referring to the accompanying drawings: Figure 1 represents a side elevation; Fig. 2 a longitudinal section; Fig. 3 a detail of the drum shifting mechanism.

The reference letter *a* represents the foundation timbers to which the bed plate *b*, of my machine is secured by bolts, pins, or in any other convenient manner. Arising from the bed plate *b*, are two pedestals or standards *c* and *c'* thoroughly ribbed to insure strength and having the shaft *d*, immovably keyed in the openings or boxes *e*, formed midway their length. The shaft *d* has mounted on it the hoisting drum *f*, and gear wheels *g* and *h*, all of which revolve loosely thereon. Journaled in the highest portion of the standard *c'* and in the overhanging end of the standard *c*, is a shaft *i* to which is imparted a continuous rotary motion by means of the crank disk *i'* and wrist pin *i''* to which pin the engine pitman is connected. Mounted on the shaft *i* are two pinions *i³* and *i⁴* the former, *i³*, being mounted between the shaft bearings and the pinion *i⁴* being fixed to that end of the shaft which projects beyond the bearing in the standard *c*.

The pinion *i⁴* is adapted to mesh with the internal gear *g* which is as hereinbefore stated mounted loosely on the shaft *d*, and held in-

capable of lateral movement by means of the set collars *d'* and *d''*. By this means the gear *g* is given a continuous rotary motion. Secured to the inner face of the internal gear is an annular friction plate *j* which is adapted to operate in conjunction with the slightly concave face *j'* of the hoisting drum *f*.

The spur gear *h* is as the internal gear mounted loosely on the shaft *d*, and held in a fixed position by means of the set collars *h²*, one on either side. This gear meshes with the pinion *i³* and by its means it is given a continuous rotary movement such movement necessarily being in a direction opposite to that of the internal gear *g*. The gear *h*, is also provided with a friction face *h'* similar to that on the gear *g* and it is embraced by the concave end *h²* of the hoisting drum.

Formed on one end of the hoisting drum, preferably the right hand end, is a counter-sunk recess *k* into which fits a ring *k'* of a size equal to that of the recess. Securely fastened over the opening and ring is a plate or cap *l*, having a central opening to admit the shaft *d*. The ring *k'* has securely fastened therein the bar *k²* formed with an opening *k³* in its center. This bar is adapted to reciprocate longitudinally in the elongated opening *l*, formed in the shaft *d*, and is secured in the ring *k'* by inserting said opening when the ring is in place and then moving the ring up and over it, whereupon it may be fastened by means of the screws *l'*. Formed in the center of the shaft *d* and extending longitudinally therewith is a passage *m* which projects up into the shaft until it comes up with the opening *l*. In this passage is located the clutch operating rod or bar *n*, which extends through the same and is connected to the bar *k²* by means of the opening *k³* formed therein. The remaining end of the bar *n*, projects out beyond the shaft *d*, and is connected to the operating lever *o*.

To use my improved machine the pinion shaft *i* is set in operation which will in turn cause the gears *g* and *h*, owing to their peculiar arrangement, to revolve in opposite directions as explained before. The drum *f*, assuming that it is in the position shown by the drawings, will however remain at a stand still, until it is moved laterally on the shaft *d*, when its concave end will come into en-

gagement with the corresponding convex face of the gear *g* or *h*, as the case may be, for example say *g*. This movement will cause the drum to revolve in the direction that the gear *g* is revolving, as the two are by means of the clutch clamped together. To reverse the drum it is shifted on its shaft to the gear *h*, to which it will be connected by means of the clutch before described. The drum is stopped by moving it such a distance from both of the gears *g* and *h*, that it will engage neither of them at which point it necessarily remains stationary.

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

In a hoisting machine, the combination of a stationary shaft, a drum mounted thereon, a gear wheel mounted at each end of the drum, friction plates fixed to the gears, on the side adjacent to the drum a revolving shaft having pinions mounted thereon and meshing

with the gear wheels in such a manner as to cause the same to rotate continuously in opposite directions, a passage formed in the stationary shaft and extending longitudinally into the same, an elongated passage in the stationary shaft extending at right angles to and intersecting the first, an annular opening or recess formed in that end of the drum nearest to the said passages, a ring secured in the recess, a cross-bar extending through the elongated passage and connected to the ring, a bar extending through the first named passage and connected to the ring, and an operating lever attached to the bar, substantially as described.

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

GEORGE C. MURREY.

Witnesses:

GEO. H. KING,
ARTHUR I. FONDA.