(No Model.)

J. C. KREPS.

WORM HOIST.

No. 536,087. Patented Mar. 19, 1895.

FIG. 1.

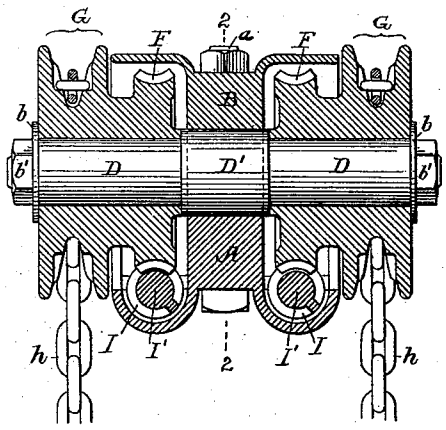


FIG. 3.

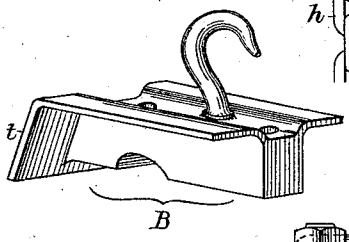
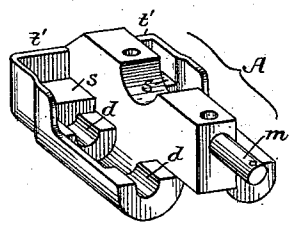


FIG. 4



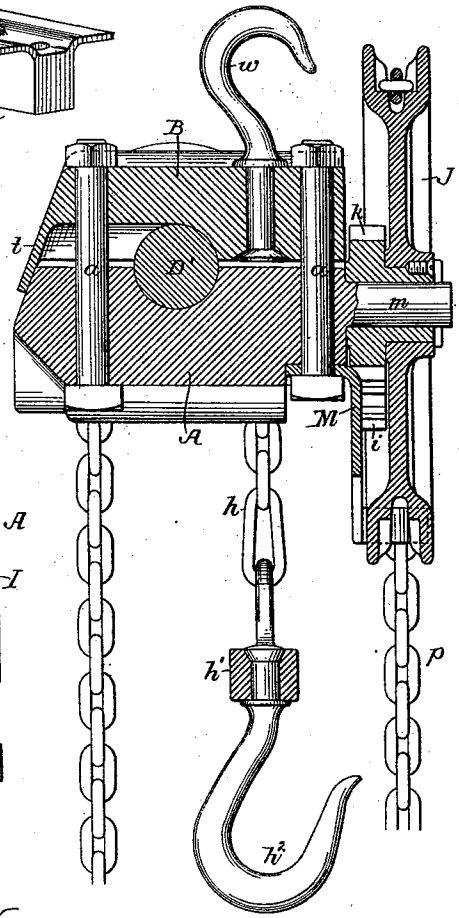


FIG. 2.

FIG. 5.

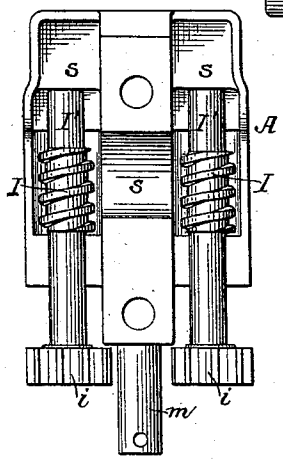
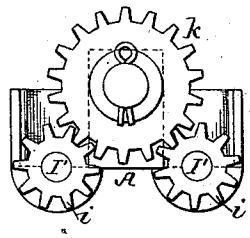


FIG. 6.



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UNITED STATES PATENT OFFICE.

JOHN C. KREPS, OF RIVERSIDE, NEW JERSEY.

WORM-HOIST.

SPECIFICATION forming part of Letters Patent No. 536,087, dated March 19, 1895.

Application filed May 6, 1893. Serial No. 473,229. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. KREPS, a citizen of the United States, and a resident of Riverside, Burlington county, New Jersey, have invented certain Improvements in Worm-Hoists, of which the following is a specification.

The object of my invention is to so construct a duplex worm hoist as to simplify and cheapen the same and to render the structure compact and capable of effectively resisting the strains to which it is subjected. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1, is a longitudinal section, partly in elevation, of my improved hoist. Fig. 2, is a transverse section on the line 2—2, Fig. 1, partly in elevation. Figs. 3 and 4, are perspective views, on a reduced scale, respectively of the upper and lower parts of the body of the hoist. Fig. 5, is a plan view of the lower part of the hoist body with the driving worms, worm shafts and gears in position thereon; and Fig. 6, is a front view of the bottom section of the hoist body showing the driving gears.

The body of the hoist is composed of the under part A and the upper part or cap B which are firmly clamped by means of bolts *a* upon the central portion D′ of a spindle D, said central portion being, by preference, slightly enlarged and adapted to suitable recesses formed in the upper and lower parts of the body of the hoist for its reception. Upon each projecting portion of the spindle D is free to turn a structure, preferably cast in one piece, as shown, and comprising a worm wheel F and a sprocket wheel G, this structure being held in place laterally by a suitable washer *b* and nut *b′* at the outer end of the spindle D.

Each worm wheel F engages with a worm I upon a shaft I′ which is adapted to bearings *d* formed in the lower portion A of the body of the hoist, and each sprocket wheel G receives one run of the hoisting chain *h*, the two runs of this chain being connected to a bar *h′* provided with a swiveled lifting hook h^2, so that in case one chain breaks, the other will support the load, it being understood that the slack chain *h* hangs in a loop at the back of the hoist.

Each of the worm shafts I′ has at its outer end a pinion *i*, these pinions meshing with a spur wheel *k* which turns upon a projecting stud *m* at the front of the body block A, and has a hub to which is secured the sprocket pulley J, to which is adapted the driving chain *p*, so that by pulling upon this chain the sprocket wheel J can be rotated in one direction or the other, this movement being transmitted by the spur wheel *k* and pinions *i* to the worms I, and thence to the worm wheels F and sprocket wheels G so as to actuate the hoisting chain *h* in order to raise or lower the load suspended upon the hook h^2.

The bottom portion A of the body of the hoist has, in the rear of the bearings *d* for the worm shafts, thrust blocks *s*, which provide end bearings for the rear ends of the worm shafts and oppose a rigid resistance to the end thrust imparted to said worm shafts by reason of the weight upon the hoisting chain which is transmitted to the worm shafts through the medium of the sprocket wheels G and worm wheels F.

The top portion B of the body of the hoist has, at the rear, a hood *t* which bears upon and overlaps the bottom section A and serves, in connection with the rear casing *t′* of said bottom section to inclose the body of the hoist at the rear and thus prevent in a great measure, the access of dirt or foreign matter to the worm gears. Said hood *t* may be separate from the cap portion B of the hoist body if desired, and bolted or otherwise secured thereto.

The upper portion B of the body of the hoist is provided with a swiveled hook *w* whereby the hoist may be suspended from any available support, this hook being located adjacent to the front end of the hoist so as to be as nearly as possible in line with the pull upon the hoisting chain and thus prevent tipping of the hoist when in use.

A bar M carrying the guides for the two runs of the driving chain *p* is secured to the lower portion of the body of the hoist by means of the same bolt *a* which secures together the two parts of the hoist body at the front of the same.

Having thus described my invention, I

claim and desire to secure by Letters Patent—

1. The combination of the two-part hoist body, the spindle clamped thereby, the sprocket wheels for the hoisting chain, the worm wheels connected thereto, the worms and worm shafts, the driving sprocket wheel, gearing connecting the same and the worm shafts, a guide for the driving chain, and clamping bolts for the body of the hoist, one of said bolts also securing said chain guide, substantially as specified.

2. The combination of the sprocket wheels for the hoisting chain, the worm wheels connected thereto, driving mechanism for said worm wheels, the spindle having a central portion clamped between the two parts of the body of the hoist, the casing, *t'*, upon the lower part of the hoist body and the hood, *t*, formed upon the upper part of the hoist body, and overlapping the said casing, whereby access of dirt to the worm gears is prevented, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. KREPS.

Witnesses:

FRANK EDMUND BECHTOLD,

JOSEPH H. KLEIN.