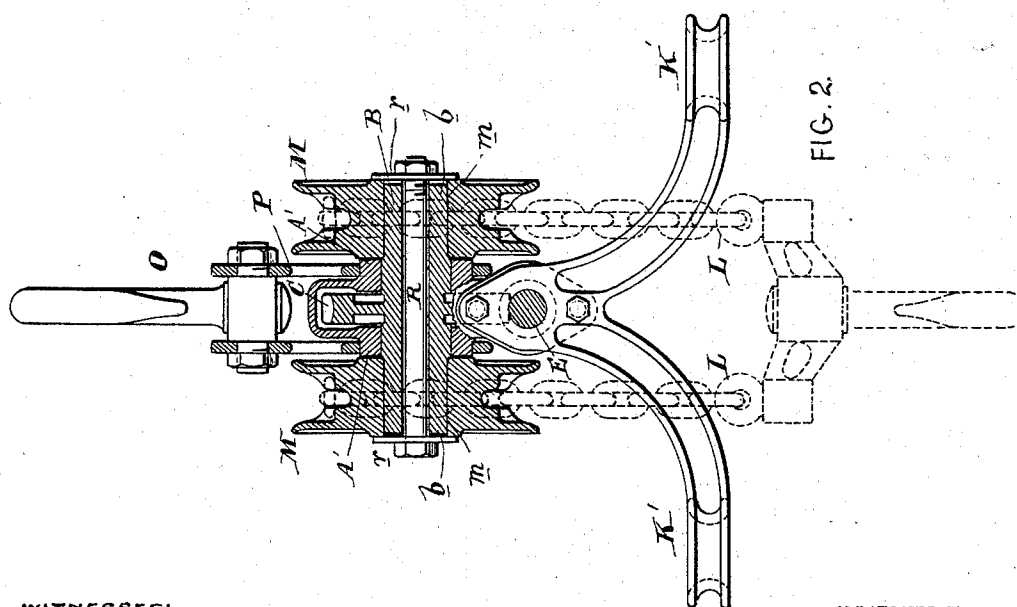
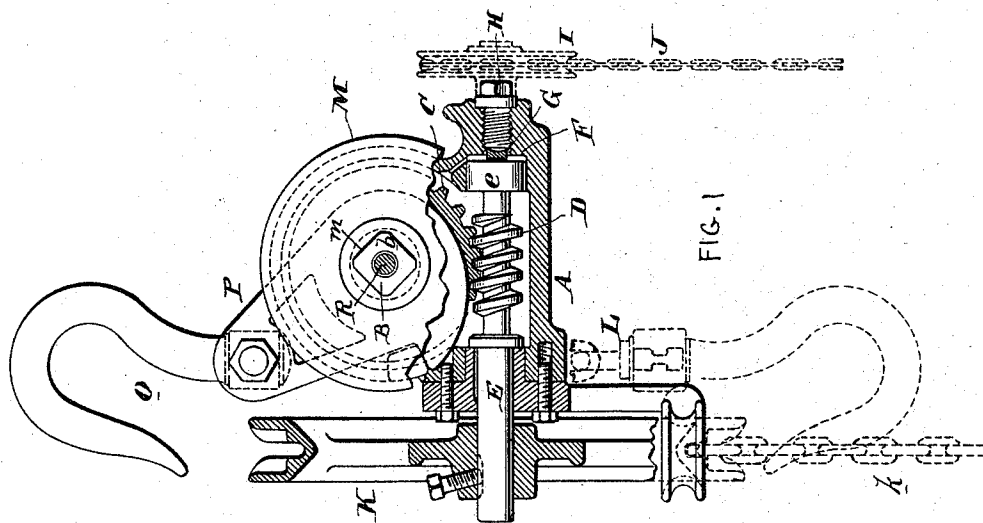


(No Model.)

J. A. MCGREGOR.
HOISTING MACHINE.

No. 573,904.

Patented Dec. 29, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN A. MCGREGOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE EDWIN HARRINGTON, SON & COMPANY, INCORPORATED, OF
SAME PLACE.

HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 573,904, dated December 29, 1896.

Application filed December 1, 1893. Serial No. 492,427. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MCGREGOR, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Hoisting-Machines, of which the following is a specification.

My invention relates to hoisting-machines; and it consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

My invention comprehends certain improvements in so constructing the hoist that a different degree of friction may be created to increase or decrease the tendency of the hoist to run down. These various improvements will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a side sectional elevation of my improved hoisting-machine, and Fig. 2 is a transverse section of same.

A is the main frame and has journaled within it a transverse shaft B, having secured or formed integral thereon the worm-wheel C, which is preferably inclosed within the case A.

D is a worm meshing with the worm-wheel C and is secured to or formed integral with the shaft E, which is journaled within the frame A at right angles to the shaft B and contains upon its outer or free end a hand-chain wheel K, the chain of which *k* is adapted to be operated by hand in the usual manner in operating the hoist and is guided through suitable guides K', secured to the frame A. The rear bearing of the shaft E is enlarged, as at *e*, so that if permitted to work against the face F of the frame A it will create a considerable friction owing to the large surface contact. When but a small frictional contact is required, such as in cases where it is desired to make the lifting or power chain L with its lifting-hook run down freely, a small bearing G, carried in the frame A, may be forced forward by means of a screw H, so as to push the bearing G away from the rear face F, as indicated in Fig. 1, and thereby reduce the extent of surface in frictional contact. The screw H may be provided with a chain-wheel I, over which a light hand-chain wheel J may pass, so as to be able to change the frictional contact when the hoist

is in an elevated position. To enable the part *e* to come into contact with the face or bearing F, clearance must be provided to permit the shaft E to move longitudinally in its bearing. The tendency of the worm D working in the worm-wheel C is to force the shaft E backward against its thrust-bearing, and it is therefore evident that by varying the extent of frictional contact its thrust-bearing may prevent to the desired degree the weight of the lifting-chain L and its hook, causing the machine to run down. It is also evident that under such conditions the hoist may be brought into such adjustment that a very slight movement of the hand-chain *k* will cause the machine to run down fast or slowly.

M M are two lifting-chain wheels over which the lift-chains L L pass and are provided with square or substantially square holes, as at *m*, which fit upon square or substantially square ends *b* of the shaft B, carrying the worm-wheel C. The shaft B is provided with shoulders adjacent to the frame A, between which and the outer washers *r* the chain-wheels M are clamped through the agency of a transverse bolt R. In this manner the chain-wheels are easily attached to the shaft B and yet are readily removed for repairs, and no amount of weight upon the chain L can turn the said chain-wheels M upon the said shaft B. There should be no material frictional contact between the bearing A' of the frame A and the chain-wheels M, but the said wheels should be carried upon the shaft B in such a manner as to prevent any possibility of the turning independently of the shaft.

The hoist as an entirety may be suspended by means of a hook O, pivoted to a frame P, secured to the frame A by being sleeved upon its bearings A' concentrically with the hollow transverse shaft B.

While I prefer the construction shown, I do not limit myself to the minor details thereof, as they may be modified without departing from the principles of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

In a hoisting-machine, the combination of the main frame formed with a bearing-socket F of enlarged diameter adjacent to the thrust

end of the worm-shaft, a worm-shaft jour-
naled in said frame and having a journal *e*
of enlarged diameter journaled in the en-
larged bearing-socket F and free to be moved
5 longitudinally therein so as to bring the face
of the journal *e* of enlarged diameter into
frictional contact with the face of the bear-
ing-socket, or to be moved out of contact
therewith, and an adjusting-screw H passing
10 through the end of the socket and bearing
on the face of the journal *e*, for moving the
worm-shaft and causing the face of the jour-

nal to make frictional contact with the face
of the socket, or not to make contact there-
with, whereby a slow or despatch movement 15
may be imparted to the hoist by the result-
ing application or removal of friction to the
worm-shaft.

In testimony of which invention I have
hereunto set my hand.

JOHN A. MCGREGOR.

Witnesses:

ERNEST HOWARD HUNTER,
HELEN L. MOTHERWELL.