

(No Model.)

3 Sheets—Sheet 1.

O. M. MOWAT.
PULLEY BLOCK.

No. 572,766.

Patented Dec. 8, 1896.

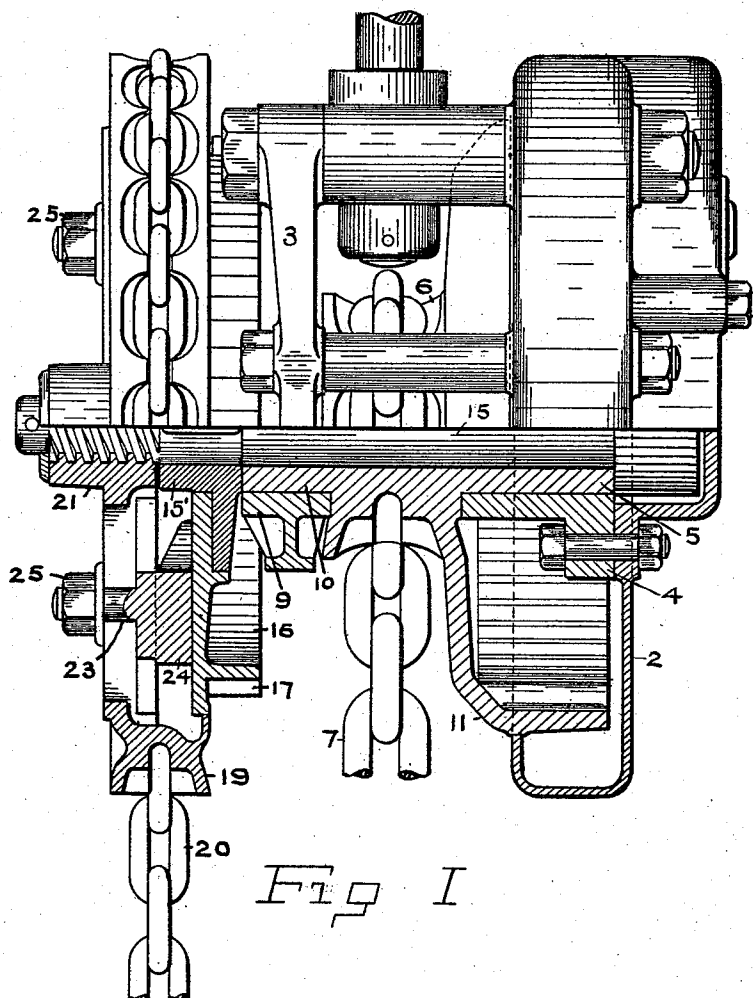


Fig. I

WITNESSES:

Warren W. Swartz
B. S. Stobbs

INVENTOR

Oliver M. Mowat
by Bekevel & Bekevel
his attys.

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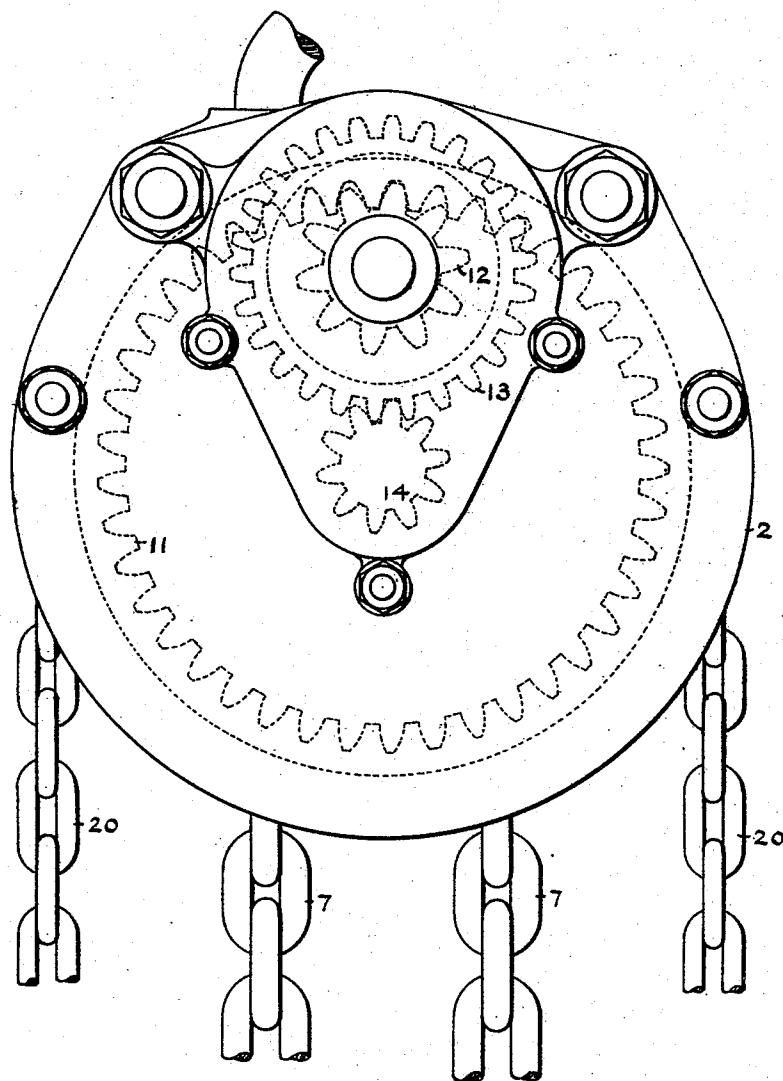


Fig. II

WITNESSES:

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B. S. Stokely

INVENTOR

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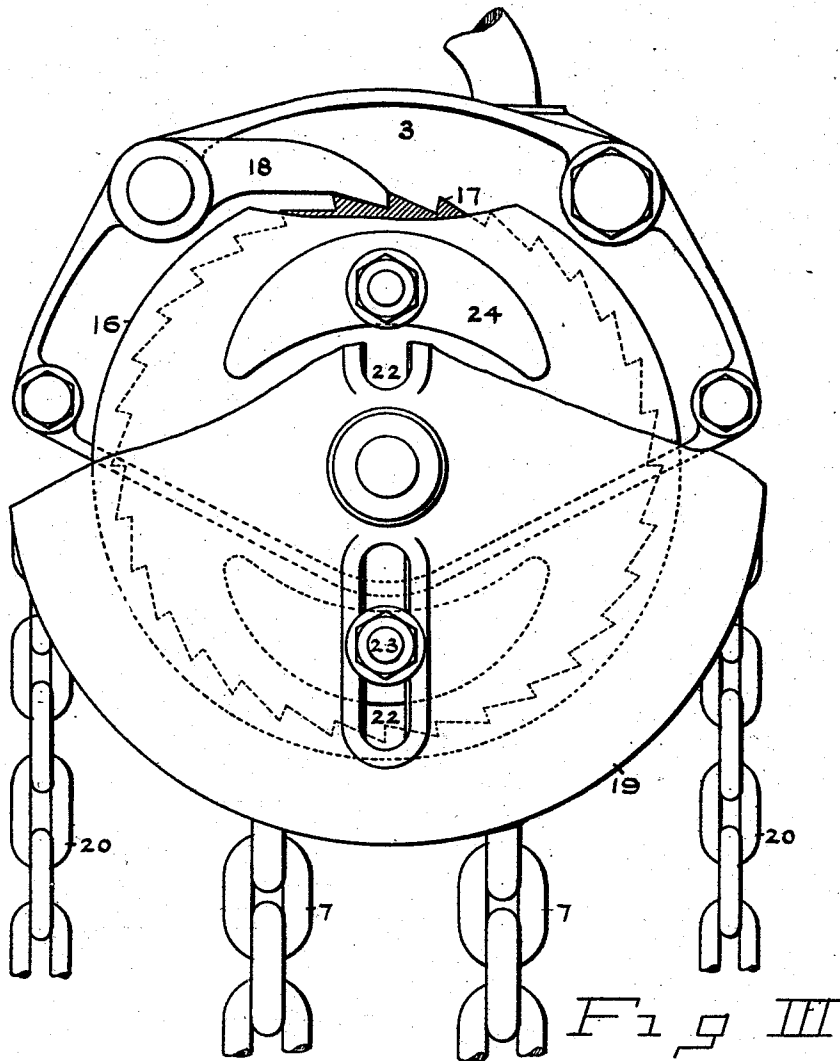
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3 Sheets—Sheet 3.

O. M. MOWAT.
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No. 572,766.

Patented Dec. 8, 1896.



WITNESSES:

Warren M. Bryant
B. D. Dolan

INVENTOR

Olive M. Mowat
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his attys

UNITED STATES PATENT OFFICE.

OLIVER M. MOWAT, OF PITTSBURG, PENNSYLVANIA.

PULLEY-BLOCK.

SPECIFICATION forming part of Letters Patent No. 572,766, dated December 8, 1896.

Application filed July 14, 1896. Serial No. 599,069. (No model.)

To all whom it may concern:

Be it known that I, OLIVER M. MOWAT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pulley-Blocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, of my improved pulley-block. Fig. 2 is an end elevation of the same; and Fig. 3 is a similar view of the opposite end, partly broken away.

My invention relates to that class of pulley-blocks wherein a weight is raised by the application of a power operating through multiplying gearing, and is designed to provide an efficient block of this character by which the load may be raised to any desired position and automatically locked in such position, and by which the load may also be lowered slowly and uniformly, either by hand or by the automatic action of the load itself, as desired.

In the drawings, in which similar numerals indicate corresponding parts, 2 and 3 represent the main brackets forming the frame of the block, these brackets being firmly bolted together with an interposed hook-bracket, as shown, and being of the general form shown in Figs. 1 and 2, respectively. The bracket 2 is provided with an inwardly-projecting bearing 4 for the hub or collar 5 of the chain-wheel 6, over which wheel passes the lifting-chain 7, the bracket 3 likewise having a bearing 9 for the opposite portion 10 of this hub or collar. Secured to and preferably formed integral with the hub of the chain-wheel 6 is an internal gear-wheel 11, whose teeth are engaged by the teeth of a pinion 12, whose shaft is provided with a toothed wheel 13, these wheels 12 and 13 preferably being cast integral with each other. The toothed wheel 13 intermeshes with a pinion 14, secured to the driving-shaft 15, this shaft extending through the hub of the chain-wheel 6 and having keyed thereto a hub or collar 15', with a projecting annular flange, as shown, this hub having loosely mounted thereon a friction-wheel 16, whose rim is provided with ratchet-teeth 17, engaged by a pawl 18, pivoted to the frame, which prevents rotation of

the wheel in a counter clockwise direction. The driving-chain wheel 19, over which passes the hand or driving chain 20, is provided with an innerly screw-threaded hub 21, engaging similar screw-threads upon the driving-shaft 15, and through radial slots 22 in this wheel extend the stems 23 of curved shoes 24, arranged to press upon the flat face of the friction-wheel 16, these shoes being held in any desired position by the nuts 25.

The screw-threads upon the driving-shaft are right-handed, so that a clockwise rotation of the driving-chain wheel forces the shoes against the friction-wheel and causes these two wheels to move as one.

The operation is as follows: When it is desired to lift a load, the operator rotating the driving-chain wheel clockwise by means of the hand-chain, the screw-threads cause the shoes to bind upon the friction-wheel 16, and this and the chain-wheel move together with the driving-shaft, the lifting-chain wheel being rotated by means of the intermediate gearing. When stopped in any position, the pawl engaging the teeth upon the friction-wheel locks the same from rotation in the opposite direction and likewise locks the driving-chain wheel, the shoes being arranged at such a distance from the center that a sufficient moment or lever-arm is afforded for this purpose. If it is desired to lower the load, the driving-chain wheel being rotated in the opposite direction, the weight of the load causes the driving-shaft to rotate, so that the threads thereon follow up those within the chain-wheel and maintain the same relation thereto, the shoes sliding with frictional resistance over the face of the friction-wheel. If it is desired that the load shall lower automatically without hand rotation of the chain-wheel counter clockwise, the shoes are moved inwardly to such a point that their moment is not sufficient to overcome, but is slightly overbalanced by the load, in which case, upon releasing the chain-wheel, the load will automatically and slowly lower itself, the shoes moving over the friction-wheel and giving sufficient resistance to insure a slow and uniform downward movement of the load.

The advantages of my invention will be apparent to those skilled in the art, since a pulley-block is afforded by which the load may

be lifted and locked in any position and lowered either by hand or by the action of the load itself, the shoes being easily and quickly adjusted to the different positions suitable
5 for such action.

The device is simple and compact, and the connecting-gearing is efficient and takes up a small amount of space.

Modifications in the form, construction, and
10 relative arrangement of the parts of the device will be suggested to those skilled in the art without departing from my invention, since

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

1. In a pulley-block, a driving-chain wheel, a driving-shaft having screw-threaded engagement therewith, radially-movable shoes mounted upon the chain-wheel and arranged
20 to contact with a friction wheel or ring, and means for preventing the movement of the friction-wheel in one direction; substantially as described.

2. In a pulley-block, a driving-wheel having a screw-threaded engagement with a driving-shaft, and provided with radial slots, shoes
25 adjustably mounted in said slots, a friction-wheel revolubly mounted upon the shaft and arranged to contact with the shoes, and means for preventing movement of the friction-wheel in one direction; substantially as described.
30

3. In a pulley-block, a driving-wheel having a screw-threaded engagement with a driving-shaft, and provided with radial slots, shoes
35 adjustably mounted in said slots, a friction-wheel revolubly mounted upon the shaft and arranged to contact with the shoes, and a pawl arranged to engage ratchet-teeth upon the friction-wheel; substantially as described.
40

In testimony whereof I have hereunto set my hand.

OLIVER M. MOWAT.

Witnesses:

G. I. HOLDSHIP,
C. BYRNES.