No. 725,048. PATENTED APR. 14, 1903.

L. M. CUTTING.

ROPE LOCK.

APPLICATION FILED JUNE 20, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

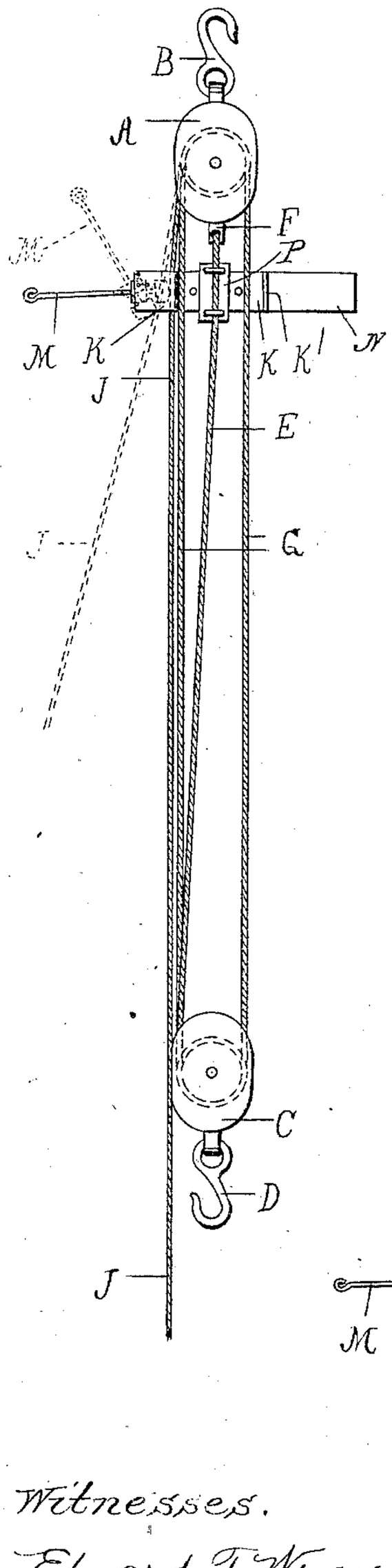


Fig. 6.

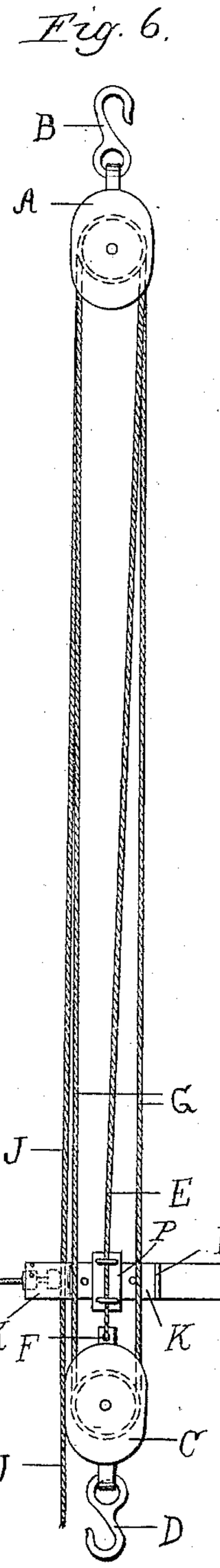
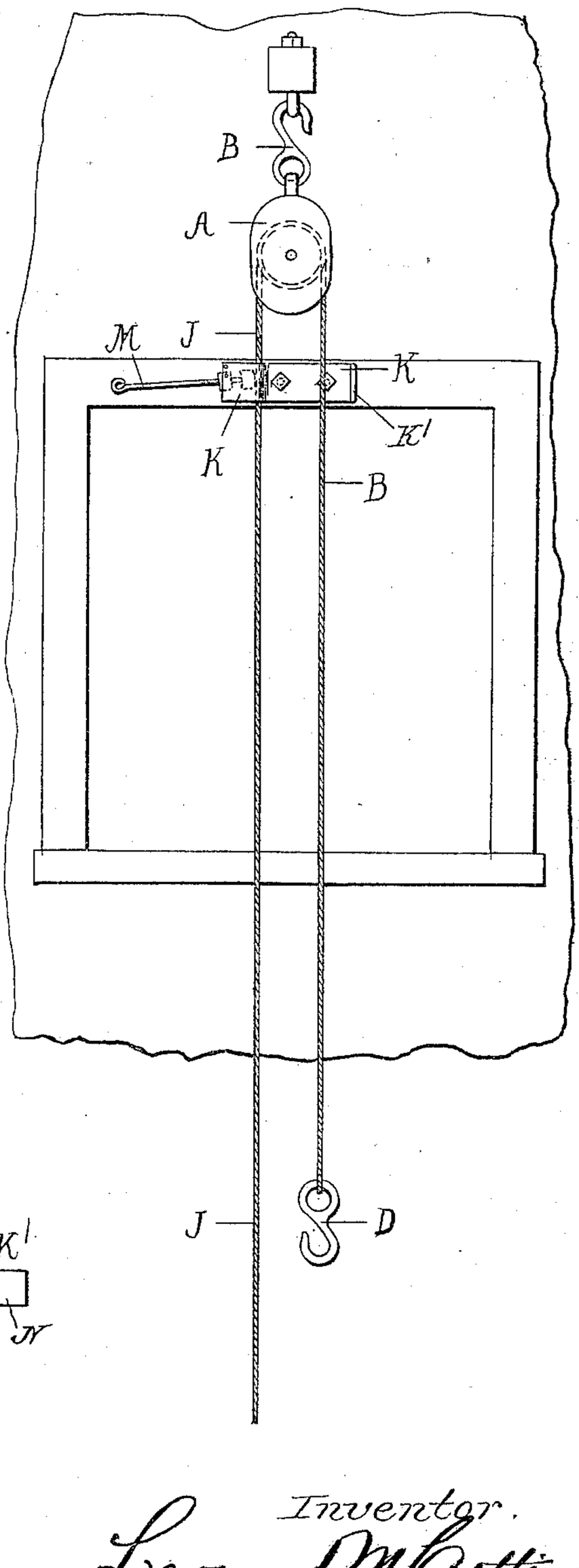


Fig. 7.



Witnesses.
Edward T. Wray.
Weston B. Lazear.

Inventor.
Leonard M. Cutting
by Parker Carter
Attorneys.

No. 725,048. PATENTED APR. 14, 1903.

L. M. CUTTING.

ROPE LOCK.

APPLICATION FILED JUNE 20, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

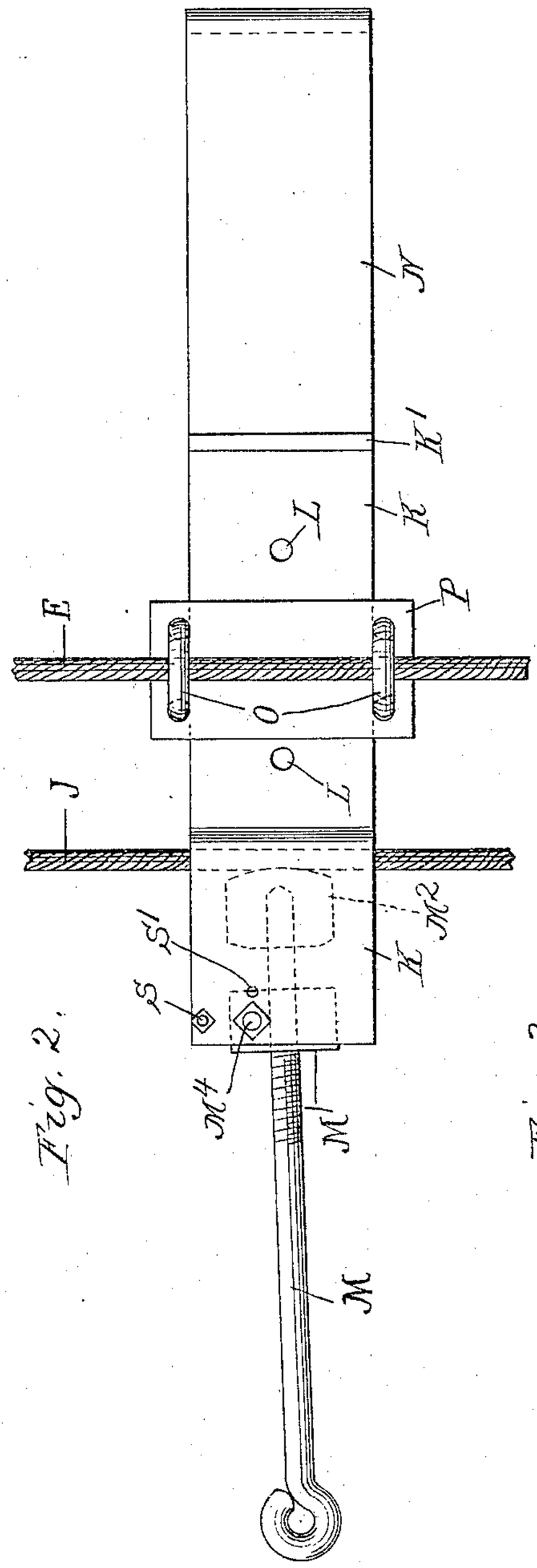


Fig. 2.

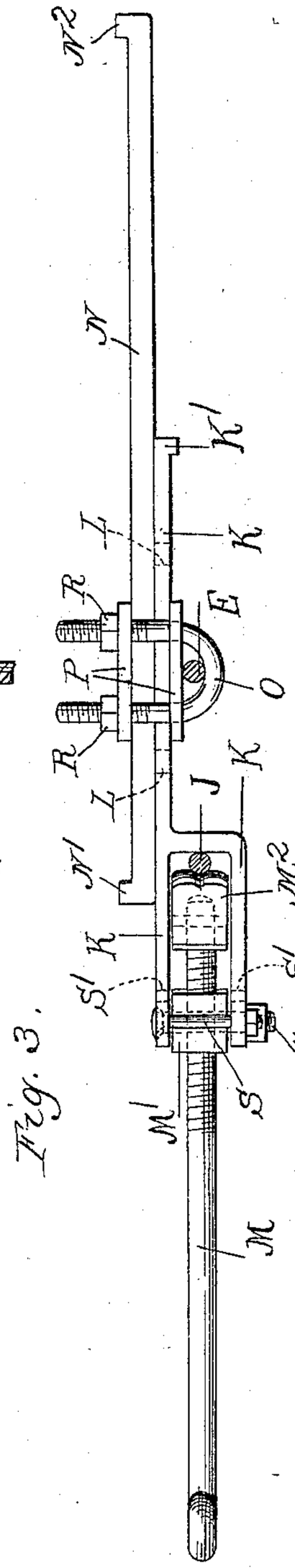
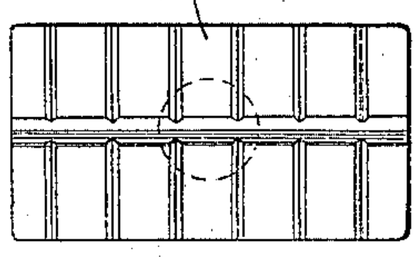


Fig. 3.

Fig. 5.



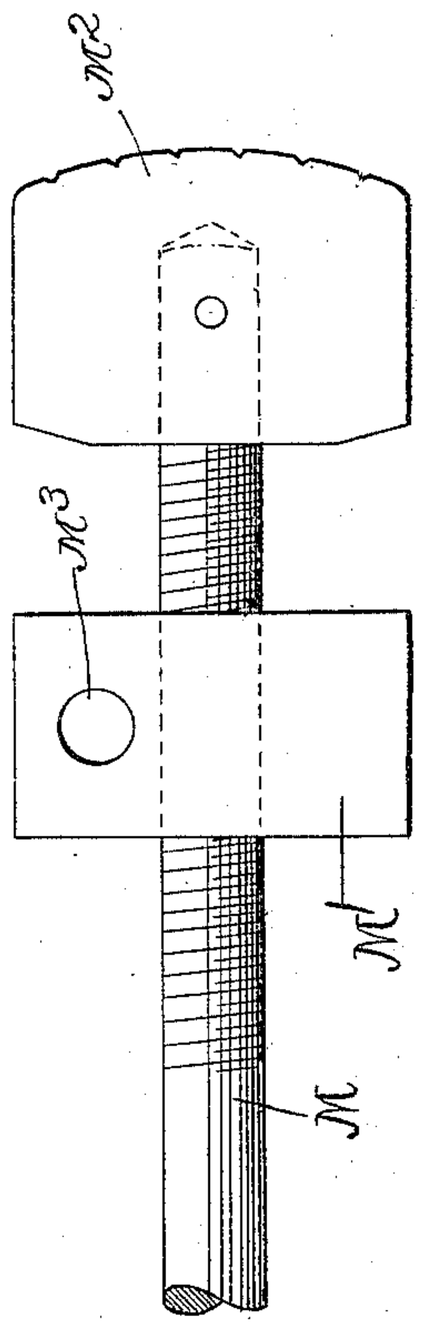


Fig. 4.

Witnesses.
Edward T. Wray.
Weston B. Lazear.

Inventor.
Leonard M. Cutting
by Parker Carter
Attorney's.

UNITED STATES PATENT OFFICE.

LEONARD M. CUTTING, OF JERSEYVILLE, ILLINOIS.

ROPE-LOCK.

SPECIFICATION forming part of Letters Patent No. 725,048, dated April 14, 1903.

Application filed June 20, 1902. Serial No. 112,414. (No model.)

To all whom it may concern:

Be it known that I, LEONARD M. CUTTING, a citizen of the United States, residing at Jerseyville, in the county of Jersey and State of Illinois, have invented a certain new and useful Improvement in Rope-Locks, of which the following is a specification.

My invention relates to rope-lock devices, and especially such as have for their object to lock or secure ropes in any desired position when such ropes are being used in connection with pulleys or blocks for the raising or lowering of weights or loads.

I have shown my invention, as it were, diagrammatically in connection with a block-and-tackle device and the ropes associated therewith and forming a part thereof.

In the illustrations, Figure 1 is a side elevation of a block and tackle with my device attached thereto. Fig. 2 is an enlarged plan view of the locking device. Fig. 3 is a side elevation with certain parts shown in section. Fig. 4 is a detailed view of the pivoted clamp. Fig. 5 is an end view. Figs. 6 and 7 are diagrammatic side elevations of modifications in the arrangement of the device with which the improvement is employed.

Like parts are indicated by the same letter in all the figures.

A is the upper block, having in this case two wheels or pulleys therein. B is the hook by which it may be suspended.

C is the lower block, also having two wheels or pulleys, and D is the hook from which the weight or load is suspended.

E is that portion of the rope which is secured at F to the upper block and leads down to the first pulley of the lower block.

G indicates the sections of the ropes passing from block to block, and J the last or outer section of the rope which passes down to the operator.

K is a casing, preferably shaped as shown, provided with the two separated portions at one end and the lip K′ at the other end. Between these two separated portions is secured the pivoted clamp, which consists of a screw-threaded rod M, with a pivoted block M′ thereon. This rod also has the end block M^2. The block M′ is perforated at M^3 to receive the bolt M^4, which passes through the two separated portions and holds the rod at one side of its longitudinal axis pivotally between the two separated plates or parts of the plate K K. The block M^2 has preferably a roughened surface, such as indicated in Fig. 5. The part K is provided with apertures L L, by which it may be screwed or secured fixedly in position when desired.

Supported upon or in proximity to the part K is the movable portion N, which serves as a weight or counterbalance, having the lips N′ N^2 to prevent its being moved too far one way or the other when being adjusted. These two parts K and N are secured together by means of the staples O O, which pass through apertures in the clamping-plates P P, and are provided with the nuts R R, whereby said plates may be clamped together. These parts may also be clamped in any desired position upon the rope E, if it is included, as indicated in Fig. 3, between the staple and one of the plates P.

S is a stop-bolt which passes through the two separated portions of the plate K and limits the motion of the rod M.

It is obvious that the two plates K and N can be adjusted along each other, the object being to vary the length of the entire device and to adjust the weight, so as to make it balance or nearly balance when the device is suspended on the rope E.

S′ is a hole for a stop.

The bolt S can be removed, the rod M be swung around to its extreme position against a stop, which will in that case be inserted in the hole S′, and the bolt S can then be restored to its position, whereupon the rod M will be locked out of action.

The use and operation of my invention are perhaps sufficiently clear; but I will further describe the same. When the apparatus is used as indicated in Fig. 1, the fixed strand of the rope which is attached to the upper block is secured to the fixed part or to the part which then becomes fixed in its relation to such fixed portion of the rope. The clamping device is brought into position and the last or operator's end of the rope is passed therethrough. It is evident now that if any weight is attached to the hook on the lower block the ropes will be tightened and the outer arm or end of the pivoted clamp will weight the clamp, so that the rope J will be

clamped between the pivoted portion and the wall of the connecting device, and here the parts will remain. If now the operator pulls down on the rope, the clamp is immediately free. If he desires to move the load, it is only necessary to pull the rope downwardly and outwardly or away from the lower block, whereupon the pivoted clamp will, by reason of the fact that it is so pivoted, be thrown into the position shown in dotted lines in Fig. 1, and by holding the rope a little to one side and slackening upon it the pivoted clamp will be held in its position and the load will be permitted to descend. The pivoted clamp is adjustable as to length. This is done by moving it so that the inner block is free from the parts between which it commonly works, and then by turning the rod it will travel in or out toward the pivot-block. The pivot-block is pivoted eccentrically, and thus when the clamping-surface comes into position it has an eccentric motion which tends to assist its clamping action. The distance between the points on the two ropes when the one is in its fixed relation and the so-called "fixed" part and the other is in its clamped position is equal to one-half the diameter of the pulley over which the rope is passing. Now if the device is to be applied to the pulley of a larger diameter it will be necessary to widen this distance. Hence the fixed part is movable along the connection between it and the pivoted portion or of course this adjustability might be given to the pivoted portion, or to both. As this action of adjustment takes place it is obvious that the weight relations between the two parts are disturbed, and hence there should be an adjustable weight, such as I have indicated, which will be made to balance, and for convenience I have shown this weight as attached or secured in position by the same action as that which fastens the rope and fixed part together.

By having the clamping device pivoted eccentrically the rope is clamped more effectively, and when one desires to lower the weight the clamping device is easily held out of action, because the upper projecting end of the rod overhangs its pivot in such a way as to permit this action. The pivotal adjustment being also somewhat removed from the clamping-surface facilitates this same action, as the leverage obtained by the lateral pull on the rope is relatively larger. The pin at the top of the two guide-plates between which the pivoted clamp swings acts as a stop to prevent the rod from going over too far. The removable pin between the two plates serves as a stop to hold the clamping device permanently out of operation while the pin is in position. The screw-holes shown in the body of the connecting part are adapted to screw the entire device in position, for example, to a projecting arm or bars, as may be desired. The part which I have called the "fixed" portion may be attached thus fixedly to some fixed object or to a rope with which it moves or to a rope which does not move. This fixed part may be of any form or shape and should be made so as to be adjustable for different thicknesses of rope.

I have spoken of "rope," but of course it will be understood that this word is intended to mean any and all forms of devices of a similar nature, whether they be technically what is known in the trade as "ropes" or whether they be more properly described by other terms. I also wish it to be understood that by the word "rope" I mean to include any rope or the like made of any material and of any form, size, or shape.

I claim—

1. A rope-lock for holding two strands of rope comprising a part adapted to be held in fixed relation to one strand of rope at any point therealong, a clamping device adapted to clamp at the will of the operator the other strand of the rope and a connection between the fixed part and the clamping device.

2. A rope-lock for holding two strands of rope comprising a part adapted to be held in fixed relation to one strand of rope, a clamping device adapted to clamp at the will of the operator the other strand of the rope and a connection between the fixed part and the clamping device, said connection adjustable as to length so as to vary the distance between the part and the clamp responsive to variations in the diameter of the wheel over which the rope travels.

3. A rope-lock for holding two strands of rope comprising a part adapted to be held in fixed relation to one strand of rope, a clamping device adapted to clamp at the will of the operator the other strand of the rope and a connection between the fixed part and the clamping device, said clamping device adjustably adapted to ropes of varying thickness.

4. A rope-lock for holding two strands of rope comprising a part adapted to be held in fixed relation to one strand of rope, a clamping device adapted to clamp at the will of the operator the other strand of the rope and a connection between the fixed part and the clamping device, said connection adjustable as to length so as to vary the distance between the part and the clamp responsive to variations in the diameter of the wheel over which the rope travels, said clamping device adjustably adapted to ropes of varying thickness.

5. A rope-lock for holding two strands of rope comprising a part adapted to be held in fixed relation to one strand of rope, a clamping device adapted to clamp at the will of the operator the other strand of the rope and a connection between the fixed part and the clamping device, said connection adjustable as to length so as to vary the distance between the part and the clamp responsive to variations in the diameter of the wheel over which the rope travels and an adjustable weight to balance the parts in their new relation.

6. In a rope-lock the combination of a part

adapted to be held in fixed relation to one strand of the rope at any point therealong with a connecting device and a clamp for the other strand of the rope thereon.

7. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope at any point therealong with a connecting device and a clamp for the other strand of the rope thereon, said clamp provided with a curved, roughened, movable, clamp-surface.

8. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon, said clamp provided with a movable clamping-surface and a fixed surface, one of said surfaces adjustable to and from the other to vary the clamp for ropes of varying thickness.

9. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon, said clamping device comprising a clamp end with a screw-threaded rod and a pivoted block through which the screw-threaded rod moves.

10. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon, said clamping device comprising a clamp end with a screw-threaded rod and a pivoted block through which the screw-threaded rod moves, said pivoted block pivoted at one side of the longitudinal axis of the clamp so that an eccentric motion is given to the clamp.

11. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon, said fixed part comprising a part through which the rope passes and means for tightening the same against the connection.

12. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon, said fixed part comprising loops through which the rope passes and tightening devices which tighten said loops against the connection to fasten the ropes.

13. In a rope-lock the combination of a part adapted to be held in fixed relation to one strand of the rope with a connecting device and a clamp for the other strand of the rope thereon and a weight held adjustably and movably to such connecting device.

14. In a rope-lock the combination of a device for suspending the rope with a lock device consisting of a part adapted to be secured to one strand of the rope, a part adapted to clamp the other part of the rope and a connection between the two.

15. In a rope-lock the combination of a block over which the rope runs with a lock device consisting of a part adapted to be attached to one strand of the rope and the other part adapted to be attached to the other strand of the rope and a connection between them.

LEONARD M. CUTTING.

Witnesses:
HOMER L. KRAFT,
FANNY B. FAY.