

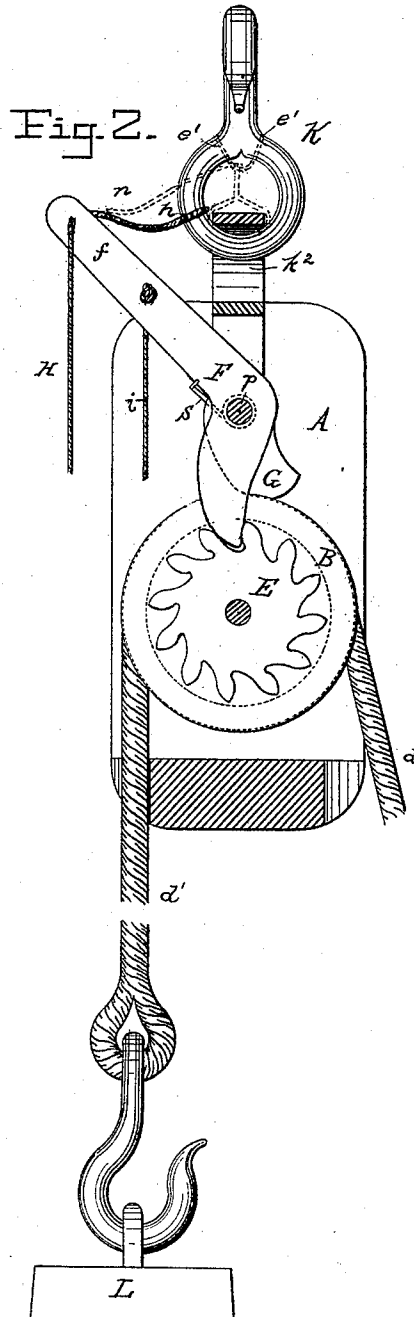
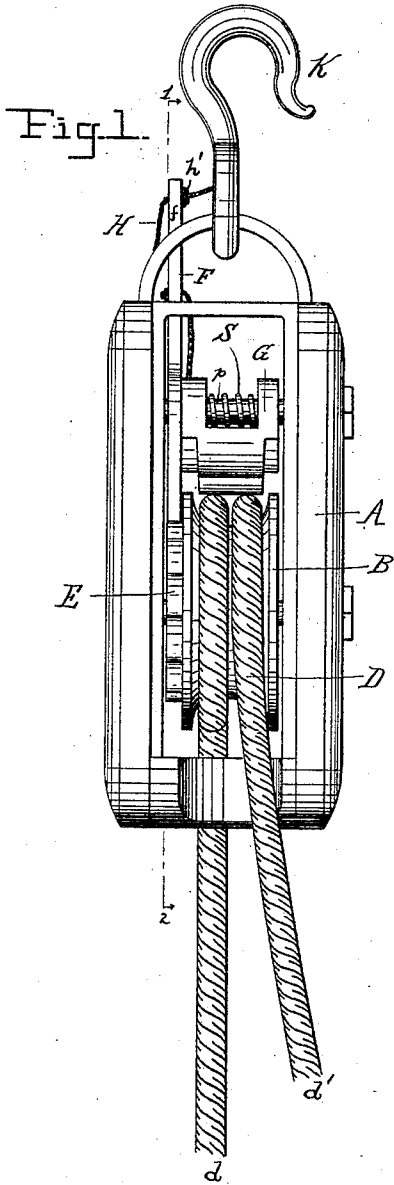
(No Model.)

2 Sheets—Sheet 1.

C. F. BATT,  
HOISTING TACKLE.

No. 395,113.

Patented Dec. 25, 1888.



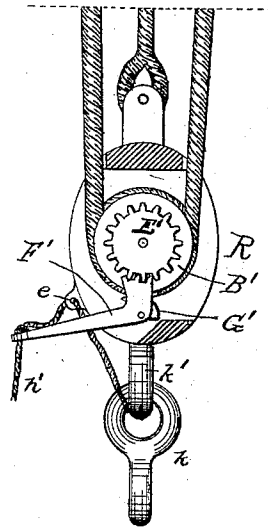
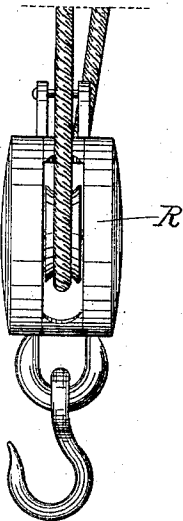
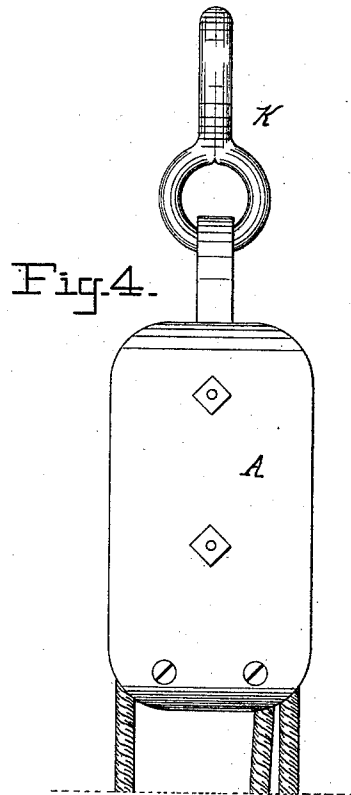
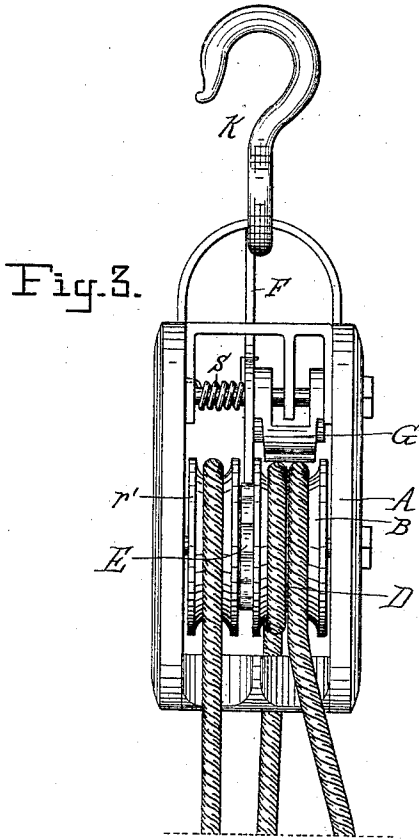
Witnesses:  
*G. J. Griswold*  
*Geo. A. Crane*

Inventor:  
*Charles F. Batt,*  
By his Attorneys  
*Howell and Howell*

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# UNITED STATES PATENT OFFICE.

CHARLES F. BATT, OF BROOKLYN, NEW YORK.

## HOISTING-TACKLE.

SPECIFICATION forming part of Letters Patent No. 395,113, dated December 25, 1888.

Application filed May 12, 1888. Serial No. 273,756. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. BATT, a citizen of the United States, and a resident of Brooklyn, New York, have invented an Improved Hoisting-Tackle, of which the following is a specification.

The object of my invention is to so construct a pulley-block or hoisting-tackle that the load may be locked or held in any position, and so that the descent of the load may be easily controlled as circumstances may require.

In the accompanying drawings, Figure 1 is a side view of a single-pulley hoisting-block embodying my invention. Fig. 2 is a vertical section of the same on the line 1 2, Fig. 1. Fig. 3 is a view of a double-pulley block embodying my invention in connection with a running block; and Fig. 4 is a view of a modification, and showing the application of my improvement to the running block.

In Figs. 1 and 2 I have illustrated my invention as applied in one of its simplest forms to a block, A, with a single pulley, B, around which the hoisting-rope D is passed with a double turn, although the number of turns may be increased. One end, *d*, of this rope is the free hoisting end, while from the other end, *d'*, is suspended the load L, Fig. 2. The pulley-block is provided with the usual suspension-hook, K.

The main feature of my invention consists in so constructing the pulley that the load may be locked at any desired height, and may be lowered easily and slowly or as fast as may be desired, and the rope freely manipulated when the load is off. For this purpose a lock for the pulley and a brake for the rope are combined, as hereinafter described.

The means I prefer to employ for locking the pulley is in the form of a lever to engage with the pulley, which has teeth E for the purpose. I have shown these teeth as in the form of a wheel in one with or attached to the pulley; but the manner of providing the pulley with teeth is only a detail. The locking-lever F is pivoted to the block at any suitable point. In the present instance I have shown the locking-lever as pivoted on a cross-spindle, *p*, in the block. This lever is so constructed that the pulley is free to turn in

the direction taken by the rope in hoisting the load; but it locks the pulley when the rope is allowed to travel in the opposite direction, unless the free end of the lever is so acted upon as to hold the lever out of engagement with the toothed wheel. I make in one piece with this locking-lever or secure to it a cam-brake, G, the acting face of which is adapted to bear on the turns of rope upon the pulley B, as represented in Fig. 1. In the present instance the locking-lever is rigidly secured to the brake. A spring, S, is arranged to act upon the lever and brake, so as to tend to press the locking-lever into gear with the wheel. In the present instance I have shown the spring as a coiled spring around the spindle *p* and fastened at one end to the spindle and acting at the other end upon an arm, *f*, of the locking-lever.

To an arm, *f*, on the locking-lever is connected an operating chain or cord, H, which is secured at *h* to the suspension-hook K, or it may be to a part of the block, and passes through an opening in an eye upon the arm *f* of the lever. A stop, *h'*, (which may be made by knotting the cord,) is formed upon or fixed to the cord to bear upon the lever at the back of the eye, as shown in Fig. 1, leaving a certain amount of slackness in the cord when the pulley is locked and the cam-brake bears with full effect upon the turns of the rope D. The amount of this slackness is just sufficient to permit the lever to be pulled by the cord H far enough to free the brake G from the pulley B, with its toothed wheel, from the locking-lever. The end of the lever F has, however, free play upon the cord H below the knot when the lever is acted on either by the teeth of the wheel in hoisting the load or by power applied to the free end of the lever. To disengage the locking-lever another chain or cord, *i*, may be used, this cord being simply secured to the lever, so that by pulling the cord the lever may be moved far enough to be disengaged from the toothed wheel and leave the pulley free to turn. The chain or cord *i* is, however, not necessary if the lever is within convenient reach, and, indeed, the cord or chain H may be dispensed with, too, if preferred. The cord *i*, if used, is connected

to the lever near its fulcrum, so that sufficient power may not be obtained to accidentally unlock the pulley when the load is on.

It will be seen from the foregoing description that when it is desired the load may be locked at any desired height by simply releasing the tension on the hoisting end  $d$  of the rope. The pull of the load upon the other end of the rope tends to turn the pulley, so that the toothed wheel acts on the locking-lever F to press the brake forcibly upon the rope and prevent it from slipping on the pulley. The friction of the rope on the brake, when the latter comes into contact with the rope, also tends to increase the pressure on the latter, so that the heavier the load the tighter will be the grip of the brake. If, then, it is desired to let the load down slowly, the lever F may be pulled sufficiently far by means of the cord or chain H, or otherwise, to free the brake G, while the pulley remains locked, so that the rope D may slip on the stationary pulley under the strain of the load. In all cases I prefer to employ at least two turns of the rope upon the pulley, so as to get a sufficient frictional surface when the pulley is locked.

When it is desired to let the end  $d'$  of the rope down quickly, as when it is free from a load, the lever F is disengaged from the toothed wheel of the pulley by pulling the cord  $i$ , so that the latter is entirely free to turn. Although I have shown the operating-arm F, to which the operating-cord is connected, as being a part of the locking-lever, it will be understood from the foregoing description that that is not important, but that it is important to have a rigid connection between the operating-lever and the brake, in order that the brake may always be released from the rope before the pulley is released from the lock.

In Fig. 3 I have shown my invention as applied to a double-pulley block in connection with a runner, R, the only difference in this case being that there is an additional loose pulley,  $r'$ , on the suspended block A for the extra turn of the rope resulting from the use of the runner R. The blocks may be constructed for any desired number of turns of the rope.

In the modification, Fig. 4, I have shown my combined locking lever and brake applied to the runner R. In such case I make the pulley B' of the runner with a sufficiently wide groove to allow of two turns of the rope being taken around it, as in the construction Fig. 1. In this case the lever F' may be provided with the knotted operating-cord  $h'$ , which passes through an eye,  $e$ , on the block before reaching the eye on the lever F', and which is secured or looped to the suspending-hook  $k$  of the runner with sufficient slackness to permit the brake G' to be freed without freeing the locking-lever when the load is on; but when the load is taken off the suspending-hook can, by pulling on the cord  $h'$ , be lifted

on its loop  $k'$  sufficiently to permit the lever to be freed from the toothed wheel. In this case I have shown the locking-lever as having a number of teeth to engage the teeth of the locking-wheel E.'

The arrangement of the operating-rope described with reference to Fig. 4 may be applied to the suspended pulley-block A, as indicated by dotted lines in Fig. 2. A loop or eye,  $e'$ , is applied to the suspension-hook, and through this loop or eye the cord or chain is passed, as shown by dotted lines, and secured to the loop  $k^2$  of the pulley-block. Thus, when the load is on, the arm  $f$  of the lever F can be pulled down by the knotted cord only far enough to free the brake G. When the load is off, the pull on the cord or chain H will lift the pulley-block and rope sufficiently to let the lever free itself from the locking-wheel E.

Although I have described my improved hoisting-tackle only in connection with rope hoisting-tackle, it will be evident that chains may be used instead of ropes.

I claim as my invention—

1. A hoisting-tackle comprising a rope and pulley-block having a pulley, with a lock to fasten the pulley and a brake rigidly secured to the lock to act on the rope.
2. A hoisting-tackle comprising a rope and a pulley-block having a pulley around which the rope has a double turn, with a lock to fasten the pulley and a brake rigidly secured to the lock to act on the rope.
3. A hoisting-tackle comprising a rope and a pulley-block having a pulley provided with teeth, in combination with a locking-lever to lock the pulley and a brake rigidly secured to the lever to act on the rope.
4. A hoisting-tackle comprising a rope and pulley-block having a pulley, a locking-lever to lock the pulley and having an operating-arm, and a brake rigidly secured to the lever to act on the rope.
5. A hoisting-tackle comprising a rope and pulley-block having a pulley provided with teeth, in combination with a locking-lever to lock the pulley, a spring to press the lever into engagement, and a brake rigidly secured to the lever to act on the rope.
6. A hoisting-tackle comprising a rope and a pulley-block having a pulley with a lock to fasten the pulley, and a brake connected to the lock to act on the rope, and an operating-arm rigidly connected to the brake to free it from the rope without releasing the pulley.
7. A hoisting-tackle comprising a rope and pulley-block having a pulley around which the rope has a double turn, a lock to fasten the pulley, a brake connected to the lock to act on the rope, and an operating-arm rigidly connected to the brake to free it from the rope without releasing it from the pulley.
8. A hoisting-tackle comprising a rope and a pulley-block having a pulley and a connected toothed wheel, with a locking-lever to engage with the toothed wheel, the lever having an operating-arm to free it from the wheel,

and a brake rigidly secured to the lever to act on the rope.

9. A hoisting-tackle comprising a rope and pulley-block having a pulley with locking-teeth, a locking-lever to engage with the teeth, an operating-cord for the lever, and a brake rigidly secured to the lever to act on the rope.

10. A hoisting-tackle comprising a rope and a pulley-block having a pulley, a locking-lever to lock the pulley, a brake rigidly secured to the lever to act on the rope, and a cord con-

nected to a part of the tackle and to the lever by a stop on the slack part of the cord, as and for the purpose set forth.

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

CHARLES F. BATT.

Witnesses:

ALBERT POPKINS,  
HUBERT HOWSON.