No. 676,147. Patented June 11, 1901.

D. H. MORGAN.

AUTOMATIC GRIP FOR TACKLE BLOCKS.

(Application filed Feb. 18, 1901.)

(No Model.)

Fig. 1

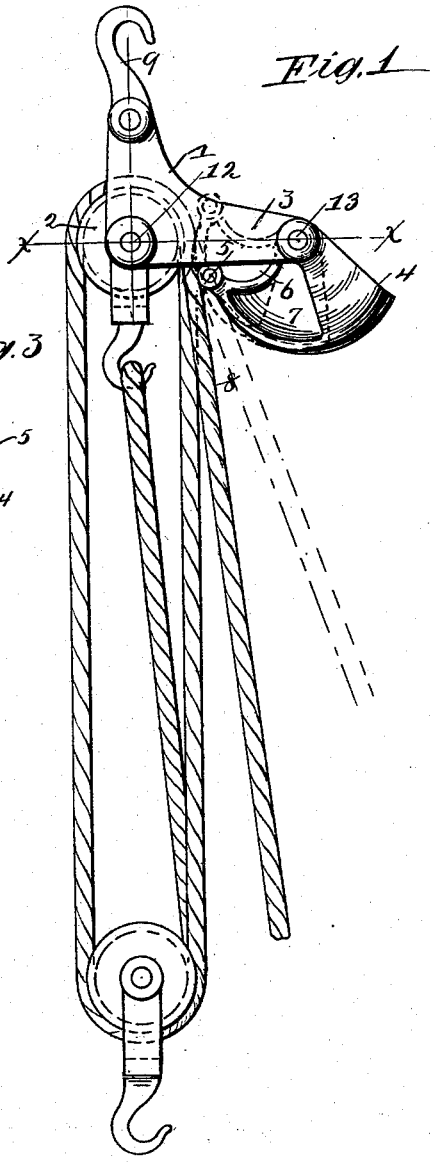


Fig. 2

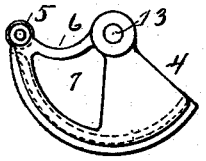
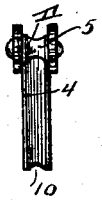


Fig. 3



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UNITED STATES PATENT OFFICE.

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AUTOMATIC GRIP FOR TACKLE-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 676,147, dated June 11, 1901.

Application filed February 18, 1901. Serial No. 47,777. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. MORGAN, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Automatic Grips for Tackle-Blocks, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic grips for tackle-block hoists; and the object of the invention is to provide a simple and efficient device for this purpose which can be released without difficulty.

My invention consists in the triangular frame and cam-brake pivoted therein, with the details of construction and combination and arrangement of parts, as hereinafter described, shown in the accompanying figures, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my device. Fig. 2 is a side view of the cam, and Fig. 3 is an edge view of the same.

In the views, 1 represents a frame in which are pivoted the pulleys 2. To the arm 3, extended horizontally therefrom, is pivoted the cam 4, having its shortest side extending toward the pulley and provided with a roller 5 at its inner extremity. The inner half of the cam is cut out at 6 and webbed at 7 or perforated to make this portion the lightest, so that the outer extremity will be heavy enough to give the cam a constant tendency to swing inward and press upon the rope 8 as it passes over one of the pulleys.

Normally the roller 5 will lie upon the rope and engage the rope without friction while it is being pulled down; but as soon as the pull upon the rope 8 ceases and the weight causes the rope to slip upward the roller will follow the rope, on account of the natural gravity of the cam, as soon as it is permitted to move and cause the cam to come into engagement with the rope, where it will be held both by its gravity and the friction of the rope, which increases the farther the cam is drawn upward. Thus an increasing pressure is obtained against the rope, the strain being divided between the pivoted point of the pulleys and that of the cam until a point is reached in the cam which cannot pass the pulleys, when of course a perfect lock or brake is obtained, which will sustain the weight hanging from the hoist.

It will be seen that the frame in which the pulleys, hook 9, and cam 4 are pivoted is so designed that the center line $x\,x$ between the pivotal points of the pulleys and cam shall always remain horizontal. Otherwise the cam would not be in position to work correctly, since it must make a contact first from gravity, and afterward it will be pulled up with the rope.

When it is desired to release the weight, the rope 8 is pulled down to release the cam and is held outward, as in the dotted position, Fig. 1, which will push outward the cam and hold it out while the rope runs freely by; but when the rope hangs down naturally the cam will be in position to engage it.

The edges of the cam and roller are grooved to engage the curved surface of the rope.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a hoist, a triangular frame, in combination with a pulley-pivot at the large angle, a pulley on said pivot and rope on the pulley, a pivot for a cam at one of the small angles, a support for the frame at the other angle and a locking-cam upon said cam-pivot constructed and arranged to engage said rope by gravity and a roller carried by the said cam at its inner extremity, substantially as described.

2. In combination, a triangular frame, a support therefor, a pivot for a pulley, a pulley thereon and rope on the pulley, a pivot for a cam, arranged in a horizontal line with the pulley-pivot, and a cam upon said pivot arranged by gravity to engage said rope, said cam having a grooved edge, and a grooved roller on the inner extremity of said cam, substantially as described.

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

DAVID H. MORGAN.

Witnesses:
WM. M. MONROE,
C. H. OLDS.