

(No Model)

H. L. FERRIS.
HOIST.

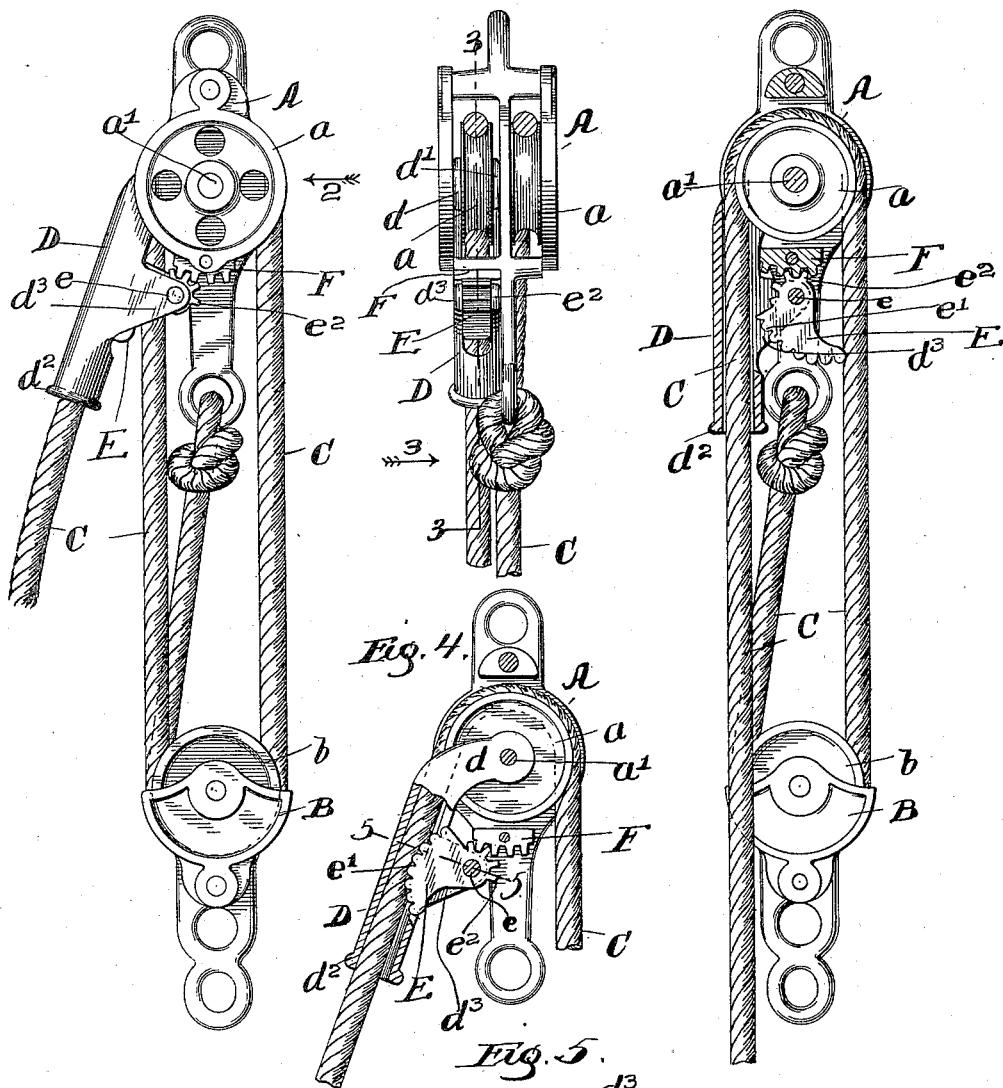
No. 584,340.

Patented June 15, 1897.

Fig. 1.

Fig. 2.

Fig. 3.



Witnesses:
Chas. O. Sherway,
R. O. Bailey

Inventor:
Harry L. Ferris
by
Wilemmer Bitten
Attys

UNITED STATES PATENT OFFICE.

HENRY L. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM & FERRIS, OF SAME PLACE.

HOIST.

SPECIFICATION forming part of Letters Patent No. 584,340, dated June 15, 1897.

Application filed April 12, 1897. Serial No. 631,750. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. FERRIS, a citizen of the United States of America, residing at Harvard, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Hoists, of which the following is a specification.

My invention relates to certain improvements in hoists of the class in which means are provided for clamping and releasing the free end of the rope, such means being operated by said free end itself.

The purpose of the invention is to gain simplicity, positive action, strength, and cheapness; and the invention consists in certain features of construction by means of which these ends are gained, which features are fully described in connection with the preferred form in which I have embodied them in the following specification, and the essential features or characteristics thereof are clearly pointed out in the appended claims.

The invention is illustrated by means of five figures, of which—

Figure 1 is a side elevation of a hoist made up of two sheave-blocks and the accompanying rope. Fig. 2 is an end elevation of the upper portion of Fig. 1, looking in the direction of the arrow 2, the rope being shown in cross-section at the point where it passes over the pulleys. Fig. 3 is a view similar to Fig. 1, except that the upper portion of said figure is shown in section parallel with the plane of the paper, the line of said section being indicated in Fig. 2 by the dotted line 3 3 and the direction of the section by the arrow 3 in said figure. Fig. 4 is a view similar to Fig. 3 of the upper portion of the latter figure, showing certain of the parts in a different position; and Fig. 5 is a section in line 5 5 of Fig. 4, showing, however, only a portion of the latter figure.

Looking at these figures, the upper sheave-block is lettered A, the lower sheave-block B, and the rope C. The upper pulleys are lettered *a*, the lower pulleys *b*. The pulleys *a* are journaled upon an axle *a'*, and upon this axle is also pivoted an oscillating arm D. The pulley which carries the free end of the rope is shown at the left in Fig. 2, and the upper end of the arm D is forked to embrace

said pulley, the two ends of the fork showing at *d d'*, where they encircle the pulley-axle. The arm D is shown as provided at its lower end with a tubular portion *d²*, through which the free end of the rope runs, and it is also grooved upon the inner side opposite the pulleys, so that it loosely fits the rope and forms a guide therefor. From the side of the arm D toward the pulleys extend two brackets or lugs *d³*, in which is pivoted a clamping-cam E by means of a pin *e*. The face *e'* of the cam is preferably roughened to engage the rope, and said cam is arranged so that as it swings upward it clamps the rope and as it swings downward it releases the same. When the rope is clamped or held by said cam, the pull of the weight upon the lower sheave tightens the grip of the cam and causes the same to hold all the more securely.

The inner end of the cam is provided with a series of teeth *e²*, and adjacent thereto upon the sheave-block is a segment F, having teeth concentric with the pulley-axle and adapted to engage those upon the cam. As the arm D is swung toward the sheave-block the teeth upon the cam and the segment throw the former down into the position seen in Fig. 3, leaving the rope free to run in either direction. When, however, the arm D is swung away from the sheave-block, the cam is swung upward into the position seen in Fig. 4, pinching the rope between it and the opposite side of the groove in the arm D. As said arm extends downward some little distance from the pulleys it can readily be swung in either direction by means of the free end of the rope.

More or less variation in the form, arrangement, and construction above described is possible, and I desire, therefore, not to limit my invention by the above description of the preferred form in which it has been embodied, but believe to be new, and desire to claim as such invention, the following:

1. The combination with a sheave-block, pulley and rope, of an oscillating arm pivoted to the sheave-block and having a guiding-channel for the free end of the rope, a clamping device pivoted upon said oscillating arm and adapted to clamp the rope guided therein, and an operating device rigidly fixed upon

the sheave-block and adapted to engage the clamping device as the arm is oscillated and operate the same to clamp or unclamp the rope; substantially as described.

5 2. The combination with a sheave-block, pulley and rope, of an oscillating arm pivoted to the sheave-block and adapted to be swung by the free end of the rope, a clamping-cam pivoted to said arm and adapted to clamp
10 the free end of the rope between it and the arm itself, said cam being provided with teeth, and a segment secured to the sheave-block concentric with the arm-pivot adapted to engage said teeth and operate the cam as
15 the arm is swung upon its pivot; substantially as described.

3. The combination with a sheave-block, pulley and rope, of an oscillating arm pivoted

upon the pulley-axle and engaging the free end of the rope so as to be swung upon its
20 pivot thereby, a clamping-cam pivoted upon said arm in position to clamp the free end of the rope thereto, teeth upon said cam concentric with its pivot and a segment upon
25 the sheave-block concentric with the axle and engaging the teeth upon the cam whereby the swinging of the free end of the rope may operate the cam to clamp the same to the oscillating arm; substantially as described.

In witness whereof I have hereunto set my
30 hand, at Harvard, McHenry county, and State of Illinois, this 7th day of April, A. D. 1897.

HENRY L. FERRIS.

Witnesses:

J. C. BLAKE,

P. W. BLANCHARD.