

D. A. NOBLE.

Improvement in Hoisting Apparatus.

No. 127,789.

Patented June 11, 1872.

Fig. 4.

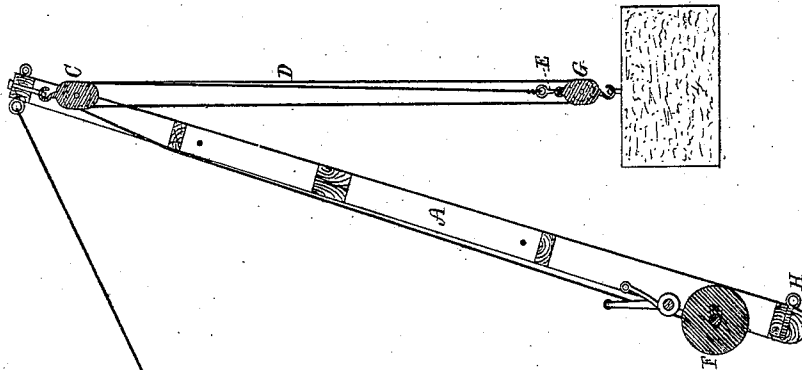
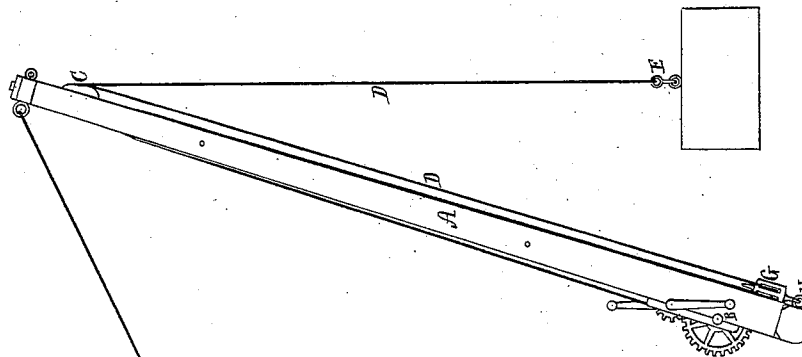


Fig. 1.



Witnesses

W. Geo. Alden.
H. E. Boardman.

David A. Noble.

by his attorney
Hurtis.

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Fig. 3.

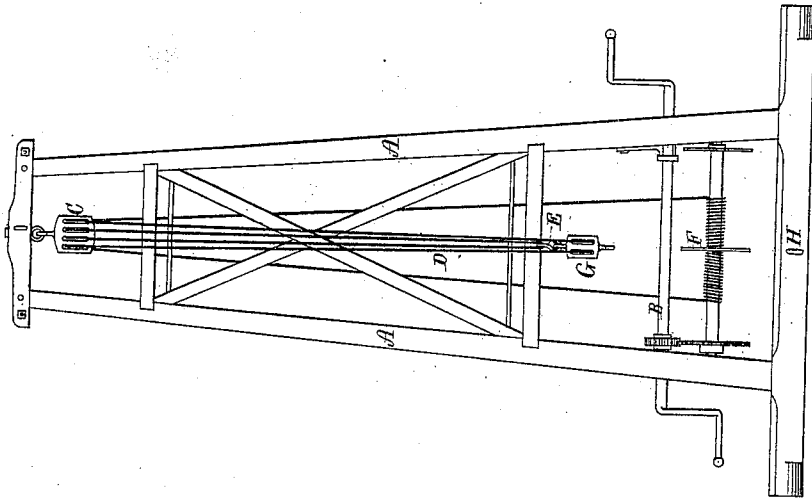
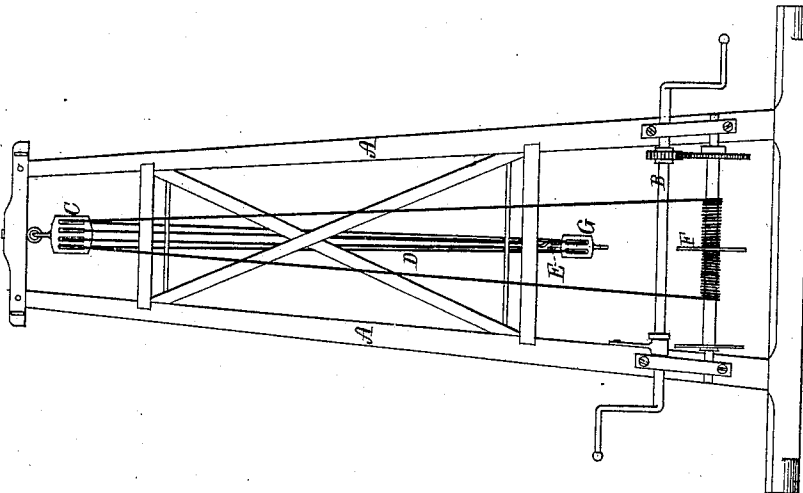


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID A. NOBLE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN HOISTING APPARATUS.

Specification forming part of Letters Patent No. 127,789, dated June 11, 1872.

Specification describing certain Improvements in Derricks or Hoisting Apparatus, invented by DAVID A. NOBLE, of Boston, Suffolk county, Massachusetts.

These improvements relate principally to means whereby the rate of speed and the power of a hoisting apparatus may be varied and governed at pleasure, and in a moment's time, without dismemberment of the apparatus, or any change in its general arrangement; and secondarily, such improvements have for their object to equalize the strain and draft upon the tackle-block, by applying it equally upon each side thereof, by which means I economize power, effect a great saving in hoisting-ropes, reduce the wear upon the derrick, and save much time now consumed in effecting the changes necessary to adapt a derrick from light to heavy work, or vice versa.

I accomplish the purpose of my invention by employing a long hoisting-rope and doubling the same, one point of doubling being attached to the windlass and the other to a hook or swivel, such swivel being attached to the load to be raised, when the latter is either very light or very heavy, or to the lower part of the standard or frame of the derrick when a medium load is to be raised, the two portions of the rope being disposed equally upon each side of the center of the windlass, and of the blocks of the derrick, and exerting an equal power upon each, substantially as hereinafter stated.

The drawing accompanying this specification represents in Figure 1 a side elevation, in Figs. 2 and 3 front and rear elevations, and in Fig. 4, a vertical section, of a derrick embodying my improvements.

In the drawing, A denotes the upright frame or standard common to the derricks now in general use for laying stone-work or for other heavy uses, the rope, coiling-shaft, or windlass of the same being shown at B, as mounted in suitable boxes applied to the frame in the usual manner, the main block of the derrick being shown at C, as suspended from the upper cross-bar of the standard A.

In carrying out the purposes of my invention, I procure a hoisting-rope, D, such as is now generally used in derricks, except that it is of much greater length, and I double this rope and attach to its center a hook or swivel,

E, as shown. Proceeding, I connect each free end or the opposite doubling of the rope D to the windlass B, one upon each side of the center thereof, and I affix to the center of draft of said windlass and of the block C a divisionary disk or collar, F, to prevent entanglement of the ends of the rope, and compel each to exert its power upon its own side of the windlass.

From the common point of suspension or doubling of the rope D, each side of such rope passes upward through opposite sides of the block C, and about one or the other of the center sheaves thereof; thence descends to and passes about one of the two sheaves of a second block, G, as shown in the drawing; thence upward again about one of the two outer sheaves of the block C; and from such sheaves descends to and is attached to the windlass, as stated.

When a light weight or load is to be raised, and raised quickly, I attach the central hook E to the said load, as shown in Fig. 1 of the drawing, and the lower block G to a staple or eye, H, affixed to the lower part of the standard A. The power of the windlass is now applied directly to load, and the latter elevated very rapidly, in manner as will be at once apparent, but with loss of power. If a very heavy load is to be raised the block G is to be attached to such load in addition to the hook E, in which case the power of the windlass is exerted indirectly to elevate the load with a great increase of power, but reduction in speed. If a medium, between the two extremes above named is desired, the hook E is to be attached to the eye H and the block G to the load. In this case the power of the windlass upon the load is less, and the rate of movement greater, than in the last-named instance, and greater than the first, with less speed.

In transposing the positions of the block G and hook E, the central or doubled portion of the hoisting-rope is passed between the portions upon each side of the block G, the arrangement of the rope enabling this to be done very expeditiously.

In lieu of attaching the ends of the hoisting-rope to the windlass, as stated, the rope may be doubled at the windlass, and its ends carried through the blocks G and C in a direction reverse to that before explained, the ends

of the said rope being joined at the hook E, or at any other point.

By the dual arrangement of the hoisting-rope, as herein explained, I exert an even strain and thrust upon the block C, which is, in my derrick, always perpendicular.

In derricks at present in use, the power of the windlass is exerted upon one corner of the main block, which is thereby canted into an inclined position, and the rope forced to one edge of the sheave, and against the sides of the block in such manner as to rapidly wear both rope and block.

By my disposition of the hoisting-rope, by which its functions are repeated upon each side of the center of draft of the derrick, I avoid

these objections; and, as before stated, economize the time and labor now required to change the derrick from a light to a heavy load, and vice versa.

Claim.

In a derrick or hoisting device, the combination with the windlass and the blocks C G of the hoisting-rope D, and the hook E, or its equivalent, arranged and operating substantially in the manner and for the purposes herein specified.

DAVID A. NOBLE.

Witnesses:

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