

UNITED STATES PATENT OFFICE.

FREDERIK V. NIELSEN, OF SAN FRANCISCO, CALIFORNIA.

HOISTING-GEAR.

SPECIFICATION forming part of Letters Patent No. 695,830, dated March 18, 1902.

Application filed September 5, 1901. Serial No. 74,395. (No model.)

To all whom it may concern:

Be it known that I, FREDERIK V. NIELSEN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have made certain new and useful Improvements in Hoisting-Gear, of which the following is a specification.

My invention is an improvement in the hoisting-gear of ships and like vessels, and has for an object to provide means whereby the cargo can be readily lifted from the hatch and delivered clear of the ship's side; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of my improvement as in use. Fig. 2 is a side view, and Fig. 3 an end view, of the pulley-block for the lift-rope; and Fig. 4 is a detail sectional view on about line 4 4 of Fig. 1.

In many large vessels built with four and five masts, as well as in other vessels, the distance from the mast to the center of the hatch is considerably less than the distance from the mast to the ship's side, so a guide for the lifting-rope which will direct such rope to the center of the hatch will not direct the rope to the side of the ship to deliver the cargo received from the hatch or to receive a fresh load for delivery to the hatch. By my invention I provide guide devices for the lift-rope, whereby the same will be adjusted relatively to the mast, so it will operate centrally over the hatch and will also clear the ship's side.

In carrying out my invention I employ on the mast A a cargo-gaff B, suitably engaged at B' with the mast A, so the gaff can swing over the hatch C and thence to the side of the vessel. The lift-rope D connects with the donkey E, extends over the elevated guide D', thence over the guide D² at the outer end of the gaff, and thence over the adjustable guide F, whence the lift-rope depends, as shown. This guide F is adjustable from the position shown in Fig. 1 outward, so it may hang vertically below the guide D² or in any intermediate position between a line dropped from the guide D² and the position in which the guide F² is shown in Fig. 1. The guide F is shown in the form of a pulley-block having a hook F', to which is connected a tail-rope G, and also provided with a yoke F², to which

is connected the hanger-rope H, which connects the cargo-gaff, as shown, and forms a swinging support for the adjustable guide F, as will be understood from Fig. 1. This yoke F² and the hanger-rope also operate to prevent any twisting of the block and consequent excessive wear upon the lift-rope, as will be understood from Fig. 1.

In the operation of the described construction it will be understood that in hoisting a load from the hatch the tail-rope G should be hauled tight and belayed at G'. The engine may then be operated to lift the load, and it will be noticed that the load will come up through the middle of the hatch. When the load is clear of the hatch, the tail-rope G may be slacked away, permitting the guide-pulley F to swing outward by the weight of the load, so it will clear the ship's side when the gaff is swung to the side, as will be understood from Fig. 1. It is also preferred to provide means whereby the weight of the load may swing the gaff from the position shown in Fig. 1 to a position where the guide D² will clear the ship's side. In this operation the load will come out through the middle of the hatch and the tail-rope G will be slacked when the load is clear of the hatch, and the load will then put a strain on the gaff-swinging rope H, so it will swing the gaff out clear of the ship's side, when the rope can be lowered and the operation be proceeded with as before. This gaff-swinging rope is connected with the block F, preferably with the hook F', as shown, extends thence over a guide H' on the cargo-gaff B, and extends thence laterally and is made fast at H² to the ship's rigging, so that when the tail-rope G is slacked the weight of the load will pull on the gaff-swinging rope and the gaff will swing out of itself. When the load is landed on the dock, the tail-rope may be hauled tight and the gaff will swing amidships. The rope H may be adjusted as to the length according to the extent to which it is desired to swing the gaff out. It will be understood that the cargo-gaff may be adjusted up and down on the mast A to any desired height and may be suitably stayed and braced in position as may be desirable or necessary.

Among the advantages of my invention I would call attention to the following: Say,

for example, we are hoisting long timber out and the loads have to be hoisted up high to clear the ship's rail. When the hook on the end of lift-rope D, to which the load is attached, gets to guide F, it carries the same up with it, so that we can hoist the load right up to D². Another advantage of this adjustable swinging guide F in hoisting lumber out of the hatch is as follows: Say we are hoisting long lumber and the load gets jammed in the hatch, as it sometimes does. If the upper end of load is pointed clear in the hatch, then by going ahead on the engine and at the same time slacking quickly a foot or two on the tail-rope G the load will pass clear out of the after part of the hatch.

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

1. A hoisting-gear substantially as herein described, comprising in combination, the mast, the cargo-gaff arranged to swing thereon and provided at its outer end with a guide for the lift-rope, an adjustable guide for said rope supported from the cargo-gaff and arranged to swing in and out with respect to the end of the cargo-gaff and the tail-rope, whereby said adjustable guide may be swung inward and held in any suitable adjustment, substantially as set forth.

2. The combination in a hoisting-gear, of the swinging cargo-gaff, a support therefor, a guide at the outer end of the cargo-gaff for the lift-rope, an adjustable guide past which the lift-rope passes, said guide being located below the cargo-gaff, and means operating independently of the movements of the lift-rope for operating said adjustable guide, the latter being fixed as against vertical movement with the load being lifted.

3. The combination of the cargo-gaff, provided with a guide for the lift-rope, and the lift-rope, of an adjustable guide for said rope, past which the lift-rope passes, said guide being located below the cargo-gaff, and fixed as against vertical movement with the load being lifted and arranged for operation independently of the hoisting devices, substantially as set forth.

4. The combination of the swinging cargo-gaff, the lift-rope, and guide devices for said lift-rope arranged for operation independently of the hoisting devices, whereby the lift-rope may be adjusted to depend in different lines below the cargo-gaff, the lift-rope being arranged to pass the said guide devices, and the latter being fixed as against vertical movement with the load being lifted, substantially as set forth.

5. The combination of the cargo-gaff, the lift-rope, an adjustable guide past which the lift-rope passes, said guide being arranged to operate independently of the hoisting devices whereby the lift-rope may be arranged to op-

erate within the hatch or at a greater distance from the mast to clear the ship's side, said adjustable guide being fixed as against vertical movement with the load being lifted.

6. The combination with the cargo-gaff and the lift-rope, of an adjustable guide for said rope past which the rope passes, said guide being arranged for operation independently of the hoisting devices, and a gaff-swinging rope, the adjustable guide being fixed as against vertical movement with the load being lifted, substantially as set forth.

7. The combination with the cargo-gaff having a guide for the lift-rope, and the lift-rope, of an adjustable guide for the lift-rope, a rope by which said adjustable guide is supported from the gaff, and a tail-rope by which the adjustable guide may be adjusted, substantially as set forth.

8. The combination with the mast and the swinging cargo-gaff, having a guide for the lift-rope, of the lift-rope, the adjustable guide therefor, a rope by which said adjustable guide is suspended from the cargo-gaff, the tail-rope connected with said adjustable guide, and the gaff-swinging rope connected with said guide, substantially as set forth.

9. The combination with the cargo-gaff, having a guide for the lift-rope, the lift-rope and the tail-rope, of the adjustable guide-block having a yoke F² and a hook F', the hanger-rope connected with the yoke and with the gaff, and the gaff-swinging rope connected with the hook F', the tail-rope being also connected with said hook, all substantially as and for the purposes set forth.

10. The combination with the mast and the swinging cargo-gaff having a guide for the lift-rope, of the lift-rope, the adjustable guide therefor, means whereby said guide is suspended from the gaff, the tail-rope for operating said guide, a gaff-swinging rope in connection with the guide, and a guide on the cargo-gaff for said swinging-rope, the latter being suitably secured, substantially as set forth.

11. The combination of the cargo-gaff, a support upon which the cargo-gaff swings laterally, a guide at the outer end of the cargo-gaff for the lift-rope, the lift-rope passing said guide, and a guide for the lift-rope arranged below the guide on the gaff, the lower guide being fixed as against vertical movement with the load being lifted arranged to operate upon the lift-rope and being adjustable laterally independently of the hoisting movement of the lift-rope, whereby it may be operated to adjust the lift-rope laterally below the guide on the cargo-gaff, substantially as set forth.

FREDERIK V. NIELSEN.

Witnesses:

ASMUS W. HANSEN,
HANS D. BENDIXSEN.