

(No Model.)

2 Sheets—Sheet 1.

B. F. DAVIS, Dec'd.

M. L. DAVIS, Administratrix.

HOISTING APPARATUS.

No. 469,355.

Patented Feb. 23, 1892.

Fig. 1.

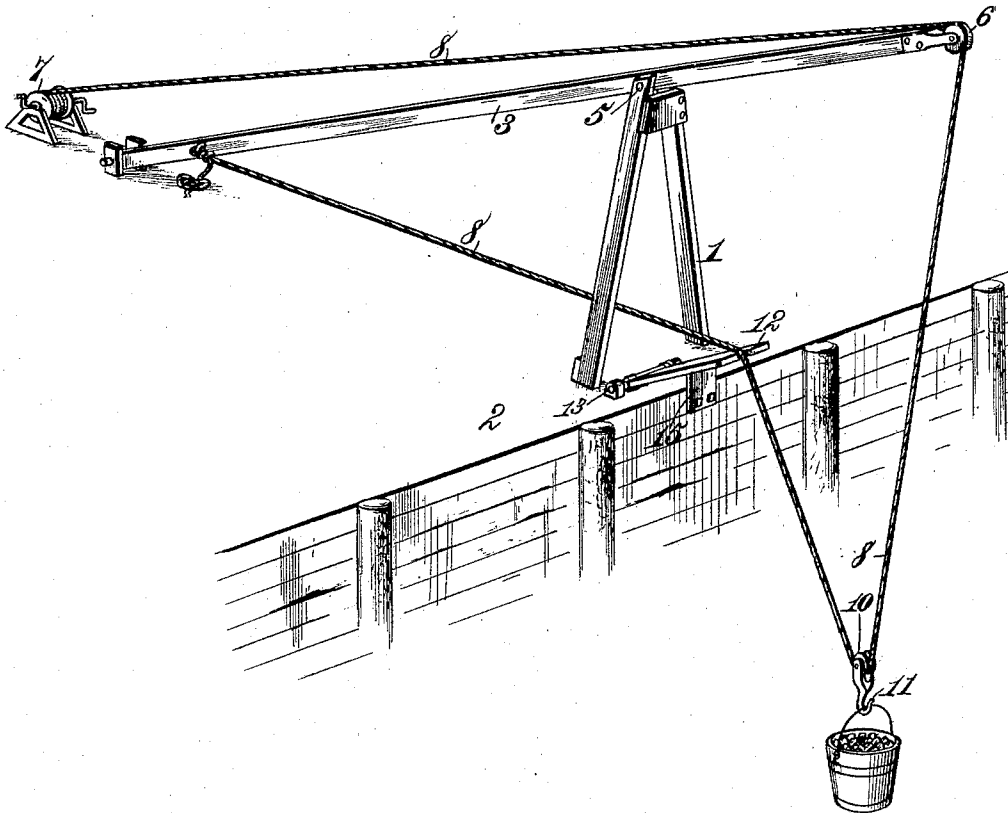


Fig. 2.

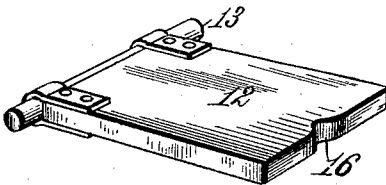
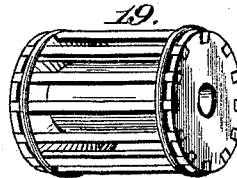


Fig. 3.



Witnesses,
Robert Smith,
Geo. W. Rea.

Inventor,
Benjamin F. Davis,
By James L. Norris,
Atty.

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Fig. 4.

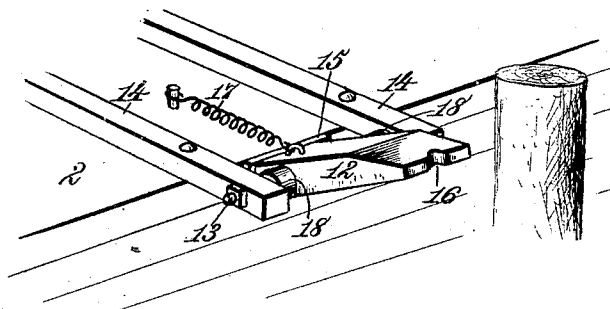
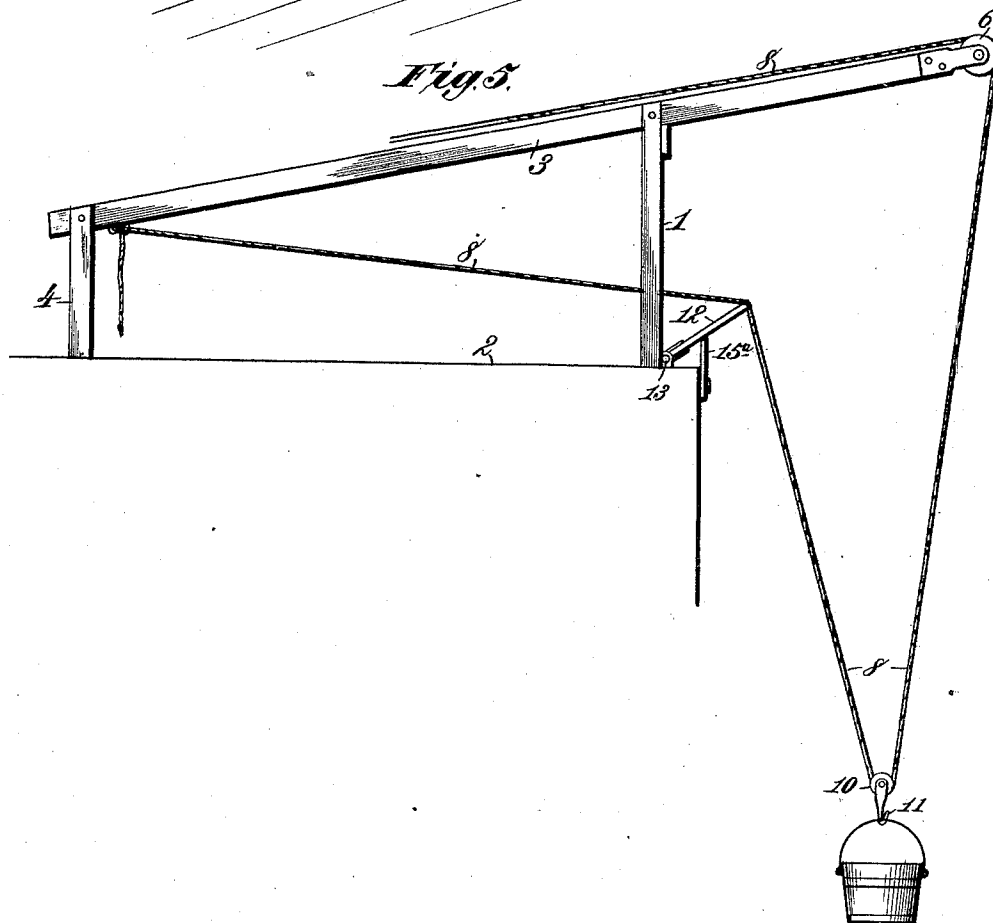


Fig. 5.



Witnesses.
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Inventor.
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UNITED STATES PATENT OFFICE.

BENJAMIN F. DAVIS, OF CORSICANA, TEXAS, ASSIGNOR OF ONE-HALF TO RALPH BEATON, OF SAME PLACE; MATILDA L. DAVIS ADMINISTRATRIX OF SAID BENJAMIN F. DAVIS, DECEASED.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 469,355, dated February 23, 1892.

Application filed March 14, 1891. Serial No. 385,071. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. DAVIS, a citizen of the United States, residing at Corsicana, Texas, have invented certain new and useful Improvements in Hoisting Apparatus, of which the following is a full, clear, and exact specification.

This invention relates to an improved hoisting apparatus for use in loading and unloading freight from and upon a wharf, bluff, bank, or other elevated place or into or from the upper part of a warehouse in such a manner as to avoid during the hoisting operation any contact of the load or cargo or its receptacle with the vertical wall of the wharf or other structure or object upon which the apparatus is located.

To this end my invention consists in the construction, arrangement, and combination of devices in a hoisting apparatus, as hereinafter described and claimed, whereby a cargo can be raised vertically until sufficiently above side obstruction and then run off horizontally with great ease and convenience.

In the accompanying drawings, Figure 1 is a perspective view of a hoisting apparatus constructed in accordance with my invention. Fig. 2 is a perspective view of a hinged turning guard and cable-guide for holding the cargo away from a wharf or other vertical object while the cargo is being hoisted. Fig. 3 is a view of a modified construction of guard that may be employed in place of a hinged guard. Fig. 4 is a view of a turning guard pivotally mounted on a horizontal shaft supported beyond the edge of a wharf or other elevated object, and Fig. 5 is a side elevation of a hoisting apparatus embodying my invention.

Referring to the drawings, the numeral 1 designates an open vertical frame or trestle located in a suitable position on a wharf 2 or on a levee, bluff, or other elevated place where a cargo is to be discharged or delivered. The trestle 1 serves as a support for a beam 3, the forward end of which is extended beyond the wharf or other elevated place on which the trestle is situated. The beam 3 may be trussed or not, as preferred, and should be of such length that its rear end will terminate at some

distance from the brink of the wharf or other elevated place. The rear portion of the beam 3 is preferably supported on a frame or trestle 4 of less height than the forward trestle 1, so that the beam will be rearwardly inclined; but, if desired, the rear portion of the inclined beam may be secured to some other support, as shown in Fig. 1, or its end may rest on the ground. The beam 3 may be rigidly secured to both trestles or supports 1 and 4, or, if preferred, it can be connected with the forward trestle 1 by a pivot 5, Fig. 1, that will enable it to be tilted, for a purpose hereinafter explained.

On the forward or outer end of the beam 3 is a sheave or grooved pulley 6, and located upon or adjacent to the beam is a winding-drum 7, to which is secured one end of a hoisting-cable 8, that is passed from said drum to and over the sheave 6, from which it may hang in the form of a loop, one side of which is passed up over the edge of the wharf or other elevation upon which the hoisting apparatus is mounted and then rearwardly through the trestle 1 and is secured to the beam at or near its lower end. The hoisting-cable 8 supports a traveling sheave 10, that carries a hook or hooks 11 for engaging a bale of goods or a bucket or other receptacle for facilitating the loading and unloading of freight. In order to hold the traveling sheave 10 and its cargo away from the vertical portion of the wharf or other place while the cargo is being hoisted or lowered, a hinged guard 12 is provided. This guard 12 is preferably hinged or pivotally mounted on a transverse horizontal shaft 13, Fig. 4, supported in bearings 14, that project a suitable distance beyond the edge of the wharf. The guard 12 is of such length and is so fulcrumed on the shaft 13 that when inclined upward and outward or forward in a normal position its rear or lower portion will be in contact with the vertical portion of the wharf or in contact with a suitably-located stop 15, whereby the hinged guard is maintained in an inclined position until it is thrown back by the hoisting of the cargo over it and its movement backward or horizontally onto the wharf. In the forward or upper end of the hinged guard 12 is a guide-notch 16, in

which one side of the looped cable 8 is supported away from the wharf while the cargo is being hoisted. When the cargo is hoisted to and over the hinged guard 12 and comes in contact therewith, said guard is thereby forced back onto the wharf or other support, and after the cargo has been moved back the guard is returned to its normal inclined position by means of a spring 17, one end of which may be secured to the wharf and the other end to the tail end of the guard in rear of or at one side of its pivots in such manner that when the free outer extremity of the guard is swung upwardly the tail-piece is swung downwardly and thereby places the spring under tension, so that when the guard is released the spring pulls the tail-piece upwardly and thereby swings the outer free extremity of the guard to the position represented in Fig. 4. It will be observed that the guard 12 is centered on the shaft 13 by means of washers 18 on each side, so that the said guard will be in line with the sheave 6, with which the winding-drum 7 should also be nearly or quite in line.

The operation of the hoisting apparatus will be obvious from the foregoing description. When the traveling sheave 10 is moved on the rope 8 to a point beyond the guard 12 and then said rope slackened, the sheave and attached bucket will descend as the slack is increased until the sheave is lowered the required distance and into position to take a cargo. After the cargo has been attached to the sheave the windlass 7 may be operated to wind the cable thereon. As the cable is wound, the sheave 10, with its cargo, is elevated until it comes in contact with the outer end of the hinged guard 12, which serves to hold said sheave and its cargo off from the wharf or other support. When the cargo is swung inward upon the wharf, it passes over the hinged guard 12, which folds down and backward beneath it. As the cable 8 is drawn taut between its two points of attachment, it forms an inclined way from the sheave or pulley 6 to the rear portion of the beam, and down this inclined way the sheave 10 and its cargo is conveyed until by slackening the cable the cargo will be brought to rest on the wharf. After the cargo has been passed over the hinged guard 12 the latter will be returned to its normal inclined position and the operation of hoisting can be repeated. Instead of pivoting or hinging the guard 12 intermediate its ends on a shaft 13, as shown in Fig. 4, it can be hinged directly on its rear end either at the edge of the wharf, Fig. 1, or at or near the foot of the trestle 1, Fig. 5, and in these instances the stop 15^a will project upward and engage the forward portions to support the guard in its inclined position. In place of the hinged guard 12 a whirl or rotary guard 19, Fig. 3, may be placed on the shaft 13, which rotary guard or whirl will serve the same purpose as the hinged guard, though

more power may be required in swinging the cargo onto the wharf. I prefer, however, to employ the hinged guard 12, which affords a simple and convenient means for preventing the cargo from dragging against the sides or edges of the wharf or other elevated place and requires the expenditure of but little power to move the cargo in a horizontal direction after it has been elevated. The winding-drum 7 should be in line with the sheave 6, so that the pull will be in a direct line with the sheave and not to one side, and this may be accomplished by locating the drum either above or below the beam or at its rear. The hoisting-cable can thus be passed over the sheave 6 from the front and thence toward the rear of the beam or other support to the winding-drum, or the cable can be passed up behind the sheave 6 and then over the same in front and downward, which will be found to be a convenient arrangement in hoisting from a wharf-boat on which is a dip-wheel actuated by the current of a stream that can thus be made to furnish power for elevating freight to a warehouse on the wharf or bluff.

It is obvious that instead of a winding-drum any suitable motor can be employed, or the hoisting-cable can be operated directly by hand. In a warehouse and some other situations the beam 3 and its supporting-trestles may be dispensed with and the sheave 6 supported in some other suitable manner. When the trestle 1 and beam 3 are employed, it is convenient to connect them by a pivot 5, as before described, so that by tilting the beam when the hoisting-cable is taut the position of the traveling sheave 10 thereon can be readily shifted.

It will be seen that by means of the described construction and arrangement of devices an effective and easily-operated hoisting apparatus is provided for the loading and unloading of freight in such manner that the load or cargo can be easily raised and then moved off in a horizontal direction without contact with the vertical walls of a wharf or other structure or object.

What I claim as my invention is—

1. In a hoisting apparatus, the combination, with a suitable supporting-frame having a guide-pulley at its outer extremity, of a hoisting-cable secured at one end, formed into a pendent loop, and extending upward over the guide-pulley, a traveling sheave engaging the pendent looped part of the cable and serving to support and carry the object to be hoisted, and a turning guard and cable-supporting guide which is turned upwardly in a vertical plane by the action of the traveling sheave as the latter is raised by the hoisting-cable to elevate the object or load, substantially as described.

2. In a hoisting apparatus, the combination, with an upright frame, a beam supported thereby and having a guide-pulley, and a hoisting-windlass, of a hoisting-cable secured

at one end, formed into a pendent loop, and
extending upward over the guide-pulley on
the beam and along the latter to the hoist-
ing windlass, a traveling sheave engaging the
5 pendent looped part of the cable and serving
to support and carry the object to be hoisted,
and a guard and cable-supporting guide which
is turned upwardly in a vertical plane by the
action of the traveling sheave as it is raised

by the hoisting-cable to elevate the object or to
load, substantially as described.

In testimony whereof I have hereunto set
my hand and affixed my seal in presence of
two subscribing witnesses.

BENJAMIN F. DAVIS. [L. S.]

Witnesses:

CAL KERR,

ROBT. COULSON.