No. 649,784. Patented May 15, 1900.

F. H. WEEKS.

TRUCK HAULING DEVICE.

(Application filed Jan. 25, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig 1

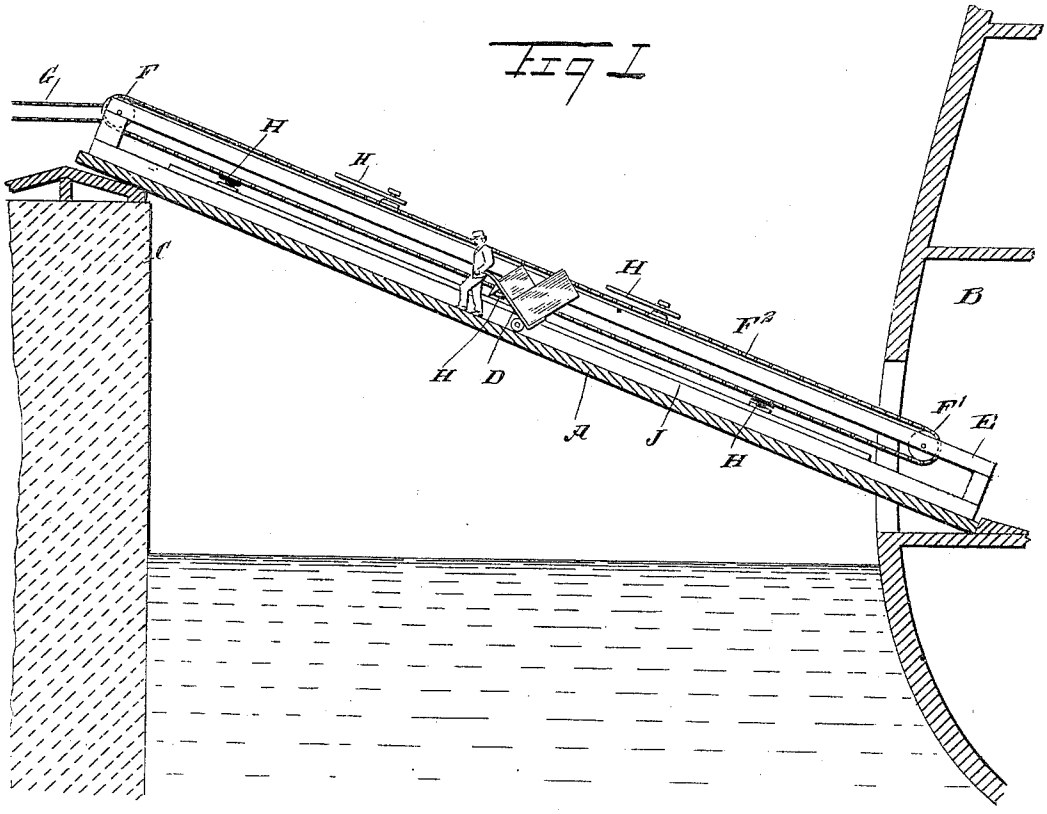
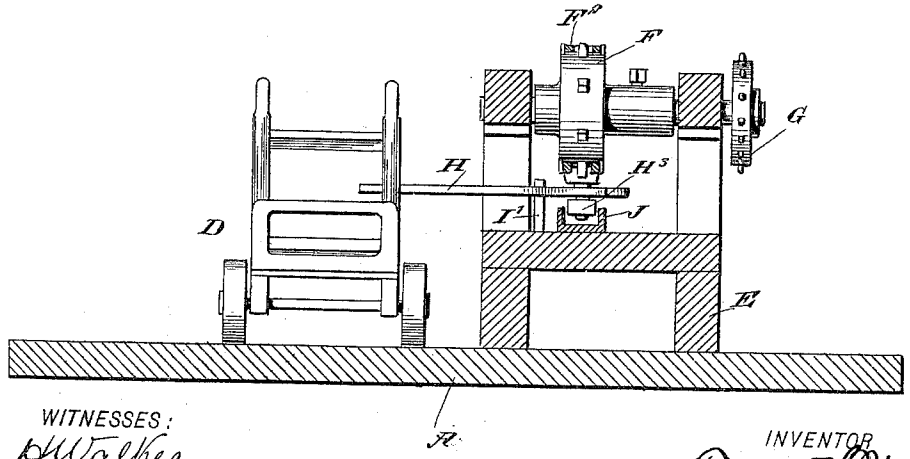


Fig 2



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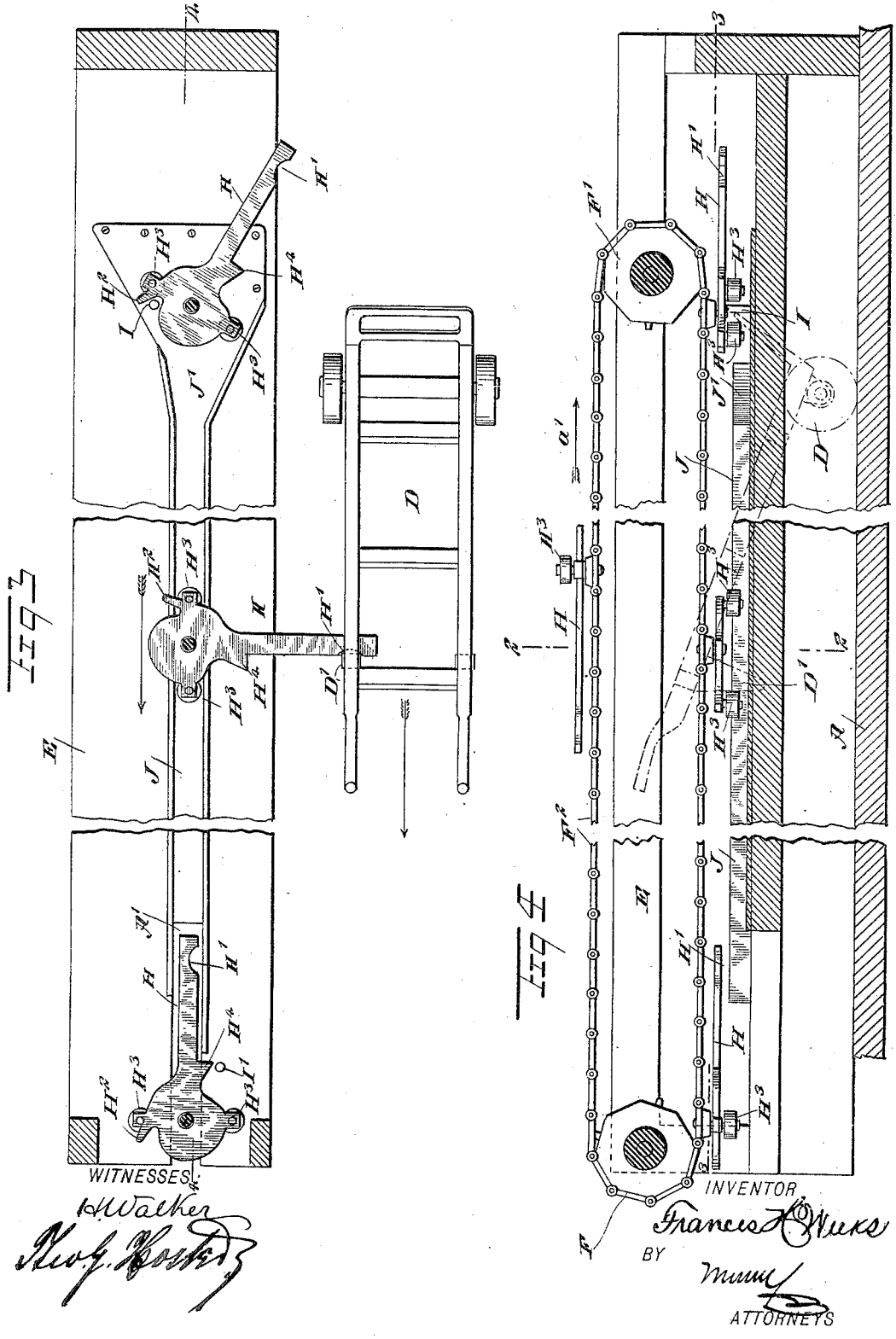
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS H. WEEKS, OF NEW YORK, N. Y.

TRUCK-HAULING DEVICE.

SPECIFICATION forming part of Letters Patent No. 649,784, dated May 15, 1900.

Application filed January 25, 1900. Serial No. 2,765. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. WEEKS, a citizen of the United States, and a resident of the city of New York, borough of Bronx, in the county and State of New York, have invented a new and Improved Truck-Hauling Device, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved truck-hauling device more especially designed for use in loading or unloading vessels, railroad-cars, and the like and in places where merchandise or other articles are carried on hand-trucks up or down an incline, the device being arranged to move the loaded hand-truck by power up the incline, the truckman not being required to use physical force to draw the hand-truck along, but merely to guide the same.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement as applied for unloading a vessel, the latter and a dock being shown in cross-section. Fig. 2 is an enlarged transverse section of the improvement on the line 2 2 in Fig. 4. Fig. 3 is a sectional plan view of the same on the line 3 3 in Fig. 4, and Fig. 4 is a longitudinal sectional elevation of the same on the line 4 4 in Fig. 3.

In unloading vessels as heretofore practiced it was necessary for the truckman having charge of a hand-truck to draw the truck with its load from the deck of a vessel up an inclined gang way or plank upon the adjacent dock or pier and then to move it along the latter to the desired place of storing the merchandise. In loading a vessel the same process was observed, only in a reverse order—that is, the merchandise was hauled along the pier by the truckman in charge of the hand-truck and then over the gang-plank to the deck of the vessel and along the same to be stored in the vessel at a desired place indicated by a stevedore. It frequently happens that the gang-planks are considerably inclined, so that it is extremely difficult and a great hardship to haul a load up on said inclined gang-plank. In practice it has been found necessary to locate a number of longshoremen along the gang-plank, so as to help the truckman while moving the truck over the gang-plank, either in assisting in pulling or pushing the truck or otherwise assisting the truckman to the desired place. With my improvement, presently to be described in detail, the extra longshoremen stationed along the gang-plank are entirely dispensed with, and the truckman in charge of the hand-truck is completely relieved from pulling the truck and its load while going over the gang-plank and is merely required to guide the truck while on the gang-plank.

As shown in Fig. 1, an ordinary gang-plank A extends from a vessel B to a dock C, and the device is designed to assist in unloading the vessel B—that is, it carries the merchandise from the latter by ordinary hand-trucks D over the gang-plank A to the dock C. At one side of the gang-plank A, or entirely separate therefrom or extending in alinement therewith, is arranged a frame E, at or near the end of which are journaled sprocket-wheels F F′, over which passes a sprocket-chain F^2, adapted to travel in the direction of the arrow a', by rotating one of the sprocket-wheels F or F′ by a suitable mechanism G from either the dock or the vessel, as may be most convenient, or by a motor located directly on the frame E. On the sprocket-chain F^2 and a suitable distance apart are pivoted arms H, arranged to swing into the path of the truck D, at one side thereof, so as to engage a part of the hand-truck, preferably one of the front legs D′, as is plainly indicated in Figs. 1 and 3, so that when the sprocket-chain F^2 is in motion and the said arm has engaged the hand-truck as described then the arm draws the truck D along over the gang-plank, while the truckman has hold of the handles and merely guides the truck during the time it travels over the gang-plank. As illustrated in the drawings, the arms H only stand in this position at a right angle to the sprocket-chain while on the lower run, and when said arms are on the return movement and travel on the upper run then they extend in alinement with

the chain. Each of the arms H is preferably provided near its free end with a notch H′ to readily engage a leg D′ of the hand-truck and prevent accidental disengagement of the arm from the leg. On the pivot end of each arm H and at one side thereof is arranged a cam H^2, adapted to move in contact with a fixed part I in the form of a lug, pin, or the like, so that when the arm H has moved around the sprocket-wheel F′ from the upper run to the lower run and the said cam H^2 strikes the pin I then the arm is swung into a transverse position, so as to stand approximately at a right angle to the chain, to engage the leg D′ of the hand-truck, located upon the gang-plank, at the lower end thereof, by the man in charge of the truck.

The under side of the pivoted end of each arm H is provided on opposite sides with friction-rollers H^3 or similar devices adapted to pass into the mouth J′ of a longitudinally-extending guideway J, carried by the frame E. The said friction-rollers H^3 pass into the mouth J′ at the time the arm H is swung around from a longitudinal into a transverse position by the cam H^2 engaging the pin I, and then when this has been done the friction-rollers travel into the narrow guideway J, so that the arm H is held against turning while standing in a transverse position and while the friction-rollers travel through the guideway from near one end of the gang-plank to the other.

The lower run of the sprocket-chain F^2 and the arms H are located at such height above the gang-plank A that the arms swing into engagement with a leg D′ of the hand-truck D when the latter is held in the usual position by the truckman having hold of the handles, as illustrated in Fig. 1. As the chain F^2 has a continuous traveling motion it is evident that the arm H, engaging the hand-truck as described, moves the hand-truck along over the gang-plank A, while the truckman simply guides the hand-truck during its travel over the gang-plank, and is consequently relieved from drawing the truck and its load by physical force. When the truck is moved by the arm H to the upper end of the gang-plank, then a second cam H^4 moves in engagement with another projection or pin I′, so that the arm H swings back into a longitudinal position in alinement with the sprocket-chain F^2, as is plainly indicated at the left in Figs. 3 and 4, whereby the truck is released from the arm, and the truckman can now readily pull the truck and its load from the gang-plank to the dock and along the same to the desired place. Usually the momentum of the loaded truck, given to it by the arm is such that it requires but little exertion on the part of the truckman to move the hand-truck from the gang-plank over upon the dock.

As indicated in Figs. 3 and 4, the frame E is cut out at the upper end sufficiently to allow a ready passage of the arm H after the latter has swung into a longitudinal position. During the time the arm H is on the upper or return run of the sprocket-chain it extends in longitudinal alinement therewith, and as soon as the arm passes the lower run it is again swung into a transverse position by the action of the cam H^2, engaging the fixed pin I. A truck is usually hauled in position on the lower end of the gang-plank A by a truckman, so as to be in proper position for the arm H to take hold of the leg D′ of the truck, it being understood that said arm can readily swing into position as the truck is held by the truckman, so that the arm can conveniently swing outward and engage the leg D′.

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

1. A device for hauling trucks on inclines, comprising a traveler mounted to move in the direction in which the truck is to be hauled, a member carried by and movably connected with the traveler and adapted to engage the truck, and means for moving said member into an operative position.

2. A device for hauling trucks on inclines, comprising a traveler mounted to move in the direction in which the truck is to be hauled, a member carried by and movably connected with the traveler and adapted to engage the truck, and stationary devices for moving said member into and out of an operative position.

3. A device for hauling trucks on inclines, comprising a traveler mounted to move in the direction in which the truck is to be hauled, an arm carried by the traveler and movably connected therewith so that it can be projected into an operative position or withdrawn into an inoperative one, and means for operating said arm.

4. A device for hauling trucks on inclines, comprising an endless traveling chain, arms placed a distance apart and held on said chain, and arranged to move into the path of and in engagement with the truck while the arms travel with the chain in one direction, and adapted to move out of the path of the truck while traveling with the chain in an opposite direction, substantially as shown and described.

5. A device for hauling trucks on inclines, comprising an endless traveling chain, arms placed a distance apart and held on said chain, and arranged to move into the path of and in engagement with the truck while the arms travel with the chain in one direction, and adapted to move out of the path of the truck while traveling with the chain in an opposite direction, and means, substantially as described for imparting motion to the arms, to move them in or out of engagement with the truck at the beginning and end respectively of the journey of the truck, substantially as shown and described.

6. A device for hauling trucks on inclines, comprising an endless traveling chain, arms placed a distance apart and held on said chain,

and arranged to move into the path of and in engagement with the truck while the arms travel with the chain in one direction, and adapted to move out of the path of the truck while traveling with the chain in an opposite direction, and means, substantially as described for imparting motion to the arms, to move them in or out of engagement with the truck at the beginning and end respectively of the journey of the truck, said means consisting essentially of fixed parts and cams on the pivot end of said arm, as set forth.

7. A device for hauling trucks on inclines, comprising an endless traveling chain, arms placed a distance apart and held on said chain, and arranged to move into the path of and in engagement with the truck while the arms travel with the chain in one direction, and adapted to move out of the path of the truck while traveling with the chain in an opposite direction, and means, substantially as described, for imparting motion to the arms, to move them in or out of engagement with the truck at the beginning and end respectively of the journey of the truck, said means consisting essentially of fixed parts and cams on the pivot end of said arm, and a guideway adapted to be engaged by part of the arm, to hold the latter in position while in engagement with the truck, as set forth.

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

FRANCIS H. WEEKS.

Witnesses:
THEO. G. HOSTER,
EVERARD BOLTON MARSHALL.