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A. W. STREETER
ELEVATOR AND ELEVATOR TRUCK

Filed Jan. 10, 1925

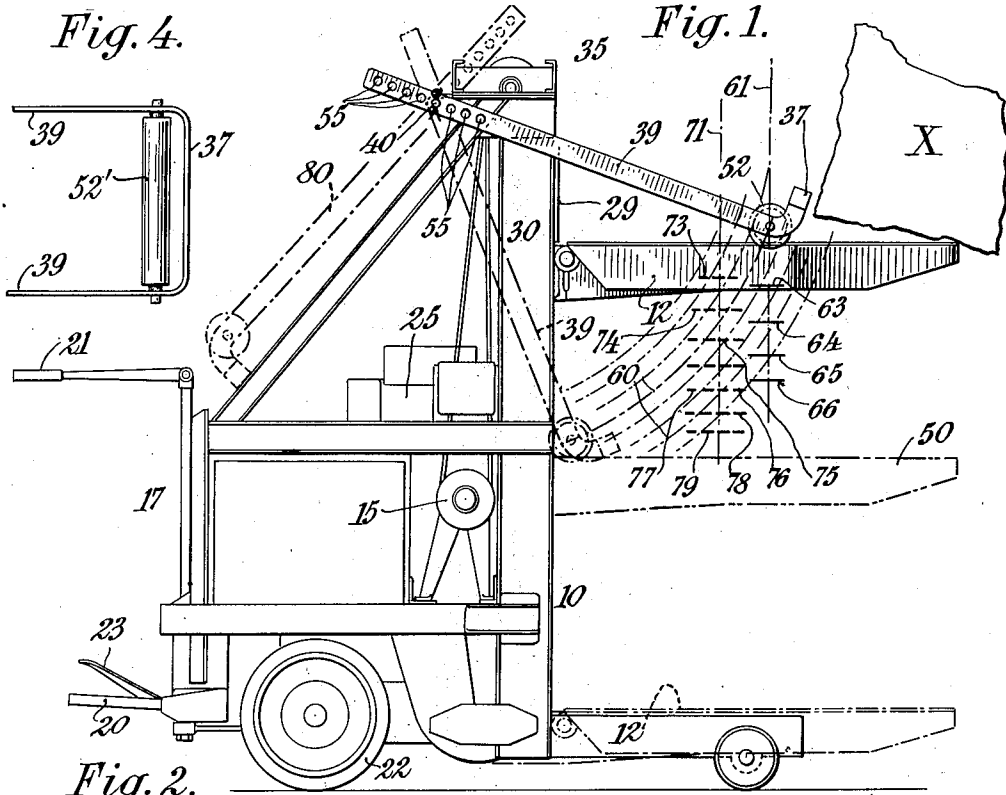


Fig. 2.

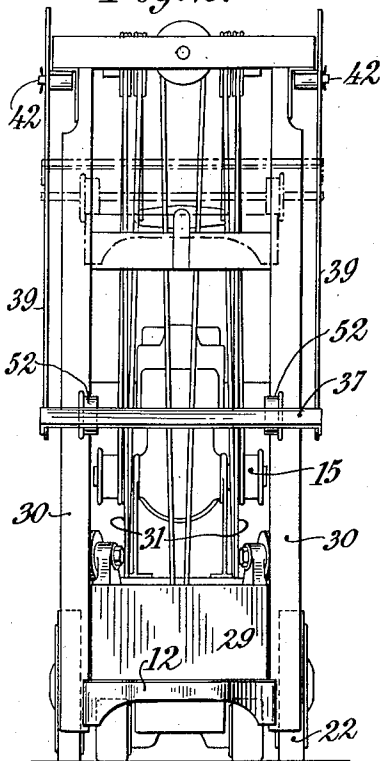


Fig. 3.

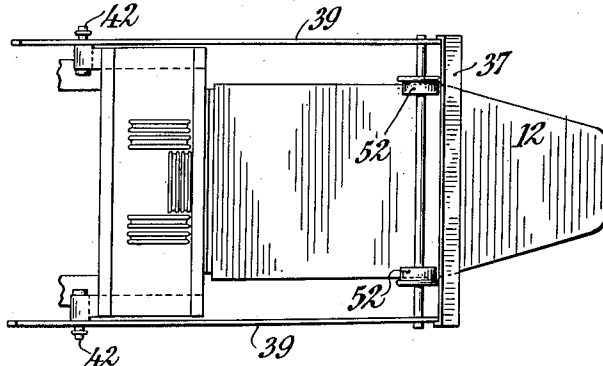
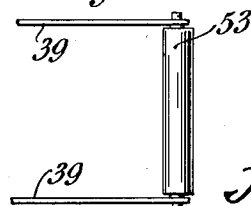


Fig. 5.



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ELEVATOR AND ELEVATOR TRUCK.

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To all whom it may concern:

Be it known that I, ALBERT WILLIAM STREETER, a citizen of the United States of America, residing in Carteret, county of Middlesex, and State of New Jersey, have invented certain new and useful Improvements in Elevators and Elevator Trucks, of which the following is a specification.

This invention relates to elevators, and more particularly to the type combined with trucks such as used in factories and yards for handling heavy or bulky materials used in manufacture, and aims to provide improvements therein.

The invention provides a time and labor saving device of the character referred to above. It provides an elevator or elevator-truck which may be manned by a single individual to operate the same to transport, elevate and eject or unload heavy articles and packages. It also greatly lightens the physical labor of the workman. In fact the workman is practically relieved of all labor in handling heavy articles, as a hoist is usually used in loading the truck, and where this is not the case, the loading is the part of the handling which is generally the easiest to perform. The invention comprises a simple and effective mechanism for unloading or ejecting the load from the elevated platform of the elevator.

An embodiment of the invention is illustrated in the accompanying drawing, in which—

Figure 1 is a view in side elevation of an elevator-truck.

Fig. 2 is a rear elevation of the parts shown in Fig. 1.

Fig. 3 is a top plan view (with the front part of the truck omitted) of the parts shown in Fig. 1.

Figs. 4 and 5 are detail views of modifications of the ejector.

Referring to said drawings, numeral 10 designates an elevator comprising a platform 12 adapted to be raised by suitable mechanism, as for example an electric driven winch 15.

The elevator is preferably a part of, or combined with, a motor truck 17, of the kind commonly used in factories and yards for handling heavy or bulky materials, and the platform 12 constitutes the platform or body upon which loads are placed and trans-

ferred from place to place in the yard or factory.

The motor truck 17 is of a well known type, the operator or workman standing on a step or foot-board 20, guiding the truck by the handle 21 and controlling the supply of motive power to the motor for driving the wheels 22 through a treadle 23. The winch 15 is preferably motor-driven. The motor casing is shown at 25. The motor is controlled in any suitable or well known manner to operate the winch.

The platform 12 is conveniently connected to a slide 29, which is raised and lowered in channel bars or I beams 30, forming upright columns at each side of the truck, by means of cables 31 attached to said slide 29 and to said winch.

The platform 12 is conveniently made so as to be close to the ground or floor level in its lowered position, as illustrated. This enables loads to be toppled thereon without having to be lifted, and lightens the labor of loading the truck when power machinery is not available.

Numeral 35 designates an unloading or ejecting mechanism. This mechanism 35 is preferably arranged to coact with the platform 12 of the truck during its rising movement to eject the load.

The ejecting mechanism conveniently comprises a cross-bar 37 carried by a part or parts 39 pivotally connected, as indicated at 40, to a part of the truck, at the upper part of the columns 30. The part 39 is conveniently in the form of a pair of arms pivotally connected to studs 42 on the upper parts of said columns 30, and having the ejector bar 37, which runs across the platform, attached to the ends thereof. The arms 39 (or other part connected to the ejector 37) are adapted to make contact with the platform 12 during its rising movement, as indicated by the dot and dash lines indicated at 50, Fig. 1. The contact of the arms 39 with the platform 12 is preferably through wheels or anti-friction rollers 52. The anti-frictions rollers 52 may be in the form of a pair of wheels, as shown in Fig. 3, or in the form of a cylindrical roll, as shown in Fig. 4, or, as shown in Fig. 5 the anti-friction roll 52 and cross-bar 37 may be combined in a single roll 53. The parts of the ejecting mechanism 35 may be so de-

signed that the rollers 52 come in contact with the platform 12 at any desired level, or remain in contact therewith throughout its movement. As here shown, the rollers 5 are designed to come into contact with the platform 12 at about halfway of its extent of upward movement.

When it is not desired to use the ejecting mechanism it may be made inoperative and moved out of the way of the platform, by swinging it over to the front side of the column 30, as indicated by dotted lines 80, Fig. 1.

The action of the ejector mechanism and the unloading of the truck is as follows. The truck is run, with the platform 12 carrying the load, at its lower level, as shown in dotted lines in Fig. 1 and in full lines in Fig. 2, to the place where it is desired to eject or remove the load. The winch 15 is then operated to elevate the platform 12. The platform 12 then rises, and during its ascent, the wheels or rollers 52 of the ejecting mechanism 35 make contact with the front end of the platform 12. As the platform 12 continues to rise, the push on the wheels or rollers 52 causes the pivotal arms 39 to be swung upward and outward, the ejector 37 moving toward the rear of the platform 12 parallel to its upper surface. As the ejector 37 is moved toward the rear end of the platform, the load X thereon is slid rearward, until the load is either pushed entirely off the platform, or pushed to a position of unstable equilibrium at the rear of the platform, whereupon it falls off. For example, the load may be a bale of metal scrap which falls upon a chute leading to the hearth of the furnace.

Means are preferably provided for varying, or adjusting, the height at which the ejector mechanism 35 acts to eject or push off the load. These means conveniently comprise a plurality of holes or sockets 55 lengthwise of the arms 39, adapted to engage the studs 42, the length of the arms 39 projecting beyond the pivots or studs 42 varying with the hole 55 which engages the stud. The longer the arm 39 beyond the pivot, the lower will be the level or horizontal plane of the platform 12 at which the ejector bar reaches the position lengthwise of said platform at which it acts to eject the load. Referring to Fig. 1, the arcs 60 correspond to the arcs through which the rollers 52 swing as the ejector bars are moved upward by the platform. The line 61 indicates the outer limit of the ejector in its travel lengthwise of the platform at which a given load at different levels is ejected. The lines 63, 64, 65, 66 indicate the successive levels of the platform 12 at the time the ejector bar reaches the line 61 (indicating the position at which the ejector acts to eject a given

load) when the first, second, third and fourth holes 55 respectively engage the studs 42. Consequently if it is desired to eject the load at a level corresponding to the line 66, Fig. 1, the arms 39 of the ejector mechanism would be moved from the position shown in Fig. 1 to that in which the holes 55 at the extreme ends of the said arms 39 engage said studs 42.

The line 71 is a line similar to 61 indicating the outer limit of the ejector in its travel lengthwise of the platform at which another load (the center of gravity of which is displaced more to the rear of the platform) is ejected at levels corresponding to the lines 73—79, inclusive. In the positions 73—79, inclusive, of the platform 12 the seven corresponding holes in the arms 39 would be connected to the pivot 40.

It will be seen that no physical labor of the workman is necessary for unloading the truck, and the single workman or operator who drives the truck may do the unloading without assistance. To unload or eject the load, it is simply necessary to operate the elevating mechanism, and the ejecting mechanism 35 will operate to eject or push off the load when the platform 12 reaches the level at which the ejecting mechanism 35 is set to eject the load.

The invention may receive other embodiments than that herein specifically illustrated and described.

What is claimed is:

1. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon.

2. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, and means for varying the height at which said ejector acts to eject the load.

3. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, said ejector moving means comprising a pivotal part adapted to swing upward and outward as the plane of said platform approaches the plane of the axis around which said pivotal part turns.

4. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, said

ejector moving means comprising a pivotal part adapted to swing upward and outward as the plane of said platform approaches the plane of the axis around which said pivotal part turns, said pivotal part having means for connecting it to a fixed part of said elevator at varying lengths.

5. In elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, said ejector moving means comprising a pivotal part adapted to swing upward and outward as the plane of said platform approaches the plane of the axis around which said pivotal part turns, said pivotal part comprising a pair of arms carrying said ejector and adapted to be pivotally connected to a fixed part of the elevator.

6. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, said ejector moving means comprising a pivotal part adapted to swing upward and outward as the plane of said platform approaches the plane of the axis around which said pivotal part turns, said pivotal part comprising a pair of arms carrying said ejector and adapted to be pivotally connected to a fixed part of the elevator, said arms having a plurality of pivot-engaging parts lengthwise thereof.

7. An elevator comprising a platform, means for raising said platform, an ejector, and means moving said ejector across said platform during the rising movement thereof to eject a load thereon at a predetermined height.

8. An elevator comprising a platform, means for raising said platform, an ejector, means moving said ejector across said

platform during the rising movement thereof to eject a load thereon at a predetermined height, and means for varying the predetermined height at which said ejector acts to eject the load.

9. A transporting and elevating device, comprising a motor vehicle, a platform, and means on said vehicle for raising the same, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across said platform to eject the load thereon.

10. A transporting and elevating device, comprising a motor vehicle, a platform, and means on said vehicle for raising the same, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across said platform to eject the load thereon, and means for varying the height at which said ejector acts to eject the load.

11. An elevator comprising a platform, means for raising said platform, an ejector, and means coacting with said platform during its rising movement adapted to cause said ejector to move across the face of said platform to eject the load thereon, said ejector moving means comprising a pivotal part adapted to swing upward and outward as the plane of said platform approaches the plane of the axis around which said pivotal part turns, said pivotal part having means for connecting it to a fixed part of said elevator at varying lengths, and means permitting of said ejector being swung where it does not coact with said platform.

12. An elevator comprising a platform, means for raising said platform, an ejector, and means moving said ejector across said platform during the rising movement thereof to eject a load thereon at a predetermined height, and means for rendering said ejector inoperative when desired.

In witness whereof, I have hereunto signed my name.

ALBERT WILLIAM STREETER.