

F. F. WAECHTER.
CONVEYING APPARATUS.
APPLICATION FILED SEPT. 25, 1911.

1,010,989.

Patented Dec. 5, 1911.

3 SHEETS—SHEET 1.

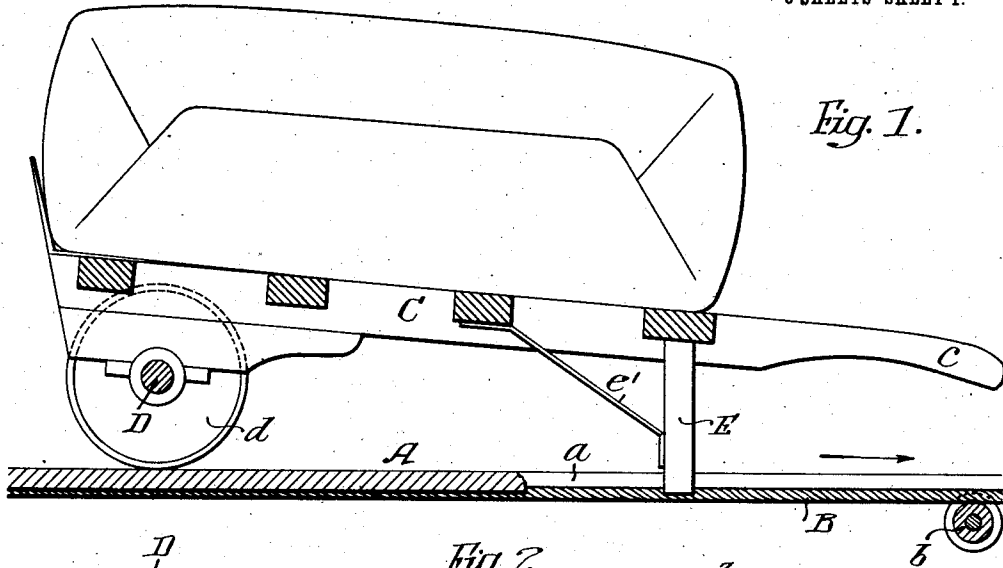


Fig. 1.

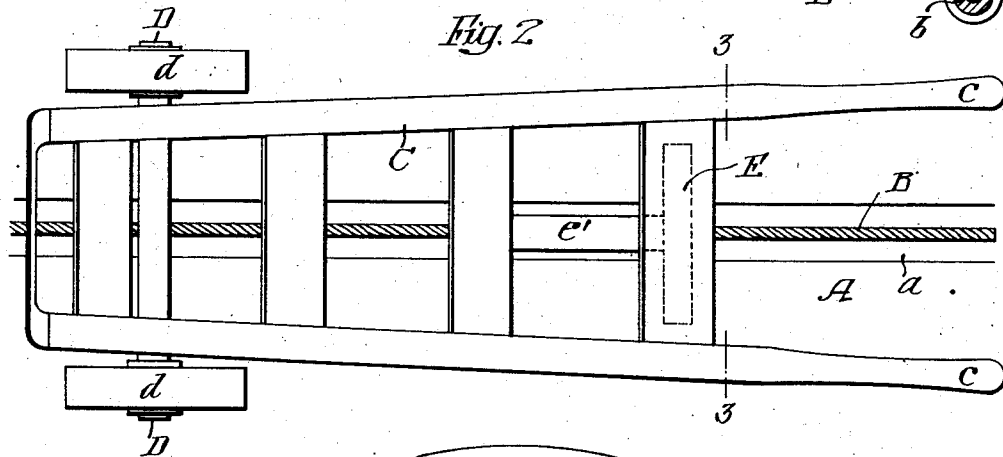


Fig. 2.

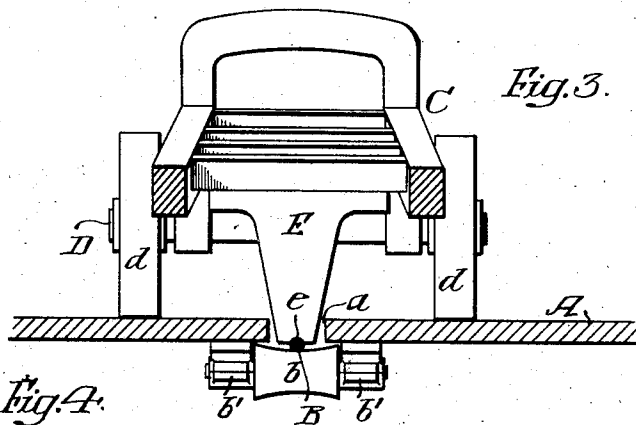
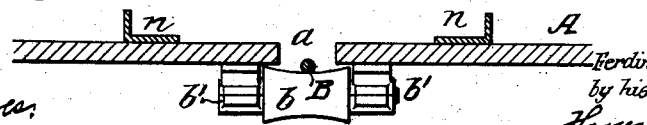


Fig. 3.

Fig. 4.

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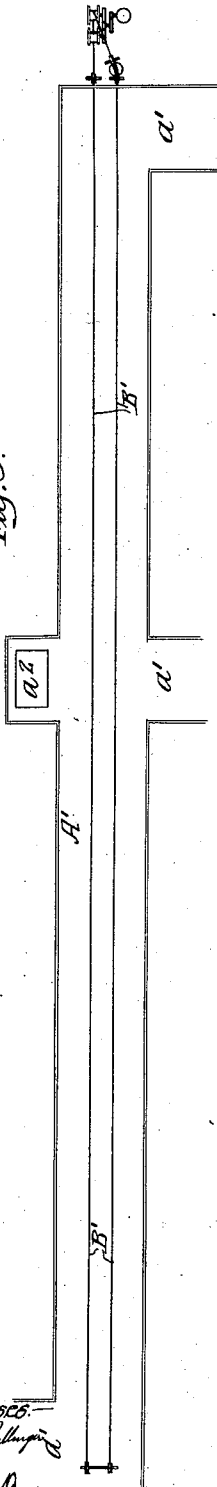
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3 SHEETS-SHEET 2.

Fig. 5.



Witnesses:
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Fig. 6.

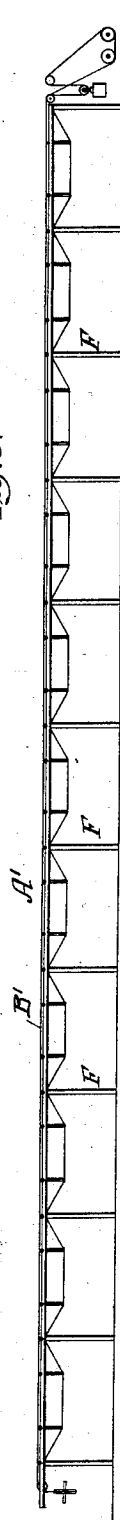


Fig. 7.

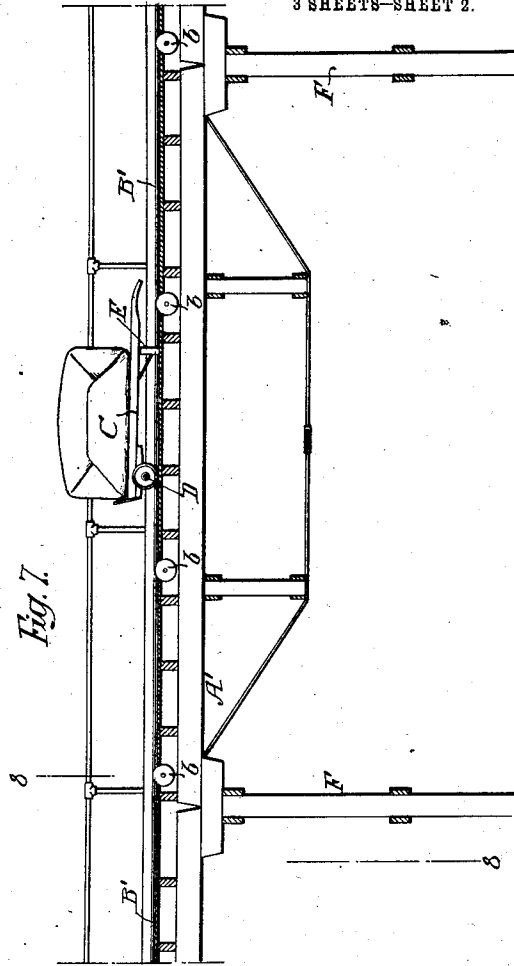
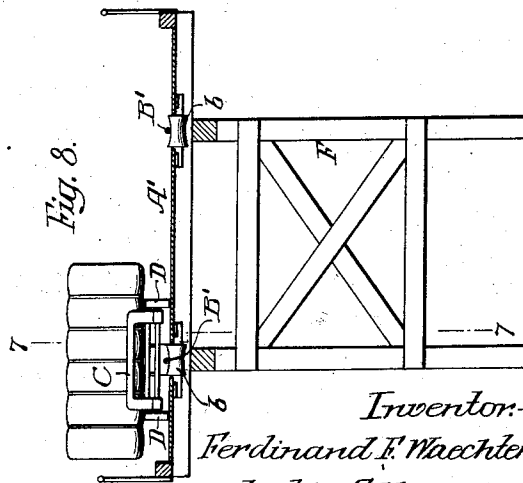


Fig. 8.



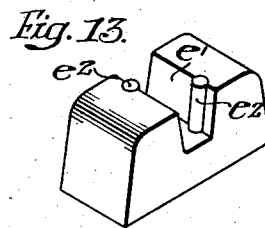
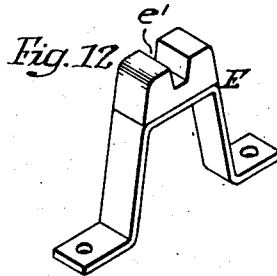
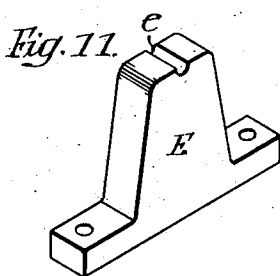
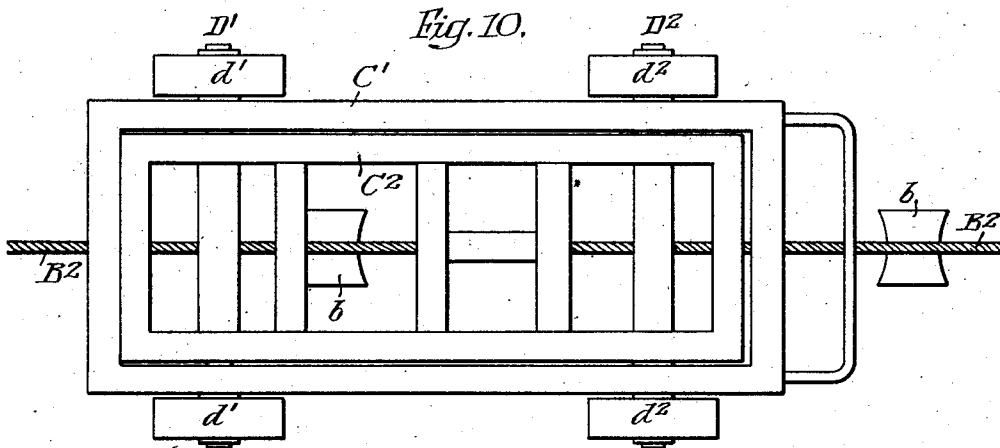
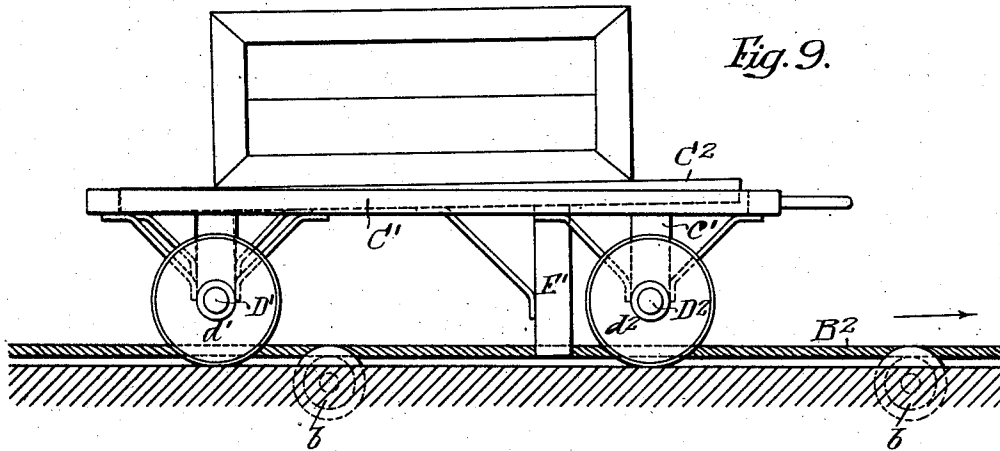
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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CONVEYING APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FERDINAND F. WAECHTER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Conveying Apparatus, of which the following is a specification.

This invention relates to certain improvements in means for traversing trucks from one locality to another by mechanical means.

The main object of the invention is to utilize a part of the weight of the truck and load, or a part of the weight of the truck alone to cause the truck to grip the rope or other traversing means.

A further object of the invention is to utilize the ordinary hand truck without removing the load so as to avoid the necessity of transferring the load from a truck to a power driven carrier and from the power driven carrier to a truck at the discharge point.

The invention is particularly adapted for handling material such as cotton, boxes and other miscellaneous freight at a wharf or storage warehouse, so as to obviate the necessity of the stevedore trundling a truck a long distance.

In the accompanying drawings:—Figure 1, is a sectional view of a truck and the floor of a platform or other way, illustrating the loaded truck engaged by a traveling rope; Fig. 2, is a plan view of Fig. 1, with the load removed; Fig. 3, is a sectional view on the line 3—3, Fig. 2; Fig. 4, is a view showing the platform provided with rails to guide the truck; Fig. 5, is a plan view in diagram of an elevated structure to which my invention can be applied; Fig. 6, is a side view of the structure illustrated in Fig. 5; Fig. 7, is an enlarged sectional view of the device showing a modification of the arrangement of the rope, the section being on the line 7—7, Fig. 8; Fig. 8, is a sectional view on the line 8—8, Fig. 7; Fig. 9, is a side view with the floor in section, illustrating a modification of the invention; Fig. 10, is a plan view of the truck illustrated in Fig. 9; Fig. 11, is an inverted perspective view of the grip of the truck shown in Fig. 1; Fig. 12,

is a view of a modified form of grip; Fig. 13, is a view of the grip provided with projections in the jaws to more readily engage the rope.

A is the floor, B is the rope or other suitable traveling device to which power is applied. This rope is supported at intervals on rollers *b* of any suitable type adapted to bearings *b'*.

C is a truck of the two-wheeled type, in the present instance, and of the ordinary form used by stevedores in handling miscellaneous freight. This truck has a shaft D on which are mounted wheels *d* and has handles *e, e*.

E is a depending foot which is suitably braced and has a grip notch *e* in its lower end for the reception of the rope B. This foot is braced as at E' but the type of the foot and in fact the type of the truck may be modified without departing from the essential features of the invention. The foot rests upon the rope and consequently the weight of the truck and its load is supported partly by the floor A and partly by the rope B, and the pressure on the rope is sufficient to create friction enough to cause the rope to impart movement to the truck. The contacting surface of the foot E is of such an extent that the truck will be held in engagement with the rope, due to the weight of the truck and the load, and cause the rope to haul the truck to the point desired.

The truck is preferably placed in position in respect to the movement of the rope, as illustrated in Fig. 1, so that the foot will engage the rope in advance of the wheels, and the truck will thus be properly guided. I preferably locate the rope within the slot of the way or platform, so that it will not interfere with the movement of the truck over the way, and the foot is so shaped that it will enter the slot, shown at *a*, so as to properly bear upon the rope. The foot can be used to support the load when not in engagement with the rope. The stevedore in handling the truck handles it along the way and when in position lowers the handled end of the truck so that the foot E will rest upon the rope. This rope travels slowly

and the stevedore has time to step out of the way before the truck moves to any appreciable extent. The truck will be carried to any point desired by the rope and as the wheels are at the rear of the truck as it moves forward they follow the movement of the rope and properly support part of the load. When the truck reaches its destination another stevedore steps in front of the moving truck, lifts it from contact with the rope and then trundles it to the point desired.

The device is particularly adapted for long carries and an elevated platform may be used, such as illustrated in Figs. 5 and 6, the rope having the forward run and a return run so that the loaded trucks may be conveyed in one direction and the empty trucks conveyed in the other direction, as it will be understood that the grip of the truck on the rope is sufficient to convey the truck whether empty or loaded.

In Figs. 5 and 6, A' is the platform supported upon posts F and this platform is suitably braced between the posts and terminals a' at intervals and may have an elevator a² at any point desired, so that when the truck is removed from the platform it can be lowered to the ground by means of an elevator. The rope is reaved around suitable driving pulleys in the ordinary manner common to drive ropes and as illustrated.

In Figs. 7 and 8, I have illustrated the rope B' located above the platform A' and the supporting wheels b' extend through the floor of the platform.

In Fig. 11, I have illustrated a particular form of grip used in the device illustrated in Fig. 1, in which it has a curved slot e to receive the rope, but in Fig. 12 I have shown a modification in which the slot e' is V-shaped to receive the rope, and in Fig. 13, I have shown the V-shaped slot e' having projecting ribs e², which tend to bite into the rope, but the form of the gripping surface may be modified without departing from the essential features of the invention.

In Figs. 9 and 10, I have illustrated my invention as applied to a four wheeled truck. D', D² are the axles on which are mounted the wheels d', d², respectively, and C' is a frame which is supported by all four of the wheels. Mounted within the frame C' is the load carrying frame C² which is pivoted to the axle D' and rests on the cross bar c' of the outer frame. Depending from this load carrying frame C² is the foot E' notched to receive the rope B². This foot is of such a length that when not in engagement with the rope it will not interfere with the inner carrying frame C² resting upon the cross bar c', when the truck is be-

ing shifted from one place to another the load is carried by the four wheels, but when it is in position and the foot E' rests upon the rope then the load is partly carried by the outer frame and its wheels and partly by the rope; the friction being sufficient to cause the rope to haul the truck over the platform or way.

In Fig. 4 I have shown the platform provided with rails n made of angle iron in the present instance, so as to guide the wheels of the truck if desired.

I claim:

1. In a haulage system, the combination of a way; a driven rope; a truck having a friction grip arranged to rest upon the rope, the weight of the truck and its load being utilized to cause the grip to frictionally engage the rope.

2. In a haulage system; the combination of a way, a rope; means for traversing said rope; a truck having wheels adapted to travel on the way and having a grip arranged to rest upon the rope; part of the load being supported by the wheels and the balance of the load being utilized as a weight to cause the grip to engage the rope.

3. In a haulage system, the combination of a way; a rope; means for traversing the rope; a truck having two wheels at one end resting on the way on each side of the rope; and a grip at the other end arranged to rest upon the rope; the weight of the load and its truck being utilized to cause the grip to frictionally engage the rope.

4. The combination in a haulage system, of a way; a rope; means for traversing the rope; wheels for supporting the rope at intervals; a truck having at one end a pair of wheels resting on the way on each side of the rope and having at the opposite end a depending leg notched to engage the rope.

5. The combination in a haulage system, of a way; a rope; means for traversing the rope; wheels for supporting the rope at intervals; a truck having at one end a pair of wheels resting on the way on each side of the rope and having at the opposite end a recessed grip arranged to engage the rope; said grip having a projection on each inner wall.

6. The combination in a haulage system; of a platform; a rope; means for traversing the rope; wheels for supporting the rope at intervals; a truck having at one end a pair of wheels resting on the platform on each side of the rope and having at the opposite end a recessed grip arranged to engage the rope; said grip having teeth projecting from the walls of said grip and said teeth being staggered.

7. In a haulage system, the combination of a way; a driven rope; a truck having a

friction grip resting upon the upper side of the rope, part of the weight of the truck and its load being utilized to cause the grip to frictionally engage the rope, said grip being released from the rope when the grip is raised.

In testimony whereof, I have signed my

name to this specification, in the presence of two subscribing witnesses.

FERDINAND F. WAECHTER.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."