

Jan. 18, 1955

E. T. WILLIAMS
TRANSPORTATION SYSTEM

2,699,735

Filed Nov. 5, 1951

3 Sheets-Sheet 1

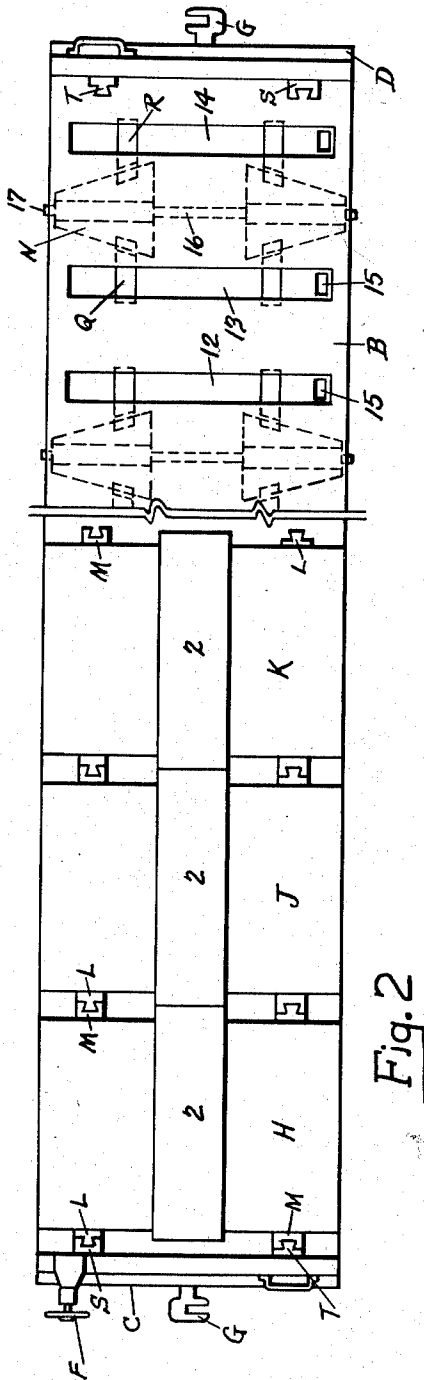


Fig. 2

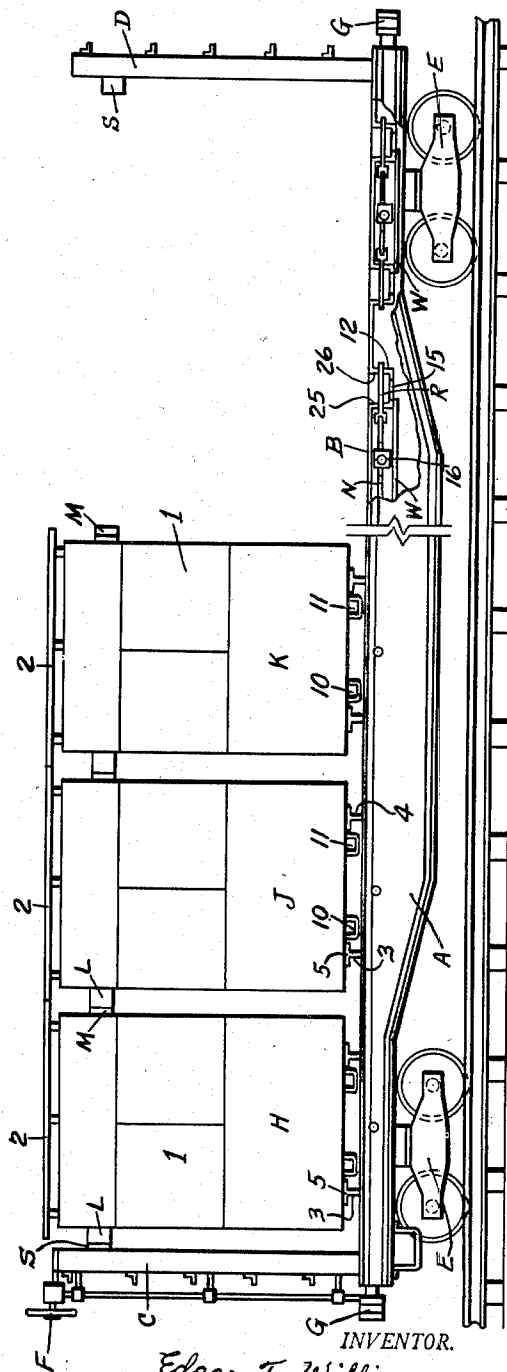


Fig. 1

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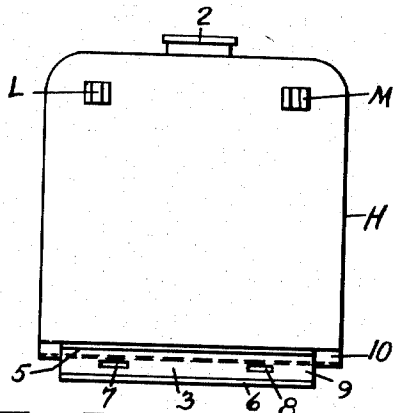


Fig. 3

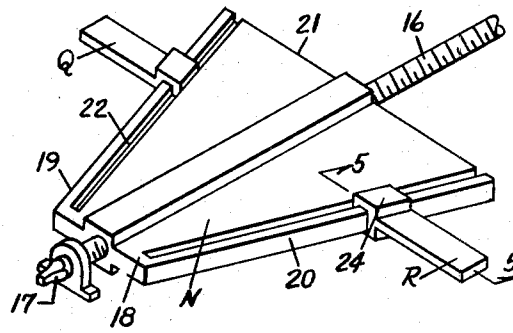


Fig. 4

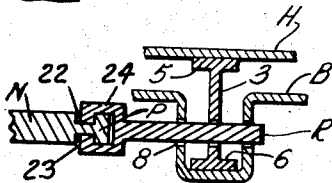


Fig. 5

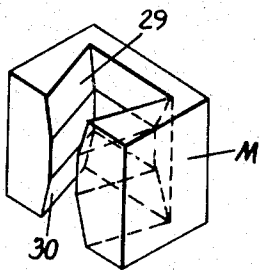


Fig. 7

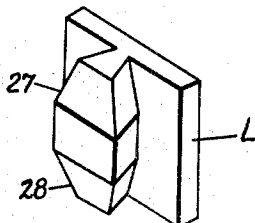


Fig. 8

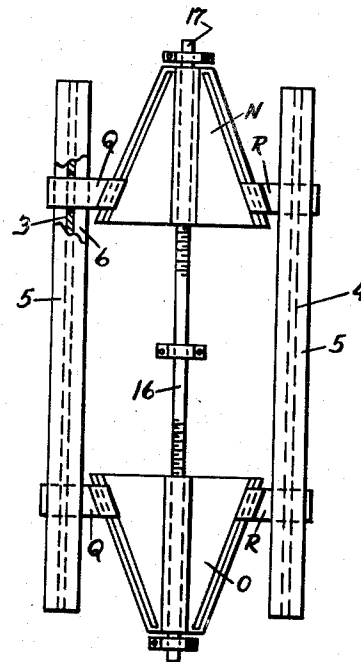


Fig. 6

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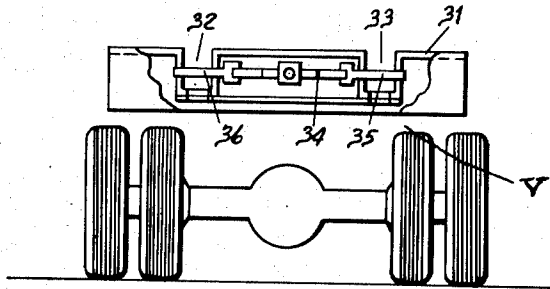


Fig. 9

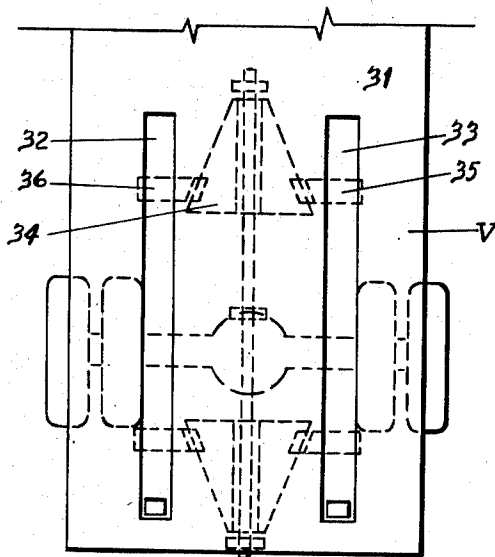


Fig. 10

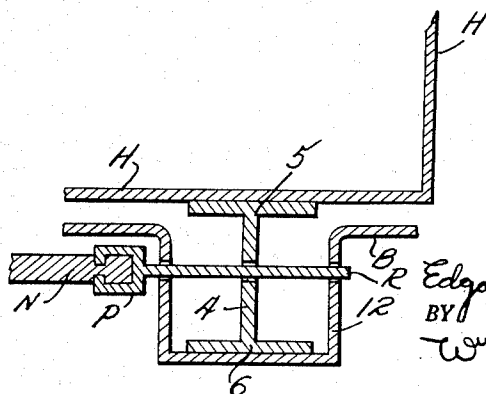


Fig. 11

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2,699,735

TRANSPORTATION SYSTEM

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Application November 5, 1951, Serial No. 254,822

3 Claims. (Cl. 105—366)

This invention relates to a transportation system and the apparatus for practicing the same, and has as its primary object the speeding up, simplifying and reduction of the cost of handling articles or items shipped or transported on and by wheeled vehicles.

Although the system and invention is primarily directed to the handling of mail and express, it will be seen and recognized, from a reading of the following description, that the system is applicable to other articles, items or materials.

The handling of mail and express packages by a railroad tends greatly to delay the movement of trains and to oftentimes make trains behind schedule due to the fact that so long a time is often required to discharge mail and express at a given destination or station. The time required to discharge the mail and express is often so great as to cause a train to leave a station far behind schedule.

The present improved system has been devised to correct the above situation and it is also of such a nature that it can be used to advantage by the post office or express companies in the delivery of mail and express to the railroad for transportation to the desired destination.

The numerous advantages of the system and novel features of construction of the apparatus by which it is practiced will appear in and be understood from the following description when read in the light of the accompany drawings.

In the drawings:

Fig. 1 is a view in side elevation of a railway car with a plurality of the carriers of the invention positioned thereon.

Fig. 2 is a top plan view of the construction shown in Fig. 1.

Fig. 3 is a view in end elevation of one of the carriers.

Fig. 4 is a perspective view of a lock for the bottom of a carrier.

Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 4, looking in the direction indicated by arrows.

Fig. 6 is a top plan view of the bottom lock in combination with the legs of a carrier, a portion of the view being in horizontal section.

Fig. 7 is a perspective view of the female member of a lock used on the side of a carrier.

Fig. 8 is a perspective view of the male member used with the lock member shown in Fig. 7.

Fig. 9 is a view in end elevation illustrating the invention in use with a truck.

Fig. 10 is a top plan view of the truck shown in Fig. 9.

Fig. 11 is a fragmentary vertical sectional view illustrating the locking connection between a carrier leg and a channelway of the vehicle platform.

Having reference now to the drawings and utilizing like characters and reference numeral to designate like parts, A designates generally a railroad car which in its general characteristics is similar to what is generally known as a "flatcar."

In most of its construction this car is conventional but those features which are not conventional and which are essential to the practice of my improved system will be specifically referred to.

The car is provided with a floor or platform B which is generally throughout its length and breadth flat and at each of its ends is provided with a vertically extending end wall or bulkhead which is designated C and D respectively. There are the usual conventional trucks E, hand brake F and couplers G.

A plurality of individual carrier units H, J and K which

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are rectangular housings, are provided at one of their ends with suitable doors 1. These carrier units are supported in side by side relationship on the car or vehicle platform and on a fully loaded car will extend from bulkhead to bulkhead and in ordinary practice a car would be fully loaded so that the individual catwalk or walkway 2 carried by the top of each carrier unit will be continuous throughout the length of a car.

In the practice of the system the mail and express intended for a single station or destination would be placed in one of the carrier units at the post office and the unit transported from there to the railroad station where the unit would be loaded onto the car. When the destination of a specific carrier unit is reached the unit would be bodily removed so that the mail and express would be delivered rapidly and in a single operation so as to permit the train to proceed on its way without delay. Further reference to the actual handling of the carrier units will be made hereinafter.

Each carrier unit, which is a unitary rectangular housing, has on its bottom and extending transverse thereof in spaced relationship, a pair of legs 3 and 4 which are in the form of I beams the upper heads 5 of which are suitably secured to the under side of the bottom of the carrier. At spaced points intermediate their lengths each leg is provided with a cut-out to provide passageways 7 and 8 which are in the web 9 of the beams substantially intermediate the beam head 5 and the beam base 6. At each of its ends each unit is provided with a pair of aligned spaced apart lock elements. One of these elements, as can be seen from Figs. 2 and 3, is a male element L and the other a female element M. It is to be noted that as respects a single carrier unit that where at one end thereof there is a male element L there is on the opposite end of the carrier in the same respective position a female element M.

Each carrier unit in addition to its legs 3 and 4 has on its bottom and extending transverse thereof, a pair of open ended U-shaped channelways 10 and 11 which form pockets for the reception of the prongs of a lifting apparatus, as will be hereinafter described.

The car platform B at spaced intervals throughout its length is depressed to provide transversely extending channelways 12, 13 and 14 which are of a width and length and properly spaced to receive the bases or feet 6 of the carrier unit legs 3 and 4. Each of these channelways is provided in its bottom with an outlet passageway 15 for the discharge of any water or trash which might find its way into the channelway.

Beneath the car platform and between each pair of channelways there is a transversely extending threaded shaft 16 the outer ends of which are squared to provide a nut 17. These nuts are at the opposite sides of the car and operable, by wrench or other suitable tool, from either side of the car. A pair of plates N and O is associated with each shaft and threadedly receives the shaft which extends through it. Each plate is substantially triangular in configuration and has its apex 18 at the outer end of the shaft while its sides 19 and 20 slant rearwardly and outwardly to the rear end or base 21 of the plate. The plate at both its edges or sides 19 and 20 is grooved on its upper and lower faces as at 22 and 23 so that at the edges of the plate a T-shaped head P is provided.

A pair of lock arms or lugs Q and R are associated with each plate, one being used at each side thereof. These arms at their inner ends are provided with a channelled socket 24 which slidably receives the respective T-shaped head P at its side of the plate.

The width of the arms or lugs Q and R is such that they will slide through the passageways 7 and 8 in the legs of the carriers. These arms also, when the lock is in a locked position, extend through the side walls 25 and 26, see Figs. 1 and 2 of the channelways of the car platform B.

It will be obvious that with a pair of carrier legs disposed in a pair of platform channelways rotation of the threaded shaft 16 in the proper direction will cause the lug arms Q and R to be extended and pass through the carrier leg openings 7 and 8 and through the side walls of the platform channelways thus securely locking the carrier to the car platform. When it is desired to move a carrier the threaded shaft 16 is rotated to retract the

plates N and O toward one another which will cause the retraction or inward movement of the lock arms Q and R and thus disengage them from the platform channelways and the passageways of the carrier legs.

Plates W span the space between the platform channelways and thus protect the locks against rain, dirt and the elements so as to assure their operation at all times.

When a carrier unit is placed upon or removed from the car platform the locking elements L and M at the upper ends of the units have sliding engagement or disengagement with one another. For those carrier units at the extreme ends of the platform the car end bulkheads C and D are provided with male and female elements S and T.

It will be obvious that as the carrier units are lowered or raised the elements L and M and the elements S and T interconnect with one another in a sliding manner much like a tongue and groove and to facilitate placement of the carriers on the car the upper and lower ends of the male element L are tapered as at 27 and 28 and the upper and lower ends of the channelways of the female element are tapered or flared as at 29 and 30. Consequently as a carrier unit is lowered the alignment of the interlocking elements L and M need not be perfect as the referred to taper and flare will cause the carriers to align themselves so that these elements will properly align themselves.

It is now common practice to utilize power lifting equipment in the handling of loads and this equipment ordinarily has or can be provided with a load engaging element or member which has a pair of spaced prongs. The before referred to channelways 10 and 11 on the bottoms of the carrier units are for the reception of these prongs and it is to be noted that when a carrier unit is in position on a car the open ends of these channelways are available free for the reception of the prongs.

To extend the present system to its best advantage of use it is desirable to facilitate the transportation of the units from their place of loading to the railroad. Accordingly I have illustrated in Figs. 9 and 10 a truck suitable for this purpose.

The truck is designated as an entirety by V and embodies a platform 31 having therein longitudinally extending channelways 32 and 33 corresponding to the channelways before described in the platform of the car. These channelways are for the reception of the carrier legs and the carrier is locked to the truck by locking the legs thereof in the exact manner previously described, and accordingly the locking plate, locking arms and plate operating shaft are not now specifically described but merely designated with the respective numerals 34, 35 and 36. Inasmuch as the carriers are provided with the prong reception channelways 10 and 11 the power loading equipment can be used at the point of the loading of the carriers with mail or other articles so as to facilitate their placement on the truck. The same power equipment

would be used at the railway to remove the carriers from the trucks and place them on the railway car.

From the foregoing it will be seen that a system is provided for rapidly, conveniently and cheaply handling goods in transportation and that one or more of the units can be quickly removed from the car at any place of destination.

Alterations in the specific constructions illustrated and described can be made without departing from the inventive concept and the invention is to be limited only within the terms of the hereinafter following claims.

What I claim is:

1. A wheeled vehicle provided with an elongated horizontally disposed platform having in its upper side a plurality of depressed transversely extending spaced apart parallel channelways, a plurality of individual carrier units supported in side-by-side relationship on the vehicle platform along the length thereof, each carrier on its bottom being provided with a pair of downwardly extending supporting legs one each of which is disposed in a platform channelway, the side walls of each channelway and the carrier leg therein being provided with aligned passageways, and an individually operable extensible lock arm mounted on the vehicle and associated with each carrier and selectively extensible through said passageways to detachably secure the legs of the carrier to the platform.

2. In a transportation system, a vehicle having a load reception platform provided with spaced apart transversely extending channelways, the side walls of the channelways being provided with oppositely aligned passageways, a plurality of individual carrier units on the vehicle platform positioned in side-by-side relationship, each carrier being provided on its bottom with a pair of legs one each of which is disposed in a platform channelway, each carrier leg being provided with passageways aligned with the passageways in the sides of the platform channelway in which it is disposed, a lock mounted on the vehicle for use with each pair of platform channelways and provided with a pair of projectable and retractable arms adapted to pass through the passageways of the carrier legs and of the channelways, and means operable from a side of the vehicle to extend and retract said lock arms.

3. A construction as defined in claim 2 wherein, a wedge-shaped member is slidably connected to each pair of lock arms, and the means at the side of the vehicle for projecting and retracting the lock arms comprises manual means to reciprocate the wedges in respect to the arms.

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