June 9, 1931. C. D. YOUNG 1,809,540

CONTAINER HANDLING SYSTEM AND APPARATUS

Filed Sept. 17, 1928 2 Sheets-Sheet 1

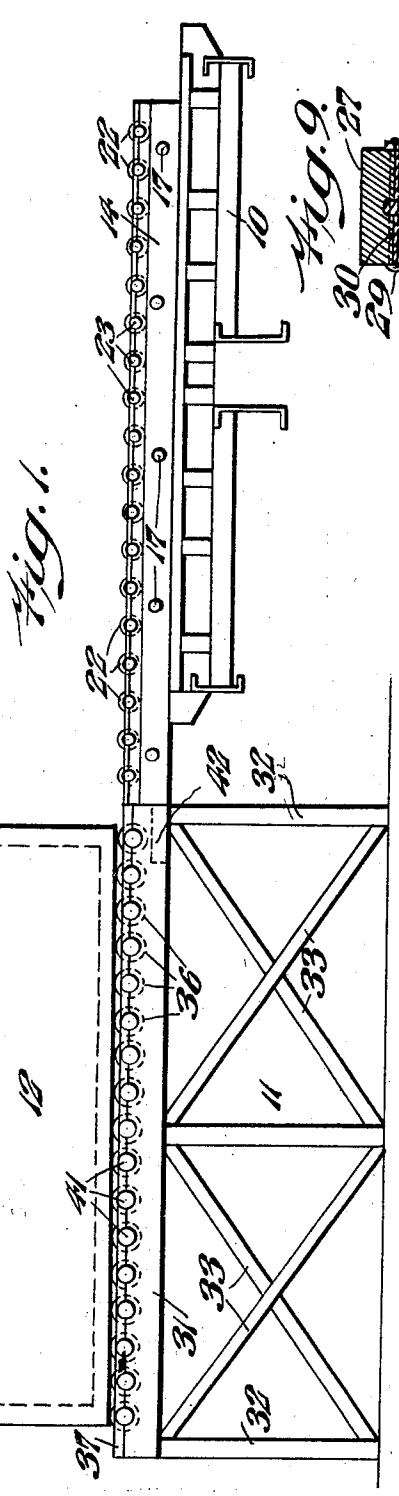


Fig. 1.

Fig. 3.

Fig. 4.

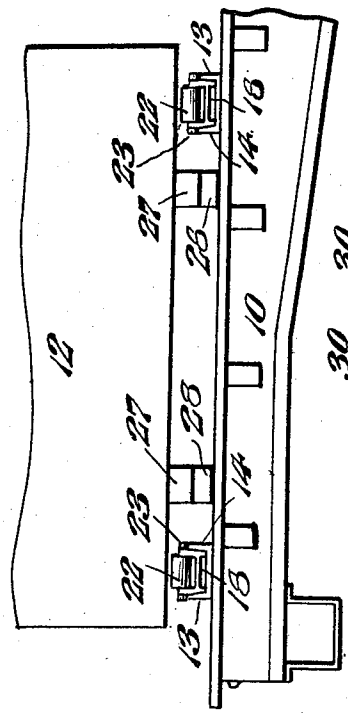


Fig. 5.

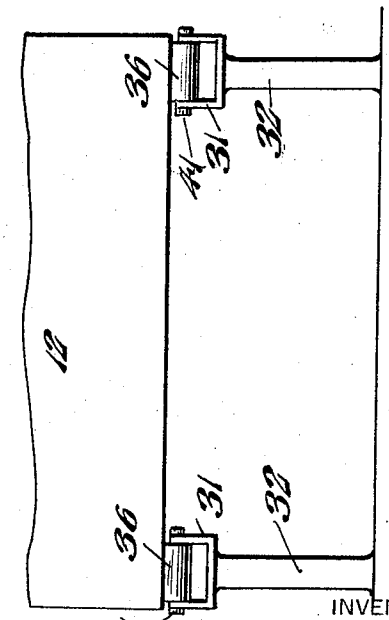


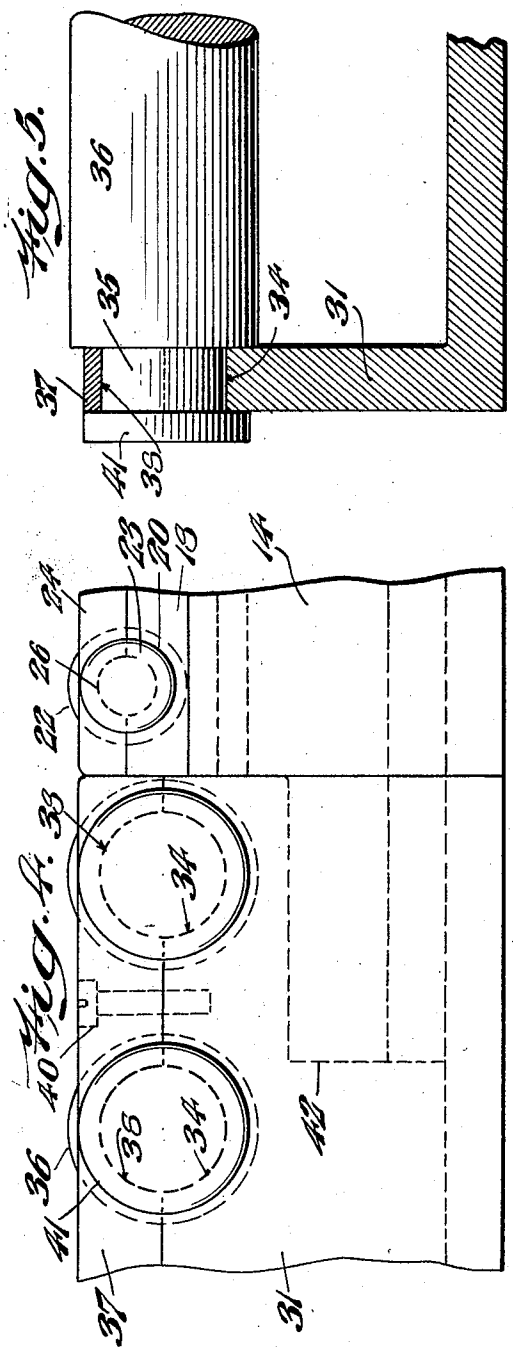
Fig. 2.

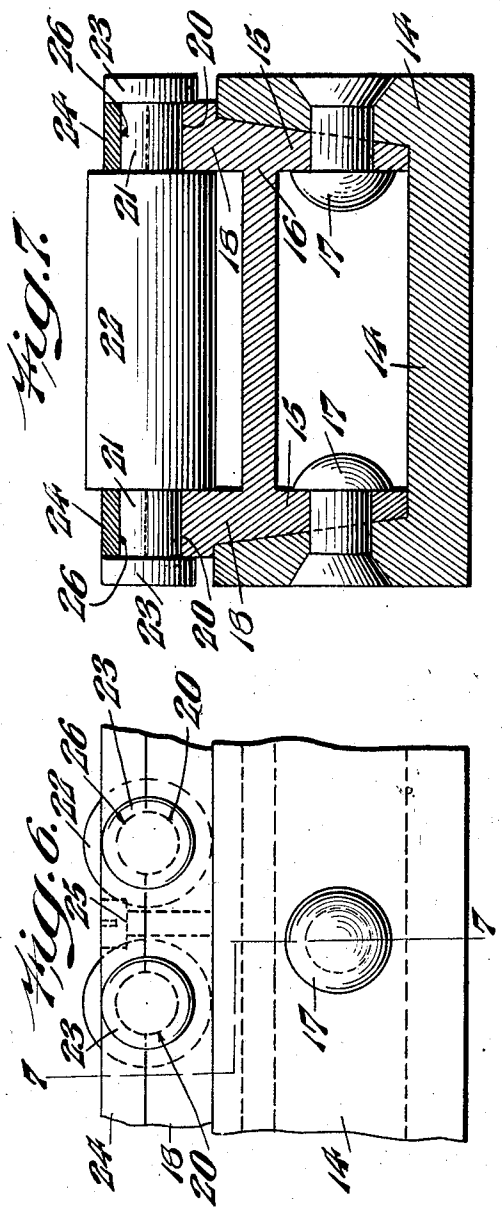
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CONTAINER HANDLING SYSTEM AND APPARATUS

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UNITED STATES PATENT OFFICE

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CONTAINER HANDLING SYSTEM AND APPARATUS

Application filed September 17, 1928. Serial No. 306,551.

The present invention relates to container handling apparatus and more particularly to the loading and unloading of freight cars.

Some of the objects of the present invention are to provide a simple and efficient mechanism for the handling of relatively large merchandise containers; to provide means wherein a freight car can be quickly and economically loaded and unloaded; to provide a portable track device for transferring containers from one location to another; to provide a container transferring track mechanism operating in conjunction with a container support in the form of a ramp structure; to provide a container transferring medium which permits the handling of large containers with a minimum of manual labor; to provide a container transferring apparatus which can be successively used with a plurality of containers to be loaded upon the same freight car; and to provide other improvements as will hereinafter appear.

In the accompanying drawings, Fig. 1 represents a side elevation of a container handling system embodying one form of the present invention; Fig. 2 represents an end elevation of one form of ramp support for containers; Fig. 3 represents a side elevation of a freight car showing one form of container transferring mechanism; Fig. 4 represents a detail in side elevation of the meeting ends of the ramp rail structure and the container transferring mechanism; Fig. 5 represents a sectional detail of ramp rail roller mounting; Fig. 6 represents a detail in side elevation of the roller mounting of the transfer mechanism; Fig. 7 represents a section on line 7—7 of Fig. 6; Fig. 8 represents one form of block wedges employed with the system; and Fig. 9 represents a transverse section of the parts shown in Fig. 8.

Referring to the drawings, one form of the present invention is shown as applied to the loading and unloading of rail freight cars and for purposes of illustration only the body portion 10 of such a car is here shown, the same being located operatively with respect to a fixed support in the form of a ramp structure 11.

For the purpose of readily transferring a container 12 to or from the car 10, two portable tracks 13 are provided each in the present instance consisting of a channel bar 14 arranged to seat the leg flanges 15 of a substantially H-shaped bearing rail 16 and to which the flanges 15 are fastened by rivets 17 spaced at suitable intervals throughout the length of the bar 14. The bearing flanges 18 of the rail 16 are respectively provided with a series of transverse journal grooves 20 in opposite alignment in order to seat the respective axles 21 of a plurality of rollers 22. The end of each axle is provided with a head of larger diameter than the axle and seats against the outer face of the flange 18 in order to prevent end to end play of the roller 22. Each roller 22 is thus journalled in an opposite pair of the grooves 20 while all of the bearing axles are held against displacement by cap rails 24 respectively fastened to the flanges 18 by stud bolts 25. Each of the cap rails 24 is provided with transverse bearing grooves 26 so spaced as to properly align with the respective axles 21 and when in place forming with the flange 18 a complete journal in which the roller axles are free to rotate. When each rail is completely assembled with its rollers 22 in place, it becomes a portable anti-friction support which can be readily carried from one place to another and when positioned to receive a container upon its rollers its wide flat channel base forms a stable support to hold it properly positioned.

In operation, two of these portable track members 13 are generally employed for transferring containers though in some instances more than two may be utilized in case the container is of exceptionally large dimensions. To transfer a container from the roller trackways 13 to the support upon which the tracks are located, such for example as the floor of a freight car 10, sets of wedge blocks 27 and 28 are employed, two sets being used at each side of the container. These blocks are provided on their meeting faces with male and female closures longi-

tudinally arranged to guide them and holes are drilled transversely to receive fastening bolts 29 which hold the wedge blocks in fixed position. Thus each set of blocks is placed on the floor of the car 10 with the inclined faces 30 of the blocks in contact and then the block 27 is driven between the block 28 and the container 12 by means of a sledge or other implement until the bottom of the container is raised above the level of the track rollers 22 and is supported entirely by the sets of blocks. The track rails 13 can now be taken out and used for loading another container or for any other purpose. When the car 10 arrives at the destination where the container 12 is to be unloaded, similar roller tracks 13 are placed beneath the container and the sets of wedge blocks 27 and 28 are knocked out so that the container becomes seated upon the rollers 22 when it can then be readily pushed from the car to an adjacent support. In the present form of the invention, a convenient type of adjacent support is shown in the rail structure 11 which consists of two channel members 31 each supported upon posts 32 and cross braced as indicated at 33. Each channel member 31 is provided with transverse bearing grooves 34 to receive the axles 35 of transversely disposed rollers 36. The grooves 34 in the sides of the channel are in opposite alignment in order to receive the opposite ends of the same roller 36. The axles 35 are held properly journalled by cap rails 37 provided with transverse grooves 38 spaced so as to correspond to the grooves 34 of the channel 31 and are held in place by stud bolts 40 as will be understood. The ends of the axles 35 are provided with heads 41 to prevent end displacements of the rollers 36. The rail supports 32 are spaced apart in order to receive the width of the body of a truck so that it can be backed into place between the rails but this spacing of the rails is less than the usual width of a container 12 which is to be transferred. This makes it possible for a truck to back into position where it can readily receive the container from the rails.

In order to form two continuous roller trackways, the support meeting end of each of the channels 14 is provided with an extension 42 which is arranged to interfit with the end of an opposite channel 31, and in this way the portable track member can be brought into abutting relation with the fixed rail and with its end rigidly supported thereby to form substantially an uninterrupted roller track surface. With two portable track members thus connected to two roller rails there are thus formed two continuous roller surfaces upon which a container can be moved from one to the other easily and with little manual effort.

While only a single form is shown in which this invention may be embodied, it is to be understood that the invention is not limited to any specific construction, but might be applied to various forms without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, I claim:

1. A container handling system which consists in locating two roller trackways upon a support, moving a container upon said tracks, driving wedge members beneath said container to elevate said container from said tracks, and removing said tracks for use with other containers.

2. A container handling apparatus comprising in combination a fixed support for a container, a movable support, a pair of portable tracks arranged to seat on said movable support and having roller surfaces leading from the level of said fixed support to receive a container moved from said fixed support, and means on said movable support to elevate said container above said tracks whereby said tracks can be removed after transferring said container from said fixed support to said movable support.

3. A container handling apparatus comprising in combination a fixed support, a movable support, two roller trackways seated on said fixed support for supporting a container, a pair of portable tracks arranged to seat on said movable support and extending to receive said container as it leaves said roller trackways, and means on said movable support and operative after said container is on said portable tracks for elevating said container to release said tracks for removal.

4. A container handling apparatus comprising in combination a fixed support, a movable support, two roller trackways seated on said fixed support for supporting a container, a pair of portable tracks arranged to seat on said movable support and having roller surfaces located to receive a container moved from said fixed support, and means on said movable support and operative after said container is on said portable tracks for elevating said container to release said tracks for removal.

5. A container handling apparatus comprising in combination a fixed support, a movable support, two roller trackways seated on said fixed support for supporting a container, a pair of portable tracks arranged to seat on said movable support and having roller surfaces located to receive a container moved from said fixed support, means on said movable support and operative after said container is on said portable tracks for elevating said container to release said tracks for removal, and means to interfit said tracks with said trackways respectively to form two continuous ways from said fixed support to said movable support.

6. A container handling apparatus comprising two supports arranged side by side, a pair of portable tracks arranged to seat on one of said supports and having roller surfaces arranged to receive a container moved from the second support, means on said second support for supporting said container at the level of said portable tracks, and means to elevate said container above said tracks whereby said tracks can be removed after transferring said container from one support to the other.

Signed at Philadelphia, county of Philadelphia, State of Pennsylvania, this 10th day of September, 1928.

CHARLES D. YOUNG.