Aug. 7, 1928. 1,679,981

J. D. LAWRENCE

PORTABLE BUILDING MATERIAL CONVEYER

Filed Jan. 31, 1927 3 Sheets-Sheet 1

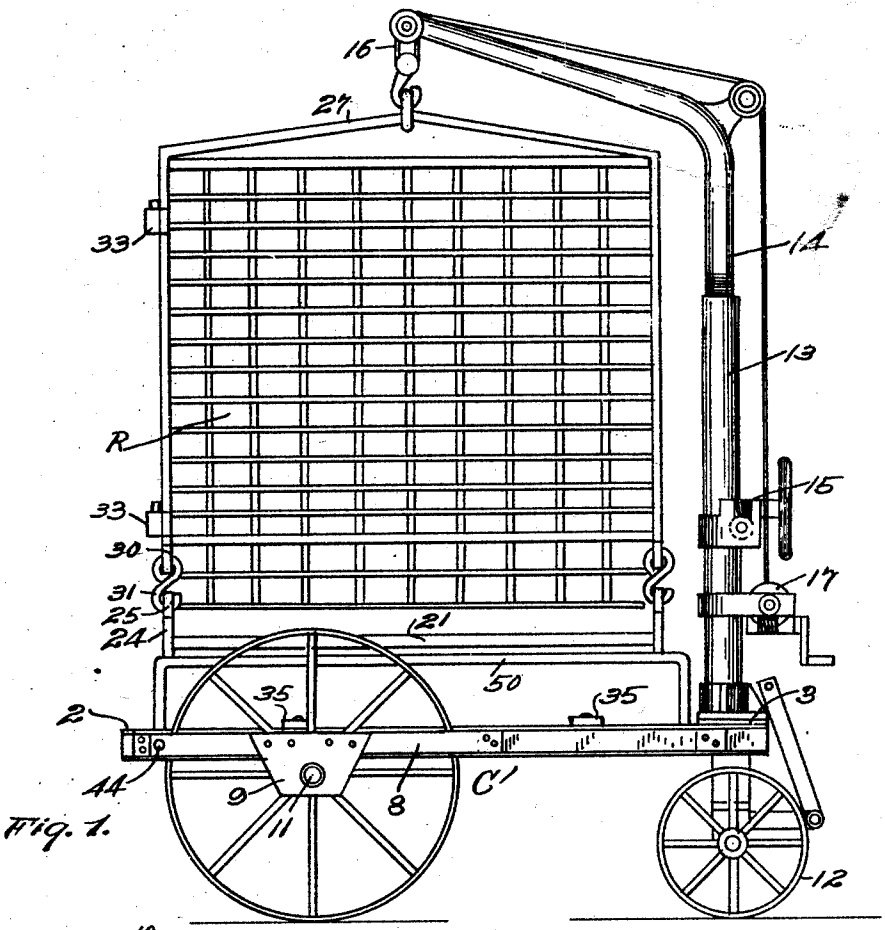


Fig. 1.

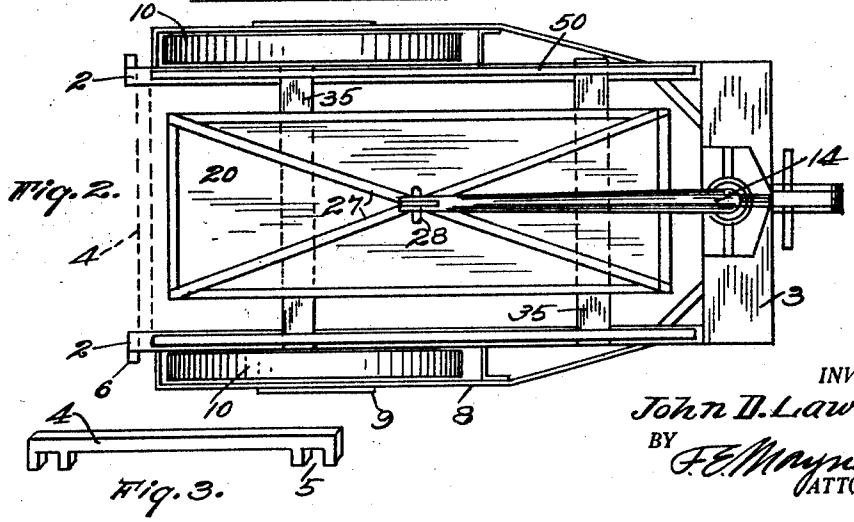


Fig. 2.

Fig. 3.

INVENTOR,
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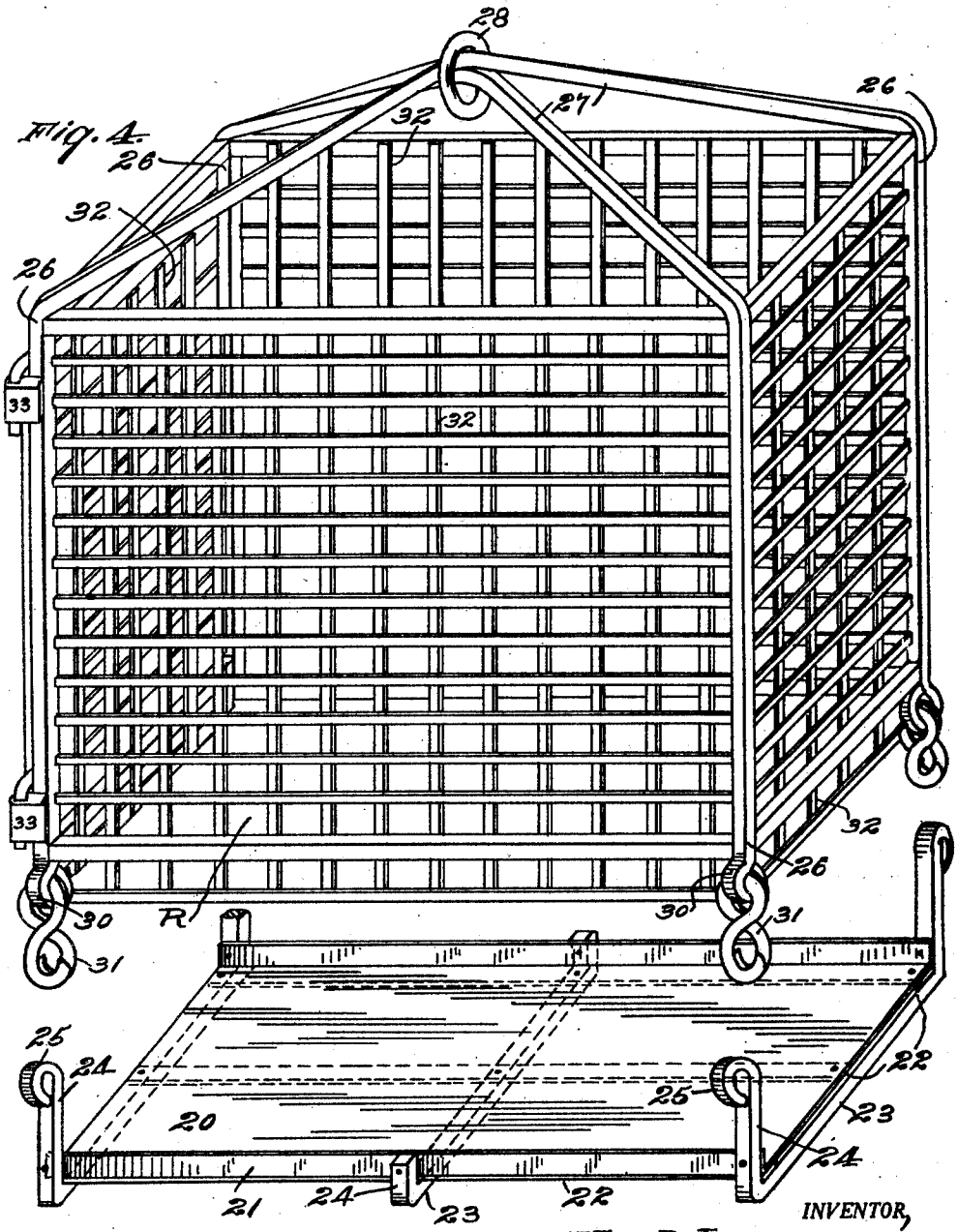
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PORTABLE BUILDING MATERIAL CONVEYER

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Fig. 4.



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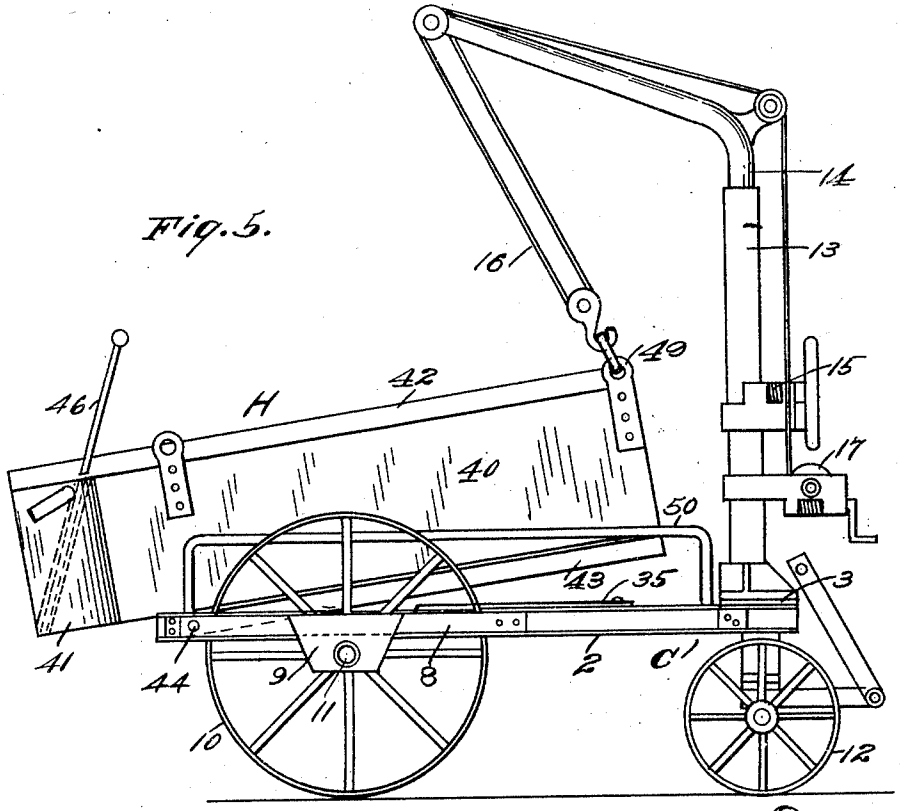
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PORTABLE BUILDING MATERIAL CONVEYER

Filed Jan. 31, 1927 3 Sheets-Sheet 3

Fig. 5.



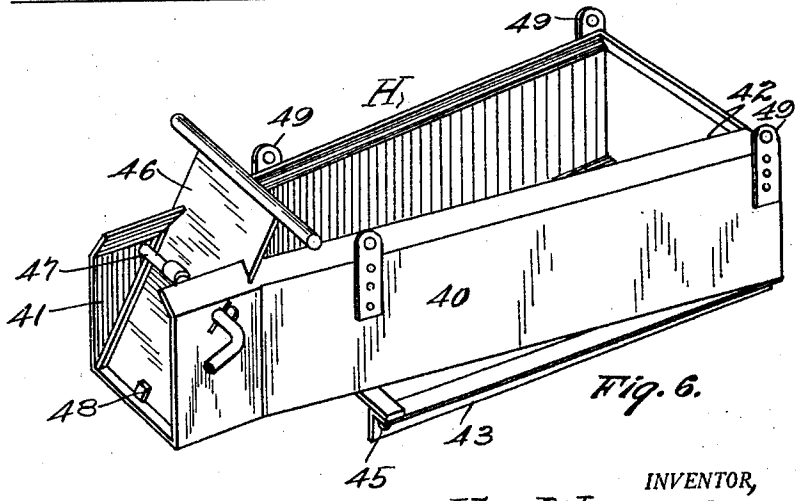


Fig. 6.

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Patented Aug. 7, 1928. 1,679,981

UNITED STATES PATENT OFFICE.

JOHN D. LAWRENCE, OF SAN DIEGO, CALIFORNIA.

PORTABLE BUILDING-MATERIAL CONVEYER.

Application filed January 31, 1927. Serial No. 164,818.

This invention relates to material handling apparatus and more especially to a portable conveyer structure for the carrying and depositing of various kinds of building material as, for example building blocks and bricks, and mobile batches.

The general object of the invention is to materially reduce the labor costs of transferring such materials from production place, or from unloading site to place in the work under construction. For instance an object is to economize in cost of and to expedite transfer of material from curb of street to wall or other place of disposition.

With the above, numerous other objects, advantages and features will be made manifest in the following specification of apparatus embodying the invention; it being understood that modifications, variations and adaptations may be resorted to within the scope, spirit and principle of the invention as it is hereinafter more directly claimed.

Figure 1 is a side elevation of a conveyer showing an elevated brick tray and its covering receptacle.

Figure 2 is a plan of the conveyer of Fig. 1.

Figure 3 is a perspective of the detached cross-tie bar of the carriage frame.

Figure 4 is a perspective of the separated brick tray and its covering receptacle.

Figure 5 is a side elevation of the conveyer; showing a batch hopper.

Figure 6 is a perspective of the detached batch hopper.

The present invention includes a carriage C with which is combinable adaptable receivers which vary according to the nature of material to be handled; the receivers being considered as interchangeable bodies readily attached to and removed from the chassis of the carriage. Each of the divers bodies or receivers is adapted for bodily removal by any suitable means whereby the body can be carried to a remote place of load discharge.

The carriage includes a stout frame having side girders 2 firmly connected by front platform 3; the rear ends of the girders being connectable by a movable cross-tie or bar 4 adjustable across the rear ends of the girders and having end yokes 5 to drop over the girders at keepers 6. Thus when the cross-tie is removed the rear end of the frame is open so that it can be pushed back to encompass a previously detached, loaded receptacle.

The girders have outboard, longitudinal guard strips 8 with bearing cheeks 9. Isolated side wheels 10 are hung on stub shafts 11, between the cheeks and their respective girders. The wheel shafts do not reach across the frame and this has a clear body space between the girders. To facilitate making short turns, front steering wheels 12 are disposed under the platform 3.

To lift a loaded body onto and from the chassis a crane having a column 13 and an extensible pole 14 is mounted on the platform and suitable means, as a worm-gear and pinion device 15, is provided to extend or retract the pole.

The crane has a suitable hoist tackle 16 operative by a drum mechanism 17, or otherwise as desired.

In Figs. 1 and 4 is shown a receiving body structure including a tray 20 having a flat bottom and upturned side flanges 21; the bottom of the tray having longitudinal reinforcing bars 22 and cross-bars 23 which are turned up at the ends 24 to stay the flanges. The upturned corner ends 24 have bights 25 for tackle attachment.

Thus building blocks, or bricks, or other elements may be carefully stacked up on the tray, either at factory, or at a vehicle unloading station, or at a street curb, in readiness to be lifted onto the backed up chassis.

The tray forms the bottom of a covering receptacle which, in Fig. 4, includes a set of corner stiles 26 bent down from fixedly lapped crossing diagonal rods 27 provided with a hitch coupling means, here shown as a ring 28 at the interconnection of the rods. The lower ends of the stiles 26 have eyes 30 each with safety hooks 31 to grapple the bights 25 of the tray. The walls of the covering receptacle R consist of lattice-panels 32, one of which is openable or removable from keepers 33.

Therefore, after a tray, of which a number may be employed in rotation while detached from the carriage, has been loaded at the loading station then the carriage is backed about the tray with the opened side of the suspended receptacle R passing along the sides of the load on the tray. When the stack is within the receptacle the open side is closed and the tackle 16 is slacked to lower the receptacle so that the hooks 31 can

be connected to the bights 25 of the tray. After this connection, the tackle hoists the loaded receptacle and tray to a level above the carriage frame and rests 35 are swung about their pivots across the frame to receive the tray when it is lowered by the tackle 16. The rests 35, as shown in Figs. 2 and 5, comprise flat bars each having one end pivoted on its respective side of the frame 2 and are adapted to be swung across from side to side as in Fig. 2, under the tray 20.

The loaded carriage can now be rolled to any desired place or unloading position and the loaded tray lifted off by the tackle and the covering receptacle R disconnected therefrom, opened and pulled away by and with the carriage, which is run for another loaded tray.

Another form of receiver, consisting of a hopper H, Figs. 5 and 6, is adapted for the transportation of plaster, mortar, sand, gravel, crushed rock, or other mobile material. The hopper has longitudinally convergent side walls 40 which are extended in the form of a contracted spout 41 at one end. The top edges of the walls are well inturned at 42 to reduce oversplash.

The hopper has side members 43 to nest on the girders 6 of the carriage frame and when in place thereon is detachably mounted on or connected to pivot means, as a cross axle 44 which passes into holes 45 therefore in the side members 43, or other suitable means.

The spout 41 has an end wall 46 movable up or down to form a valve for controlling discharge from the spout. The valve may be set at any position by a locking shaft 47 and has a stop lug 48 to limit outward movement.

The hopper H has a set of eyes 49 for attachment of hoisting tackle, not shown, by which it can be carried to a point remote from the carriage, as, also, may the loaded, combined tray and covering receptacle R.

When it is desired to tilt the hopper H to discharge the load while the hopper is in place on the carriage, the crane tackle 16 is hitched to the eyes 49 most remote from the pivot 44 and the larger end of the hopper is pulled up to desired angle.

A side guard rail 50 is fixed on each girder of the carriage.

The hopper and its load may be raised from the carriage and placed upon a scaffold, when desired, by connecting the tackle 16 to the four eyes 49 and then extending and swinging the pole 14.

What is claimed is:

1. A conveying receptacle including a tray having bottom supporting bars with upturned ends having eyes, a cage having corner alining bars with the said ends having eyes at their lower ends, and safety hitches for detachably connecting the tray to the eyes of the corner bars of the cage.

2. A conveying receptacle including a flat, tray bottom having upturned side flanges, reinforcing cross-bars upon which the bottom is secured and by which it is spaced up from a resting surface to afford ventilation; the cross bars at the ends of the tray bottom having upturned ends provided with tackle eyes.

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