H. D. PRATT.

TRANSFER UNLOADER FOR DUMP WAGONS.

APPLICATION FILED NOV. 22, 1913.

1,177,353.

Patented Mar. 28, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

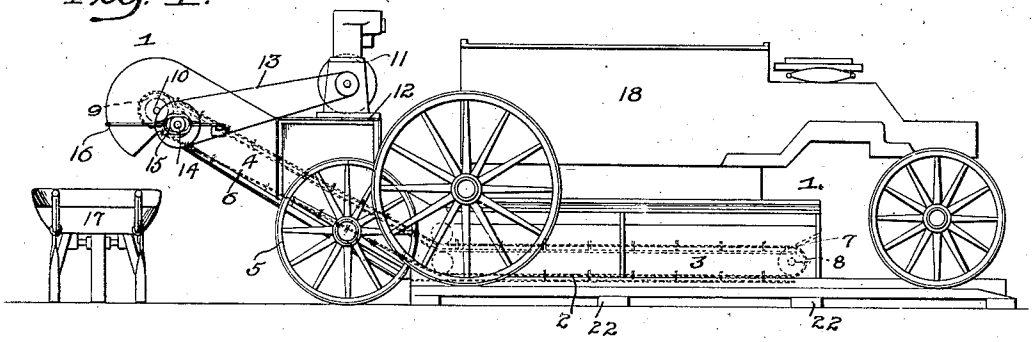


Fig. 2.

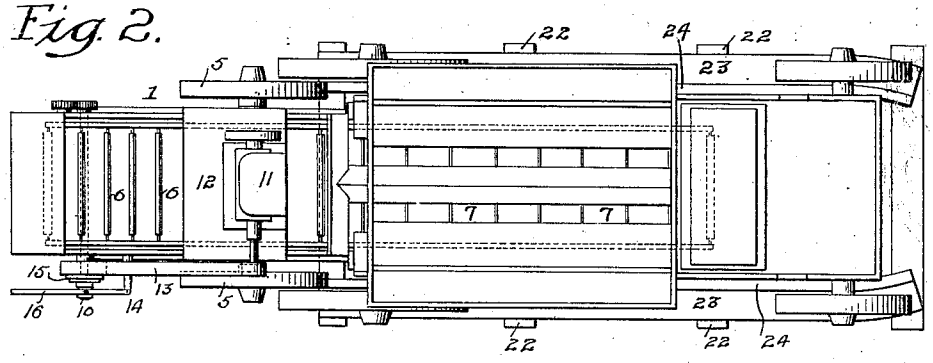


Fig. 3.

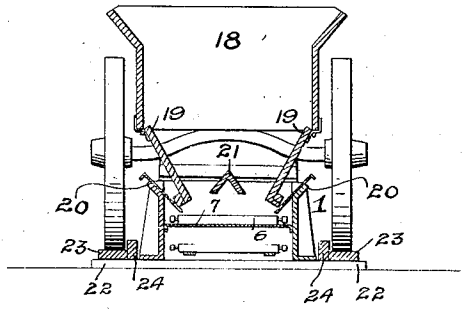


Fig. 7.

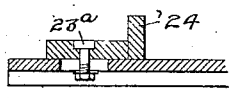
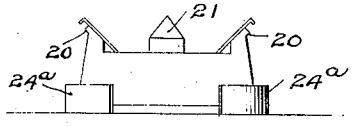


Fig. 8.



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2 SHEETS—SHEET 2.

Fig. 4

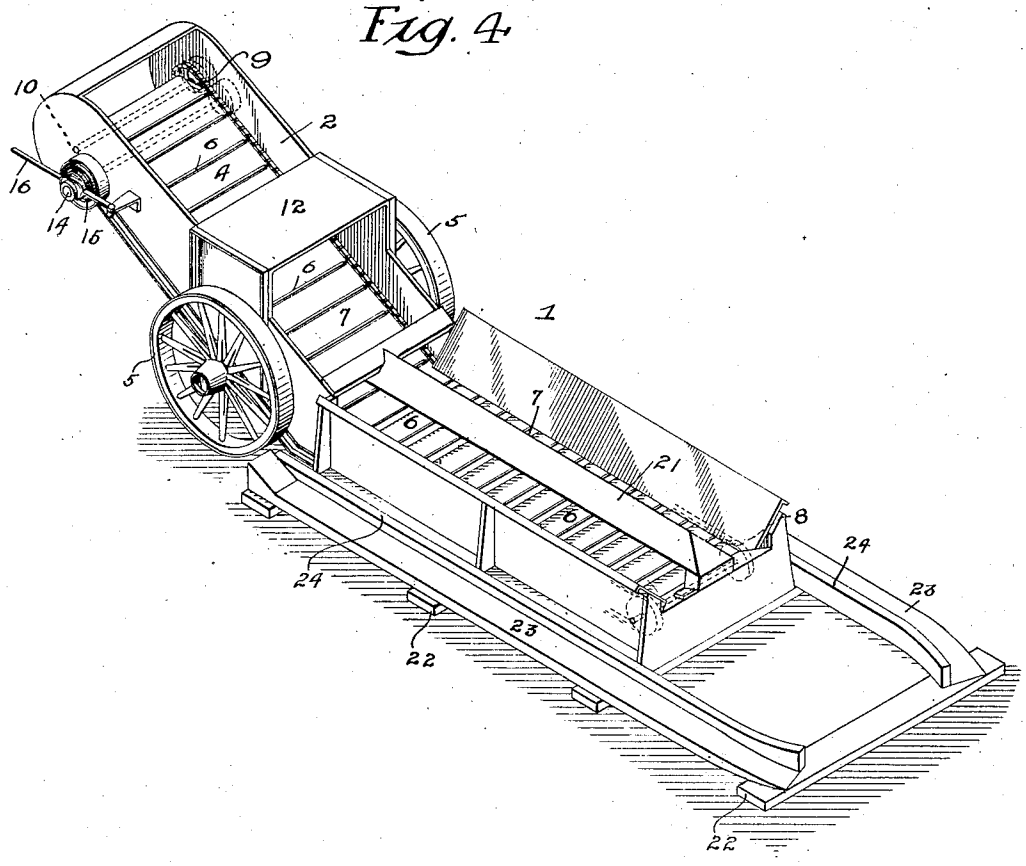


Fig. 5.

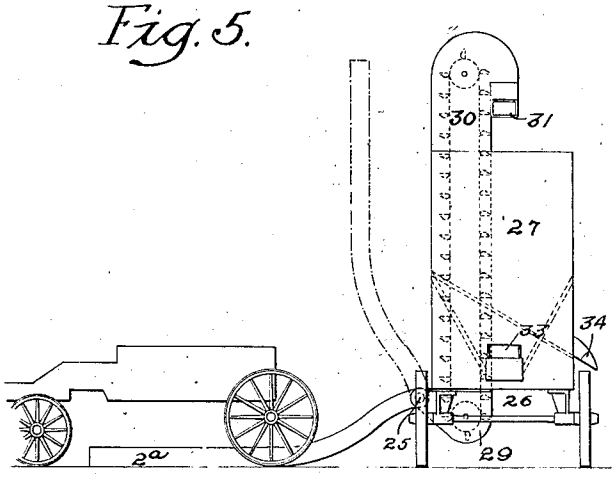
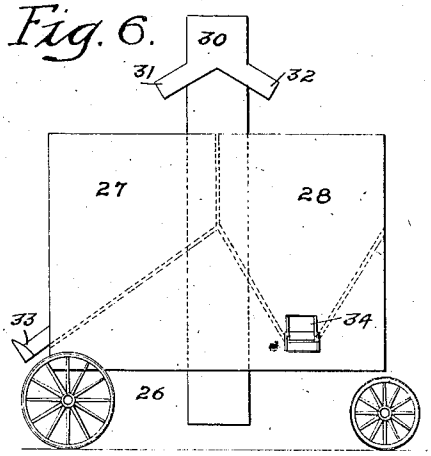


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TRANSFER-UNLOADER FOR DUMP-WAGONS.

1,177,353. Specification of Letters Patent. **Patented Mar. 28, 1916.**

Application filed November 22, 1913. Serial No. 802,451.

To all whom it may concern:

Be it known that I, HOWELL D. PRATT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Transfer-Unloaders for Dump-Wagons, of which the following is a specification.

My invention relates to certain improvements in the handling of stone, sand, and like material, used, particularly, in the construction of roadways and concrete structures.

One object of my invention is to dispense with the manual handling of the material after it is discharged from a wagon.

A further object of the invention is to provide a conveying apparatus so that the material can be dumped directly from a wagon onto a conveyer and discharged into a wheel-barrow, the chute of a concrete mixer, or into bins from which it can be removed as desired.

These objects I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a side view of my improved transfer unloader, showing a bottom dump wagon in position to discharge a load and a wheel-barrow in position to receive the material from the conveyer; Fig. 2, is a plan view, the wheel-barrow being omitted; Fig. 3, is a transverse sectional view through the conveyer and the wagon, showing the pivoted bottom dump forming a portion of the hopper for the conveyer; Fig. 4, is a perspective view of the transfer re-loader, the engine being omitted; Fig. 5, is a side view illustrating the invention to be used in connection with an elevator and bins; Fig. 6, is an end view of Fig. 5; Fig. 7, is a view showing an adjustable rail for wagons of different gage; and Fig. 8, is a view of a modification.

Referring to the drawings, 1 is the transfer unloader consisting of a conveyer 2 having a horizontal section 3 and an inclined section 4. In the present instance, the structure is mounted on wheels 5 and is so balanced that it can be moved to any point desired by raising the horizontal section 3.

The conveyer, in the present instance, consists of two chains adapted to guideways in the frame, and cross bars 6 arranged at intervals and forming pushers which slide on a steel trough 7, but a belt or other form of conveyer may be used without departing from the essential features of the invention. The chains pass around sprocket wheels 8 at the outer end of the horizontal section 3 and sprocket wheels 9 on a shaft 10 at the upper end of the conveyer, and this shaft is driven from any suitable motor, such as a gasolene engine or electric motor. In the present instance, a gasolene engine 11 is mounted on a platform 12 and on the engine shaft is a sprocket wheel around which passes a chain 13 which also passes around a sprocket wheel on an intermediate shaft 14 which is geared to the shaft 10, through a clutch 15 controlled by a lever 16 which is located in position to be actuated by a laborer handling the wheel-barrow 17, shown in Fig. 1. The discharge end of the conveyer is located sufficiently above the ground that the ordinary standard wheel-barrow or other carrier can be placed under it to receive material from the conveyer.

18 is an automatic dump wagon of the usual form having a bottom discharge.

19, 19 are the hinged sections of the bottom and, in order to provide a hopper to direct material onto the conveyer, the side walls of the conveyer frame are flared, as at 20, to form the lower portion of the hopper and act as a stop for the bottom sections 19 of the wagon. In some instances, a breaker 21 may be longitudinally arranged on the unloader directly over the conveyer so as to carry a portion of the load when the contents of the wagons are discharged, to reduce the pressure on the conveyer, but this may be dispensed with if so desired.

The horizontal conveying section 3 is mounted on a base 22 of any suitable construction. This base rests directly on the ground and has a wheel guide 23 at each side of the conveyer, which supports the wheels of the wagon when it is placed in position over the conveyer. The guides have vertical flanges 24 and are shaped so as to form tapered guideways for the wheels so that, when the wagon is placed on the wheel guides, they will direct the wagon into the proper position above the conveyer and, when the bottom boards are dropped, they will form a continuation of the hopper and the load will be in position to be re-

moved by the conveyer and discharged into a wheel-barrow, or other receptacle, or directly into the chute of a concrete mixer, as desired.

The wheel guides may be made adjustable to accommodate wagons of different gage, as shown at 23ª, Fig. 7. In some instances the bottom portion of the wheel guides may be dispensed with, as in Fig. 8; the wheels in this instance resting directly on the ground and the side guides 24ª act to direct the wheels so that the wagon will be in the proper position above the conveyer.

In Figs. 5 and 6, I have illustrated the invention in connection with a receiving bin and elevator. The elevator section 2ª is made as in Fig. 1, with the exception that it is pivoted at 25 to the carriage 26 on which are mounted the bins 27 and 28. These bins are preferably of a sufficient size to hold several wagon loads of material and the conveyer discharges into the boot 29 of an elevator 30, which has two spouts 31 and 32 to direct the material, either into the bin 27 or the bin 28. The bin 27 has a pivoted discharge spout 33, and the bin 28 has a pivoted discharge spout 34, forming a gate in the present instance. The hoppers are located sufficiently above the ground that a wheel-barrow, or other carrier, can be adjusted under the sprouts in order to receive material therefrom.

In some instances, a carriage may have a single bin, but I prefer to use two bins, one for stone and the other for sand. In this instance, as well as in Fig. 1, the dump wagon is backed, or otherwise placed, onto the section 2ª and the pivoted bottom boards of the wagon form the hopper so that the conveyer can transfer the load into the boot of the elevator and the elevator will discharge its contents into either one of the bins, according to the material to be conveyed. Thus the wagon can be immediately unloaded without waiting for the material to be drawn off when needed.

This invention is particularly adapted for use in making roadbeds, or in laying streets, where it is required to handle a large quantity of broken stone, sand, or similar material.

The apparatus illustrated in Fig. 1, is located close to the concrete mixer and, instead of dumping the contents of the wagon directly onto the ground, the wagon is backed over the wheel guides so that it will be in position directly over the conveyer. Then the bottom is lowered and the sections of the bottom become the side walls of a hopper, forming a continuation of the flanges 20 of the conveyer. As the conveying mechanism is set in motion, it will remove the material and will elevate it at such a distance above the ground that a wheel-barrow can be readily filled at the discharge end of the apparatus. A clutch lever can be operated by the workman handling the wheel barrow, so that the elevator can be stopped and started as one wheel-barrow after another is loaded. The contents of each wheel-barrow can be discharged directly into the pivoted chute of the concrete mixer which, after receiving a certain amount of material, is raised so that it may discharge its contents into the mixing chamber. In some instances, the conveying apparatus may be located so as to discharge directly into the chute of the concrete mixer, but I prefer to have them independent as the material must be mixed in the proper proportion and the present method is to measure the material by wheel-barrow loads.

I claim:—

1. The combination in a transfer unloader for dump wagons, of a portable frame arranged to be located on the surface of a roadway and having wheel guides on each side thereof which are arranged to support the wheels of a wagon; a narrow endless conveyer having a longitudinal section and an inclined section, the horizontal section extending between the wheel guides and arranged to receive material from a wagon located on said guides, the horizontal section being above the surface of the wheel guides; and a frame for the horizontal portion of the conveyer having flared sides arranged to guide the material discharged from the wagon onto the conveyer.

2. The combination in a transfer unloader for dump wagons arranged to be located on the surface of a roadway, of a frame having wheel guides for the dump wagon; an endless belt conveyer having guides for the conveyer so that it will travel horizontally over the frame, said conveyer being less in width than the distance between the wheels of the wagon; side flanges; and a central breaker on the horizontal portion of the apparatus arranged to guide the material to be dumped from the wagon into the conveyer.

In testimony whereof, I have signed by name to this specification, in the presence of two subscribing witnesses.

HOWELL D. PRATT.

Witnesses:
Jos. H. Klein,
Wm. A. Barr.