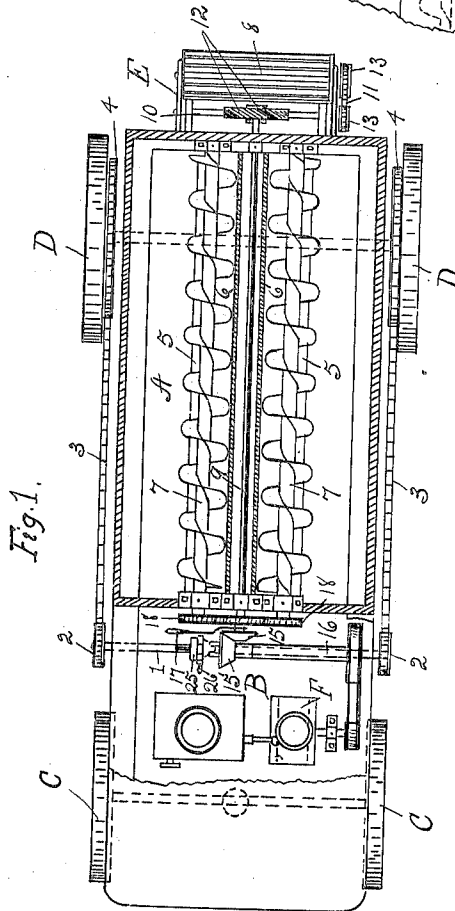
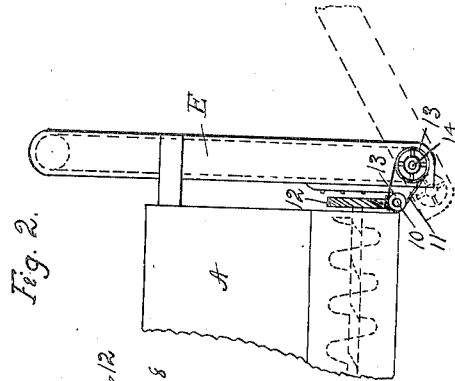
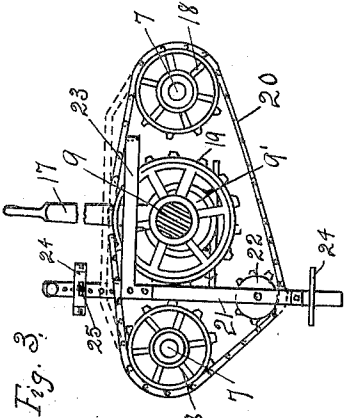
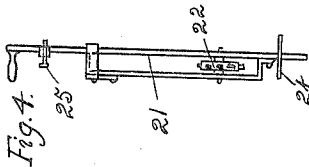
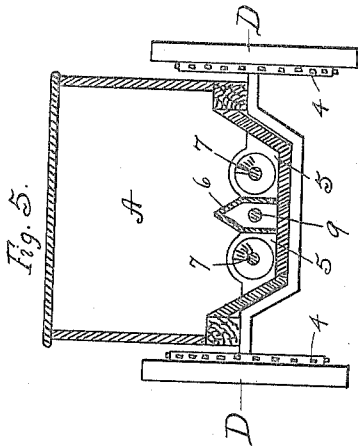


No. 802,698.

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B. KERN, JR.
DUMPING WAGON.
APPLICATION FILED JAN. 27, 1905.



WITNESSES

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BERNARD KERN, JR., OF TOLEDO, OHIO.

DUMPING-WAGON.

No. 802,698.

Specification of Letters Patent.

Patented Oct. 24, 1905.

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To all whom it may concern:

Be it known that I, BERNARD KERN, Jr., a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Dumping-Wagons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to mechanically-operated dumping-wagons of the class adapted either for separate use or for use in connection with street-sweeping machines, threshing-machines, or the like for receiving the sweepings or threshed product thereof; and it has for its object the provision of improved means for automatically dumping or unloading the contents of a wagon or other receiving-receptacle.

The mechanism, operation, and arrangement of the parts comprising my invention are fully described in the following specification, and shown in the accompanying drawings, in which—

Figure 1 is a plan view of my improved machine, with part in horizontal cross-section to show the internal arrangement of the parts. Fig. 2 is a side elevation of the adjustable conveyer at the rear of the machine. Fig. 3 is a detail front view of the conveyer-controlling mechanism. Fig. 4 is a side elevation of the chain-guiding member shown in Fig. 3, and Fig. 5 is a transverse vertical section of the receiving-bin of my machine.

Referring to the drawings, A represents the receptacle or receiving-bin of my invention, and B the front platform, both of which are supported upon and made portable by the two front wheels C and the two rear wheels D. At the rear of the receptacle A is pivotally mounted the adjustable conveyer or carrier E, by means of which the contents of the receptacle A when deposited thereon, as hereinafter described, may be transferred to a dump-pile or other suitable depository. Mounted on the platform B is an engine F, which generates power for rotating the shaft 1, which in turn communicates motion to the rear drive-wheels D for propelling the machine through the medium of the sprockets 2 on the ends of said shaft, the chains 3, and

large sprockets 4, secured to the inner sides of said wheels.

The lower portion of the bin A is longitudinally contracted and is formed into two parallel trough-like portions 5 by reason of the frame 6 being secured to the bottom of the bin in central longitudinal position, as shown in Fig. 5. Mounted longitudinally in each of the troughs 5 of the bin A in suitable bearings provided in the opposite ends thereof is a worm-wheel 7, which is adapted to feed the matter contained in the receptacle or bin through a suitable opening (not shown) provided in the rear thereof in alignment with said worm-wheels and to deposit it on the adjacent end of the conveyer E when said conveyer is adjusted in proper position. An endless carrier-apron 8 connects suitable rollers at each end of the conveyer-frame E and is adapted to carry the deposits to and discharge them over the free end thereof upon a dumping-pile or in any other suitable place. Power is transmitted to the apron 8 through the shaft 9, which is mounted longitudinally within the frame 6, the counter-shaft 10, and the chain 11, said shafts having the meshing spiral gears 12 mounted thereon and said chain connecting the sprocket-wheels 13 13, which are mounted on the ends of the shaft 10 and the lower roller-shaft 14 of the conveyer, as shown in Figs. 1 and 2. A bevel-gear 15 is mounted on the forward end of the shaft 9 and meshes with the companion bevel-gear 15', from which it receives its power. The bevel-gear 15' is keyed to a sleeve 16, which is mounted loosely on the shaft 1, whereby it is permitted to turn independently thereof and is adapted to receive its power from the engine F by any suitable connection therewith. To enable the bevel-gear 15 to be thrown into and out of engagement with the gear 15', as it may be desired to operate the conveyer-apron 8 or worm-wheels 7, the forward end of the shaft 9 is mounted in an eccentric bushing 9', which bushing has its movement controlled by the lever 17, which has its lower end provided with a sleeve surrounding said bushing, as shown in Fig. 3.

The worm-wheels 7 7 have a sprocket-wheel 18 secured to each of their forward ends in transversely-aligning position with the sprocket-wheel 19, which is mounted on the forward end of the shaft 9 and are connected with each other and with the sprocket-wheel 19 by the endless sprocket-chain 20, as shown in Fig. 3, by means of which the worm-wheels

77 are rotated. In order to release the chain 20 from meshing engagement with the sprocket 19, when it is desired to operate the conveyer-apron 8 independently of the worms 7 7 for the purpose of freeing said apron of dirt deposited thereon just prior to the stopping of the rotation of said worms, I provide a vertically-reciprocatory member 21, which carries an idler-pinion 22 at its lower end for engaging the lower inner side of the chain 20 for tightening the same. A horizontally-disposed transversely-projecting arm 23 is also carried by the member 21 in position to engage the upper inner side of the chain 20 on either side of the sprocket 19, whereby said chain may be lifted out of meshing engagement therewith when the member 21 is raised, thereby permitting the sprocket 19 and shaft 9 to have a movement independent of the worm-wheels 77. The member 21 is guided in its vertical movement by means of the guide-pieces 24 24, through which it passes and which are secured to the front of the bin A, and is retained in adjusted position by means of the pin 25, which passes through alining apertures provided therein and in the upper guiding-piece 24.

For the purpose of rotating the shaft 1 and transmitting motion to the rear drive-wheels D for propelling the machine by power generated by the engine F, I provide a clutch-sleeve 25, which is feathered to the shaft 1 and adapted to be moved longitudinally thereof by an oscillation of the lever 26 to have its side engage in any suitable manner with the contiguous end of the driven sleeve 16, whereby the shaft 1 is rotatable.

The operation of my invention is as follows: When it is desired to unload the contents of the bin A, which have been deposited therein in any suitable manner, the lever 17, connecting with the eccentric bushing 9' on the shaft 9, is moved in the proper direction to throw the bevel-gear 15 in meshing engagement with the driving bevel-gear 15' on the revolving sleeve 16, thereby communicating motion to the shaft 9 and through it to the counter-shaft 10 and conveyer belt or apron 8, the latter being first adjusted to the desired slant. The worm-wheels 7 7 are then set in motion by the lowering of the member 21 to permit the sprocket-chain 20, connecting the sprockets 18 18, to engage the rotating sprocket-wheel 19 on the shaft 9, thus causing a steady feed of the contents of the bin A to fall upon the rear end of the conveyer-apron 8 and be discharged by it as desired. Should the unloading operation be stopped before the contents of the bin A have been entirely discharged therefrom, the rotation of the worms 7 7 should first be stopped by the raising of the chain 20 from engagement with the driving-sprocket 19, so as to stop the feed of said worms and at the same time permit the conveyer-apron to revolve to entirely discharge

its load. The propelling of the machine is accomplished by throwing the clutch-sleeve 25 into engagement with the contiguous notched end of the sleeve 16, thus communicating motion to the sprocket-chains 3 and drive-wheels D.

It is obvious that such changes in the form, proportion, and minor details of construction of the parts as fairly fall within the scope of my invention may be made without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the class described, the combination of a receptacle or bin having an adjustable conveyer pivotally mounted to the rear of the receptacle or bin and having an endless conveyer-apron thereon, one or more worm-wheels mounted longitudinally in the bottom of said receptacle or bin and having their rear ends terminating adjacent to the lower end of the conveyer for discharging the contents of the receptacle thereon, a driving-shaft in advance of the receptacle or bin, a counter-shaft disposed longitudinally of the receptacle or bin and adapted to communicate motion from the driving-shaft to the conveyer-apron, connection between said counter-shaft and worms, and mechanism adapted to be adjusted to cause said worm-wheels and conveyer-apron to operate in unison or said conveyer-apron to operate alone.

2. In combination, a portable receptacle having its lower portion contracted to form a trough, an adjustable conveyer-frame secured to the rear of the receptacle and having an endless conveyer-apron thereon, power means in advance of said receptacle, a shaft mounted longitudinally of the receptacle and adapted to receive rotation from said power means, means connecting said shaft and conveyer-apron for operating the latter, a plurality of feed-worms in said receptacle for feeding the contents thereof to said conveyer, a sprocket-wheel secured to each feed-worm and to said shaft in alining position, an endless chain connecting said sprocket-wheels, and means for throwing said chain into or out of engagement with the sprocket-wheel on said shaft for the purpose described.

3. In a wagon, a receptacle, a conveyer-apron adjustably mounted at the rear of said receptacle, a driving-shaft mounted in advance of the receptacle and having a bevel-gear thereon, means for imparting rotation to said shaft, a driven shaft having one end terminating adjacent to the conveyer-apron and its other end provided with a bevel-gear adapted to mesh with the gear on the driving-shaft, means for connecting said driven shaft and conveyer-apron for operating the latter, an eccentric bushing forming the bearing for the forward end of the driven shaft whereby its

gear may be thrown into or out of mesh with the gear of the driving-shaft, one or more feed-worms journaled within said receptacle for feeding its contents to the conveyer or apron, and connection between the driven shaft and feed-worms for imparting rotation to the latter.

4. The combination in a dumping-wagon, of a receptacle, a conveyer-apron secured to the rear of the receptacle a shaft in advance of said receptacle, a sleeve loosely mounted on said shaft, means for rotating said sleeve, connection between said shaft and the driver-wheels of the wagon for imparting motion to

the latter, a clutch mechanism on said shaft adapted to be moved to engage said sleeve and rotate said shaft, feed-worms mounted in said receptacle for feeding the contents to said conveyer-apron, means for imparting motion to said apron from said sleeve, and means for imparting motion to said worms.

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

BERNARD KERN, JR.

Witnesses:

C. W. OWEN,
CORNELL SCHREIBER.