

Nov. 24, 1925.

1,563,202

L. E. LENTZ

APPARATUS FOR USE IN REPAIRING ROADS

Filed July 13, 1923

2 Sheets-Sheet 1

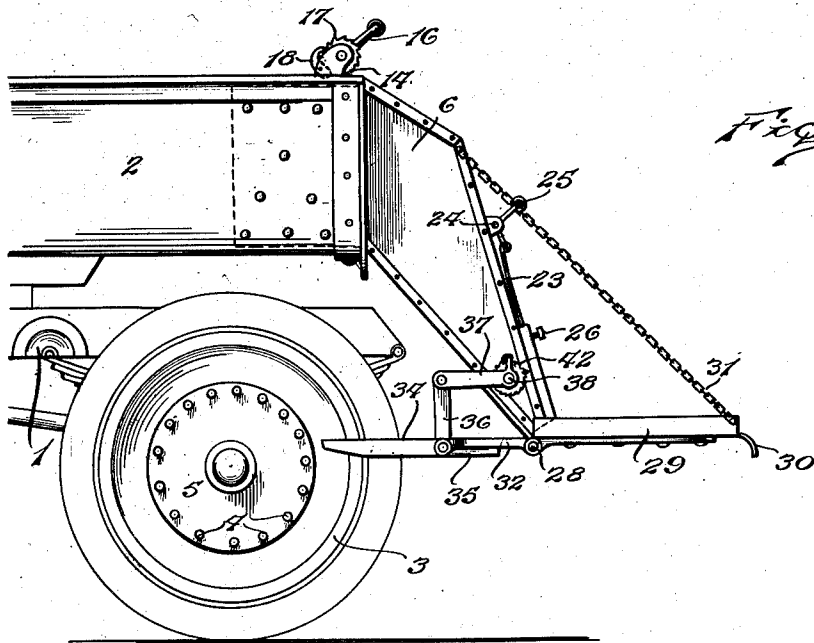


Fig. 1.

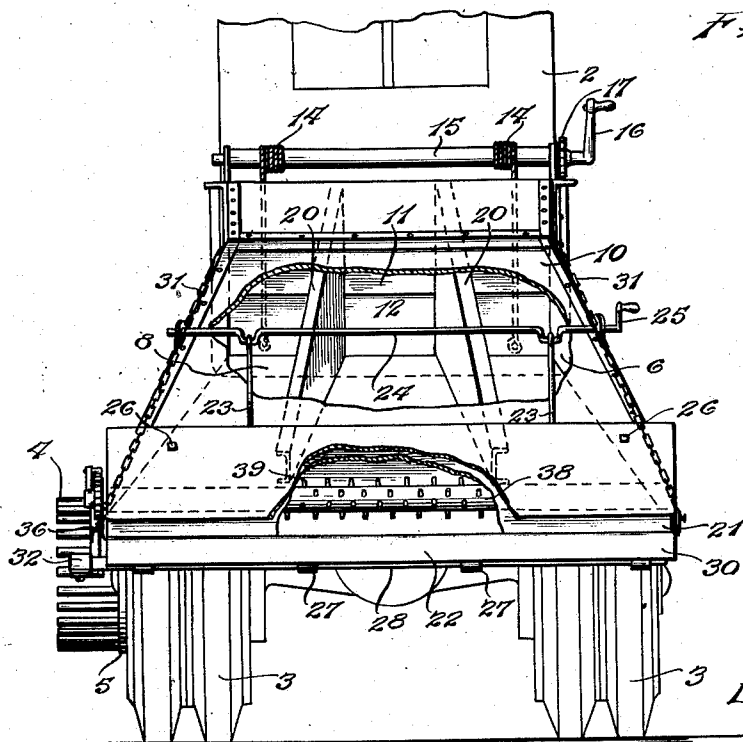


Fig. 2.

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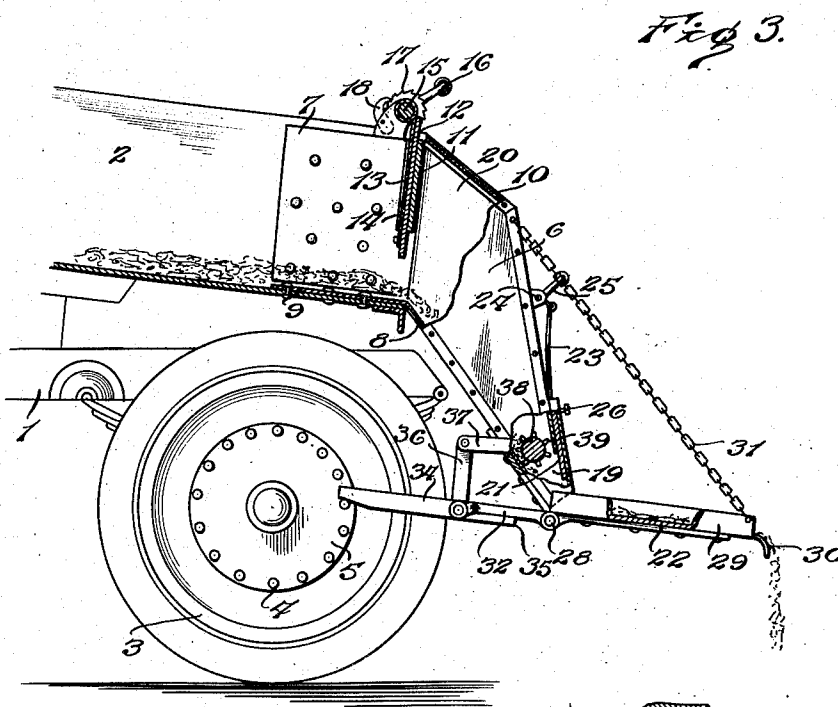
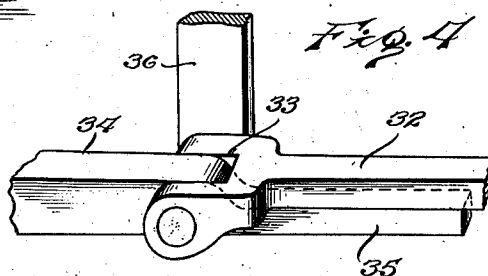
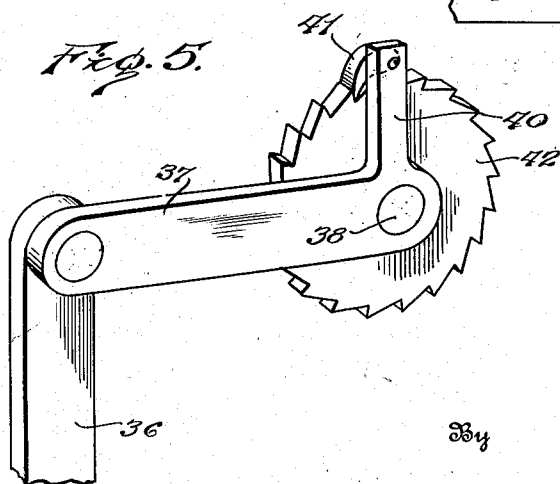
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# APPARATUS FOR USE IN REPAIRING ROADS

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2 Sheets-Sheet 2



Inventor

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By

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## UNITED STATES PATENT OFFICE

LELAND E. LENTZ, OF DELPHOS, OHIO.

APPARATUS FOR USE IN REPAIRING ROADS.

Application filed July 13, 1923. Serial No. 651,319.

*To all whom it may concern:*

Be it known that I, LELAND E. LENTZ, a citizen of the United States, residing at Delphos, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Apparatus for Use in Repairing Roads, of which the following is a specification.

The object of this invention is to provide a simple mechanism which may be secured to the rear delivery end of a truck and operated by the travel of the truck to spread material for the purpose of resurfacing or repairing macadam roads. The invention also seeks to provide novel means for depositing the material and novel means for maintaining the material in condition to be deposited and includes means whereby the quantity of material deposited may be easily regulated. Other objects of the invention will appear in the course of the following description.

In the accompanying drawings:

Figure 1 is a side elevation of my improved apparatus showing the same in position upon a truck and in inoperative condition;

Fig. 2 is a rear elevation partly broken away;

Fig. 3 is a view, partly in side elevation and partly in longitudinal section, showing the mechanism arranged for operation;

Fig. 4 is an enlarged detail perspective view of a portion of the actuating mechanism, and

Fig. 5 is a detail perspective view of a part of the means for actuating the agitator or stirrer.

The truck may be of any preferred or known type including a frame 1 and a dumping body 2 mounted upon the frame. In carrying out my invention, I secure to one of the rear wheels 3 of the truck a series of pins or tappets 4 which are arranged concentrically about the axle of the wheels and may be secured thereto in any convenient or preferred manner, the present illustration disclosing a circular plate 5 which is secured rigidly to the side of the wheel and carries the pins or tappets adjacent its circular edge. I also secure to the rear end of the body 2 a hopper which includes side plates 6, the main portions of said plates extending downwardly and rearwardly from the body and diverging, as shown clearly in Fig. 2. The upper forward ends

of these side plates are extended in the form of wings 7 which are adapted to extend into the body and be rigidly secured to the sides of the same, as will be readily understood upon reference to Fig. 3. The side plates are connected by a bottom plate 8 which may likewise have a forward extension 9 riveted or otherwise rigidly secured upon the bottom of the truck body, and a top plate 10 which is secured to and extends between the upper edges of the side plates. There is also a check plate 11 secured to and extending between the upper rear corner portions of the wings 7 and terminating short of the bottom extension 9 whereby an opening is provided through which the material may pass from the body 2 into the hopper. An end gate 12 is slidably mounted at its ends between the check plate 11 and cleats 13 secured to the wings 7 adjacent but in advance of the check plate, and this end gate has secured thereto the lower ends of cables or other flexible suspending devices 14 which extend upwardly and are secured to and wound upon a windlass or winding rod 15 which is mounted in suitable bearings upon the wings 7 and is equipped at one end with a crank or other form of handle 16, as will be readily understood. Adjacent the handle a ratchet 17 is fixed upon the turning rod or windlass 15, and a pawl 18 is mounted upon the adjacent wing 7 or the bearing for the winding rod to engage the ratchet so as to prevent reverse movement thereof and hold the end gate in any position to which it may be adjusted. I am thus enabled to readily regulate the quantity of material passing into the hopper so that waste of the material and choking of the hopper will be avoided.

The bottom and rear walls of the hopper converge downwardly so as to provide a restricted discharge passage, as shown at 19, and within the hopper partitions 20 are provided, the said partitions diverging downwardly and rearwardly so that the material will be spread effectually as it flows through the hopper and will be delivered evenly through the entire extent of the discharge passage. Mounted in any convenient manner upon the rear side of the hopper so as to slide thereon is a cutoff 21 which may be set so as to uncover the discharge opening to a greater or less extent and thereby regulate the flow of material to the dis-

tributing pan 22. This cutoff plate 21 may be supported by links or other suspending devices 23 extending from the cutoff to a crank shaft 24 which is mounted in suitable bearings upon the rear side of the hopper and is equipped at one end with a crank or other form of handle 25. Set bolts 26 are mounted in the guides for the cutoff and are adapted to bind against the latter so as to hold it in a set position.

Extending across the lower end of the hopper and mounted in suitable bearings 27 on the under side thereof is a rod or shaft 28 by which the distributing pan 22 is pivotally mounted. This pan may conveniently consist of a metal plate having its end edges upturned to provide retaining flanges 29 and having its rear edge turned downwardly to provide a lip 30 over which the material may flow to be deposited upon the surface of the road. The pan is supported in its lowest position by chains or similar elements 31 secured at their opposite ends respectively to the outer rear corners of the pan and to the hopper at any convenient points of the same. At one end of the distributing pan is provided a forwardly extending arm or bracket 32, the forward end of which is forked or bifurcated, as shown at 33, and within the fork or bifurcation I pivotally mount a lever 34 which has its front arm extending forwardly from the bracket or arm 32 and has its rear arm projecting under the said bracket, as shown at 35. It is to be understood that the rear end of the arm 32 is rigid with the pan so as to oscillate or rock with it about the rod or shaft 28, and it is immaterial whether the arm and the bearings for the pan turn loosely on the rod or are secured to it to turn therewith, the rod in the one case being fixed on the hopper and in the other case being journaled thereon. A link 36 is pivotally connected at its lower end with the lever in common with the pivotal connection between the lever and the arm 32, as shown in Fig. 4, and has its upper end pivoted to the forward end of a crank or rocking arm 37 which is fitted loosely on the end of an agitator shaft 38 which extends across the lower portion of the hopper at or immediately above the discharge passage 19 of the same. This agitator may be of any convenient form and is illustrated as consisting of a circular bar or rod provided with teeth or pins 39 throughout its surface. The rocking arm 37 is provided with a branch or offset 40 on which is pivotally hung a pawl 41 adapted to engage a ratchet disk 42 fixed concentrically upon the shaft 38.

The operation of the apparatus will, it is thought, be readily understood. The truck is loaded in the usual manner and, with the body in the normal horizontal posi-

tion shown in Fig. 1, the hopper and the distributing pan 22 will be so disposed that the lever 34 will be rearwardly beyond and out of the path of the tappets 4. When the truck has been driven to the point where the material is to be spread, the truck body is tilted, as shown in Fig. 3, to a sufficient extent to dispose the forward extremity of the lever 34 between two of the tappets 4 so that, as the truck is then backed to and over the worn surface, the rotation of the rear wheels and of the tappets will cause the tappets to successively impinge upon the top of the lever at the forward end thereof and consequently vibrate the lever. The vibration of the lever will be transmitted through the link 36, the arm 37, pawl 41 and ratchet 42 to the agitator so that it will be caused to rotate or rock step by step and thereby agitate the material flowing through the hopper so that it will be prevented from accumulating to choke the discharge passage of the hopper. The agitator shaft will remain at rest as the front end of the lever 34 rises but will be actuated on the reverse movement so that the material will be fed to the pan as the pan rises, the feed being retarded if not entirely cut off as the pan descends. When the backing of the truck causes a tappet to impinge upon the lever 34, the front end of the lever is obviously carried downwardly and, its rear end being in contact with the arm 32, the arm 32 will also swing downwardly about the center of the rod 28 and the pan will consequently be swung upwardly. When the tappet clears the lever, the pan will descend under its weight and the weight of the material therein to the extent permitted by the chains 31, the movement of the pan causing the material to escape over the lip 20 in a relatively thin stream. The downward movement of the pan obviously imparts return movement to the arm 32 and the lever 34 and brings the lever into position to be again actuated by the tappets 4. When the truck is being driven to the scene of operations, the distributing pan will be in a horizontal position, as shown in Fig. 1, so that the material cannot escape over the same except to the negligible extent which may be due to the vibration of the vehicle in traveling over the road, and this slight flow of the material may be prevented by lowering the cut-off plate 21 until its lower edge engages the surface of the pan, whereupon the material will be held in the hopper. Excessive flow to the hopper may also be cut-off by adjusting the end gate 12 in an obvious manner. The rapidity of discharge may be easily controlled by adjusting the end gate and the cut-off plate as well as by care in moving the truck body to the dumping position.

My device is exceedingly simple in its

construction and the arrangement of its parts so that it may be readily secured to any truck and is not apt to get out of order, while it will operate efficiently without requiring any great attention upon the part of the workers. The lever 34 which actuates the agitator is brought into or out of operative position by merely tilting the truck body to dumping position and, as this lever and the cooperating parts are arranged in advance of the point of discharge, it is not apt to be clogged by dust or particles of stone and will be in operative condition at all times. The weight of the forward arm of the lever overbalances the rear arm thereof so that, when the truck body is tilted, the lever will assume operative relation to the actuating tappets and will retain that relation notwithstanding its vibration as a result of its engagement by the tappets. Should the lever 34 from any cause be swung forwardly into the path of the tappets while the truck is being driven forward, the tappets will impinge against the under side of the lever and the lever will then merely rock about its pivotal connection with the arm 32 without imparting motion to the arm.

Having thus described the invention, what is claimed as new is:

1. A device for the purpose set forth comprising a hopper constructed to be secured to the discharge end of the tiltable body of a dumping vehicle to receive material from said body, a distributing pan mounted upon the delivery end of the hopper to receive material therefrom, and means to be operated by a wheel of the vehicle whereby to impart up and down motion to the pan relative to the hopper, said means being normally free of the vehicle wheel and being brought into engagement therewith by tilting of the body.

2. A device for the purpose set forth comprising a hopper to be secured to the discharge end of a tilting body of a dumping vehicle and receive material therefrom, a distributing pan attached to and projecting

rearwardly from the lower end of the hopper to receive material therefrom, an agitator within the hopper, a lever mounted below the hopper to be actuated by a ground wheel of the vehicle, and connections between the lever and the agitator and between the lever and the pan for transmitting the movement of the lever to the agitator and to the pan, the lever being normally inoperative and being moved into engagement with the ground wheel of the vehicle by the tilting of the vehicle body.

3. A device for the purpose set forth comprising a hopper to be secured to the discharge end of a tiltable dumping vehicle body, a distributing pan extending rearwardly from the discharge end of the hopper and receiving material therefrom and supported on the hopper for vertical rocking movement, a forwardly projecting bracket connected with the pan, and a lever pivoted between its ends upon said bracket and having its front end adapted when the vehicle body is in tilting position to be actuated by a wheel of the vehicle and having its rear end projecting under the bracket whereby to vertically vibrate the pan during rearward movement of the vehicle.

4. A device for the purpose set forth comprising a hopper to be secured to the discharge end of a tiltable dumping vehicle body, a distributing pan attached to the hopper and extending rearwardly therefrom to receive material from the hopper, an agitator within the hopper adjacent the discharge end of the same, a forwardly projecting operating arm connected with the agitator, a bracket extending forwardly below the hopper and connected with the pan, a lever pivoted between its ends to said bracket and having its front end adapted to be actuated by a wheel of the vehicle and its rear end extending under and adapted to impinge against the bracket, and a link connecting the lever with said forwardly projecting arm.

In testimony whereof I affix my signature.

LELAND E. LENTZ. [L. S.]