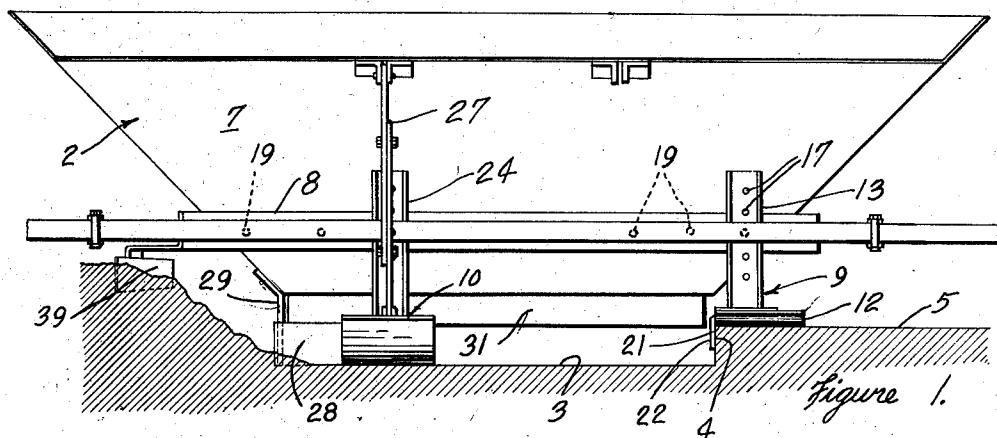
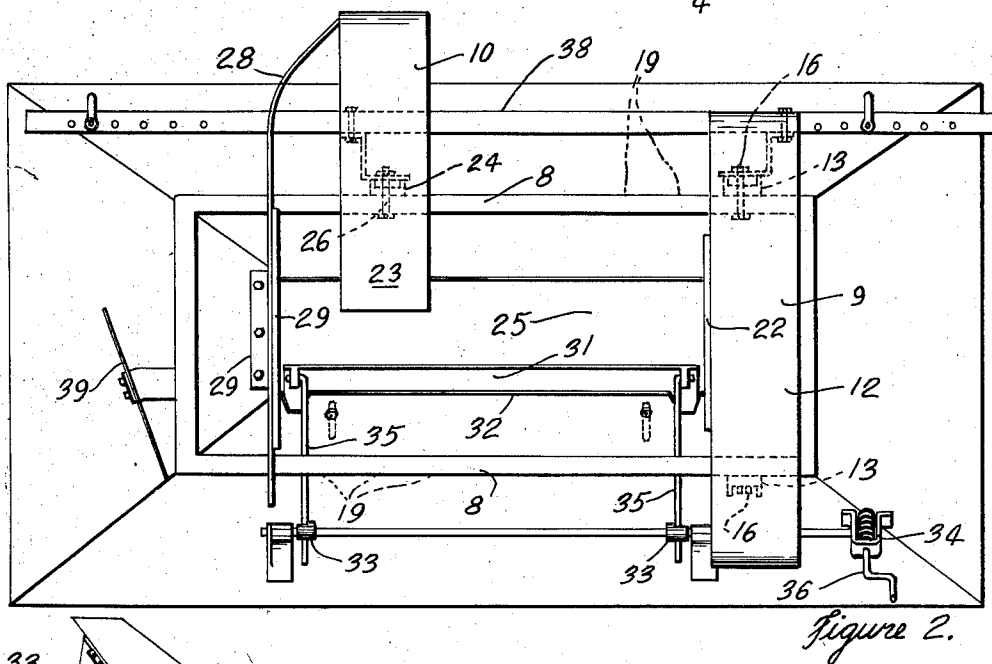
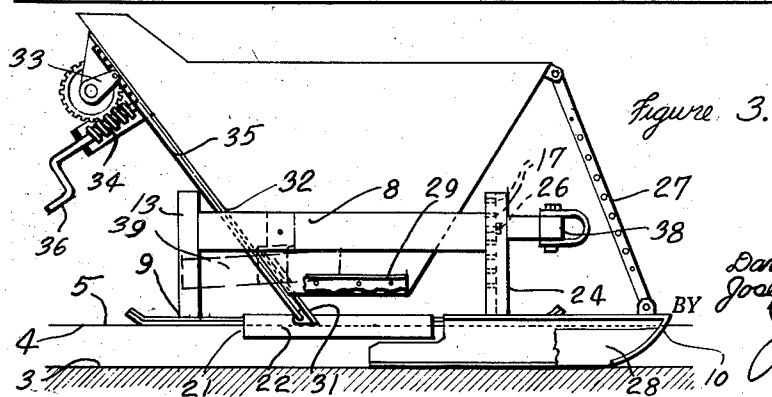


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SHOULDER SPREADER FOR ROADWAYS

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SHOULDER SPREADER FOR ROADWAYS

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10 Claims. (Cl. 94-44)

The invention relates to road building machinery and particularly to a means for building up roadways along the edges or shoulders thereof.

An object of the invention is to provide an apparatus of the character described having a material discharging capacity in excess of the quantity to be deposited so as to insure at all times freedom of flow during the normal advance of the apparatus over the road but at the same time the flow will be held to the desired amount by the road clearance of the orifice and the means provided on the machine for leveling the deposit.

Another object of the invention is to provide a machine of the character described having a material leveling means which is arranged to cooperate with the material discharge orifice to control the flow of material from the latter.

Still another object of the invention is to provide a road shoulder spreader in which the material discharge orifice is located in the bottom thereof whereby the material will be discharged directly downward.

A further object of the invention is to provide an apparatus of the character described which is arranged to be supported on a bed for the new fill as well as on the roadway.

A still further object of the invention is to provide a shoulder spreader which will be positively guided in respect to its position over the portion to be filled during the advance of the spreader thereover.

Yet another object of the invention is to provide an apparatus of the character described which is extremely simple and inexpensive in construction, may be readily adjusted to lay a fill of any slope, permits the ready interchange of parts, and is readily convertible for operation with or against traffic.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a front elevation of the apparatus of our invention showing it operatively disposed for spreading a road shoulder.

Figure 2 is a bottom view of the spreader.

Figure 3 is an end elevation of the spreader as shown in Figure 1.

In the embodiment of the invention illustrated the spreader 2 is shown in position for depositing material on the shoulder 3 of the roadway 5, the shoulder being depressed to define a sub-planar strip contiguous with the edge of the roadway. The spreader comprises a hopper 7 arranged in a frame 8 which is supported on runners 9 and 10. The runner 9 includes a shoe 12 and uprights 13 which extend upwardly from the shoe and are arranged for adjustable positioning to the frame at the front and rear sides of the hopper, the connection between the uprights and the frame being preferably by means of a bolt 16. The uprights are provided with vertically aligned holes 17, any one of which may be engaged by the bolt for obtaining different vertical positioning of the hopper with respect to the shoe. Also the frame 8 is provided with horizontally spaced openings 19 for engagement by the bolt, so that transverse adjustment as well as vertical may be effected between the hopper and the runner. The runner 9 is arranged to bear on the road portion 4 adjacent the edge thereof and means are provided, which are here shown preferably in connection with such runner, for engaging the side edge 21 of the road so as to hold the spreader in desired position over the depressed strip as the former is advanced thereover. As here shown such means comprises a guide plate 22 which is fixed to the shoe and extending vertically downward from the adjacent inner edge thereof.

The runner 10 is disposed at the end of the hopper opposite the runner 9, and as will be clearly noted from Figure 1 the shoe 23 of the runner 10 extends under the hopper and is arranged to ride in the bottom of the depression. With the runner 10 thus disposed in the depression the spreader may be properly supported for smooth traction over the area to be filled with the material from the hopper, and in order to permit the unobstructed flow of the material from the hopper orifice 25 to the road bed, the rear end of the shoe 23 preferably extends rearwardly only partially under the orifice. Attachment of the shoe 23 of the runner 10 to the frame is effected by means of an upright 24 which is fixed to the shoe and adjustably secured to the frame by a bolt 26 for variable vertical positioning in a manner similar to the connection of the uprights 13 with the frame. Since the shoe 23 is as here shown disposed no further rearwardly than the discharge orifice of the

hopper, the runner 10 is preferably supported exclusively at the front of the hopper. Therefore but one upright 24 is disposed at the front of the hopper as clearly shown in Figure 3. Preferably, in order to compensate for the omission of an upright at the rear, the forward end of the shoe is secured to the forward upper edge of the hopper by means of a link 27, the latter being of adjustable length to allow of variation in the vertical positioning between the hopper and shoe as aforesaid.

As an effective means for removing from in front of the advancing hopper, any earth which may have shifted back upon the strip from the loose embankment at the outer edge thereof, we provide a deflecting plate 28 which is secured to the hopper by means of a brace 29 and preferably affixed at its forward end to the corresponding end of the runner 10. The runner 10, as will be noted in Figure 2, is disposed appreciably inward from the outer end of the discharge orifice, and the deflecting plate extends from the runner to a point without said end of the orifice so that the material discharged from the hopper will not encounter the earth aforesaid.

The runners 9 and 10 are arranged for changeable positioning so that the spreader may be operated to advance in either direction on the same side of the road. This is enabled by the similarity of the runner attaching means at the ends of the frame. To effect an interchange of the runners the shoe 9 is moved laterally from one end of the frame to the other and reversed, while runner 10 is merely placed at the end from which the runner 9 has been removed.

The discharge orifice 25 of the hopper preferably comprises the entire bottom of the hopper and, being thus directly at the bottom of the hopper instead of at the side thereof, the material may thus flow straight downwardly upon the strip. Furthermore, with the orifice thus positioned it may be arranged to pass over the strip with all portions thereof in extremely close proximity to the surface of the strip. In this manner the orifice may be of relatively large size to permit the ready discharge of material from the hopper, but at the same time owing to the nearness of the entire orifice to the strip the flow will be governed to a great extent proportionately to the speed at which the hopper is advanced. A manual control for regulating the volume of material discharged from the hopper independent of the advance movement of the spreader is afforded by means of a gate 31 movable coplanar and along the inner side of the rear wall 32 of the hopper. Movement of the plate to effect the desired variation in the size of the opening and locking of the plate in said position is afforded through means of cranks 33 connected to the gate by means of link rods 35 and operatively associated with a worm gearing 34 which is mounted on the hopper and may be actuated by means of a handle 36. The links 35 which are disposed adjacent opposite ends of the gate are each adjustably connected to their associated crank arms whereby different variations in the positioning of the gate with respect to the orifice may be effected so as to thereby secure any desired slope of the fill surface. It is important to note that the gate projects downwardly from the hopper to an appreciable degree, proportionately to the closing of the orifice by the gate. In this way the bottom of the gate will provide an effective means for automatically levelling

the material as it is deposited on the strip to the desired depth and slope.

A draw bar 38 is secured to the upright members 13 and 24 in such manner as to allow lateral and vertical adjustment of the former. In order to fill in with earth from the embankment at the side of the strip any spaces along the side of the deposit on the strip, a deflecting member 39 is secured to the frame 8 at an end thereof adjacent the runner 10.

We claim:

1. An apparatus for depositing road material on a depressed strip having one side edge thereof contiguous with a roadway, comprising a hopper for the material having a discharge orifice thereacross, means to support the hopper over said strip for advancement therealong and deposit of material thereon and including a roadway engaging element, and guiding means comprising a flange depending from said element and engageable with said side edge for retaining said hopper over said strip in determined relation.

2. An apparatus for depositing road material on a strip disposed below the plane of and having a substantially vertical side edge defined by a side of a roadway contiguous therewith, comprising a hopper for the material having a discharge orifice thereacross, means to support the hopper including a roadway engaging element and a strip engaging element for advancement of the hopper along and the discharge of material on the strip, and guiding means secured to and depending from a portion of said first element and engageable with said vertical side edge for retaining said hopper over said strip in determined relation to said edge.

3. An apparatus for depositing road material on a strip at an edge of a roadway, comprising a hopper for the material having a discharge orifice arranged to extend transversely across the strip on the advance of the hopper thereover, means to support the hopper over said strip for advancement therealong and deposit of the material thereon and comprising a member adjacent one end of said orifice arranged to bear on the roadway, and a member adjacent the other end of the orifice arranged to bear on said strip, guiding means engageable with the side edge of said roadway for maintaining the hopper orifice in determined relation to said edge, and a deflector affixed to the apparatus ahead of said orifice for moving out of the path of the orifice any material in front thereof during the advance of the hopper over the strip.

4. An apparatus for depositing road material on a strip at an edge of a roadway, comprising a hopper for the material having a discharge orifice arranged to extend transversely across the strip on the advance of the hopper thereover, and means to support the hopper over said strip for advancement therealong and deposit the material thereon and comprising a member adjacent one end of said orifice arranged to bear on said roadway adjacent the forward and rear extremities of the hopper, and a member extending under the orifice from the front of the hopper and in spaced relation to and terminating substantially under the orifice.

5. An apparatus for depositing road material on a strip on the side of a roadway contiguous with an edge thereof, comprising a hopper for the material having a discharge orifice arranged to extend transversely across the strip on advance of the hopper thereover, means to support the hopper over the strip for advancement there-

along, a deflecting member in advance of the orifice for removing extraneous material lying thereon from the path of the material discharging from the orifice, and a second deflecting member to the rear of said orifice arranged to deflect material lying without the strip against the outer edge of the material deposited on the strip from the hopper.

6. An apparatus for depositing road material along a roadway, comprising a hopper for material and having a discharge orifice for discharging material onto the road, a support for said hopper including a pair of runners, and means for moving material from in front of the path of the orifice comprising a member secured to the forward end of one of said runners and extending rearwardly to adjacent one side of said orifice.

7. An apparatus for depositing road material comprising a hopper mounted for movement over a road surface and comprising a casing provided at its upper end with an inlet opening and with a pair of opposing transversely extending side walls convergently extended from said opening to define at the lower end of the casing a reduced discharge orifice from which the material is deposited onto the road, a plate disposed within said casing adjacent and substantially parallel to one of said side walls and movable into and in a manner regulating the size of said orifice and movable through said orifice and therebelow to cause a leveling on the road surface of material discharged through said orifice.

8. An apparatus for depositing road material on a shoulder contiguous with a side edge of a roadway comprising, a hopper for material and having an orifice thereacross for discharging material, means for supporting the hopper over said shoulder for advancement therealong and deposit of material thereon comprising, a shoulder engaging member, and a roadway engaging member, said roadway engaging member being spaced transversely from an end of said orifice to permit engagement and support thereof by said roadway while confining the deposit of material exclusively to said shoulder.

9. An apparatus for depositing road material on a shoulder contiguous with a side edge of a roadway comprising, a hopper for material and having an orifice thereacross for discharging material, means for supporting the hopper over said shoulder for advancement therealong and deposit of material thereon comprising, a shoulder engaging member, and a roadway engaging member, said roadway engaging member being disposed under substantially the full length of one side of the apparatus to provide a longitudinal support therefor and being spaced transversely from an end of said orifice to permit engagement and support thereof by said roadway while confining the deposit of material exclusively to said shoulder, said shoulder engaging member extending from adjacent the front end of the other side of the apparatus to adjacent the orifice to provide with said other member a transverse support for the apparatus and terminating at the rear thereof opposite the forward extremity of the orifice whereby deposit of material will be substantially free from engagement with said members.

10. An apparatus for depositing road material on a shoulder contiguous with a side edge of a roadway, a hopper for material having an orifice thereacross for discharging material, means for supporting the hopper over said shoulder for advancement therealong and deposit of material thereon comprising, a shoulder engaging member mounted at one side of the apparatus and adapted for movement in one direction, a roadway engaging member mounted at the other side of said apparatus and adapted for movement in a similar direction, and detachable mounting means for securing said members to the apparatus and permitting the interchange of said members to either side of the apparatus and the positioning thereof for moving in opposite directions so as to afford selective travel of said apparatus over a shoulder either in one or an opposite direction.

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