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3,230,845

SPREADER

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2 Sheets-Sheet 1

Fig. 1.

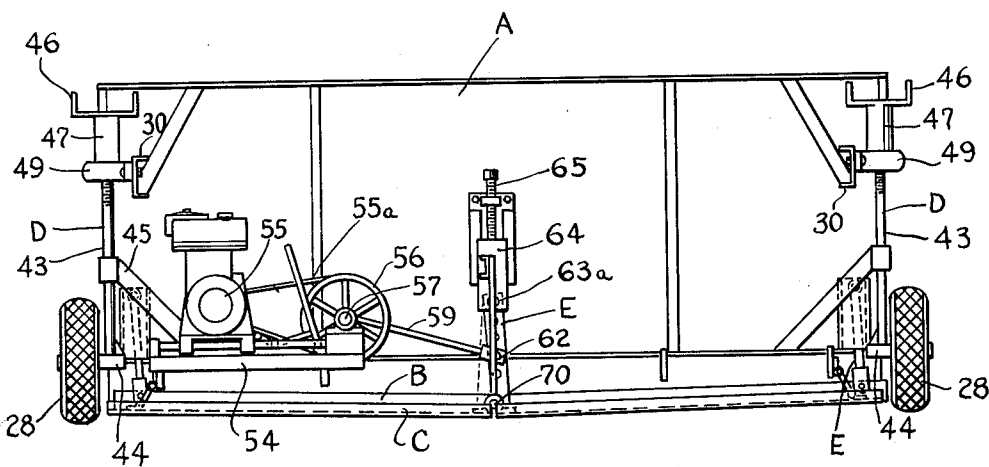
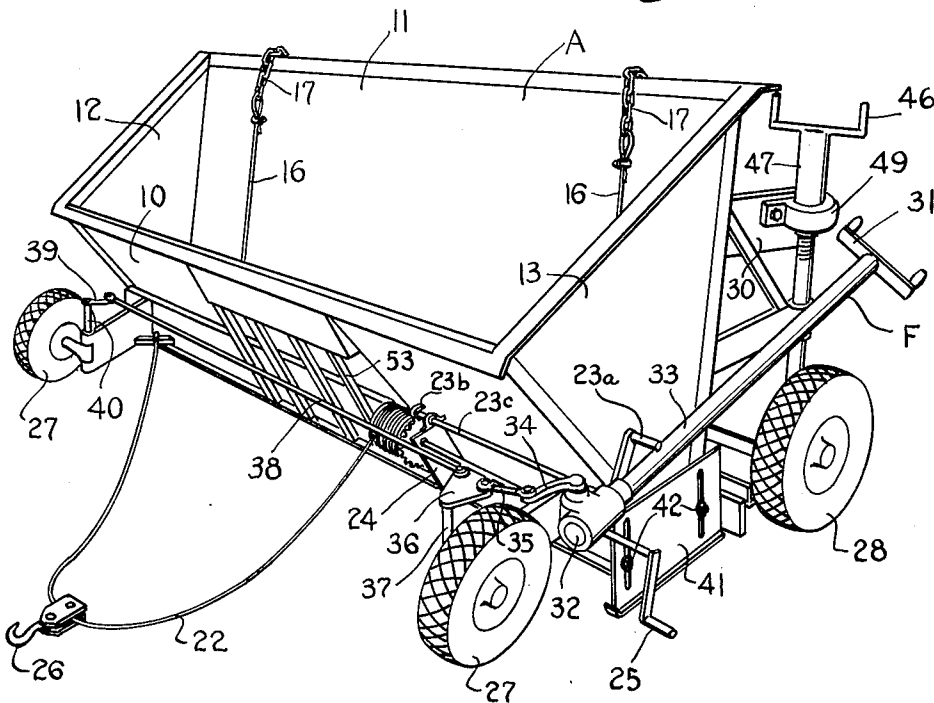


Fig. 2.

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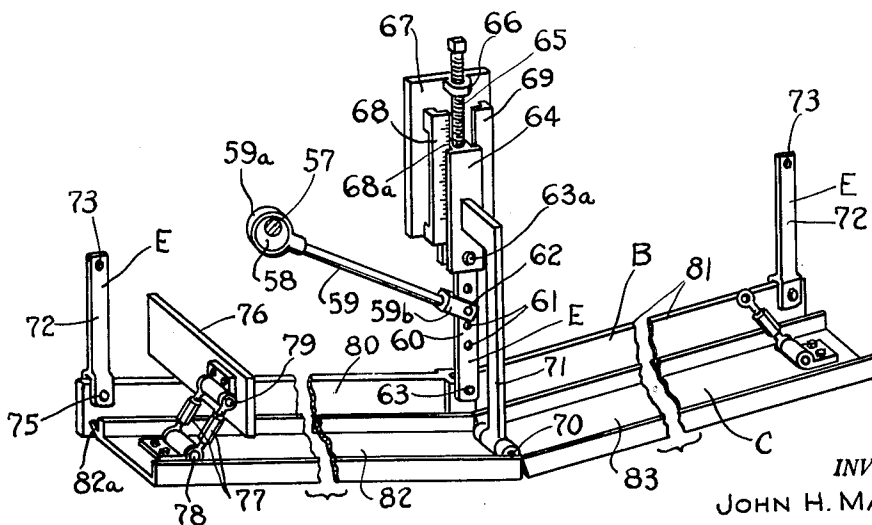
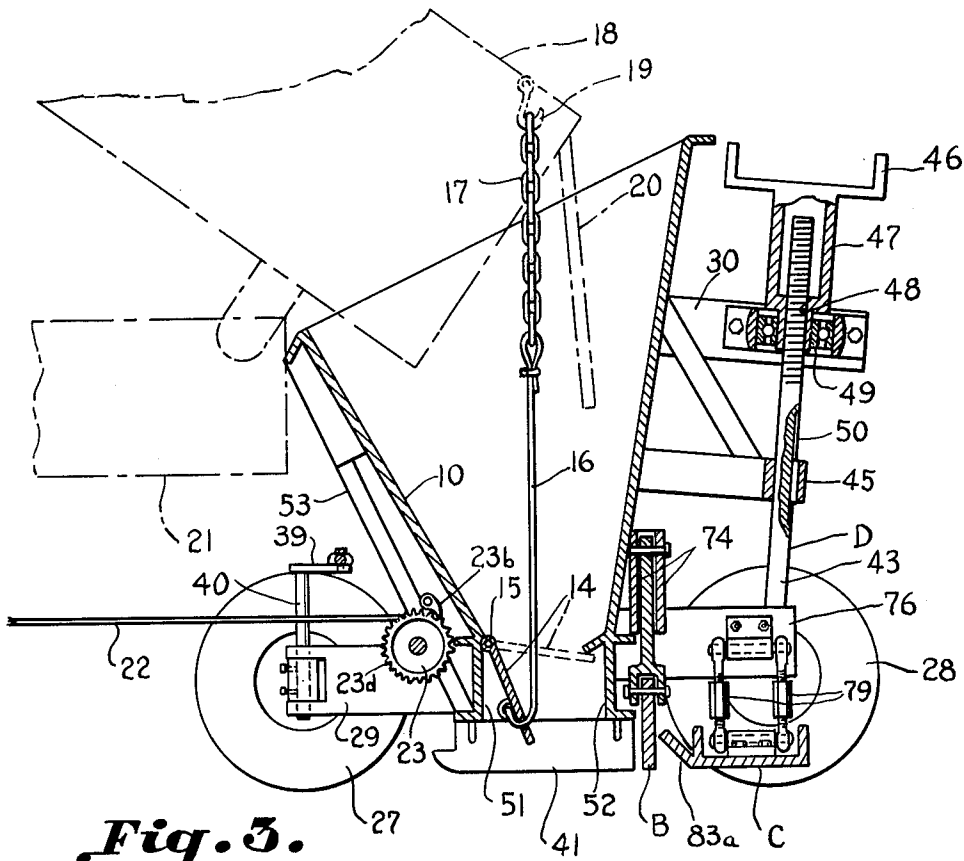
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SPREADER

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1 Claim. (Cl. 94-46)

This invention relates to an improved spreader for asphalt and the like of the type which may be attached to a vehicle.

Formerly, most asphalt spreaders and the like have been self-propelled and have included means for mixing the asphalt and the like preparatory to spreading same. Spreaders of the type which were adapted to be attached to dump trucks have been inadequate to do the job of providing a sufficiently even and smooth surface preparatory to the compacting operation.

Accordingly, it is an object of this invention to provide an asphalt spreader and the like of the type which may be carried by and employed effectively with a dump truck and the like.

An important object of this invention is to provide an improved spreader capable of spreading asphalt and the like and providing an even, smooth surface thereon.

Another important object of this invention is to provide an asphalt spreader of the non-self-propelled type having a separate strike off bar and screed bar mounted between wheel supports to minimize irregularities in the road surface engaged by the wheel supports.

Another object of the invention is to provide a spreader of the non-self-propelled type having improved steering means independent of the towing vehicle, and being capable of being adjusted to spread surfaces of varying thicknesses.

Another important object of the invention is to provide an asphalt spreader having tamping or compacting action together with a strike off and smoothing action.

Still another object of this invention is to provide an asphalt spreader of the non-self-propelled type which is of simple rugged construction minimizing the expense of the spreader and yet providing an improved road surface.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings forming a part thereof, wherein an example of the invention is shown and wherein:

FIGURE 1 is a perspective view illustrating a spreader constructed in accordance with the present invention,

FIGURE 2 is a rear elevation illustrating the spreader shown in FIGURE 1,

FIGURE 3 is a side elevation, with parts in section illustrating the spreader shown in FIGURES 1 and 2, and

FIGURE 4 is an enlarged rear perspective view, with parts omitted, illustrating the adjustable mechanism for compacting and smoothing the surface of the asphalt and the like.

Referring more particularly to the drawings a spreader of the non-self-propelled type is illustrated as including a hopper A having an open bottom which is provided with a gate. A strike off bar B is carried by the hopper A and is provided with driving means for oscillating same in the form of a suitable motor. A screed bar C for smoothing the surface which has been struck off by the strike off bar B also has connection to the hopper A. Adjustable means D in the form of threaded elements are provided for raising and lowering the hopper by bearing upon the wheel supports. It will be noted by reference to FIGURE 3 especially that the strike off bar B and the screed C are mounted below and rearwardly of the hopper and between the rear wheel supports. The strike off bar B is provided with linkage mechanism E permitting

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arcuate oscillatory movement of the strike off bar B. The strike off bar B and the screed C may be centrally adjusted to provide a crown or depression whichever is desired in the roadway surface. It will be noted that the strike off bar B and the screed bar C are made in two parts for this purpose and that the screed has attachment to the hopper independently of the strike off bar B. The steering means F are provided for steering the spreader independently of the vehicle pulling same.

The hopper A is substantially wedge shaped, having a front wall 10 and a rear wall 11 inclined inwardly and downwardly so as to provide a relatively large open top. The hopper A also includes sides 12 and 13 together with a gate 14 which is hinged at 15 to the bottom of the front wall 10. The bottom or gate 14 is attached through a flexible cable 16 and a chain 17 to the dump body 18, shown in broken lines in FIGURE 3, by a hook 19. In operation the gate 20 of the dump body opens to permit asphalt and the like to be dumped into the hopper A.

When in use the spreader is attached to the truck chassis 21 by means of the flexible cable 22 which is carried by a winch 23. The winch 23 is mounted upon a suitable bracket 24 carried adjacent the front wall 10 of the hopper and is provided with a crank 25 for tightening the cable 22 and positioning the hook 26 about a suitable part of the truck. A crank arm 23a serves to disengage the pawl 23b, through the shaft 23c, from the peripheral teeth 23d. It will be noted that the entire spreader may be carried by the truck when the dump body is lowered and that when the dump body is raised as shown in FIGURE 3 that the bottom 14 of the hopper A will be opened to permit the flow of asphalt and the like therethrough. When the dump body is lowered the gate 14 is automatically closed saving the asphalt remaining in the hopper. In operation after the spreader has been lowered to the ground and is in operable position the hook 26 is extended and attached to a suitable part of the truck for pulling the spreader.

A pair of front wheel supports 27 and a pair of rear wheel supports 28 are carried by brackets 29 and 30, respectively. The front wheels 27 may be steered through the steering mechanism F which includes a handle 31 fixed to a shaft 32 carried by a steering column 33 having connections to one of the brackets 29. The shaft 32 through suitable means (not shown) turns the link 34. The turning of the link 34 through the link 35, which is pivoted on one end to the link 34 and on the other end to a plate 36, serves to turn the shaft 37 and the wheel mounted thereon in a desired position for steering. The plate 36 has a steering bar 38 pivoted thereon, the other end of the steering bar being pivotally connected to the link 39 to turn the shaft 40 mounting the opposite wheel an amount commensurate with the turning of the shaft 37. The sliding member 41, which defines the edge of the material being spread serves as a guide in steering. This sled member 41 is adjustable through manipulation of the bolts 42.

The brackets 30 carry the threaded means D for raising and lowering the spreader elements with respect to the wheel supports 27 and 28. A threaded shaft 43 forms a part of each of the adjustable supports D and each is fixed to one of the wheel supports 44. The shaft 43 is also provided with a support 45 intermediate the wheel supports 44 and the brackets 30. A crank arm 46 is carried by a housing 47 which is internally threaded as at 48 for raising and lowering the shaft 43 by turning the housing within the bearing 49 carried by the bracket 30. A key 50 prevents the shaft 43 turning within the support 45.

It should be noted at this point that the hopper A includes and is braced by a pair of longitudinally disposed

channel members 51 and 52 which support the bracket 29 carrying the front wheel supports 27. Bracing 53 is provided to support the front wall 10 of the hopper. A suitable support 54 is provided for the motor 55 and is carried by the rear channel member 52. The motor 55 through a suitable belt 55a drives a pulley 56 to turn a shaft 57. The shaft 57 carries a cam 58 (FIGURE 4). The cam 58 imparts an oscillatory motion to the shaft 59 through the bearing 59a. The shaft 59 is connected in one of a number of positions to a vertically adjustable standard or link 60 provided with a number of vertically spaced apertures 61 provided to accommodate adjustment of the link. This connection is had by the bifurcated member 59b and the pin 62 carried thereby being fixed in one of the apertures 61.

The strike off bar B is divided into two halves as is best shown in FIGURES 2 and 4. The two adjacent ends of the strike off bar are pivotally connected as by the pin 63 which also passes through the standard 60. The standard 60 has a slide 64 adjacent its upper end into which a threaded member 65 is internally threaded. The member 65 is also threaded into an internally threaded projection 66 carried by a bracket 67 which has fixed connection with the rear wall of the hopper 11. The standard 60 has pivotal connection with the slide 64 as by the bolt 63a. It will be noted that the slide is positioned between a pair of guide members 68 and 69 which are in turn carried by the bracket 67. If desired one of the guide members 68 or 69 may be calibrated as shown at 68a.

The adjacent edges of the screed C are pivoted as at 70 to a bracket 71 which has fixed connection to the slide 64 so that the adjustment of the screed C will be commensurate with that of the strike off bar B. The free edges of the strike off bar B are connected to the hopper by suitable links 72 which are pivoted adjacent their upper ends as at 73 to a bifurcated support 74 having suitable fixed connection with the hopper. The lower ends of the link 72 have pivotal connection as at 75 adjacent the remote ends of the strike off bar B. Support is provided for the remote ends of the screed bar C by brackets 76 which have suitable connection to the hopper. The links 77 are hinged on one end as at 78 to the remote ends of the screed bar C and on their ends as at 79 to the brackets 76.

The strike off bar B is divided into two halves 80 and 81 and the screed is divided into two halves 82 and 83. The strike off bars 80 and 81 essentially comprise a longitudinal vertically disposed flat bar. The screed portions 82 and 83 include essentially a channel member with the web portion facing downwardly. Inwardly and upwardly facing lips 82a and 83a remove excess asphalt prior to the smoothing of the surface by the web.

It is important to note that the arcuate oscillatory motion imparted to the strike off bar B promotes the delivery of the asphalt from the hopper A, the even spreading of the asphalt, and at the same time a compacting of

the asphalt. Smoothing is provided by the independent screed C. The thickness of asphalt to be spread may be adjusted by the hopper supports D. By mounting the strike off bar and the screed between wheel supports irregularities in the surface are minimized.

The foregoing disclosure and description of the invention is illustrative and explanatory thereof and changes and variations will occur of those skilled in the art which may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

A portable spreader for asphalt and the like pulled by a truck including, a hopper having an open bottom through which asphalt is fed, a gate for closing said bottom, a strike off bar oscillatably mounted directly upon the hopper, motor driving means carried by the hopper oscillating said strike off bar so as to impart vibratory motion to the hopper, a screed bar carried by the hopper rearwardly of the strike off bar, front and rear wheel supports mounted directly upon the hopper carrying the hopper therebetween, said front wheel supports and said rear wheel supports each including a pair of wheels positioned on opposite sides of the hopper, vertically adjustable means mounting the hopper upon the rear wheel supports so that the hopper may be raised or lowered, said strike off bar and screed bar being positioned below and rearwardly of the hopper and between the rear wheel supports, and means attaching said hopper to the truck, whereby the strike off bar serves to vibrate the hopper thus feeding asphalt through the open bottom and to grade the asphalt being laid, the surface of such asphalt being smoothed by the screed bar, and whereby the effect of irregularities in the unfinished road bed is minimized by such positioning of the strike off bar and screed.

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