July 21, 1953 M. R. RASMUSSEN 2,645,986

GRAVEL SPREADER

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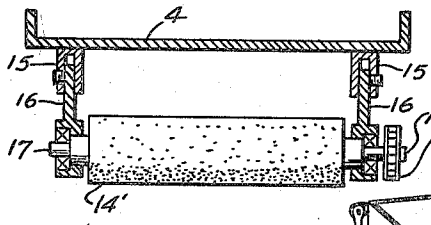


FIG. 5

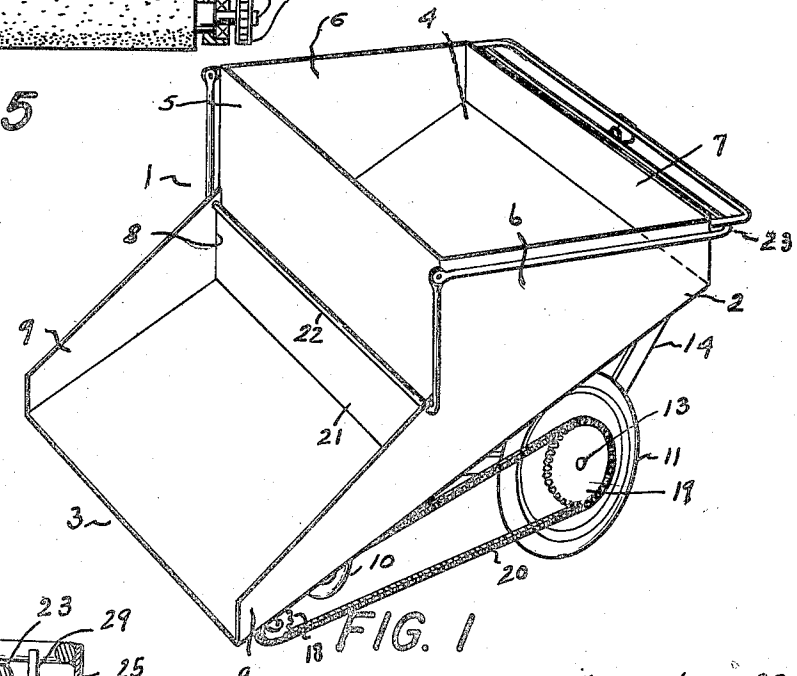


FIG. 1

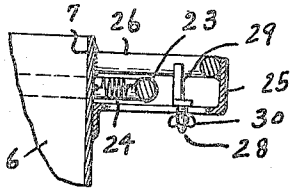


FIG. 4

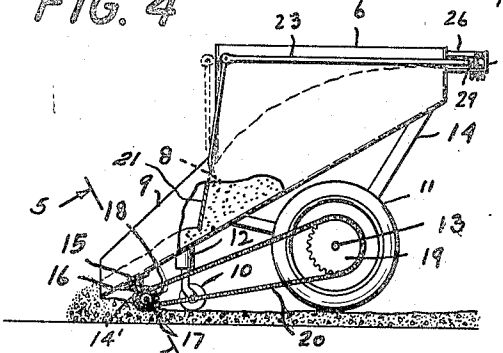


FIG. 2

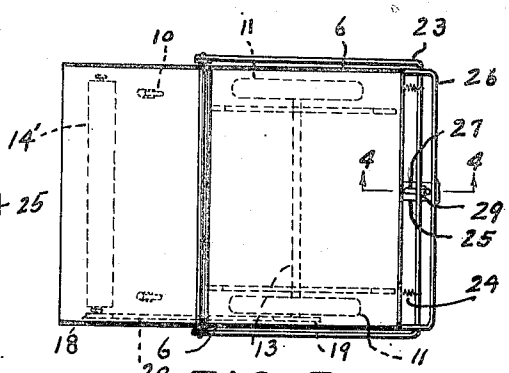


FIG. 3

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GRAVEL SPREADER

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2 Claims. (Cl. 94—44)

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My invention relates to a gravel spreader for spreading roofing gravel or the like.

An important object of the invention is to provide a simple and efficient device by which roofing gravel or the like can be evenly and quickly spread on asphalt covered roofing surfaces.

Another object of the invention is to provide a gravel distributing cart wherein the carrier wheels are set inwardly, relative to the sides of the body so that the wheels will not come into contact with, and pick up, the asphalt being covered.

A further feature resides in the provision of means whereby the quantity of gravel being delivered may be controlled.

The invention has particular relation to a combination of certain novel features of construction, arrangement of parts and use, an example of which is given in this specification and illustrated in the accompanying drawings.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view of the spreader,

Figure 2 is a side elevational view, partly broken away and partly in cross-section, showing the cylindrical brush and the door in operation,

Figure 3 is a plan view showing the wheels and casters as they are set-in to avoid running on the fresh asphalt;

Figure 4 is an enlarged, fragmentary, sectional view taken on the line 4—4 of Figure 3, and

Figure 5 is a cross-sectional view, on a somewhat enlarged scale, taken along line 5—5 of Figure 2, looking in the direction indicated by the arrows.

In the drawings wherein, for the purposes of illustration, is shown a preferred embodiment of my invention, the numeral 1 designates generally the body, which body includes a rear portion or hopper 2 for carrying the gravel, and a forward portion or chute 3 for transmitting the gravel onto the tarred roofing surface, said hopper and chute portions being provided with the integral bottom 4, which is connected or welded in any suitable manner to the retaining walls of said body portions.

The hopper 2 is open at the top, and has arranged therearound the upright forward retaining wall 5, the side retaining walls 6, 6 and the rear retaining wall 7. The wall 5 is of greater height than the wall 7, and the connecting side walls 6, 6 taper downwardly and forwardly so

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that their height at their forward ends is about twice their height at their rear ends. Thus, when the body is mounted on the carrying means, as hereinafter described, the top edges of the side walls are substantially horizontal.

The forward wall 5 is provided with a longitudinal opening 8 which extends transversely of the bottom 4 and substantially from end to end of said wall.

The chute 3 is open at the top and has two side walls 9, 9. The rear ends of said walls are secured to the end portions of wall 5 of the hopper, said chute walls tapering downwardly from a point intermediate said wall 5 to the end of the chute 3, which end is open to permit the gravel to be spread upon the roofing surface.

The spreader is carried or supported by the front casters 10, 10 and the rear wheels 11, 11 in a forwardly inclined direction, such spreader or cart, in its assembled form, assuming the position as shown in Figures 1 and 2.

The casters 10, 10 are rotatably mounted in holders 12, 12 which are secured to the forward under portion of the bottom 4. As shown in Figure 3, these casters are set in from the outer edges of the bottom 4 so that they will only travel on the gravel spread by the chute. Thus the casters will not travel over the fresh tar or asphalt and will remain clean and free from any substance on the roof that would tend to cause clogging.

The wheels 11, 11 are rotatably mounted on an axle 13. The axle 13 is secured to the brackets 14, 14 which depend from the bottom 4 and the wheels 11 are set inwardly so as not to come into contact with the asphalt. The brackets are so shaped as to permit the cart, when in its normal position, to assume the inclined direction from top to bottom as shown in Figures 1 and 2.

It will be noted, as shown in Figures 2 and 5, that the forward end of the chute 3 is supported by the casters a sufficient distance from the ground surface so as to clear the gravel after it has been deposited on the roof. As the gravel is delivered from the chute it is deposited in non-uniform depths. In order to smooth out the gravel and cause it to lay in a uniform thickness, a cylindrical brush 14′ is disposed between the forward end of the chute 3 and the casters 10, 10. Secured to the forward under portion of the bottom 4 are the brush holders 15, 15. The end portions of these holders are provided with recesses for receiving the upper ends of the stems 16, 16. The lower ends of said stems are provided with

bearings in which the end spindles 17, 17 of the brush 14' rotate.

Fixed to one end of said brush 14' there is a sprocket 18 and on the corresponding wheel 11 there is fixed another and larger sprocket 19. A sprocket chain 20 operates over the sprockets and serves to revolve the brush 14' so as to smoothly spread the gravel delivered from the chute.

In order to control the flow of the gravel from the hopper to the chute, a door or shutter 21 is fixed, at its upper edge, to a U-shaped rod 22 which extends through corresponding bearings in the upper portion of the side walls 9, 9. The door 21 is shaped to fit into the opening 8, and is operated in the manner and by the means hereinafter described.

The rod 22, at each end, is turned upwardly at substantially right angles and is pivotally connected, at each of its ends, to the forward ends of the side arms of the control handle 23. Said handle is formed of a rod or the like which extends from said pivoted connections around the side and rear walls of the hopper, as shown in Figures 1 and 2.

Coil springs 24, 24 are attached, at their forward ends, to the upper portion of the rear wall 7, and at their other ends to the handle 23. The purpose of these springs is to cause the door 21 to return to its normal closed position when pressure on the handle is released. Thus it can be seen that when it is desired to release the gravel from the hopper the handle 23 may be pulled rearwardly causing the lower end of the door to move forwardly or open and thereby providing an outlet from the hopper to the chute. The amount of gravel that will be discharged from the hopper to the chute and then to the roof is controlled by the amount of pressure exerted on the handle.

A support 25 is fastened, at one end, to the rear wall 7. The handle 23 rests on the upper flat surface of said support which extends rearwardly a sufficient distance to permit the handle to be manipulated. The rear end of the support is turned upwardly at substantially right angles, where it is rigidly connected to the stationary grip 26. This stationary grip is a rod or the like extending longitudinally substantially from end to end of the rear wall 7, where it is secured to the upper portion thereof.

The support 25 is provided with a longitudinal slot 27 which extends substantially from end to end thereof. A bolt 28, having an upstanding stop 29, is extended through said slot, and a winged nut 30 is screwed onto the lower end of said bolt. Thus the bolt may be tightly secured at any desired place along said slot and the range of movement of handle 23, which rests upon said support, and the amount of gravel delivered, thus controlled.

What I claim is:

1. A spreader comprising, a container having a forwardly declining bottom forming a chute, the front wall of the container having its lower edge space above the bottom to form a discharge opening, said chute extending forwardly beyond the opening, a movable door closing said opening, said door being movable upwardly, adjustable means on the container under the control of the operator for moving the door upwardly to release the contents of the container onto the chute to be spread on a surface, carriage wheels secured to bracket means on the underside of said container and chute, said bracket means being formed to carry the container and chute in a forwardly inclined position to cause the contents of the container to flow by gravity through said opening onto said chute when the door is raised by the operator, a cylindrical brush mounted on a horizontal axis beneath the chute adjacent the discharge end thereof, and a driving connection between said brush and said carriage wheels for effecting rotation of the brush.

2. A spreader comprising, a container having a forwardly declining bottom forming a chute, the front wall of the container having its lower edge spaced above the bottom to form a discharge opening, said chute extending forwardly beyond the opening, a movable door closing said opening, said door being movable upwardly, adjustable means on the container under the control of the operator to move the door upwardly to release the contents of the container onto the chute to be spread on a surface, carriage wheels secured to bracket means on the underside of said container and chute, said bracket means being formed to carry the container and chute in a forwardly inclined position to cause the contents of the container to flow by gravity through said opening when the door is raised by the operator, said wheels being inset to prevent them from rolling over a wet surface, a cylindrical brush rotatably mounted on the chute in front of the carriage wheels, and a driving connection between said brush and said wheels for effecting rotation of the brush.

MARTIN R. RASMUSSEN.

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