July 8, 1941. J. D. MITCHELL 2,248,374

WINDROWING GATE

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Fig. 1.

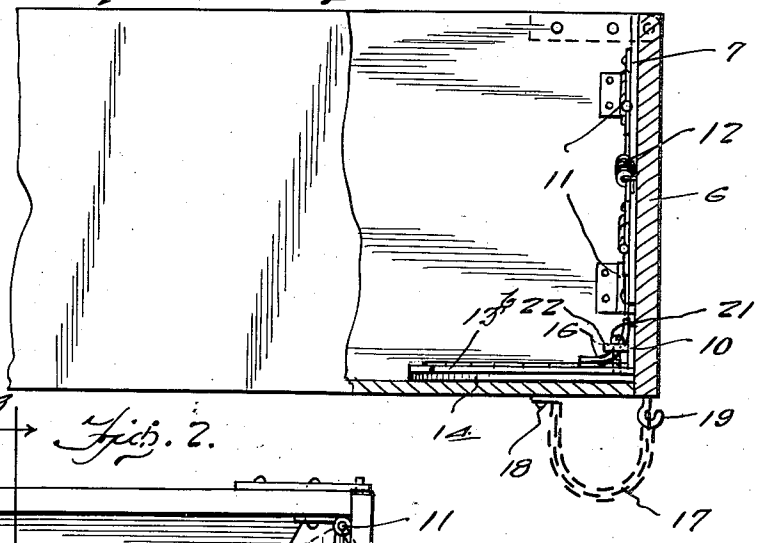


Fig. 2.

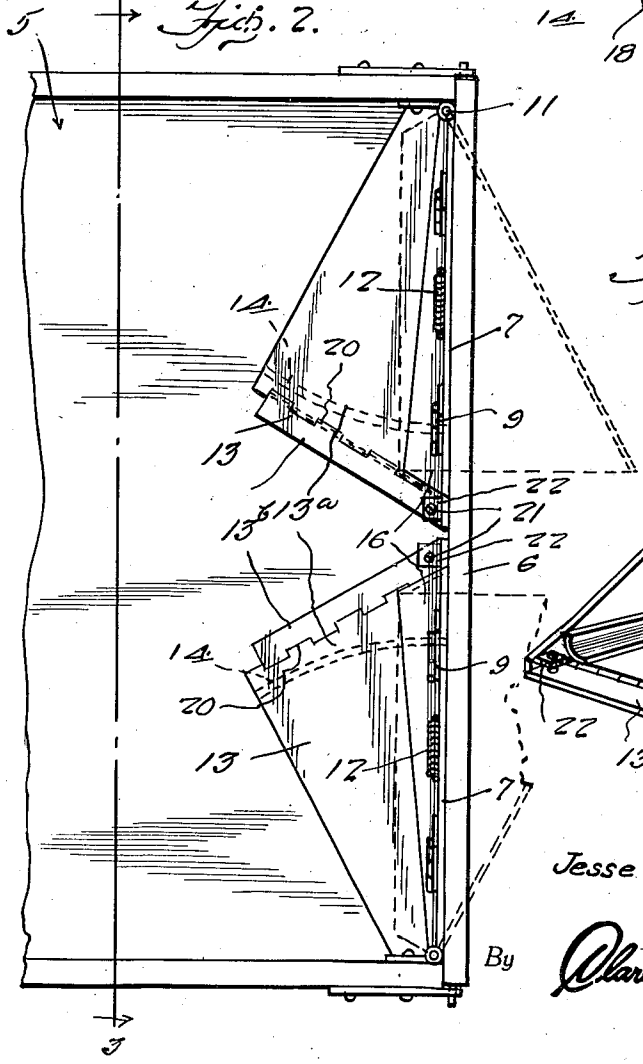
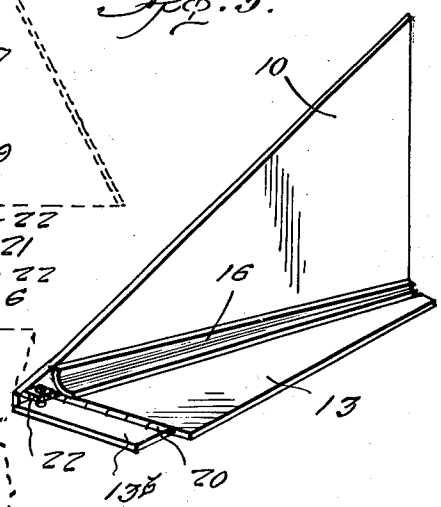


Fig. 5.



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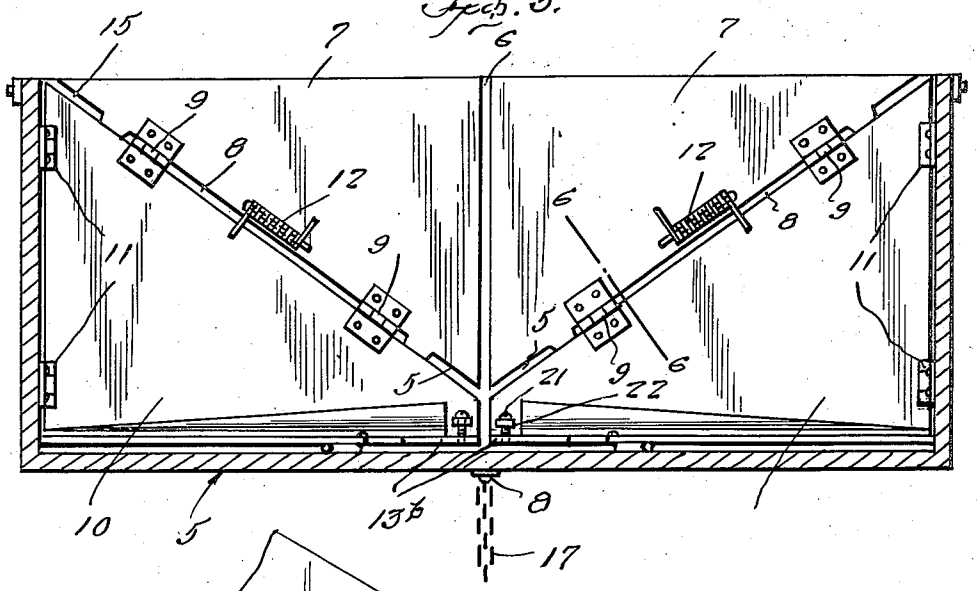
Attorney

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WINDROWING GATE

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Fig. 3.



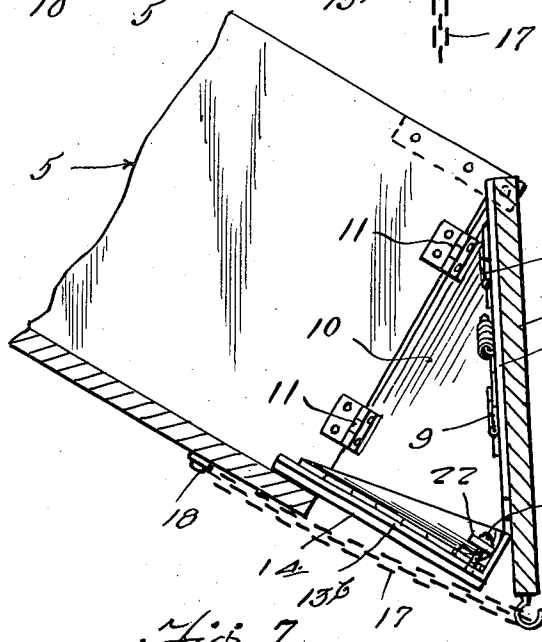


Fig. 7.

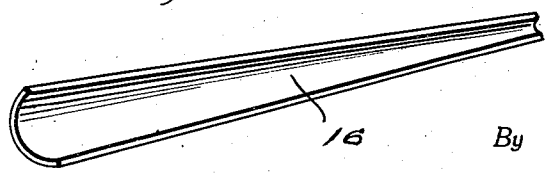


Fig. 6.

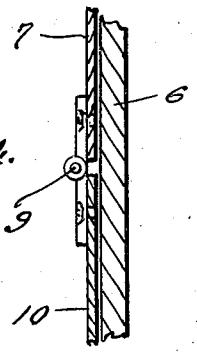


Fig. 4.

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Patented July 8, 1941 2,248,374

UNITED STATES PATENT OFFICE

2,248,374

WINDROWING GATE

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Application October 22, 1940, Serial No. 362,273

7 Claims. (Cl. 296—51)

This invention has reference to means whereby the tail gate of wagon and/or truck dump beds, hydraulically or otherwise operated, may be used to advantage in depositing gravel, sand, crushed aggregate, or the like in windrows on road beds and the like for use in the construction and finishing of such beds.

The "windrowing" of such gravel and the like has many known advantages over the usual practice of letting the gravel discharge from the end of the bed so as to spread substantially across the road for substantially the full width of the same, the discharging of the gravel in rows on the beds facilitating proper spreading of the material.

In accordance with the present invention provision is made whereby when the tail gate is swung to open position a relatively small discharge space is provided for the contents of the bed so that as the vehicle moves along the discharging material "windrow" as distinguished from spreading laterally over the road surface; and the invention, together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein—

Figure 1 is a fragmentary side elevational view of the rear end of a dump bed with the end gate shown in fully closed position and illustrating the application of my invention thereto, and taken substantially on line 1—1 of Figure 2.

Figure 2 is a fragmentary top plan view of the rear end of the dump bed.

Fig. 3 is a horizontal sectional view taken substantially on the line 3—3 of Figure 2.

Figure 4 is a fragmentary longitudinal sectional view through the rear end of the dump bed with the latter in inclined position for discharging the contents thereof and further illustrating the application of the invention.

Figure 5 is a perspective view of a skirt-equipped plate section forming part of the invention.

Figure 6 is a detail sectional view taken substantially on the line 6—6 of Figure 3, and

Figure 7 is a perspective view of a channel member forming part of the invention.

Referring more in detail to the drawings it will be seen that 5 indicates generally the rear portion of a wagon or truck dump bed and 6 the end gate therefor.

In accordance with the present invention there are bolted, riveted, or otherwise secured to the inner side of the gate 6 substantially triangular-shaped plates 7 to the inclined edges 8 of which are hinged as at 9 substantially similarly shaped plates 10, which latter plates, at their vertical end edges are hinged to the side walls of the wagon box or bed 5 as at 11.

The plate sections 10 are yieldably urged into flat contact with the end gate 6 through the mediums of springs 12 suitably mounted on the plates 7 and having terminals impinging against the plates 10 as shown in Figure 3.

The plates 10 have integral with the lower horizontal edges thereof and extending inwardly therefrom at right angles to said plates substantially triangular-shaped skirt sections 13, that, as shown, when the end gate 6 is in fully closed position, overlie the bottom of the wagon box or bed.

The skirts 13 have secured to the undersides thereof arcuate rods 14 that act as runners for these skirts and tend to insure smooth operation of the device.

Further in accordance with the present invention the plate sections 7 at the edges thereof hinged to the plate sections 10 are notched at their extremities as at 15 to provide suitable clearance between the hinged edges of the respective pairs of hingedly connected plate sections as will permit fine gravel or similar granular material to pass therethrough without interfering with smooth swinging movement of the plate sections 10 relative to the plate sections 7 incidental to the swinging of the gate 6 either to open or closed position.

Also to facilitate the discharge of the material when the end gate is open, and to prevent the collection of material in the corners or angles formed between the plates 10 and their aprons 11, there are spot-welded or otherwise secured to each plate 10 and its associated apron 13 an elongated tapering channel member 16, the same being substantially semi-cylindrical in cross-section and tapering in the direction of its length from the outer end of the plate section 10 toward the hinged vertical edge of said section as shown.

Outward swinging movement of the end gate 6 may be limited to the extent desired through the medium of a length of chain 17 anchored at one end thereof as at 18 to the underside of the bottom of the bed and adapted to have a selected link thereof engaged with a hook 19 provided on the lower edge of the end gate 6 as best shown in Figure 4.

From the above detailed description it will be apparent that when it is desired to discharge the contents of the wagon bed the latter, in the usual manner, is tilted to substantially the position shown in Figure 4 whereupon the end gate 6 will swing outwardly to the position shown in said figure, and as may be limited by reason of the particular engagement of the chain 17 with the hook 19.

Obviously as the gate 6 swings out to this position the plate sections 10 will swing relative to the plate section 7 on the hinges 9, and laterally on the hinges 11 to provide supplemental side gates, while at the same time the aprons 13 will swing on an arc outwardly to provide supple-

mental or bottom extensions for the wagon bed with the edges 13a of the skirts 13 moving into substantially spaced paralellism to provide therebetween the space through which the contents of the wagon bed will discharge to fall in a "windrow" as the vehicle moves forwardly.

Thus it will be seen that through the medium of this attachment a relatively small discharge opening is provided at the discharge end of the wagon bed and through which the contents of the bed will pass to pile in a longitudinal row instead of spreading laterally to either side as this discharge takes place.

After the dumping or discharging of the material the wagon bed may be lowered into position in the usual way, the end gate 6 swung back into position, and obviously as the gate swings back in position the skirts 13 will slide easily inwardly of the bed over the bottom thereof and the parts assume the normal position such as shown in Figure 1.

At the edges 13a thereof the skirts 13 are provided with leaves 13b respectively hinged to the skirts 13 as at 20 to swing vertically relative thereto.

Normally the leaves 13b are held coplanar with the skirts 13 through the medium of retaining screws 21 that thread through lugs 22 on the extremities of the plate sections 10, and also threadedly engage in openings provided therefor in the leaves 13b as clearly suggested in Figure 5. It will thus be seen that when it is desired to provide a larger opening between the confronting edges 13a of the aprons 13 when the aprons are in the dotted line position shown in Figure 2, the operator threads the screws 21 upwardly through the lugs 22 and out of engagement with the leaves 13b permitting the latter to swing downwardly.

Thus the discharge opening between the confronting edges of the skirts 13, during a discharge of the material from the dump bed may be laterally increased or diminished by use of the leaves 13b in the manner just described.

It is thought that a clear understanding of the construction, operation, utility and advantages of an invention of this character will be had without a more detailed description.

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

1. In combination with a dump bed and end gate therefor, substantially triangular-shaped plates secured to the inner side of the end gate, additionally substantially triangular-shaped plates hinged at one edge thereof to a corresponding edge of the respective first-named plates, said second plates having extending at right angles therefrom skirts overlying the bottom of said bed, said second-named plates also having vertical end edges hinged to the side walls of the bed; the second-named plates serving as supplemental side gates when the end gate is in open position.

2. In combination with a dump bed and end gate therefor, substantially triangular-shaped plates secured to the inner side of the end gate, additionally substantially triangular-shaped plates hinged at one edge thereof to a corresponding edge of the respective first-named plates, said second plates having extending at right angles therefrom skirts overlying the bottom of said bed, said second-named plates also having vertical end edges hinged to the side walls of the bed; the second-named plates serving as supplemental side gates when the end gate is in open position, and runners secured to the undersides of said aprons and contacting the bottom of said bed to insure smooth movement of the aprons relative to the bed bottom.

3. In combination with a dump bed and end gate therefor, substantially triangular-shaped plates secured to the inner side of the end gate, additionally substantially triangular-shaped plates hinged at one edge thereof to a corresponding edge of the respective first-named plates, said second plates having extending at right angles therefrom skirts overlying the bottom of said bed, said second-named plates also having vertical end edges hinged to the side walls of the bed; the second-named plates serving as supplemental side gates when the end gate is in open position, and channel members secured to the second-named plates and associated aprons at the angles between the second-named plates and their associated aprons.

4. A dump bed end gate comprising a main end gate, supplemental side gates hingedly connected at one edge thereof to the side walls of the bed and at a second edge thereof to the end gate proper, and aprons carried by said supplemental side gates and extending in planes substantially at right angles to said supplemental side gates for overlying the bottom of said bed.

5. In combination with a dump bed and vertically swinging end gate therefor, plates rigidly secured to the end gate at the inner side thereof, supplemental side gates hinged at one edge thereof to the first-named plates and at a second edge thereof to the side walls of said bed, spring members mounted on the first-named plates and having end portions bearing on the adjacent edges of said supplemental side gates for yieldably urging the latter into flat contact with said end gate.

6. In combination with a dump bed and vertically swinging end gate therefor, plates rigidly secured to the end gate at the inner side thereof, supplemental side gates hinged at one edge thereof to the first-named plates and at a second edge thereof to the side walls of said bed, spring members mounted on the first-named plates and having end portions bearing on the adjacent edges of said supplemental side gates for yieldably urging the latter into flat contact with said end gate, and each end gate having an apron extending at right angles therefrom and in overlapping substantially sliding engagement with the bottom of said bed.

7. A dump bed end gate comprising a main end gate, supplemental side gates hingedly connected at one edge thereof to the side walls of the bed and at a second edge thereof to the end gate proper, and aprons carried by said supplemental side gates and extending in planes substantially at right angles to said supplemental side gates for overlying the bottom of said bed; said aprons being arranged relative to said supplemental side gates and to one another as to provide between confronting edges thereof a discharge opening when the dump bed is in a position for dumping materials therefrom, and leaves hinged to the edges of the aprons to swing vertically relative thereto for decreasing or diminishing the size of said opening, and interengaging means on said supplemental side gates and said leaves for detachably securing the leaves normally in a position coplanar with said aprons.

JESSE DALE MITCHELL.