

UNITED STATES PATENT OFFICE

JAMES ALEXANDER LITT, OF STRATFORD, ONTARIO, CANADA

SNOWPLOW

Application filed February 23, 1928. Serial No. 256,387.

My invention relates to improvements in snow plows, and the object of the invention is to devise a snow plow of this type which is adaptable for use in clearing highways by throwing the snow away from the path of travel of traffic on either side of such highway and thus operate without interfering with the traffic, which may be readily adjusted to operate either to remove shallow or deep layers of snow with equal ease, and yet leave a thin surface layer of snow on which the sleigh traffic may travel, in which the snow can be discharged to either side of the road and at sufficient elevation to clear the snow banks or in whichever direction the wind may be blowing so as to be carried thereby clear of the roadway, in which means are provided particularly when plowing in deep snow to prevent the lateral displacement of the plow by snow pressure, and by which the plow may be steered by the steering mechanism of the driving truck, and it consists essentially of the arrangement and construction of parts as hereinafter more particularly explained.

Fig. 1 is a perspective view of my plow looking towards the front.

Fig. 2 is a similar view to Figure 1 looking towards the rear and showing the connecting means between the plow and the adjacent parts of the truck and the steering mechanism thereof.

Fig. 3 is an inverted plan view on a small scale showing the steering mechanism.

Fig. 4 is an enlarged sectional detail showing the hinge connection between the plow frame and the driving truck.

In the drawing like characters of reference indicate corresponding parts in each figure.

1 indicates the base or floor portion of the plow, such base or floor portion being inclined so as to extend at its front end adjacent to the highway surface and be lifted therefrom at its rear end. 2 and 3 are longitudinal inclined members of a plow body supporting frame, the rear ends of such members being connected by vertical members 4 and 5 to the plow body adjacent its rear edge. 6 and 7 are walls extending upward-

ly from the plow body and extending from the rear edge thereof and converging in V-form, the apex of the V being located immediately of the length of the plow body as indicated at 8.

The outer edges of the walls 6 and 7 are flanged outwardly as indicated at 9 and 10, the flanges 9 and 10 merging together at their forward ends to form a forwardly extending flange 11 extending forward at the apex of the V walls 6 and 7.

12 is an orifice formed in the flange portion 11, and 13 is an orifice formed in the body of the plow. 14 is a directing vane provided at its rear end with an orifice 15 placed in registering position with the orifices 12 and 13. 16 is a rod extending through the orifices 12, 15 and 13, thereby swingably holding the vane 14 in position.

If it is desired to direct the snow equally on each side of the plow the rod 16 may be withdrawn and the directing vane 14 removed so that the snow will directly engage the walls 6 and 7 to be equally divided and thrown on either side of the plow body.

17 and 18 are standard members extending upward from each side of the plow body and at the front edge thereof, such standards being connected together at their upper ends by a cross bar 19 between which and the outer edge of the plow body the directing vane 14 extends as clearly indicated in Figure 1. 20 and 21 are bracing bars connecting the ends of the bar 19 with the flange portions 9 and 10.

A series of orifices 22 formed along the front edge of the plow body and a series of orifices 23 in the bar 19 in which stop pins such as indicated at 24 may be inserted so as to hold the vane 14 against the pressure of the snow when operating thereagainst.

25 and 26 are runner members pivotally mounted at 27 and 28 adjacent the front edge of the plow body and connected together at their rear ends by a bar 29 pivotally connected thereto at 30 and 31. 32 is a pin extending outward from the bar 29. 33 is a link pivotally mounted upon the pin 32. 34 is a rocking rod mounted in suitable bearings such as indicated at 35 and 36 extending from

the lower face of the plow body 1 and provided at its forward end with a crank portion 37 engaging the free end of the link 33. 38 is a supplemental rod connected to the rod 34 by a universal joint connection 39. The rear end of the rod 38 is provided with a crank portion 40. 50 and 51 are the longitudinal members of the chassis frame of the driving truck. 52 is a cross bar secured to the side bars 50 and 51 adjacent their front ends, and 53 and 54 are eye-bolts secured respectively in the cross bar 52 and in the vertical portions 4 and 5 of the plow body frame, the eyes of such bolts engaging one with the other as clearly indicated in Figure 4 to form a hinge joint.

55 indicates a portion of the front axle of the driving truck and 56 a portion of the steering rod which is usually carried at the rear of the axle 55 and moves longitudinally when operated. 57 is a sleeve secured to the rod 56 and provided with a lug 58 into which the end of the crank 40 extends as clearly indicated in Figure 2.

It will thus be seen that when the plow is driven by the truck forward along the highway the snow will be lifted by the inclined body 1 of the plow and in the case of packed snow the layer of snow will be cut vertically at each side of the plow body by the standard members 17 and 18 which act as vertical cutters.

When the vane 14 is in the central position the snow will be carried upward and into engagement with the outer faces of the walls 6 and 7 so as to be deflected laterally to pass in equal quantities to each side of the plow. When, however, it is desired to clear one side of the highway while traffic is using the opposite side the vane 14 is set over towards that side of the plow adjacent to the used side of the highway so that all the snow picked up by the plow body will be deflected to that side of the highway which is not in use and away from the traffic, and will thus prevent the traffic in any way being interfered with during the clearing of the highway.

In removing a deep layer of snow it is desirable to lower the rear end of the plow body so that the upper surface of the body will be more nearly horizontal and thereby will permit the lifting of the snow with a smaller consumption of power.

When a high wind is blowing and the snow is light the vane 14 may be set to either side of the plow or to that side of the plow from which the wind is blowing so that the lifted snow will be carried by such wind from the road surface, and when plowing on that side of the roadway from which the wind is coming such snow may be carried clear across the roadway by the wind over the snow bank on the opposite side.

It will also be seen that by supporting the front edge of my plow body 1 on runners 25 and 26 a thin layer of snow will be left on

the highway surface after the plowing operation so as to leave it in a fit condition for use by sleigh traffic.

As the driving truck pushes the plow forward through deep snow the snow pressure against the vane 14 will have a tendency to push the plow out of its true course. To obviate this the runners 25 and 26 may be so set as to compensate for this snow pressure and thereby prevent any side movement of the plow out of its course.

It will also be seen that by steering the truck the snow plow will also be steered in the required direction, the steering rod 56 moving longitudinally in the direction desired, the crank 40 being swung in a corresponding direction and the crank rods 38 and 35 also rocked in the same direction so as to move the link 33 and bar 29 and thereby correspondingly swing the runners 25 and 26 to steer the snow plow in a corresponding direction.

What I claim as my invention is:—

A highway snow plow comprising an inclined plow body having a front cutting edge and an upwardly inclined surface extending therefrom, a pair of frame members extending parallelly beneath the said body and secured thereto, the inner end of each member extending vertically at the upper end of the inclined plow body, a member forming a portion of a truck frame extending transversely behind the plow body, and eye bolts secured in such transverse member opposite each of the aforesaid vertical frame portions, and an eye bolt in each of said vertical frame portions set at right angles to the eye bolt of the transverse member and engaging therewith to form a flexible driving connection between the truck and the plow body.

JAMES ALEXANDER LITT.