

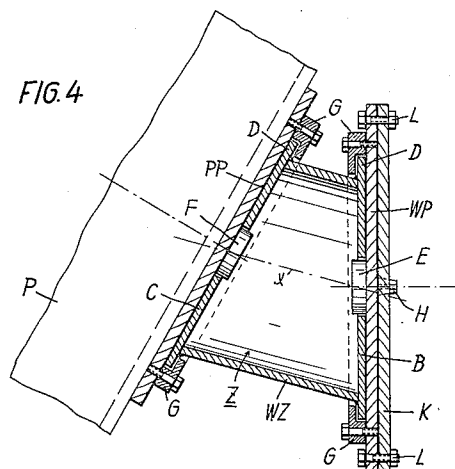
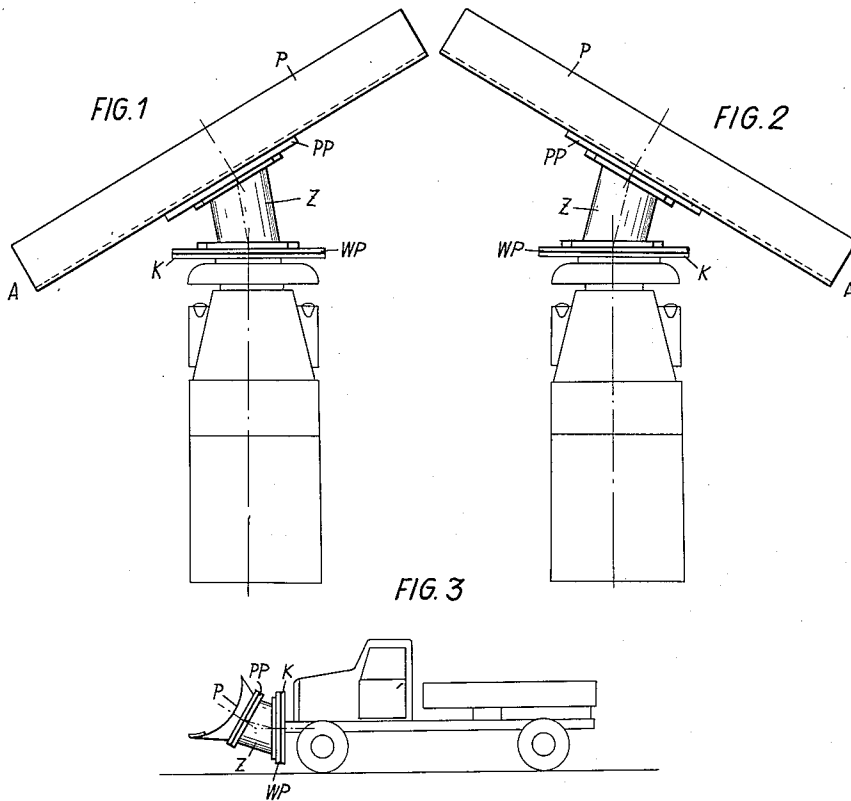
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SNOW CLEARING UNIT

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1

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SNOW CLEARING UNIT

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The invention relates to means for pivotally moving snow plows affixed to driving vehicles. Snow plows affixed to driving vehicles must be pivotally moved for clearing to the left or right. This is effected, as a rule, by lifting and then turning the snow plow. For this operation the operator of the snow plow must leave the driving vehicle. Besides, a relatively complicated gearing is required for performing the combined movement of the snow plow.

It is an object of the invention to eliminate the disadvantages of the known means for pivotally moving snow plows and to provide a device which is simple in structure and permits of effecting the pivotal movement of the snow plow without requiring the operator of the snow plow to leave the driving vehicle.

The essential feature of the invention resides in that a hoof-shaped member is arranged for rotation relative to the vehicle and to the snow plow and provides a connecting member between the driving vehicle and the snow plow. In a preferred embodiment of the invention the hoof-shaped member consists of a hollow cylinder, the flat end faces of which lie in planes including an acute angle. Within the scope of the invention, circular plates are affixed to the flat end faces of the hoof-shaped member. One of these plates is rotatably mounted on a plate connected to the driving vehicle and the other of said plates is rotatably mounted on the snow plow.

Finally, the invention covers the provision of guides for the hoof-shaped member and the snow plow.

Further details of the invention will be explained in more detail with reference to the accompanying drawing, which shows diagrammatically and by way of example an embodiment of means for pivotally moving a snow plow. FIG. 1 is a top plan view showing a snow plow affixed to a driving vehicle and arranged for clearing to the left. FIG. 2 is a similar view showing the snow plow in position for clearing to the right. FIG. 3 is a side view showing the snow plow lifted for transport and FIG. 4 is an enlarged view showing a detail of the invention.

In the embodiment shown by way of example a snow plow P is affixed by means of a hoof-shaped member Z to a driving vehicle. For rotatably mounting the member Z the driving vehicle has a plate WP whereas a plate PP is affixed to the plow P for connecting the latter to the hoof-shaped member Z.

The member Z consists suitably of a hollow cylinder having flat end faces which lie in planes including an acute angle and have circular plates affixed thereto, which may have the shape of a circular ring and facilitate the rotatable mounting on the plate WP of the driving vehicle and on the plate PP of the snow plow P.

A rotation of the hoof-shaped member Z in the counter-clockwise sense when viewed in the forward direction of travel will move the snow plow from the position shown in FIG. 1 through the lifted intermediate position shown in FIG. 3 to the position shown in FIG. 2. The rotation from the position for clearing to the left, shown in FIG. 1, to the lifted position shown in FIG. 3 and from the latter to the position for clearing to the right, shown in FIG. 2, amounts to 90 deg. for each of the two phases mentioned. The side toward which clearing is effected is designated A in FIGS. 1 and 2.

The snow plow is suitably supported at its center of gravity so that special means are not required for pivot-

2

ing the snow plow with the aid of the member Z. In order to enable the pressure with which the snow plow is forced, e.g., against the roadway to be increased by means of the hoof-shaped member Z and particularly to enable the application of increased pressure on the left or right side and finally to enable the lifting and pivotal movement of the snow plow even where obstacles occur it is suitable to provide guides for supporting the snow plow.

FIG. 4 is an enlarged central sectional view showing the hoof-shaped member Z which serves for pivotally moving the snow plow. The hoof-shaped member Z consists essentially of a cylindrical shell WZ having end faces inclined relative to the cylinder axis x and closed by plates B, C which may be welded to the shell and are larger in diameter than the outside diameter of the shell WZ so that a continuous flange D is formed at each end of the shell WZ. Each of the plates B, C has a central circular opening engaged by a pin E or F, respectively, which is carried by the plate WP or PP, respectively. This arrangement ensures that the hoof-shaped member Z is centered and guided. The hoof-shaped member Z is further guided and held on the plates WP and PP by arc-shaped segments G, which are screwed to the plates and overlap the flanges D with a clearance. The plate WP is secured with fixing nuts and bolts L to the plate K of the vehicle. It is thus apparent that the hoof-shaped member Z is connected to the driving vehicle for rotation relative thereto on an axis E which extends substantially in the direction of the longitudinal axis of the vehicle and that the member Z is connected to the snow plow P for rotation relative thereto on a horizontal axis F which is transverse to the longitudinal direction of the snow plow P.

The two angles between the longitudinal axis x of the cylinder and the plates B, C need not be equal.

The hoof-shaped member Z may be rotated by hand or by electric or hydraulic power means controlled from the driver's cab.

What is claimed is:

1. A snow clearing unit which comprises a driving vehicle, a snow plow, and a hoof-shaped member connected to said driving vehicle for rotation relative thereto on an axis which extends in the direction of the longitudinal axis of the driving vehicle, and connected to the snow plow for rotation relative thereto on a horizontal axis which is transverse to the longitudinal direction of the snow plow.

2. A snow clearing unit which comprises a driving vehicle, a snow plow and a hoof-shaped member having mutually opposite, flat end faces which lie in planes that include an acute angle, one of said end faces extending transversely to the longitudinal axis of said driving vehicle and being connected to said driving vehicle for rotation on an axis normal to said one end face, the other of said end faces extending in the longitudinal direction of said snow plow and being connected to said snow plow for rotation on an axis normal to said other end face.

3. A snow clearing unit as set forth in claim 2, which comprises a mounting plate affixed to said driving vehicle and two circular end plates each of which is affixed to one of said flat end faces and one of which is rotatably connected to said mounting plate and the other of which is rotatably connected to said snow plow.

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