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DEFLECTOR FOR BLOWN SNOW OVER SNOWPLOW BLADES

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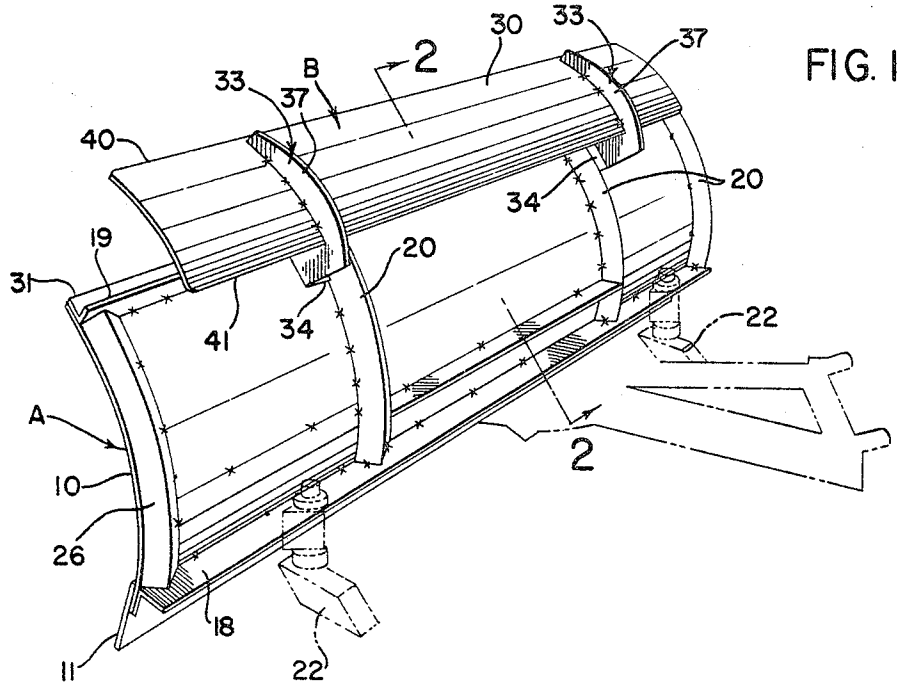


FIG. 1

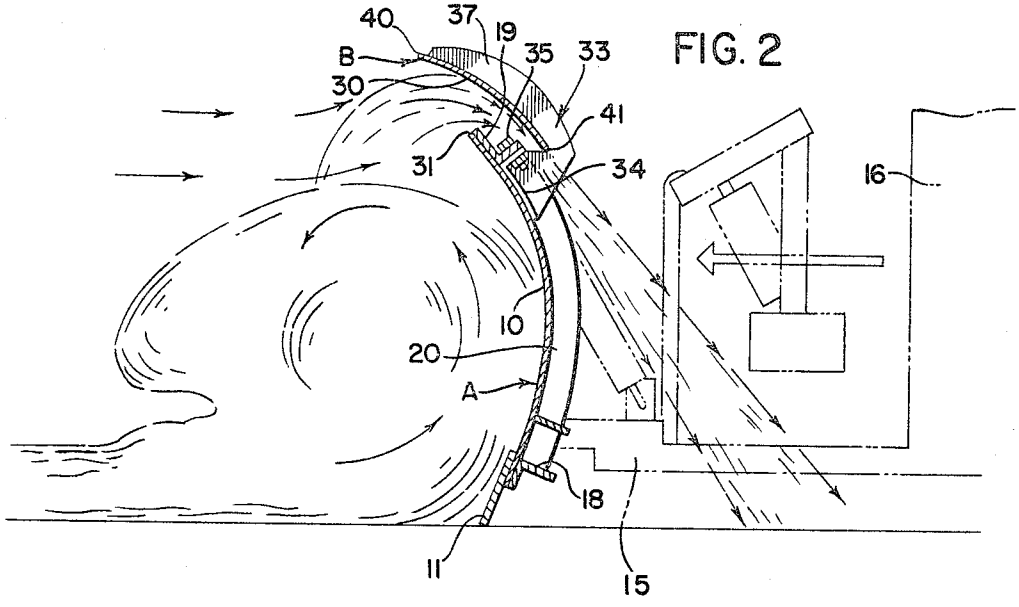


FIG. 2

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DEFLECTOR FOR BLOWN SNOW OVER SNOWPLOW BLADES

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ABSTRACT OF THE DISCLOSURE

A deflector is mounted adjacent the upper edge of a snowplow moldboard and includes a forward surface facing forwardly above the upper edge of the moldboard to deflect horizontally moving air downwardly to the rear of the moldboard.

This invention pertains to the art of snowplows and more particularly to a deflector for directing snow blown over the top of a snowplow blade away from the line of vision of the operator.

One of the problems in the plowing of snow using high-speed, vehicle-propelled snowplow blades has been that of the snow disturbed by the blade being blown upwardly over the top of the blade in a billowing cloud in sufficient quantities to either partly or completely obscure the vision of the vehicle operator. The problem is particularly bad when the snow is dry and powdery and the plowing is being done at substantial speeds or when there is a wind blowing.

The present invention contemplates means associated with the upper edge of the snowplow blade for causing a downward flow of air behind the blade, thus sucking or deflecting the wind blown snow coming over the top of the blade downwardly between the blade and the front end of the vehicle so that it does not obscure the vision of the driver.

In accordance with the present invention there is provided for use with a conventional snowplow blade, an elongated member extending in generally parallel spaced relationship above the top edge of the blade and having a cross sectional configuration such as to cause a flow of air downwardly from the top of the blade and between the back side of the blade and the front end of the propelling vehicle. The cross-sectional shape may be as desired but in the preferred embodiment is generally slightly curved from the leading edge to the trailing edge, with the leading edge sloping downwardly and rearwardly at a 20° angle to the trailing edge at a 60° angle.

The principal object of the invention is the provision of new and improved means for deflecting snow blown over the top of a snowplow blade downwardly behind the blade and out of the eyes of the vehicle operator.

Another object of the invention is the provision of a new and improved deflector for mounting on snowplow blades which causes snow blowing over the top of the blade to be directed away from the forward line of vision of the snowplow operator.

Still another object of the invention is the provision of a new and improved means for causing a flow of air downwardly behind the blade of a snowplow for sucking blown snow passing over the top of the blade downwardly and out of the eyes of the operator.

The invention may take physical form in certain parts and arrangement of parts a preferred embodiment of which will be described in detail in this specification and illustrated in the accompanying drawing which forms a part hereof and wherein:

FIGURE 1 is a rear perspective elevational view of a snowplow blade having a deflector mounted thereon

illustrating a preferred embodiment of the invention; and,

FIGURE 2 is a side cross sectional view of FIGURE 1 taken approximately on the line 2—2 thereof.

Referring now to the drawings wherein the showings are for the purpose of illustrating a preferred embodiment of the invention only and not for the purposes of limiting same, the figures show a snowplow blade and mounting mechanism A having fastened to the upper edge thereof a deflector B.

The snowplow blade A and its mounting mechanism are all relatively conventional in the art and form no part of the present invention. In general, the blade is comprised of a horizontally elongated steel plate concave in a forward direction about a horizontally extending axis. This plate has a wearing or scraping edge **11** fastened to the lower edge thereof and as is conventional, the blade **10** and edge **11** will be disposed so that its longitudinal length is at an angle other than perpendicular to the forward movement of the blade. The blade is supported and pushed forward on the front end of a propelling motor vehicle **16** by means of conventional mounting mechanism including the members **15** shown in dotted lines, the important thing being that there is a space between the back edge of the blade **10** and the front of the motor vehicle **16**.

The blade **10** is reinforced by means of a horizonally extending angle iron **18** extending parallel to the lower edge and spaced from the lower edge and fastened to the backside by welding and a horizontally extending angle iron **19** fastened to and extending along the upper edge of the blade **10**. Angle irons **20** curved to conform to the curvature of the blade and welded to the backside thereof reinforce the blade in a vertical direction.

Suitable and conventional skids **22** may also be provided to slightly space the lower edge of the member **11** from the pavement so as to limit the amount of wear thereon.

In accordance with the invention, means are provided for the air coming over the top edge **31** of the blade downwardly between the blade and the vehicle **16**. Such means may take a number of different forms but in the preferred embodiment is the deflector B.

The deflector B is comprised of a horizontally elongated member **30** mounted so as to be in spaced relationship to and over the upper edge **31** of the blade A. The member **30** may be mounted in a number of different ways, either from the propelling vehicle **16** or from the mounting mechanism **15**, but in the preferred embodiment, is supported by means of a pair of brackets **33** having one leg **34** resting against the back of the plate **10** and bolted to a flange of the angle iron **19** by means of suitable nuts and bolts **35**. The opposite leg **37** of the bracket **33** extends across the upper and back side of the member **30** and is welded thereto as is conventional It will be appreciated that the bracket **33** could be made adjustable so that the angle of the member **30** would also be adjustable.

The member **30** is in effect an airfoil acting on the flow of air over the upper edge **31** of the blade A to direct it downwardly behind such blade between the back of the blade A and the front of the motor vehicle **16**, as is shown in FIGURE 2. The member **30** may take a number of different cross sectional configurations but in the embodiment shown, the member **30** is downwardly concave. The member **30**, as shown, is angled downwardly from its leading edge **40** towards its trailing edge **41** which angle because of the curvature is a gradually increasing angle.

The member **30** may be formed of any desired material but in the preferred embodiment is a thin plate of steel.

In operation, as a snowplow blade moves forward the

snow is scooped upwardly into the concavity of the blade and the majority of it, because of the angle of the horizontal axis of the blade relative to the forward direction of motion, moves to one side or the other. However, as the blade moves forward, the snow which is a granular material is agitated and some of it is thrown up over the upper edge **31** of the blade as a billowing cloud of snow particles. Additionally, oftentimes when plowing of snow is being done, the wind is blowing and this wind will pick up the loosened snow as it is agitated and blow it over the top of the blade **31**. In either event heretofore this powdered snow obscured the vision of the operator of the vehicle.

Using the present invention, however, the air coming over the top edge of the blade **31** impinges on the lower concave surface of the deflector B and is deflected downwardly behind the blade **10**. In addition a vacuum is created above the upper side of the deflector B causing a suction so that air coming over the upper side of the deflector B and close thereto is sucked downwardly behind the blade **10** and in front of the vehicle **16**. This downward movement of air carries the air and entrained snow particles downwardly and either prevents or substantially decreases the amount of snow which can rise up high enough to obscure the line of vision of the operation.

The invention while quite simple in construction has proven quite effective in practice and has considerably alleviated a problem which has long bothered snowplow operators.

The invention has been described with reference to a preferred embodiment. Obviously modifications and alterations will occur to others upon a reading and understanding of this specification and it is my intention to include all such modifications and alteratins insofar as they come within the scope of the appended drawings.

Having thus described my invention, I claim:

1. In a snowplow including a moldboard having upper and lower edges, a rear surface and a front plowing surface, the improvement comprising; an elongated deflector member mounted adjacent said upper edge of said moldboard, said deflector having top and bottom edges, a forward surface and a back surface, said top edge of said deflector being positioned a substantial distance above said upper edge of said moldboard, said bottom edge of said deflector being positioned below said upper edge of said moldboard, said forward surface of said deflector being spaced rearwardly of said rear surface of said moldboard to define an air flow passage, said forward surface of said deflector including a substantial portion opening forwardly above said upper edge of said moldboard to strike air moving horizontally above said upper edge of said moldboard and deflect such air downwardly through said air flow passage.

2. The plow of claim **1** and further including bracket means on said deflector for mounting said deflector on said moldboard, said bracket means including first leg means secured to said back surface of said deflector and second leg means projecting forwardly below said bottom edge of said deflector.

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ROBERT E. PALFREY, *Primary Examiner.*

U.S. Cl. X.R.

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