

March 31, 1925.

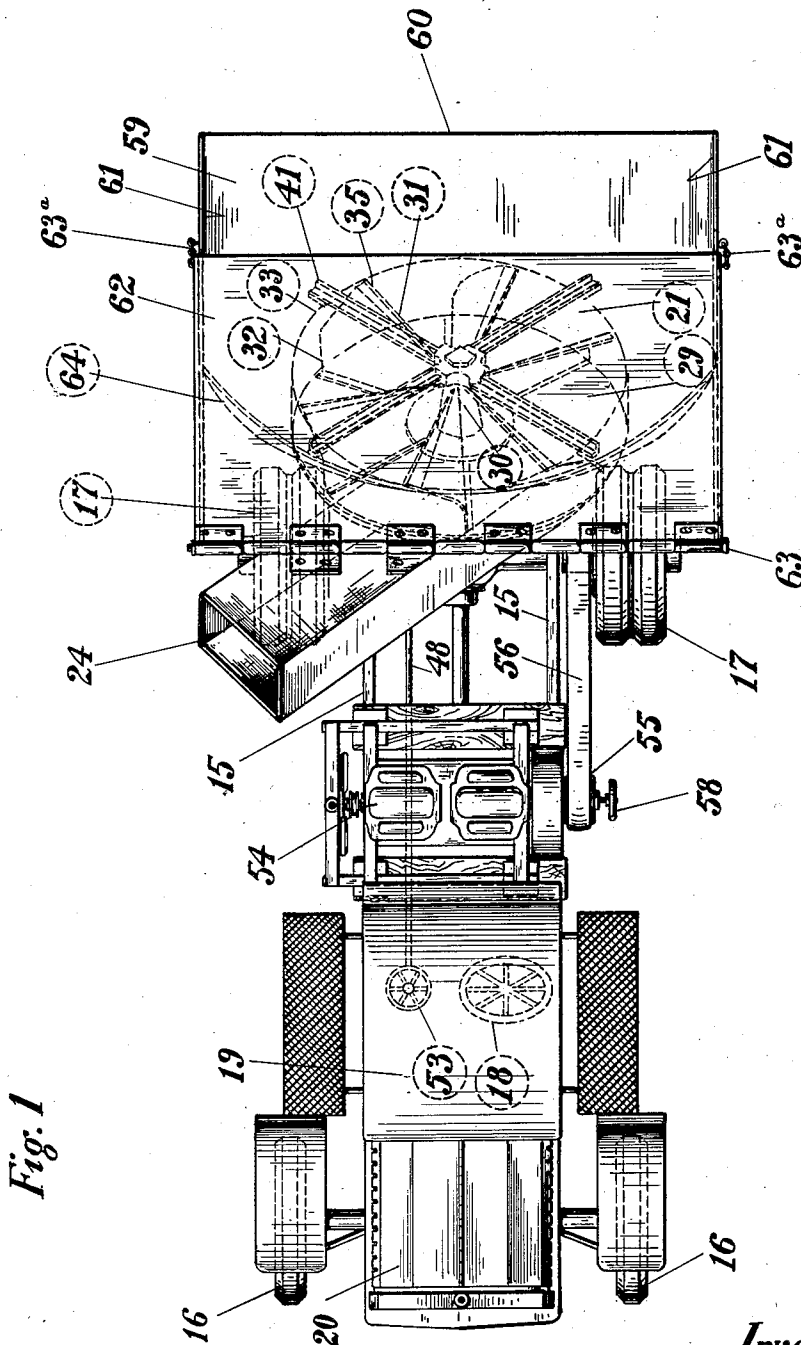
E. H. FAHRNEY

1,531,742

SNOWPLOW

Filed March 5, 1924

3 Sheets-Sheet 1



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SNOWFLOW

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3 Sheets-Sheet 2

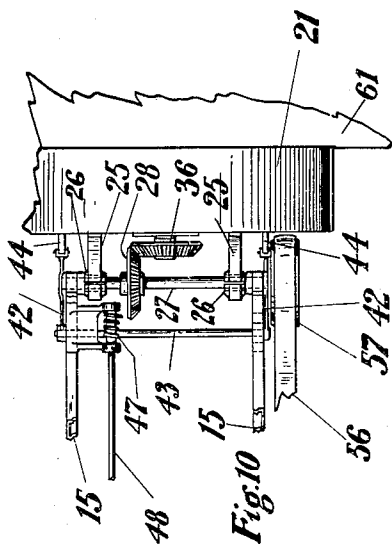
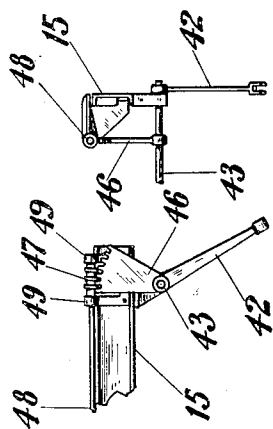
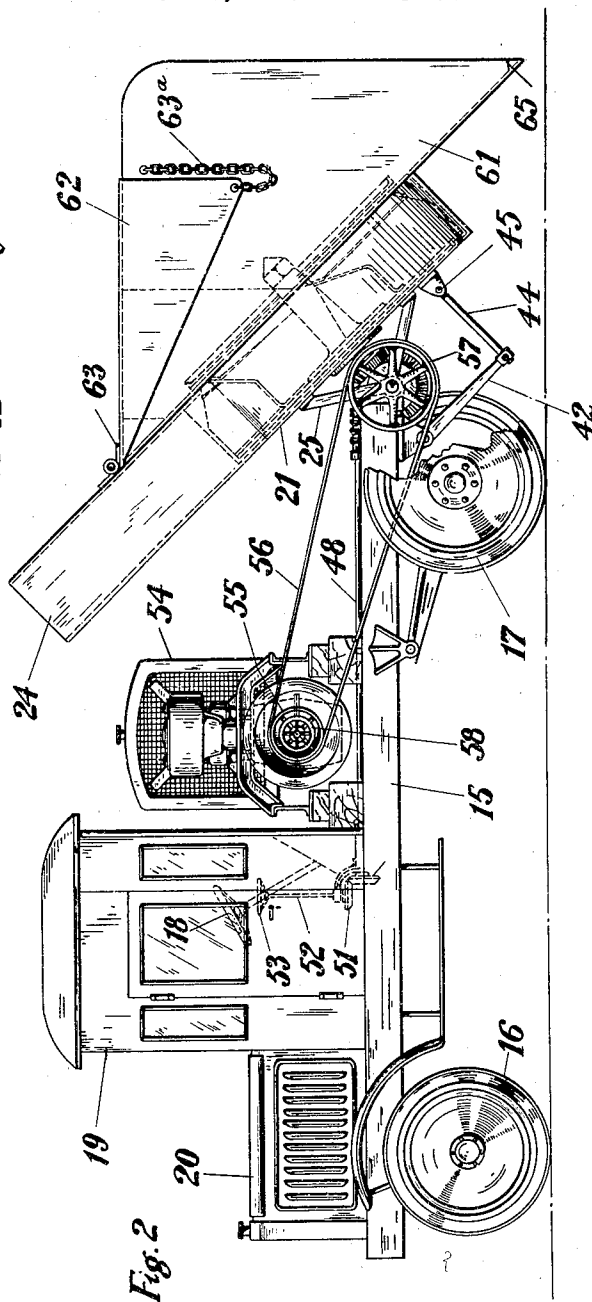


Fig. 8



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SNOWPLOW

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3 Sheets-Sheet 3

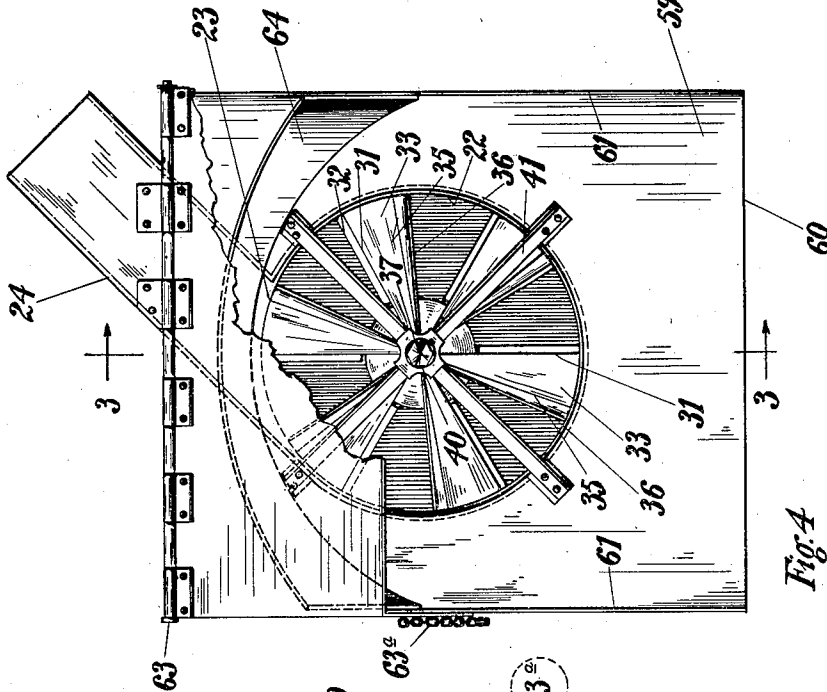


Fig. 4

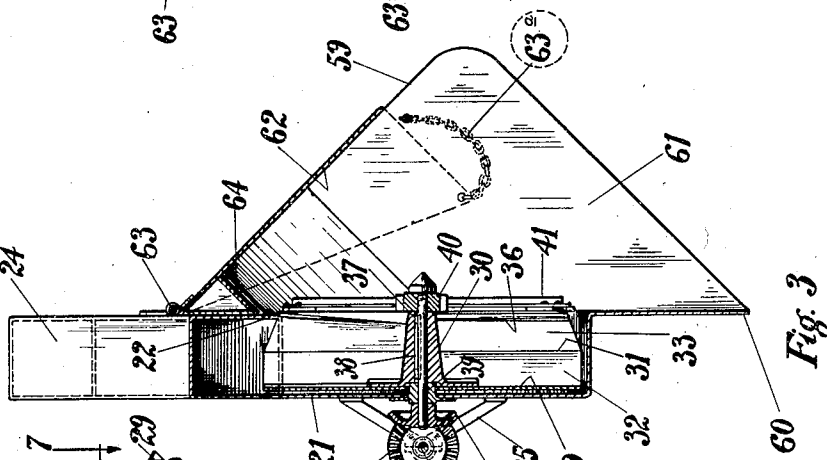


Fig. 3

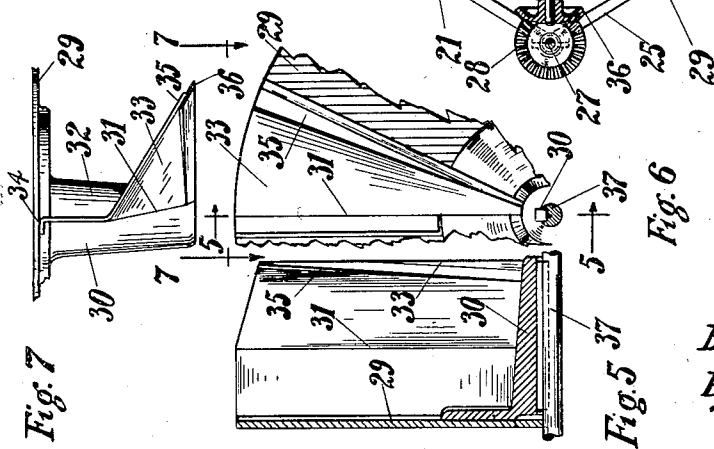


Fig. 7

Fig. 5

Fig. 6

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UNITED STATES PATENT OFFICE.

EMERY H. FAHRNEY, OF CHICAGO, ILLINOIS.

SNOWFLOW.

Application filed March 5, 1924. Serial No. 697,146.

To all whom it may concern:

Be it known that I, EMERY H. FAHRNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Snowplows, of which the following is a specification.

This invention relates to improvements in snow plows particularly adapted though not necessarily limited in its use for removing snow from streets, roads or highways, and one of the objects of the invention is to provide an improved motor propelled vehicle like structure of this character which may be readily controlled and operated from the vehicle.

A further object is to provide improved mechanism for handling and conveying away the snow and improved means whereby the snow handling mechanism may be adjusted or shifted with respect to the vehicle so as to position such mechanism as desired with respect to the work to be performed, and which mechanism may also be shifted or swung upon the vehicle so as not to interfere with the travel of the vehicle when the apparatus is not in use for the removing or shoveling of the snow.

A further object of the invention is to improve and simplify a machine of this character and increase the efficiency and speed of operation thereof in the handling of the material being operated upon, and at the same time produce a machine which will be simple, durable and comparatively compact in construction and effective in operation.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention, and in which—

Figure 1 is a top plan view of the apparatus.

Figure 2 is a side elevation with parts broken away.

Figure 3 is a sectional view as taken on line 3—3, Figure 4.

Figure 4 is a front elevation of Figure 3, with parts broken away.

Figure 5 is a sectional view taken on line 5—5, Figure 6.

Figure 6 is an elevation as taken from the right hand side of Figure 5.

Figure 7 is a view taken on line 7—7, Figure 6.

Figure 8 is an elevation of Figure 9.

Figure 9 is an end elevation of Figure 8.

Figure 10 is a detail top plan view with parts omitted and parts broken away of the mechanism for shifting the snow handling mechanism about its pivot with respect to the supporting structure.

Referring more particularly to the drawings the numeral 15 designates a suitable wheel supported vehicle, having the wheels 16—17, the wheels 16 being the steering wheels and being controlled by means of steering mechanism, 18, which latter is located within the enclosure 19 for the operator.

The vehicle is propelled by a motor mounted thereupon (not shown) but preferably located under the hood 20.

The vehicle may be of any desired construction and of any desired size, and the motor for driving the vehicle is preferably located adjacent the rear of the vehicle.

The snow handling mechanism is located at the other or forward end of the vehicle and consists of a casing 21 of any desired size. This casing is provided with an inlet opening 22 through the upper wall thereof for the reception of the snow or material to be handled, and is also provided with a discharge outlet opening 23 to which latter opening is connected a spout 24. This spout may be of any desired size and configuration and is preferably arranged so as to deliver the material from the casing 21 to one side of the path of movement of the vehicle 15.

The casing is supported upon the forward end of the vehicle for pivotal movement with respect thereto, in any desired or suitable manner but preferably by means of brackets 25 connected with the casing and which brackets are journaled upon bearings 26 carried by the vehicle structure 15. Journaled in the bearings 26 is a shaft 27 which has connected with it for rotation therewith a beveled gear 28, for a purpose to be hereinafter described.

Arranged within the casing 21 is a rotor

which consists preferably of a disc 29 connected with a hub 30, and which hub may be of any desired size. Carried by the disc 29 are a plurality of radially arranged blades, each of the blades being of any desired height, a portion of each blade being deflected laterally to another portion of the blade and along a line 31 extending lengthwise of the blade intermediate the longitudinal edges thereto to form a portion 32 and a deflected portion 33. The portion 32 of the blade is anchored as at 34 to the disc 29 so as to be arranged perpendicular thereto while the deflected portion 33 of the blade overhangs the discs and the free longitudinal edge 35 of the portion 33 of the blade 31 diverges from the inner end of the blade toward the outer end thereof, the inner end of the blade being disposed adjacent the hub 30, while the outer end of the blade is disposed adjacent the periphery of the disc 29. This free edge 35 of the blade 33 may be shaped to form a cutting edge 36 or may have a cutter secured thereto, and the surface of the portion 33 together with the cutting edge of such portion of the blade is of a helical formation.

This shape of blade is particularly advantageous in devices of this character for the reason that as the rotor travels at a greater velocity at its periphery than adjacent its axis, the blades will be so arranged that they will take in approximately the same proportionate amount of snow in the neighborhood of the axis as at or in the neighborhood of the periphery of the rotor. The difference in the speed of rotation at these two points is compensated by the difference in the angle of the cutting edge of the blade adjacent the hub and the periphery by reason of the helical formation of the cutting surface of the blade.

The rotor thus constructed substantially fills the casing 21 and the diameter of the rotor and length of the blades is substantially equal to the diameter of the opening 22 in the casing 21 and beneath which opening the rotor is located, the hub 30 of the rotor being disposed at substantially the diametric center of the said opening.

With this arrangement it will be manifest that snow which passes into the casing 21 through the opening 22 will be caught by the blades of the rotor and will be conveyed thereby to the outlet opening 23, through which the blades discharge the snow into the spout or chute 24.

Motion is imparted to the rotor in any desired or suitable manner preferably by means of the beveled gear 28, which meshes with another beveled gear 36 secured to a shaft 37 and to which shaft 37 the rotor is secured in any desired or suitable manner such as by means of a key or fastening device 38. The shaft 37 is journaled in a bearing

39, preferably arranged in the bottom of the casing 21 and also in a bearing 40 supported in any desired or suitable manner preferably by means of a spider or arms 41 secured to the top of the casing 21 and extending across the opening 22.

It will therefore be manifest that when the shaft 27 is rotated a rotary motion will be imparted to the rotor within the casing 21, through the medium of the gears 28—36, and as the casing 21 is mounted for pivotal movement with respect to the supporting vehicle or structure it will be manifest that the gears 28—36 will remain in mesh during the pivotal movement of the casing 21 with respect to the supporting vehicle and will also continue to drive the rotor in any position to which the casing 21 has been adjusted.

The casing 21 may be moved about its pivot in any desired or suitable manner but preferably by means of arms 42, one of which is preferably arranged adjacent each side of the supporting structure and are pivotally connected with the supporting structure for movement in unison, preferably by means of a bar or rod 43, having suitable bearings upon the supporting structure. Connected by one end to each of the arms 42 is a link 44 and the free ends of these links are pivotally connected as at 45 with the rotor casing 21, so that when the bar or rod 43 is rocked in its bearings it will be manifest that through the medium of the link connection 44 between the arms and the rotor casing 21, the latter will be swung about its pivot and will be maintained in its adjusted position by reason of these connections.

Any suitable means may be provided for rocking the shaft 43. A simple and efficient means for accomplishing this result includes a toothed segment 46 which is connected with the rod 43. The teeth of the segment are engaged by a worm 47 carried by a shaft 48 journaled in suitable bearings 49 and this shaft 48 extends lengthwise of the vehicle structure 15 and preferably terminates within the enclosure 19. A beveled gear 50 is connected with the shaft 48 and this beveled gear meshes with another beveled gear 51 on a shaft 52, which latter is adapted to be rotated by means of a hand control device 53.

It will therefore be manifest that the rotor casing 21 may be swung about its pivot in any direction and to any desired extent by the operation of the hand control device 53 and when so operated the arm and link connection 42—44 between the shaft 43 and the casing 21, together with the worm and toothed segment 46, the casing will be maintained in its adjusted position.

Any suitable means may be provided for rotating the shaft 27 but it is preferably rotated

tated from a suitable motor device 54 mounted upon the vehicle structure and which motor may be of any desired or suitable type. Connected with the shaft of the motor 54 is a pulley 55 over which a belt 56 passes. This belt in turn passes over a pulley 57 carried by the shaft 27.

If desired a suitable clutch 58 may be provided for controlling the driving connection between the motor 54 and the shaft 27. This clutch device 58 may be of the ordinary and well known type, which may be operated by hand to render the pulley 55 active or inactive with respect to the motor shaft.

If desired and when the apparatus is being transported, the driving mechanism of the rotor may be rendered inactive and at the same time the rotor casing 21 may be swung about its pivot so that it will be folded, so to speak, upon the supporting structure so as not to interfere with the transportation of the device.

The snow is directed to the rotor casing preferably by means of a scoop like device 59, which is secured to the rotor casing 21 and encompasses the opening 22. This scoop may be of any desired size and configuration so that the forward edge 60 thereof extends for a considerable distance in advance of the opening 22 in the rotor casing 21. The edge 60 is preferably substantially straight and is of a length to preferably extend beyond the sides of the vehicle structure. The sides 61 of the scoop extend for any desired height above the rotor casing to a point to the rear of the opening 22 so that when the vehicle is advanced and the edge 60 of the scoop is placed in proximity to the work or snow the snow will travel into the scoop to be delivered through the opening 22 in the rotor casing without compressing the snow.

If desired a hood like closure 62 may be provided for a portion of the scoop and is pivotally mounted as at 63. This closure is provided as a means for preventing the snow from traveling out of the top of the scoop and is pivotally mounted so that the snow in the scoop will automatically control the rising movement thereof. The closure 63 is pivotally mounted so that it will automatically open and thereby prevent the snow from packing or wedging in the scoop. A flexible element 63^a may be provided for limiting the opening movement of the hood.

As a means for assisting in directing the snow, which has been gathered into the scoop, into the opening 22 of the rotor casing, there may be provided a deflector 64, which is arranged in the rear of the opening 22 within the scoop and is shaped to partially encompass the opening. This deflector is preferably inclined to the bottom of the scoop and preferably extends entirely across the scoop.

With this improved construction it will be

manifest that during the operation of the apparatus the snow will be constantly in motion or traveling from the time that it is picked up by the scoop until it is delivered through the spout 24 and furthermore the snow will be prevented from packing in the scoop.

The rotor casing is mounted for pivotal adjustment so that the end 60 of the scoop may be readily positioned with respect to the work and when not in use the snow handling device may be folded upon the vehicle structure. Furthermore, the scoop will readily enter the snow and the snow will be taken from the scoop substantially uniformly throughout the length of the rotor blades. That is to say, approximately the same proportionate amount of snow will be taken into the rotor by the blades in the neighborhood of the axis of the rotor as at the periphery of the rotor.

With this improved construction and arrangement it will be manifest that the opening 22 in the casing and through which the rotor is supplied with snow, will at all times be covered by the snow being supplied by the scoop. This is accomplished by reason of the peculiar construction of the scoop, the deflector 64 and the hood 62, all of which direct the snow from all points about the periphery of the opening 22 therethrough and to the rotor, with the result that the rotor will be completely covered by the snow, thereby preventing the rotor from driving air through the casing as such air would cause the rotor to operate inefficiently.

With this improved form of scoop device 59 in combination with the sides 61 thereof, the snow will be lifted and retained in an unpacked condition in its passage from the ground to the rotor, and the deflector 64, will after the portion of the snow over the rotor has been removed by the rotor, push the advancing snow into the rotor feed opening without compressing the snow.

By the arrangement of the steering wheel 16 behind and spaced a considerable distance from the snow handling mechanism, the steering of the vehicle will be greatly facilitated and rendered easier in operation by reason of the fact that a greater leverage of the vehicle will be obtained.

Furthermore, by mounting the scoop and the rotor for pivotal adjustment, it will be manifest that the leading edge of the scoop may be positioned at any desired angle with respect to the surface of the ground to compensate the depth of the snow being operated upon and to control the advancing movement of the scoop.

While the preferred form of the invention has been herein shown and described it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the sev-

eral parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

- 5 1. A snow plow including a motor propelled vehicle, a rotor casing supported entirely by the vehicle at one end of the vehicle and for pivotal movement with respect to the vehicle, said casing having an inlet and an outlet, a rotor in the casing for delivering the snow through the casing, and means for actuating the rotor, the pivot of the rotor casing being transverse to the axis of the rotor.
- 10 2. A snow plow including a motor propelled vehicle, a rotor casing supported entirely by the vehicle at one end of the vehicle, said casing having an inlet and an outlet, a rotor in the casing for delivering the snow through the casing, means for actuating the rotor, the said casing being movable upon the vehicle about a pivot transverse to the axis of the rotor, and means for swinging the casing about said pivot.
- 15 3. A snow plow including a motor propelled vehicle, a rotor casing supported entirely by the vehicle at one end of the vehicle, said casing having an inlet and an outlet, a rotor in the casing for delivering the snow through the casing, means for actuating the rotor, the said casing being movable upon the vehicle about a pivot transverse to the axis of the rotor, and means operable from the vehicle for swinging the casing about the said pivot and for maintaining the casing in its adjusted position with respect to the vehicle.
- 20 4. A snow plow including a motor propelled vehicle, a rotor casing supported entirely by the vehicle at one end of the vehicle, said casing having an inlet and an outlet, a rotor in the casing for delivering the snow through the casing, means for actuating the rotor, the said casing being movable upon the vehicle about a pivot transverse to the axis of the rotor, and a scoop connected with the casing for directing the snow into the casing and to the said rotor.
- 25 5. A snow plow including a vehicle, a rotor casing, said casing having a snow receiving inlet and a discharge outlet, a rotor in the casing, and means for actuating the rotor, the said casing being supported entirely by the vehicle for movement about a pivot transverse to the axis of the rotor.
- 30 6. A snow plow including a motor propelled supporting structure, a rotor casing, said casing having a snow receiving inlet and a discharge outlet, a rotor in the casing, and means for actuating the rotor, said casing being supported entirely by the supporting structure for pivotal movement with respect to the said structure.
- 35 7. A snow plow including a motor propelled supporting structure, a rotor casing, said casing having a snow receiving inlet and a discharge outlet, a rotor in the casing, means for actuating the rotor, said casing being supported entirely by the supporting structure for pivotal movement with respect to the said structure, and a scoop for directing the snow into the casing and to the rotor, said scoop being connected to and movable with the said casing.
- 40 8. A snow plow including a supporting structure, means for propelling the structure, a casing having a snow receiving inlet and a discharge outlet, a scoop connected with the casing for directing the snow to the said inlet, a rotor in the casing, means on the supporting structure for actuating the rotor, the said casing being supported entirely by the said structure, and means for swinging the casing about its pivot.
- 45 9. A snow plow including a supporting structure, means for propelling the structure, a casing having a snow receiving inlet and a discharge outlet, a scoop connected with the casing for directing the snow to the said inlet, a rotor in the casing, a motor on the supporting structure, a driving connection between the said motor and the rotor for actuating the latter, and means for controlling at will the said driving connection, the said casing being supported entirely by the said structure and for pivotal movement with respect thereto.
- 50 10. A snow plow including a supporting structure, means for propelling the structure, a casing having a snow receiving inlet and a discharge outlet, a scoop connected with the casing for directing the snow to the said inlet, a rotor in the casing, a motor on the supporting structure, a driving connection between the said motor and the rotor for actuating the latter, means for controlling at will the said driving connection, the said casing being supported entirely by the said structure for pivotal movement with respect thereto, and means for swinging the casing about its pivot, the last recited means also operating to maintain the casing in its adjusted position with respect to the said supporting structure.
- 55 11. A snow plow including a supporting structure, means for propelling the structure, a casing having a snow receiving inlet and a discharge outlet, a scoop connected with the casing for directing the snow to the said inlet, a rotor in the casing, a motor on the supporting structure, a driving connection between the said motor and the rotor for actuating the latter, means for controlling at will the said driving connection, the said casing being supported entirely by the said structure for pivotal movement with respect thereto, and means for swinging the casing about its pivot, the last recited means also operating to maintain the casing in its

adjusted position with respect to the said supporting structure, the axes of the said rotor and the pivot being transverse to each other.

5 12. A snow plow including a supporting structure, means for propelling the same, a casing having a snow inlet and a discharge outlet, a rotor in the casing, means for actuating the rotor, the said casing
10 being supported entirely by the said structure for pivotal movement on an axis transverse to the axis of the rotor, a scoop connected to and movable with the said casing about its pivot, and a deflector in the scoop
15 partially encompassing the said inlet opening of the casing.

13. A snow plow including a supporting structure, means for propelling the same, a casing having a snow inlet and a discharge
20 outlet, a rotor in the casing, means for actuating the rotor, a scoop connected with the casing for directing the snow into the said inlet, and a pivotally mounted closure for a portion of the scoop.

25 14. A snow plow including a supporting structure, means for propelling the same, a casing having a snow inlet and a discharge outlet, a rotor in the casing, means for actuating the rotor, a scoop connected with the
30 casing for directing the snow into the said inlet, and a pivotally mounted closure for a portion of the scoop, the movement of the said closure about its pivot being controlled by the snow in the hood.

35 15. A snow plow including a supporting structure, means for propelling the same, a casing having a snow inlet and a discharge outlet, a rotor in the casing, means for actuating the rotor, a scoop connected with the
40 casing for directing the snow into the said inlet, a pivotally mounted closure for a portion of the scoop, the movement of the said closure about its pivot being controlled by the snow in the hood, and means for limiting
45 the opening movement of the closure with respect to the scoop.

16. A snow plow including a supporting structure, a casing mounted upon the structure and having a snow inlet and a discharge
50 outlet, means for directing the snow to the said inlet, a rotor in the casing, and means for actuating the rotor, said rotor including blades, said blade including a perpendicular portion and a laterally deflected extremity,
55 the surface of the said extremity being of a helical formation.

17. A snow plow including a supporting structure, a casing mounted thereupon and having a snow inlet and a discharge outlet,
60 means for directing the snow to the said inlet, a rotor in the casing, and means for actuating the rotor, said rotor including a rotatable element and a blade, one portion of the blade being deflected at an angle to
65 another portion and on a line extending

lengthwise of the blade, one of said portions being disposed perpendicular to and secured by its edge to the face of the said element, the said deflected portion being
70 spaced from the said face of the said element, the surface of the said deflected portion of the blade being of a helical formation.

18. A rotor for a snow plow and the like, said rotor including a casing having a snow
75 inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable disc like element, a blade, one portion of the blade being deflected with respect to another portion and on a line extending
80 lengthwise of the blade, one of said portions being disposed perpendicular to and secured by its longitudinal edge to the face of the disc, the deflected portion being spaced from the said face of the disc and
85 having its free edge of a helical formation.

19. A rotor for a snow plow and the like, said rotor including a casing having a snow
inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rota-
90 table disc like element, a blade, one portion of the blade being deflected with respect to another portion and on a line extending lengthwise of the blade, one of said portions being disposed perpendicular to and
95 secured by its longitudinal edge to the face of the disc, the deflected portion being spaced from the said face of the disc and having its free edge of a helical formation, the inner end of the blade terminating adjacent the axis of the disc and the outer end
100 of the blade terminating adjacent the periphery of the disc.

20. A rotor for a snow plow and the like, said rotor including a casing having a snow
105 inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable disc like element, a blade, one portion of the blade being deflected with respect to another portion and on a line extending
110 lengthwise of the blade and substantially parallel with one of the longitudinal edges of the blade, the said edge of the blade being secured to the face of the disc for maintaining the adjacent portion of the blade perpendicular to the face of the disc, the free
115 edge of the deflected portion of the blade diverging from the inner end to the outer end thereof, the portion of blade adjacent the last recited edge being of a helical
120 formation.

21. A rotor for a snow plow and the like, said rotor including a casing having a snow
inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable
125 disc like element, a blade, one portion of the blade being deflected with respect to another portion and on a line extending lengthwise of the blade and substantially parallel with one of the longitudinal edges of the
130

blade, the said edge of the blade being secured to the face of the disc for maintaining the adjacent portion of the blade perpendicular to the face of the disc, the free edge of the deflected portion of the blade diverging from the inner end to the outer end thereof, the portion of blade adjacent the last recited edge being of a helical formation, the inner end of the blade terminating adjacent the axis of the said disc and the outer end thereof terminating at the periphery of the disc.

22. A rotor for a snow plow and the like, said rotor including a casing having a snow inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable hub, a disc secured to one end of the hub, a plurality of radially arranged blades secured to the face of the disc, one end of the blade terminating adjacent the hub and the other ends thereof terminating at the periphery of the disc, the longitudinal edges of each of the blades being deflected along an intermediate line extending lengthwise of the blade and substantially parallel with one of said longitudinal edges, the last said edge being anchored to the face of the disc, the other longitudinal edge diverging with respect to the said line and from the inner to the outer end of the blade, the last recited edge of the blade being of a helical formation.

23. A rotor for a snow plow and the like, said rotor including a casing having a snow inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable disc like element and a plurality of radially disposed blades secured to the face of said disc, each of said blades having a perpendicular portion adjacent the disc, the free longitudinal edge of the blade being deflected with respect to the said perpendicular portion, the surface if said deflected portion being of a helical formation.

24. A rotor for a snow plow and the like, said rotor including a casing having a snow inlet and a discharge outlet, a rotor proper in the casing, said rotor including a rotatable disc like element and a plurality of radially disposed blades secured to the face of said disc, each of said blades being shaped to form a perpendicular portion extending lengthwise of the blade and a laterally deflected portion, the free edge of the said perpendicular portion being secured to the face of the disc, the free longitudinal edge of said deflected portion diverging from the inner to the outer end of the blade and being of a helical formation.

25. A rotor for snow plows and the like, said rotor including a casing having a snow inlet and a discharge outlet, and a rotor proper in the casing, said rotor including a disc like element and a plurality of radially disposed blades projecting from the face of

the rotor, each of said blades having a portion perpendicular to the face of the disc and a laterally deflected portion overhanging the face of the disc and being of a helical formation.

26. A rotor for snow plows and the like, said rotor including a casing having a snow inlet and a discharge outlet, and a rotor proper in the casing, said rotor including a disc like element and a plurality of radially disposed blades projecting from the face of the rotor, each of said blades having a portion perpendicular to the face of the disc and a laterally deflected portion overhanging the face of the disc, the longitudinal edge of said overhanging portion diverging with respect to the said perpendicular portion and from the inner to the outer end of the blade and being of a helical formation.

27. A snow plow including a vehicle like structure, means on the vehicle for propelling the same, a rotor casing having a snow inlet and a discharge outlet, a rotor in the casing, the said casing being supported entirely by the vehicle and for movement with respect thereto on an axis transverse to the axis of the rotor, means for swinging said casing about the said pivot and for maintaining the casing in its adjusted position, means also mounted on the vehicle for actuating the rotor in any position into which the said casing has been moved with respect to the vehicle, a scoop connected to and movable with the casing for directing the snow into the casing, and a discharge chute leading from the outlet of said casing for directing the snow to one side of the path of movement of the vehicle.

28. A snow plow including a vehicle like structure, means on the vehicle for propelling the same, a rotor casing having a snow inlet and a discharge outlet, a rotor in the casing, the said casing being supported entirely by the vehicle for pivotal movement with respect to the vehicle on an axis transverse to the axis of the rotor, means for swinging said casing about the said pivot and for maintaining the casing in its adjusted position, means also mounted on the vehicle for actuating the rotor in any position into which the said casing has been moved with respect to the vehicle, a scoop connected to and movable with the casing for directing the snow into the casing, a discharge chute leading from the outlet of said casing for directing the snow to one side of the path of movement of the vehicle, and means for rendering the rotor inactive at will with respect to its driving mechanism.

29. A snow plow including a vehicle like structure, means on the vehicle for propelling the same, a rotor casing having a snow inlet and a discharge outlet, a rotor in the casing, the casing being supported entirely

by the vehicle for pivotal movement with respect to the vehicle on an axis transverse to the axis of the rotor, means for swinging said casing about the said pivot and for maintaining the casing in its adjusted position, means also mounted on the vehicle for actuating the rotor in any position into which the said casing has been moved with respect to the vehicle, a scoop connected to and movable with the casing for directing the snow into the casing, said scoop encompassing the inlet opening of the said casing, the walls of the scoop being spaced for a considerable distance from the said opening, and an inclined deflector within the scoop and projecting above the bottom of the scoop, said deflector extending about the said inlet opening of the casing.

30. A snow plow including a vehicle like structure, means on the vehicle for propelling the same, a rotor casing having a snow inlet and a discharge outlet, a rotor in the casing, means mounting the casing on the vehicle for movement with respect to the vehicle on an axis transverse to the axis of the rotor, means for swinging said casing about the said pivot and for maintaining the casing in its adjusted position, means also mounted on the vehicle for actuating the rotor in any position into which the said casing has been moved with respect to the vehicle, a scoop connected to and movable with the casing for directing the snow into the casing, said scoop encompassing the inlet opening of the said casing, the walls of the scoop being spaced for a considerable distance from the said opening, an inclined deflector within the scoop and projecting above the bottom of the scoop, said deflector extending about the said inlet opening of the casing, and a pivotally mounted hood extending over the top of the scoop in proximity to the said inlet opening of the casing.

31. A snow plow including a vehicle like structure, means on the vehicle for propelling the same, a rotor casing having a snow inlet and a discharge outlet, a rotor in the casing, means mounting the casing on the vehicle for movement with respect to the vehicle on an axis transverse to the axis of the rotor, means for swinging said casing about the said pivot and for maintaining the casing in its adjusted position, means

also mounted on the vehicle for actuating the rotor in any position into which the said casing has been moved with respect to the vehicle, a scoop connected to and movable with the casing for directing the snow into the casing, said scoop encompassing the inlet opening of the said casing, the walls of the scoop being spaced for a considerable distance from the said opening, an inclined deflector within the scoop and projecting above the bottom of the scoop, said deflector extending about the said inlet opening of the casing, and a pivotally mounted hood extended over the top of the scoop in proximity to the said inlet opening of the casing, the opening movement of the said hood being controlled by the snow in the said scoop.

32. A snow plow including a supporting structure, means for propelling the same, snow handling mechanism at one end of and supported entirely by the said structure, means for actuating the snow handling mechanism, an enclosure on the said structure for the operator, and means whereby the snow handling mechanism may be pivotally shifted with respect to the supporting structure and from within the said enclosure.

33. A snow plow including a supporting structure, traction wheels at opposite ends thereof, snow handling mechanism mounted at one end of the structure for movement therewith and with respect to the structure, the wheels at the end of the structure remote from the snow handling mechanism constituting the steering wheels for the structure, and means for controlling said steering wheels.

34. A snow plow including a supporting structure, traction wheels at opposite ends thereof, snow handling mechanism mounted at one end of the structure for movement therewith and with respect to the structure, the wheels at the end of the structure remote from the snow handling mechanism constituting the steering wheels for the structure, and means for controlling said steering wheels and from the vehicle.

In testimony whereof, I have signed my name to this specification, on this 3rd day of March, A. D. 1924.

EMERY H. FAHRNEY.