L. A. WORTH.

SNOWPLOW.

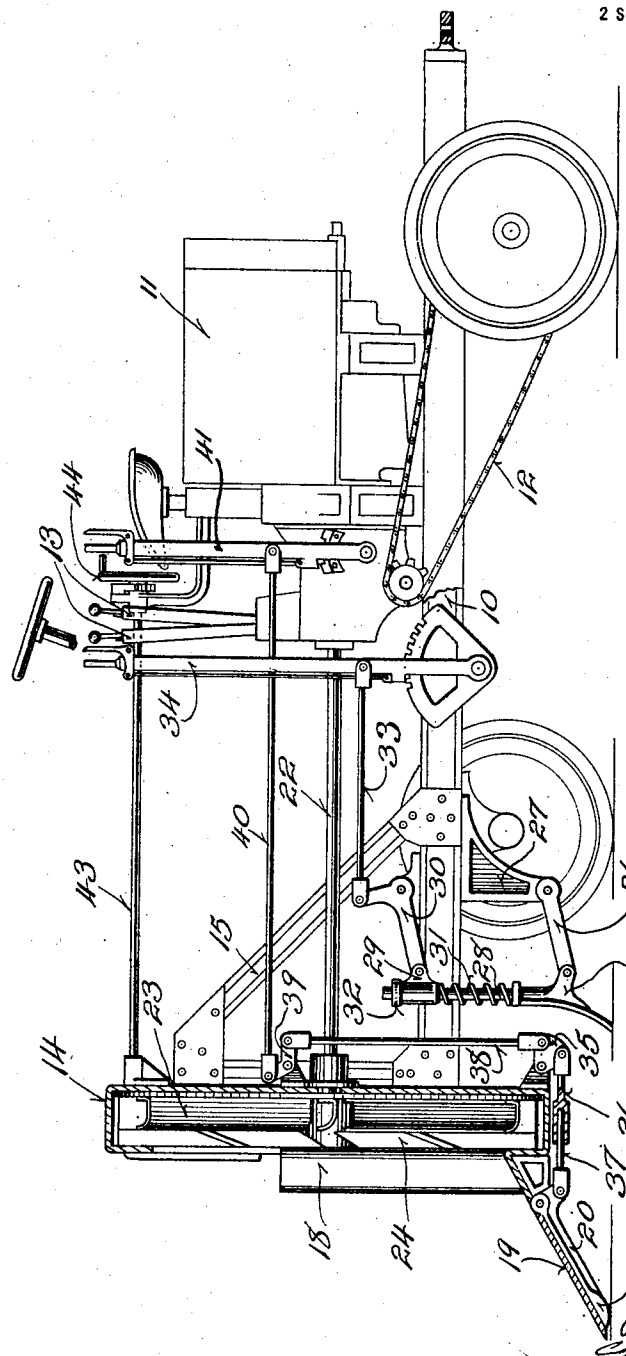
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1,387,576.

Patented Aug. 16, 1921.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 2.

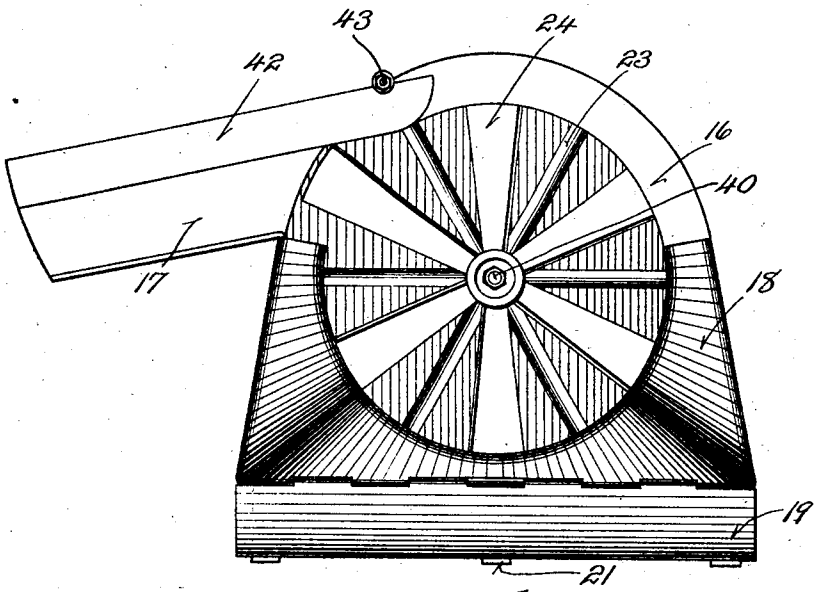
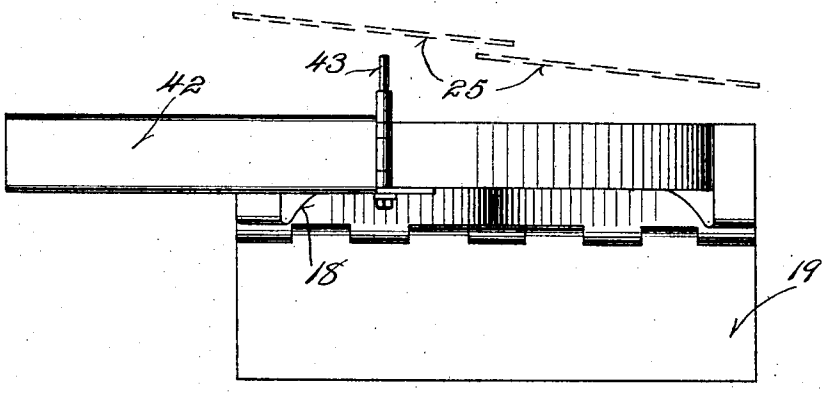


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEWIS A. WORTH, OF MERTON, WISCONSIN.

SNOWPLOW.

1,387,576. Specification of Letters Patent. Patented Aug. 16, 1921.

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To all whom it may concern:

Be it known that I, LEWIS A. WORTH, a citizen of the United States, and resident of Merton, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Snowplows; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in snow plows, more particularly of that type mounted on a self-propelled vehicle and adapted for the positive discharge of the snow laterally of the path of movement of the vehicle.

It is in general the object of my invention to simplify and otherwise improve the structure and to increase the efficiency of machines of this character, and it is more particularly my object to provide a plow mechanism which is adapted to thoroughly remove the snow from its path of travel over a paved street.

It is further my object to provide an improved lateral conveying means for snow in the path of the vehicle which is supplied for its conveying action with snow previously dislodged or separated from the mass in advance thereof, thus relieving the lateral conveying means from the stress of actual dislodgment of the snow from the compacted mass in advance thereof, and permitting a maximum efficiency of said lateral conveying means.

A still further object resides in the provision of means whereby various parts of the plow may be adjusted from the driver's position.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of parts which will be hereinafter more particularly described and defined by the appended claims.

In the accompanying drawings:

Figure 1 is a side elevational view of a snow-plow constructed in accordance with my invention, the forward casing of the plow structure being shown in section to more clearly disclose the structure thereof.

Fig. 2 is a front end view of the plow.

Fig. 3 is a plan view of the forward end of the plow.

Referring now more particularly to the accompanying drawings, I provide a wheeled vehicle chassis or frame 10 on which is mounted a motor 11 having drive connection 12 with the rear wheels of the chassis, this drive connection being controlled by the levers 13 of a transmission mechanism of the type commonly employed in automobile structures. A substantially circular casing 14 is secured at the front end of the chassis and braced by the beams 15, the bottom of this casing being spaced a slight distance above the ground. The peripheral wall of the casing carries an inwardly extending annular flange 16 defining a conveyer channel in the casing, the front of the casing being thus open and the peripheral wall of the casing is provided at one upper side portion with a discharge opening, from which a chute 17 extends laterally of the vehicle. A guide shield 18 covers the lower portion of the channel flange 16 and presents an inwardly inclined deflecting surface adapted to direct snow into the casing, the shield being extended at the lower side portions of the casing to provide a straight edge portion extending substantially parallel to the ground. A scoop plate 19 is pivoted to this lower straight edge portion of the shield, brace bars 20 being secured to the under face of this scoop plate and terminating at their forward ends in enlargements 21 adapted to slide on the roadway and hold the forward edge of the scoop plate spaced a very slight distance thereabove, said scoop plate being thus inclined upwardly and coacting with the adjacent portion of the shield 18 to deflect snow into the conveyer casing.

A shaft 22 extends forwardly from the engine structure and is projected axially into the casing 14. This shaft carries within the rear portion of the casing a series of radial fan blades 23 which are channel shaped in cross section whereby to receive snow which enters into the casing and to impart a centrifugal force thereto whereby the snow will be discharged through the chute 17 in a manner similar to the action of the ordinary blower-fan. A radial series of cutter blades 24 is mounted on the shaft in advance of the blades 23, said cutter blades being inclined obliquely with respect to their direction of rotative movement and adapted to sever snow from the compacted mass in advance of the machine and to feed said snow to the blades 23 from whence the snow is discharged from the casing laterally of the

direction of travel of the vehicle. Thus, as the machine is propelled forwardly, snow in the path thereof will be deflected into the casing by the scoop plate 19 and shield 18 and cut to proper consistency by the blades 24 and fed to the blades 23 for discharge laterally of the machine.

To complete the cleansing action on the roadway, a pair of slightly inclined scraper blades 25 are provided rearwardly of the casing 14 and are pivotally connected by links 26 with hanger brackets 27 depending from the vehicle frame 10. Standards 28 are carried by these scraper blades and are slidable in sleeves 29 carried by the forwardly extending arms of angle levers 30 pivoted on the vehicle frame, said scraper blades being thus held in proper position. Springs 31 are coiled on the standards 28 and bear against the sleeves 29 and stop collars 32 are secured on the upper ends of the standards for engagement by the sleeves. Thus position of the levers 30 determines the elevation of the scraper blades 25 and the degree of spring tension with which said blades may press against the roadway. The position of the levers is determined by a link 33 extending rearwardly to an upstanding control lever 34 pivoted on the vehicle frame and disposed at a convenient point adjacent the driver's seat of the vehicle.

To provide means for raising the scoop plate, a lever 35 is pivoted at the lower portion of the casing 14 and has pivotally connected therewith a forwardly extending link 36 terminating in a socket portion which slidably receives a second link 37 pivoted to the scoop plate. The scoop plate is thus at all times free to rise and prevent damage by engagement with obstacles in the roadway, and rocking movement of the lever 35 will be transmitted by the links 36 and 37 to the scoop plate to raise the same when desired. Movement of the lever 35 is controlled by a link 38 pivoted thereto and to a second lever 39 from whence a link 40 extends rearwardly to an upstanding control lever 41 mounted adjacent the driver's seat.

It may be desirable at times to adjustably limit range of discharge of snow laterally from the fan casing; and to this end I provide a top section 42 for the chute 17 which is secured to a shaft 43 at the upper edge of the fan casing 14, the top section 42 being thus pivotally adjustable by rotation of the shaft. This shaft extends rearwardly to a convenient point adjacent the driver's seat of the vehicle and carries a handwheel 44.

I have thus provided a fairly simple and highly efficient machine for cleaning snow from a roadway which is provided with positive means for conveying the snow laterally from the path of the machine to prevent the possibility of clogging, and which may be controlled in its various desired adjustments, from a single point.

While I have shown and described a preferred embodiment of my invention, it will be appreciated that various changes and modifications of structure may be employed to meet differing conditions of use and manufacture, without departing in any manner from the spirit of my invention.

What is claimed is:

1. A machine of the class described comprising a vehicle, a casing mounted at the front of the vehicle, radial blades rotatably mounted in the casing on a longitudinal horizontal axis for discharging material laterally from the casing, deflector members disposed in advance of the lower portion of the casing for directing snow into said casing and having their corner portions extended to form a straight lower edge, a scoop pivoted at said straight lower edge of the deflector members, a lug depending from said scoop, a longitudinally extending link pivotally connected to said lug, and means for shifting said link longitudinally to adjust said scoop vertically about its pivot.

2. A machine of the class described comprising a vehicle, a casing mounted at the front of the vehicle, a member rotatably mounted in the casing on a longitudinal horizontal axis and having blades for discharging material laterally from the casing, a scoop pivoted to the front of said casing to deflect material into said casing, cutters on said rotary member in advance of said blades, a chute extending tangentially downwardly and laterally from one side of the casing, and a vertically adjustable top section for said chute whereby to adjustably limit the range of discharge of material from the chute.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

LEWIS A. WORTH.