April 22, 1924. 1,491,686

C. R. FITCH

SNOWPLOW

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FIG. 1.

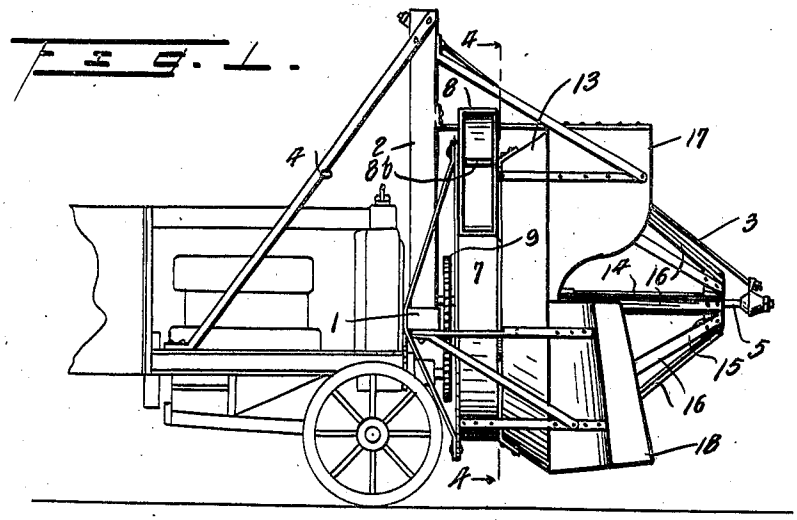
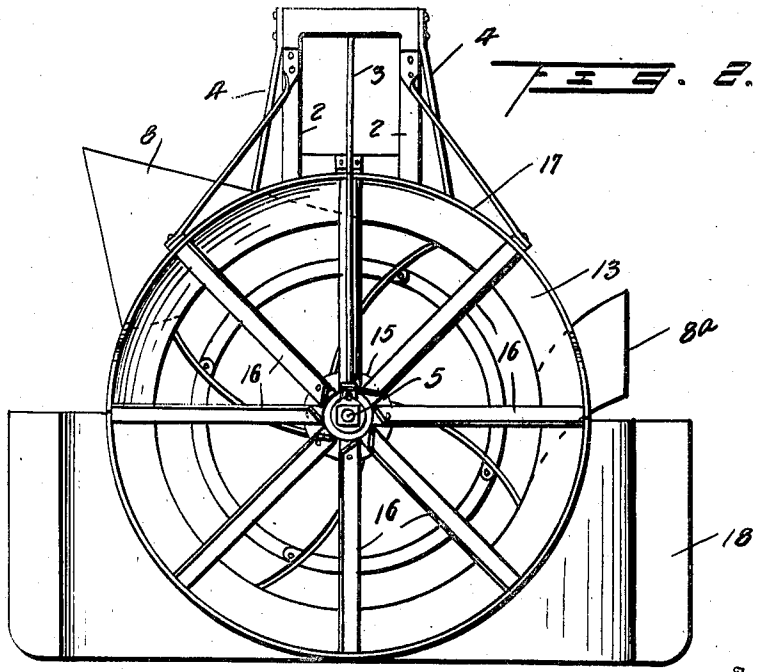


FIG. 2.



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Fig. 3.

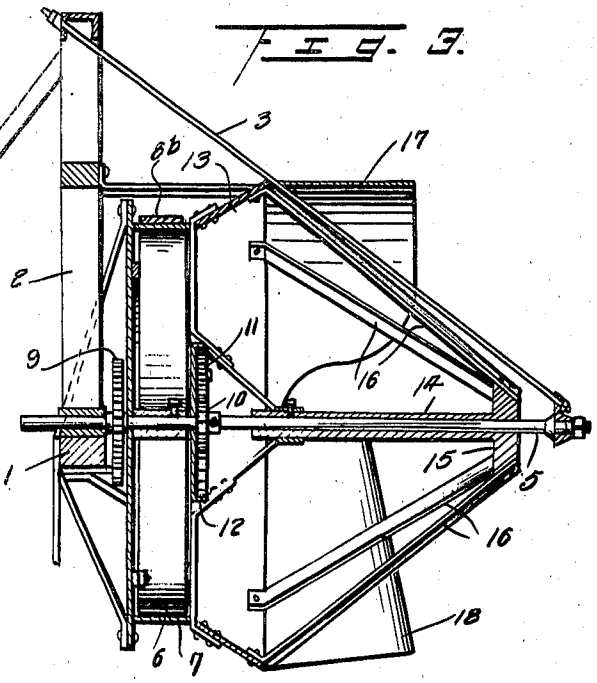


Fig. 5.

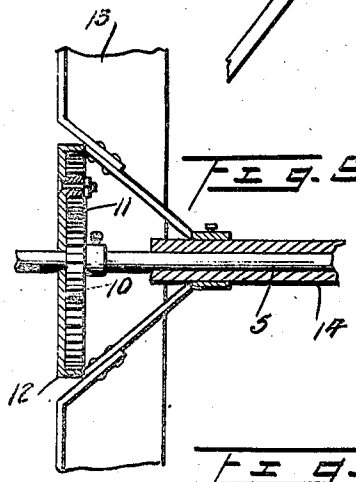


Fig. 4.

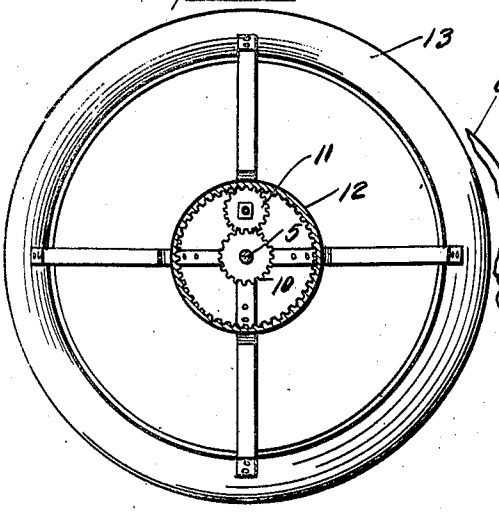
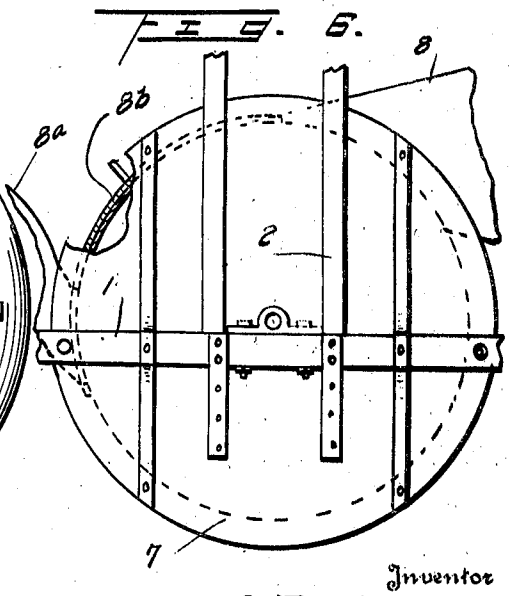


Fig. 6.



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Patented Apr. 22, 1924. 1,491,686

UNITED STATES PATENT OFFICE.

CECIL R. FITCH, OF NORTH ST. PAUL, MINNESOTA.

SNOWPLOW.

Application filed September 13, 1923. Serial No. 662,473.

To all whom it may concern:

Be it known that I, CECIL R. FITCH, a citizen of the United States, residing at North St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Snowplows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of the present invention is the provision of a snow plow which is adapted to be attached to a truck, bus or analogous motor vehicle for removing snow in the path thereof, said plow embodying a rotary cutter and a fan for drawing in the snow loosened by the cutter and discharging the same laterally.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application:

Figure 1 is a side elevation of a snow plow embodying the invention,

Figure 2 is a front view thereof,

Figure 3 is a vertical, central, longitudinal section,

Figure 4 is a transverse section on the line 4—4 of Figure 1,

Figure 5 is a detail view showing more clearly the gearing whereby the fan and cutter are driven in opposite directions, and

Figure 6 is a rear view of the fan casing and the bracing therefor.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The plow is adapted to be located in front of the truck or other vehicle and is mounted in any substantial and preferred way and, as shown, a cross-beam 1, an upright 2 and front and rear braces 3 and 4 are provided. A centrally disposed longitudinal shaft 5 supports the rotary fan and cutter. The fan 6 is enclosed within a casing 7 which is provided with a laterally disposed spout 8, whereby to discharge the snow to one side of the vehicle. A sprocket wheel 9 is connected with the fan and is adapted to be driven from the motor of the vehicle in any preferred way. The hub of the fan is provided with a gear wheel 10 which is in mesh with a gear wheel 11 journaled upon the web of and in mesh with the teeth of an internal spur gear 12 forming a part of the rotary cutter with the result that the fan and cutter are rotated in opposite directions. A flared rim 13 is connected with the internal spur gear 12 and serves to gather the loosened snow and direct the same into the casing 7 of the fan. A sleeve 14 mounted upon the shaft 5 is connected at its rear end with the internally toothed rim 12 and at its forward end to a flared ring 15. Cutting blades 16 grouped about the sleeve 14 and rearwardly diverged, are connected at their ends to the ring 15 and rim 13. A shield 17 extends over the upper portion of the rotary cutter and is disposed adjacent the rim 13 and serves to confine the snow and prevent blinding and obstructing the vision of the driver. A guard 18 is similarly disposed below the shield 17 and operates in a measure to restrict the action of the rotary cutter. The shield 17 and guard 18 may be supported in any preferred way.

In practice, the device is located in front of the truck or other vehicle and element 9 is geared in any preferred and convenient way to the motor of the vehicle to be driven thereby. As the vehicle thus equipped is driven forwardly, the rotary cutter penetrates and loosens the snow which is drawn rearwardly by the action of the fan 6 and discharged laterally through the spout 8. By driving the fan and the rotary cutter in reverse directions, the strain is equalized and the snow prevented from collecting and choking.

A spout 8^a may be applied to the opposite side of the fan casing and a cut off 8^b provided to cooperate with each of the spouts, whereby the snow may be discharged to the right or the left as desired.

What is claimed is:

1. A snow plow comprising a rotary fan, a casing therefor having a laterally disposed spout, and a rotary cutter mounted in line with the fan and including forwardly converged blades, and a rearwardly converged rim secured to and rotating with said blades, the latter serving to gather in the

loosened snow and direct the same into the fan casing.

2. A snow plow comprising a rotary cutter, the same including a sleeve, cutting blades grouped about the sleeve and rearwardly diverged, a ring at the front end of the sleeve having the forward ends of the cutting blades attached thereto, and a rearwardly converged rim at the rear end of the sleeve and having the rear ends of the cutting blades attached thereto.

3. A snow plow comprising a shaft, a fan mounted upon the shaft, means for imparting rotary movement to the fan, a casing enclosing the fan and having a laterally disposed spout, a sleeve loose on said shaft, an internally toothed rim connected with the rear end of the sleeve, a gear wheel fast to said fan, an idle gear wheel connecting the internally toothed rim with the gear wheel rotatable with the fan, a forwardly flared rim connected with the said internally toothed rim, a ring at the front end of the sleeve, rearwardly diverged blades attached at their front ends to said ring and at their rear ends to the forwardly flared rim, a shield disposed over the upper portion of the cutter, and a guard arranged below the lower portion of the cutter.

In testimony whereof I affix my signature in presence of two witnesses.

CECIL R. FITCH.

Witnesses:
MABEL G. HANSON,
HARRIET M. LOAGUE.