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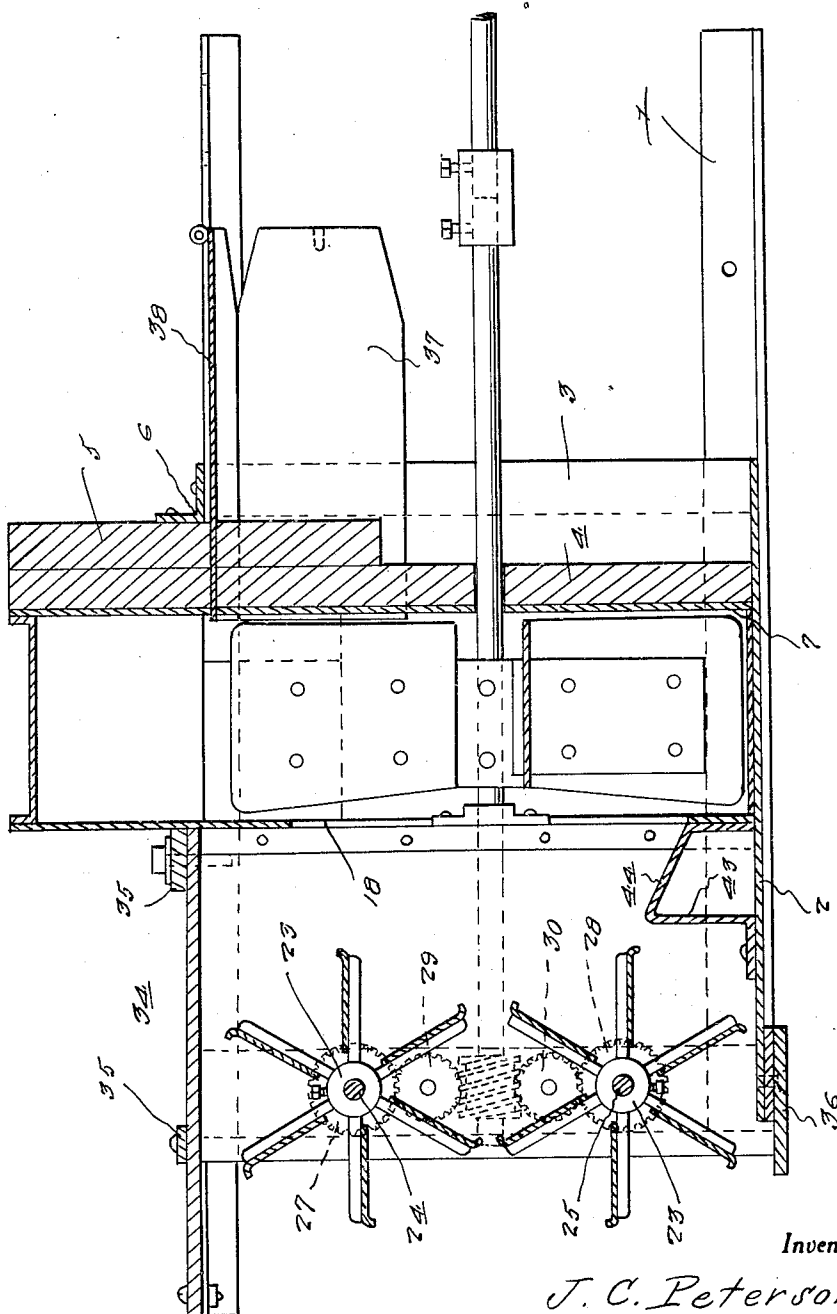
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SNOWFLOW

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3 Sheets-Sheet 1

Fig. 1.



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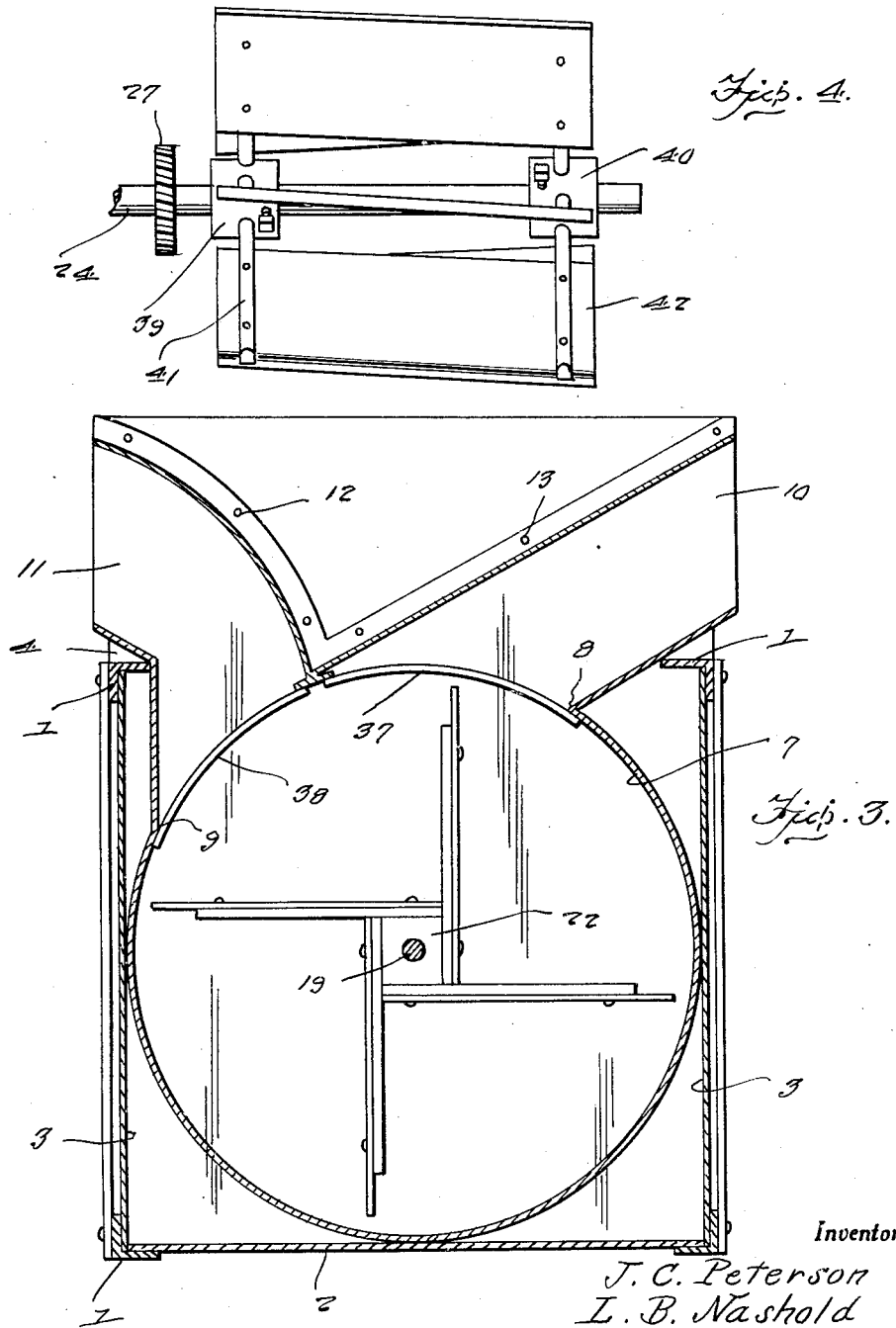
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UNITED STATES PATENT OFFICE

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SNOWPLOW

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This invention relates to certain new and useful improvements in snow plows and the primary object of the present invention is to provide a snow plow that may be mounted on a vehicle, such as a locomotive or the like, for clearing the trackway of snow accumulation and may be also used on any other type of vehicle as may be found desirable for clearing the snow from side walks, boulevards, highways and the like.

A still further object of the invention is to provide a snow plow of the above mentioned character which will insure depositing of the plowed snow to either side of the road or walk being cleaned.

A still further object of the invention is to provide a plow of the above mentioned character, which is comparatively simple in construction, consists of relatively few parts, can be readily mounted on a locomotive or other vehicle without requiring a material alteration in the vehicle, and which will otherwise be found practical, and thoroughly efficient for the purpose designed.

Other objects and advantages of the invention will become apparent during a study of the following description, taken in connection with the accompanying drawings wherein:

Figure 1 is a vertical sectional view taken through the plow, certain parts being shown in elevation.

Figure 2 is a horizontal sectional view taken through the plow.

Figure 3 is a vertical transverse sectional view taken through the plow.

Figure 4 is an elevational view of one of the cutters.

Referring more in detail to the drawings, it will be seen that the plow includes a frame structure comprising four horizontally disposed angle irons 1 arranged in rectangular formation and disposed one adjacent each corner of a casing, the latter being substantially U-shaped in cross section and including a bottom wall 2 and oppositely disposed side walls 3.

Rising from the bottom wall 2 between walls 3 adjacent the rear end of the casing inwardly from said end is a rear wall 4 the up-

per end of which projects beyond the open top of the casing. A brace or reinforcing member 5 engages the upper end of the wall 4 and extends transversely of the casing from one side wall to the other of the casing. The brace or reinforcing member 5 is confined between wall 4 and a transverse angle bar 6 that connects the upper pairs of angle irons 1.

An annular fan housing 7 is arranged in the casing forwardly of wall 4 and at the top thereof is provided with a pair of openings 8, 9, from which extend upwardly and outwardly therefrom and in opposite direction, nozzles or conduits 10, 11 which at their free ends open laterally of the plow.

The conduits 10, 11, may be formed in any suitable manner and are secured to wall 4 as at 12, 13. Rising from the bottom walls 2 of the casing is a pair of spaced parallel partition walls 14, 14, that are arranged forwardly of the fan housing 7 and at right angles thereto. The partition walls 14, 14 divide the casing into a pair of compartments 15—15 that open outwardly at the forward end of the plow. The partition walls 14—14 form therebetween a gear chamber 16 closed at each end by vertical wall members 17—17, and the chamber is adapted to contain a suitable lubricant.

The forward end wall of fan housing 7 is provided with an opening 18 which connects the fan housing with the compartments 15—15.

Extending longitudinally through the casing is a driven shaft 19. The shaft 19 extends through suitable openings provided therefor in wall 4 and an adjacent end wall of the fan housing; the shaft passing through the fan housing and into the gear casing. Suitable bearings 20, 21 are provided for the shaft 19 in the walls 17—17.

Mounted on shaft 19 for rotation therewith and located within the fan housing 7 is a blower fan 22, the blades of which are relatively arranged as to have adjacent blades project radially from the hub of the fan at substantially right angles to one another and alternate blades projecting radially from the hub in opposite direction. (See Figure 3.) Arranged within each compartment 15 and

adjacent the forward end thereof is a pair of upper and lower cutters 23. The upper cutters are mounted on a shaft 24 and the lower cutters on a shaft 25.

5 Shaft 24, 25 extends transversely of the casing through partition walls 14—14 and have their ends supported by vertical bars 26 arranged adjacent the side walls 3 at the forward end of the casing.

10 On an intermediate portion of each shaft 24, 25, and arranged within gear chamber 16 are gear wheels 27, 28 that mesh with gears 29, 30 suitably journaled between the walls 14 and arranged within the gear chamber for mesh with a worm 31 on an adjacent portion of shaft 19. At its free end shaft 19 is adapted to be coupled as at 32 to one end of a motor shaft, a portion of which is indicated at 33.

20 Thus as is apparent, when power is transmitted to shaft 19, fan 22 will be rotated and movement of shaft 19 is transmitted to shafts 24 and 25 through the gearing described in detail, thus rotating the cutters 23 simultaneously with fan 22. The packed snow and ice will be cut and loosed by contact of the cutters with the same, the particles of snow and ice being subsequently drawn into the casing by the suction created by the fan 22, the particles of snow and ice in the casing being drawn into the fan housing 7. The snow and ice particles thus drawn into fan housing 7 are forced into the outlet conduits 10, 11 to be deposited on opposite sides of the plow.

35 For closing the top of the casing forwardly of the fan housing 7 there is provided a removable cover plate 34 held in position by cross bars 35 bolted at their ends to adjacent angle irons 1. At its forward end the cover plate 34 projects forwardly of the corresponding end of the casing.

40 Extending across the bottom of the casing at the forward end thereof is a blade 36 that has a convex cutting edge as suggested in Figure 2.

45 Openings 8, 9 are controlled by sliding valve plates 37, 38 that are arcuate in cross section and are adapted for sliding movement through suitable slots provided in the wall 4 and brace member 5.

50 Each of the cutters 23 comprises a pair of spaced hubs 39, 40 respectively provided with spokes 41 radiating therefrom; the spokes of hub 40 being arranged in alternate relation with respect to the spokes of hub 39 and in advance of the spokes on hub 39. Blades 42 supported by pairs of spokes 41 are thus inclined obliquely with respect to the axes of the respective shafts 24, 25 to insure guiding of the snow particles rearwardly and into the casing, and toward opposite sides of the plow.

55 Extending transversely of the casing at the bottom thereof, and arranged in each compartment 15 is a member 43, located adjacent

the bottom of fan housing 7 and having an inclined top surface 44 inclining toward the fan housing 7 at the bottom of opening 18. The purpose of member 43 is to prevent accumulations of snow in the casing in front of the fan housing, and at the same time by reason of incline 44 serves as a chute for directing the snow into the fan housing.

70 From the foregoing then it will be seen that we have provided a snow plow that may be readily mounted on any desired type of vehicle and which will be found in actual practice to be thoroughly efficient for clearing a path through snow accumulation.

75 Even though we have herein shown and described the preferred embodiment of the invention it is to be understood that the same is susceptible of improvements, modifications and changes coming within the scope of the appended claims.

80 Having thus described our invention, what we claim as new is:

85 1. A snow plow including in combination a casing open at one end thereof, rotatably mounted cutters adjacent the open end of said casing, a fan housing arranged in said casing rearwardly of said cutters, outlet conduits for said fan housing extending in relatively opposite directions laterally relative of said casing, means for simultaneously operating said fan and said cutters, and means in said casing for preventing accumulation of snow in the bottom of said casing.

90 2. A snow plow including in combination a casing open at one end thereof, rotatably mounted cutters arranged at the open end of said casing, a fan housing arranged in said casing rearwardly of the cutters, outlet conduits for the fan housing extending in relatively opposite directions and opening outwardly of the fan housing laterally of said casing, a fan in said fan housing, a shaft for said fan, a gear chamber in said housing, and gearing in said chamber for transmitting movement of said shaft to said cutters, members extending transversely of said casing at the bottom thereof, said members having inclined surfaces for directing snow into said fan housing, said members being also adapted for preventing accumulation of snow at the bottom of said casing.

100 3. A snow plow including in combination a casing adapted to be mounted on a vehicle or the like, said casing being open at one end, a fan housing arranged in said casing remote from said open end, outlet conduits for the fan housing extending laterally with respect to said casing and in relatively opposite directions, a gear chamber dividing said casing forwardly of the fan housing into a pair of compartments, upper and lower cutters arranged in each of said compartments adjacent the open end of said casing, said fan housing provided with an opening in one wall thereof for connecting said housing with

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5 said compartments, a driven shaft extending through said fan housing and into said gear chamber, gearing in said chamber for transmitting movement of said shaft to said cutters, and a fan mounted on said shaft and arranged within said fan housing.

10 4. A snow plow including in combination a casing adapted to be mounted on a vehicle or the like, said casing being open at one end, a fan housing arranged in said casing remote from said open end, outlet conduits for the fan housing extending laterally with respect to said casing and in relatively opposite directions, a gear chamber dividing said casing forwardly of the fan housing into a pair of compartments, upper and lower cutters arranged in each of said compartments adjacent the open end of said casing, said fan housing being provided with an opening in one wall thereof for connecting said housing with said compartments, a driven shaft extending through said fan housing and into said gear chamber, gearing in said chamber for transmitting movement of said shaft to said cutters, and a fan mounted on said shaft and arranged within said fan housing, and members arranged in the bottom of said casing and located one in each of said compartments, said members having an inclined surface terminating at its lower end adjacent the lower portion of the opening in said wall of said fan housing and constituting a snow chute.

15 In testimony whereof we affix our signatures.

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