Jan. 15, 1929. 1,698,901

D. ZINN

SNOWPLOW

Filed Nov. 7, 1927 2 Sheets-Sheet 1

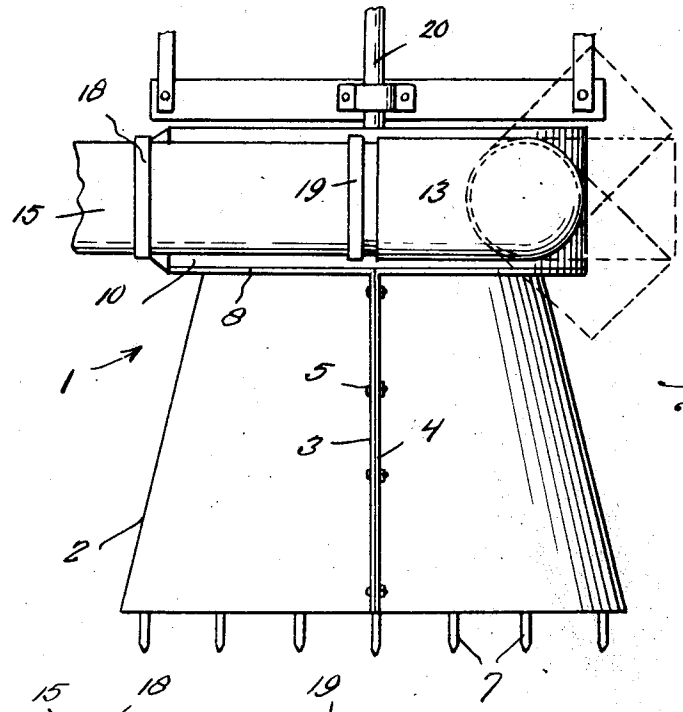


Fig. 1.

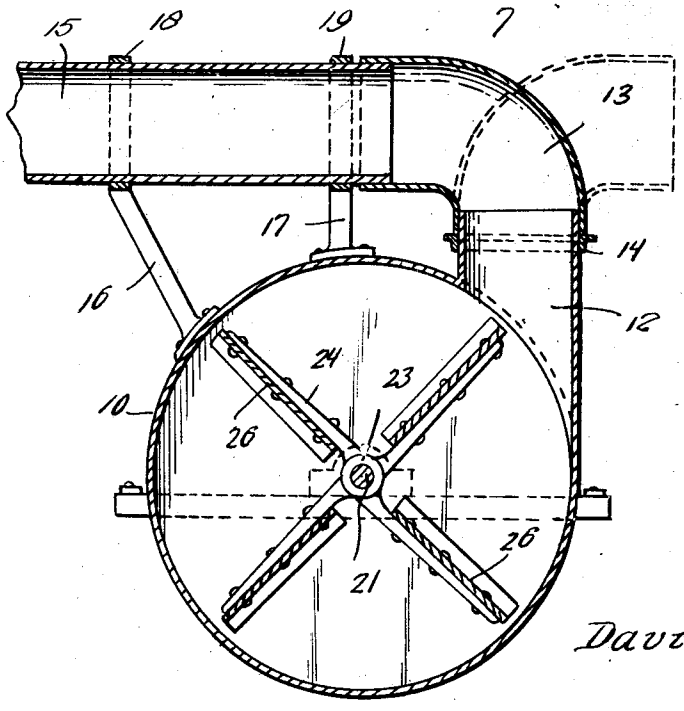


Fig. 2.

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Filed Nov. 7, 1927 2 Sheets-Sheet 2

Fig. 3.

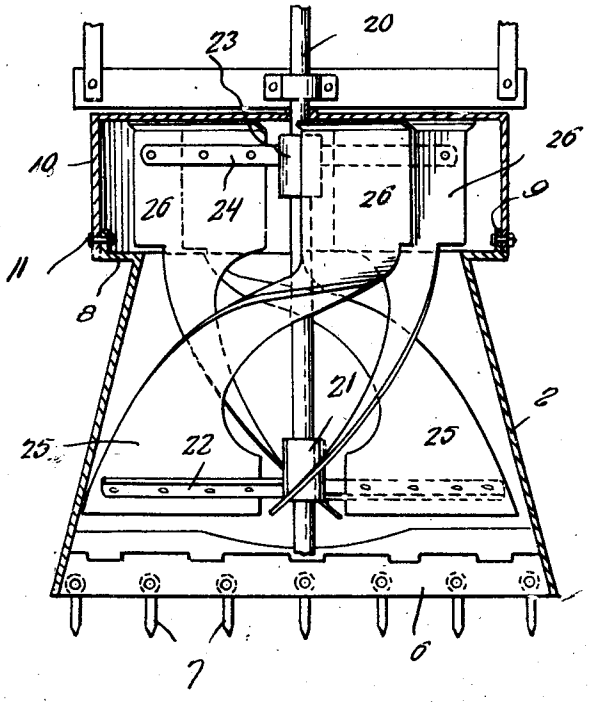
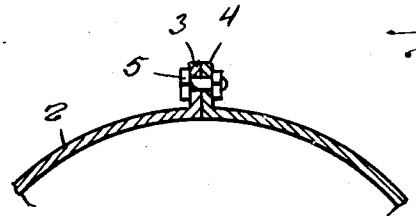


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID ZINN, OF NEW HAMBURG, ONTARIO, CANADA.

SNOWPLOW.

Application filed November 7, 1927. Serial No. 231,592.

The present invention relates to improvements in snow plows, and has reference more particularly to an improvement over the snow plow disclosed in my prior Patent No. 1,641,723, September 6, 1927.

One of the important objects of the present invention is to provide a snow plow which includes a fan casing open at its front side and to which is secured a sectional housing which is also open at its front side, auger forming knives being adapted for rotation within the housing, and cooperating at their rear inner ends with fan blade forming buckets; the fan casing being provided with a peripheral snow discharge pipe.

A further object is to provide a snow plow of the above mentioned character wherein an elbow is supported on the upper end of the snow discharge pipe, and is adapted for horizontal swinging movement, an additional pipe being connected to the elbow for conveying the snow to any particular point at the side of the road where the snow gathered by the plow may be deposited.

A still further object of the invention is to provide a snow plow of the above mentioned character, which is simple in construction, inexpensive, strong and durable and further well adapted to the purpose for which it is designed.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings.

In the accompanying drawings forming part of this application and in which like numerals indicate like parts:

Figure 1 is a top plan view of the snow plow embodying my invention.

Figure 2 is a vertical sectional view through the fan casing, and the fan blade forming buckets arranged therein as well as through the outlet pipe and the elbow and the horizontally supported discharge pipe.

Figure 3 is a sectional view through the fan casing, and the frusto conical housing showing in top plan the auger forming knives, and the fan blade forming buckets associated therewith, and

Figure 4 is an enlarged fragmentary sectional view showing the connection between the adjacent edges of the sectional housing for the auger forming knives.

In the drawings wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates generally my improved snow plow, the same being adapted to be mounted on the front of a tractor, motor car, or the like in the manner as set out in my prior patent mentioned above. The snow plow includes a sectional frusto-conical housing 2 which may consist of two, three, or more sections, as is desired. Laterally extending flanges such as are shown at 3 and 4, respectively, are formed on the complementary sections of the hood or housing 2 and these flanges are secured together in abutting relation by suitable bolt and nut connections shown at 5.

The bottom wall of this frustoconical hood or housing 2 is formed so as to present a horizontal front edge to which is hingedly secured a horizontal plow blade 6 that is equipped at its forward edge with forwardly extending spaced teeth 7 that will bite into the snow and cause the same to be fed upwardly into the housing in the manner also more clearly disclosed in my prior patent.

This hood or housing is open at its respective ends and a lateral flange extends outwardly from the rear edge of each of the sections of the hood, as shown at 8 and extending rearwardly from the flanges 8 are the ears 9 in the manner clearly illustrated in Figure 3.

A substantially cylindrical fan casing 10 which is open at its front side abuts the outer edge portions of the flanged rear end of the hood or housing 2 and the rearwardly extending ears 9 are disposed against the inner peripheral face of the fan casing. Suitable securing means such as is shown at 11 extends through the forward edge portion of the fan casing and the ears, whereby the fan casing is connected to the frusto-conical hood, in the manner clearly shown in Figure 3.

Extending upwardly from the periphery of the circular fan casing 10 is the relatively short outlet pipe 12 and adapted for rotary movement on the upper end of this outlet or exhaust pipe is the elbow 13. A band or collar 14 encircles the upper portion of the outlet or exhaust pipe 12 and any appropriate means may be provided for maintaining the elbow in position on the outlet or exhaust pipe at its upper end against accidental displacement therefrom.

An elongated discharge pipe 15 has its inner end fitted in the outlet end of the elbow 13 for conveying the snow to the side of the road, and by swinging the elbow to the positions shown in the dotted lines, the snow may be discharged from the plow in any predeter-

mined direction. However, there is provided on the fan casing a pair of upwardly disposed brackets 16 and 17, on the upper ends of which are arranged the horizontally alined rings or bands 18 and 19, respectively, through which the discharge pipe 15 is slidable and these brackets and the bands or rings carried by the upper end thereof will support the discharge pipe in a stationary horizontal position, as clearly shown in Figures 1 and 2 of the drawings.

A driven shaft 20 extends centrally through the fan casing and the sectional housing or hood 2 and this shaft is driven by the same means, and in the same manner as set out in my prior Patent No. 1,641,723. A hub 21 is secured on the forward end portion of this driven shaft 20 for disposition adjacent the forward open end of the sectional housing or hood 2, and this hub rotates with the shaft. A plurality of arms extend radially from this hub 21 as illustrated at 22 with reference more particularly to Figure 3. A similar hub 23 is secured on the shaft 20 rearwardly of the aforementioned hub 21 and this hub 23 is preferably arranged adjacent the closed rear side of the fan casing 10 as clearly shown in Figure 3. A series of arms 24 extend radially from this hub 23 and is clearly illustrated in Figures 2 and 3 of the drawings.

A plurality of auger forming knives designated by the numeral 25 are secured at their larger forward ends to respective radially extending arms 22 associated with the forward hub 21. Four of such knives are employed and the same extend rearwardly in the sectional hood or housing 2 through the open rear end thereof. The inner ends of these auger forming knives are so constructed as to provide fan blade forming buckets 26 which are secured to the respective radially extending arms 24 associated with the rearmost hub 23 and as is clearly illustrated in Figure 3, these fan blade forming buckets are operable within the fan casing.

It is obvious that when the shaft 20 is operated and the snow plow is moving forwardly over the snow covered surface, the snow entering the forward end of the hood will come in contact with the rotatable auger forming knives and these knives will convey the snow rearwardly into the fan casing where the buckets 26 will carry the snow around in a rotary manner to discharge the same through the tangentially extending outlet or exhaust pipe 12, and through the elbow 13 and the discharge pipe 15 to a point at the side of the road.

While I have shown the preferred embodiment of my invention it is to be understood that minor changes coming within the scope of the invention may be made without departing from the spirit of the invention or the scope of the appended claim.

Having thus described the invention, what I claim as new is:—

In a snow plow, a housing open at its forward and rear ends, a fan casing open at its front side and secured to the rear end of the housing, an outlet pipe extending upwardly from the periphery of the fan casing, a horizontal discharge pipe connected at its inner end to the upper end of the outlet pipe, upstanding brackets carried by the fan casing, horizontally alined bands arranged on the brackets through which the horizontal pipe extends and is supported, auger forming knives mounted on the shaft for rotation within the housing to feed the snow to the fan casing, and a fan unit mounted on the shaft for rotation within the fan casing to force the snow out through the outlet pipe.

In testimony whereof I affix my signature.

DAVID ZINN.