

Feb. 26, 1929.

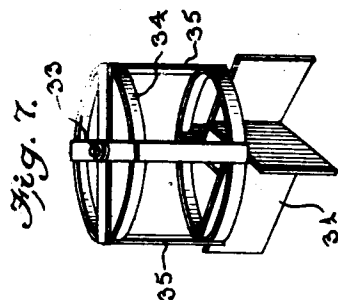
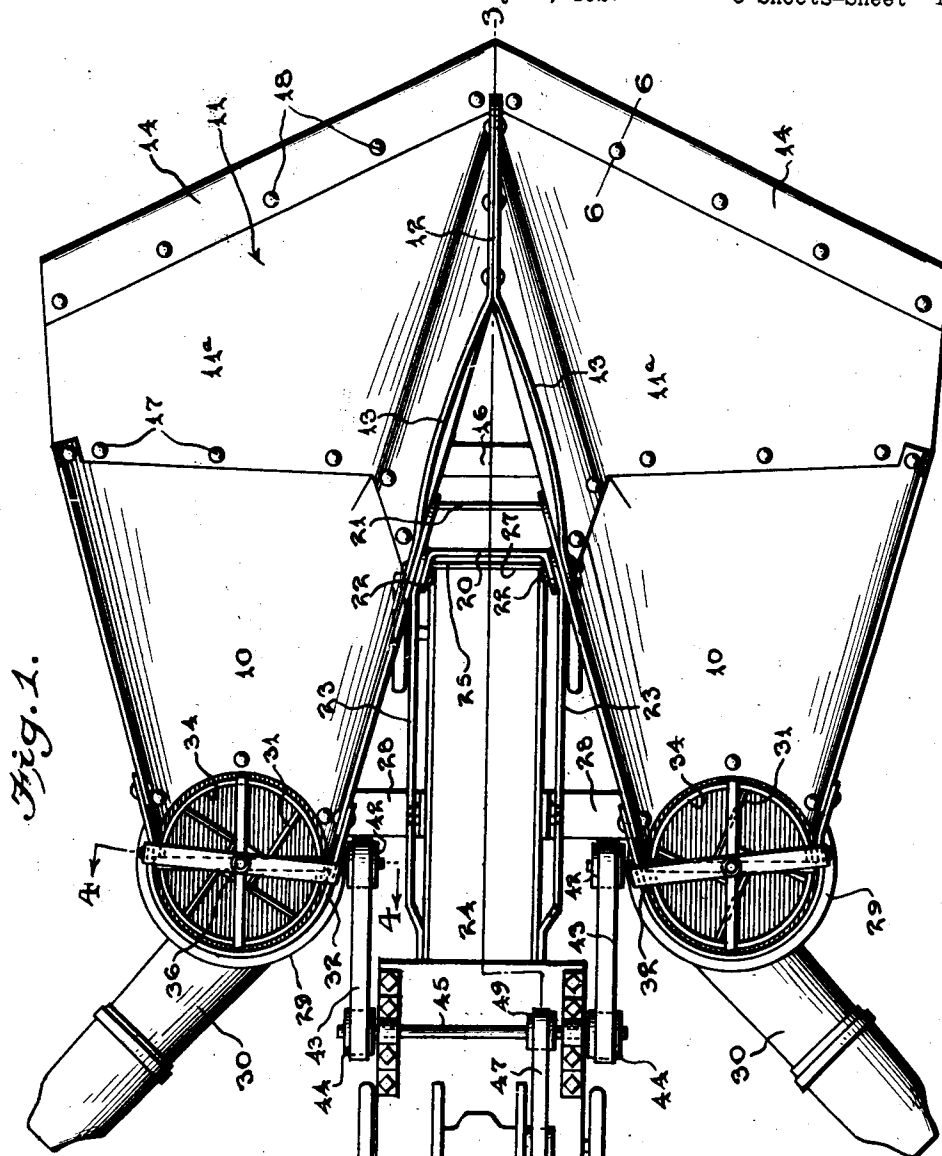
L. R. LIDDELL

1,703,740

SNOWPLOW

Filed May 17, 1927

3 Sheets-Sheet 1



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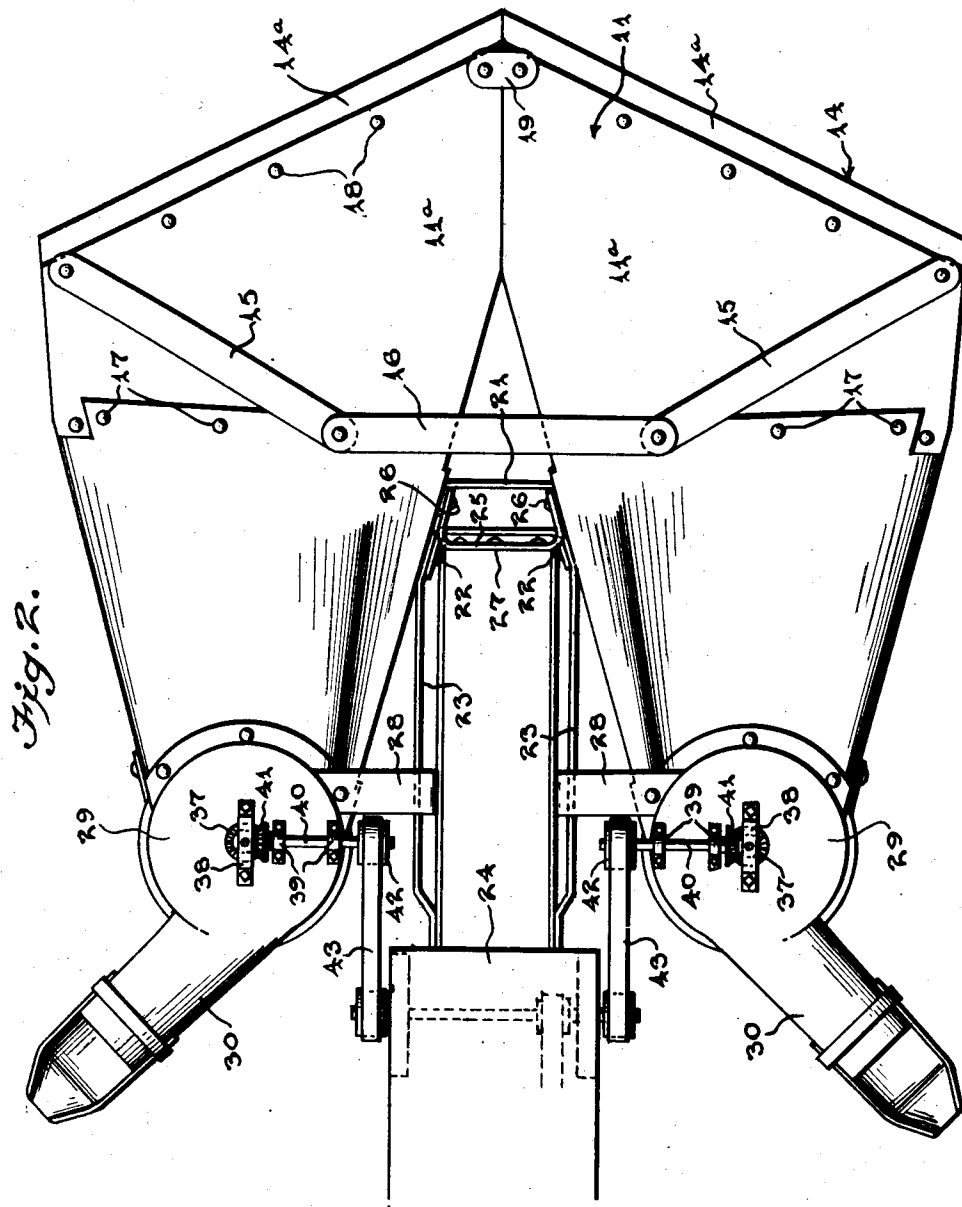
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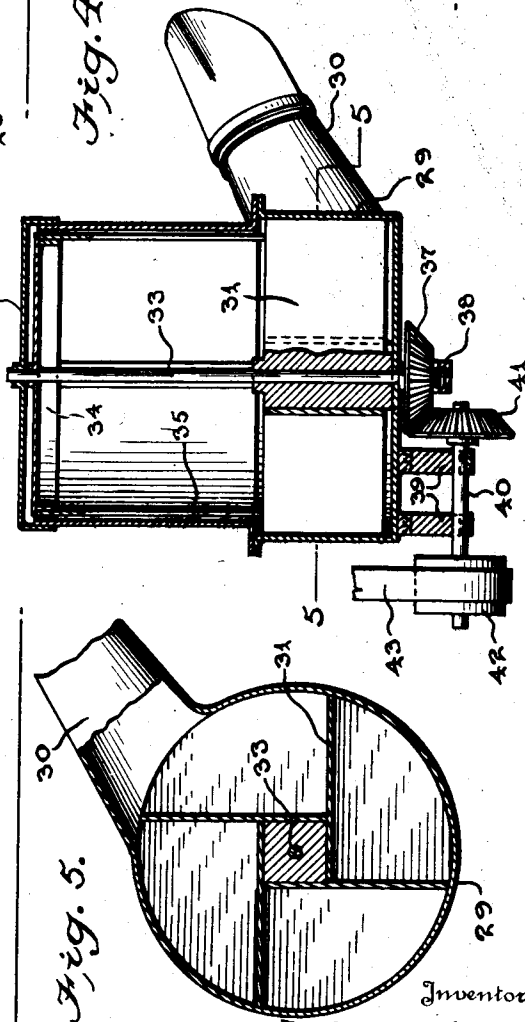
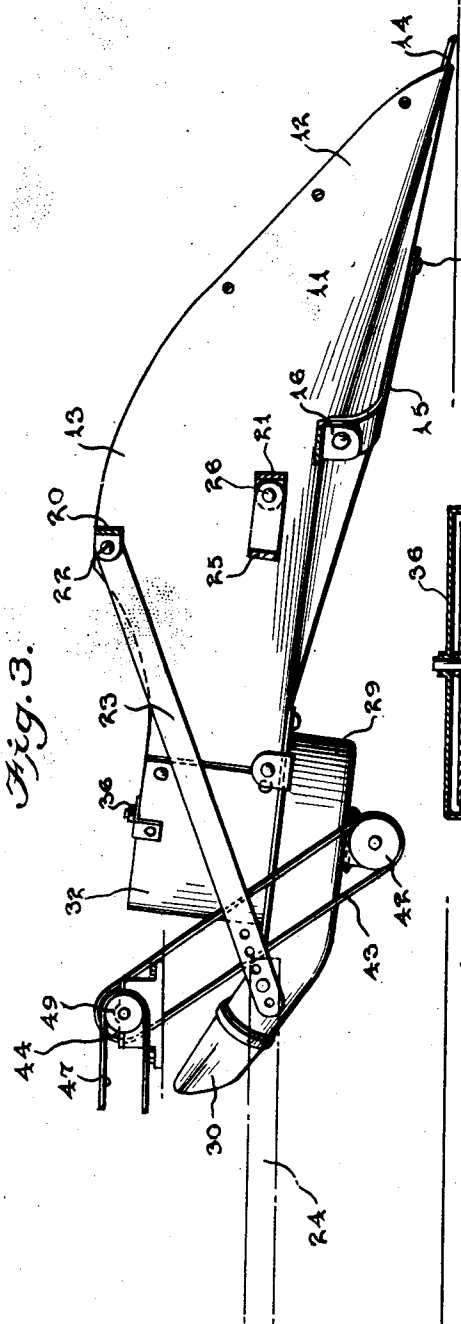
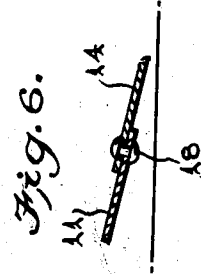
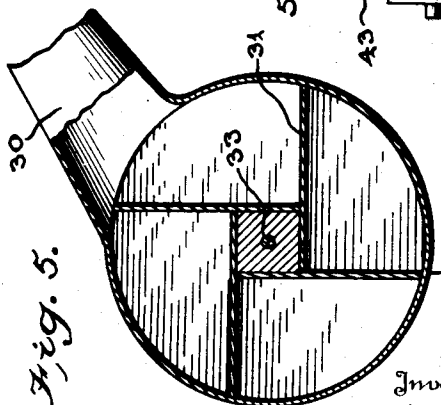


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SNOWFLOW.

Application filed May 17, 1927. Serial No. 192,014.

The object of the invention is to provide a snow plow particularly adapted for application to a motor truck for the removal of the snow from the roadway and its ultimate deposit at a material distance from the side of the road in the form of a continuous mound serving as a fence to prevent snow from falling back on the road or being blown thereonto; to provide a plow in which the snow is raised from the roadbed by shovels and deposited at the side of the road by blowers having means for crushing lumps and breaking ice; and to provide a construction which is of simple form and therefore susceptible of cheap manufacture and low marketing cost.

With this object in view, the invention consists in a construction and combination of part of which a preferred embodiment is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the invention.

Figure 2 is a bottom plan view.

Figure 3 is a vertical longitudinal sectional view on the plane indicated by the line 3—3 of Figure 1.

Figure 4 is a sectional view on the plane indicated by the line 4—4 of Figure 1.

Figure 5 is a sectional view on the plane indicated by the line 5—5 of Figure 4.

Figure 6 is a detail sectional view on the plane indicated by the line 6—6 of Figure 1.

Figure 7 is a perspective view of the combined cutting and blower element.

The invention is in the form of twin scoops 10 connected with a common plow element 11 spanning the forward ends of the two and having a centrally disposed slicer 12 terminating in divergent arms 13 connecting with the adjacent sides of the two scoops 10. The forward edge of the plow is defined by a blade 14 extending throughout its forward edge which is arranged on rearwardly divergent lines on opposite sides of the slicer.

On the under face, the plow is reinforced by the braces 15 and 16 and is connected with the scoops by appropriate fasteners such as rivets 17, corresponding rivets 18 being employed to connect the blade 14 to the plow. The plow comprises, in the illustrated embodiment, two correspondingly formed plates 11^a, the blade likewise comprising correspondingly formed elements 14^a. The two plates 11^a at the forward end are connected by a transverse tie plate 19.

The two scoops at the forward end and at the upper side are connected by a transverse

brace 20 and below this with a second transverse brace 21, the fasteners 22 securing the former also serving as a means for securing the brace members 23 which extend rearwardly for securement to the chassis of the truck 24. The U-shaped brace member 25 which is secured by the fasteners 26 to the two scoops, these fasteners also securing the brace 21, is employed to support the structure from the forward end of the truck, the U-shaped brace member being connected to the truck as shown at 27.

Bracket members 28 secured to the scoops adjacent the rear end constitute a further means for securing the device to the truck, being secured to the chassis of the latter on opposite sides.

The scoops at the rear ends carry substantially horizontally disposed cylindrical housings 29 disposed below the planes of the bottoms of the scoops and having radially disposed discharge chutes 30 arranged in rearwardly divergent relation and at an acute angle to the longitudinal center line of the truck. Within the housings 29 are disposed the fans 31, the intake to the housings being through the bottom wall of the scoops at the rear ends of the latter, the rear walls 32 of the scoops being semi-circular and acting as a means for directing the snow contained in the scoops into the housings from which it is discharged by the fans through the chutes 30.

Mounted in common with the fans 31 on the shafts 33 are the squirrel-cage ice and snow crushers 34, the cutters 35 of the latter being shielded by the rounded rear walls 32 of the scoops and the cutters engaging and crushing lumps of snow passing up the scoops to the housings 29.

The shafts 33 having a bearing in the bottom walls of the housings 29 and an upper bearing in transverse bars 36 diametrically spanning the walls 32, these shafts below the housings receive bevel gears 37 disposed between the bottom wall of the housings and brackets 38 which carry thrust bearings for the shafts 33.

Journalled in spaced brackets 39 on the bottom of the housings are shafts 40, the latter having bevel gears 41 meshing with the gears 37 and pulleys 42 over which are trained belts 43, the latter being trained over pulleys 44, carried at the extremities of the shaft 45 which is journalled in hangers 46 mounted on the truck 24. The shaft 45 is driven by the engine 46 carried on the truck, by means of

a belt 47 operatively connecting the pulleys 48 and 49 on the engine and shaft 45 respectively.

As the truck is propelled by its motive power and the fans and crushers set in operation by the engine 46 by means of the operative connection just described, the snow is raised from the roadbed by the knife 14, passing on to the plow where it is divided by the division plate 12 so as to move on to the two scoops 10. Reaching the throats of the scoops, it drops into the housings 29, lumps and pieces of ice being crushed by the knives of the crushers prior to such entry. As it fails into the housings 29, it is ejected therefrom through the discharge chutes 30 through the instrumentality of the fans 31 operating in the housings.

The invention having been described, what is claimed as new and useful is:

1. A snow plow comprising a scoop of which the side walls are arranged in convergent relation and connected with an arcuate rear wall, a housing disposed below the bottom of the scoop at the rear end and in

communication with the latter through the bottom, the housing having a discharge chute, and a rotary element having its axis of rotation vertical and consisting of a fan and a squirrel-cage crusher of which the former operates in the housing and the latter in the scoop adjacent the arcuate rear wall.

2. A snow plow comprising a scoop of which the side walls are arranged in convergent relation and connected with an arcuate rear wall, a housing disposed below the bottom of the scoop at the rear end and in communication with the latter through the bottom, the housing having a discharge chute, and a rotary element consisting of a fan and a squirrel-cage crusher of which the former operates in the housing and the latter in the scoop adjacent the arcuate rear wall, the rotary element having a shaft extending from the housing, and driving means connected with said shaft.

In testimony whereof he affixes his signature.

LESLIE R. LIDDELL.