

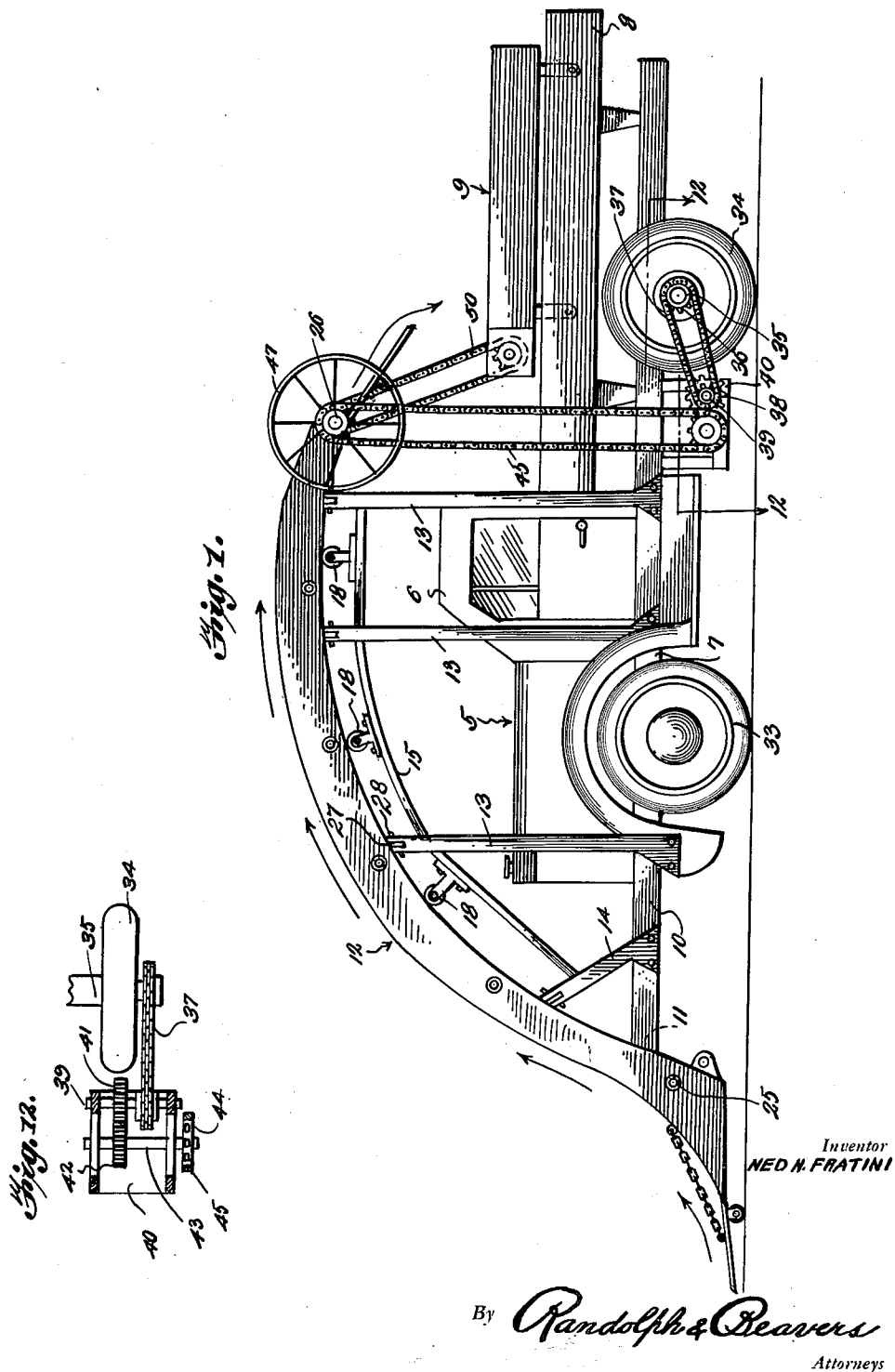
March 4, 1952

N. N. FRATINI
SNOW REMOVING MACHINE

2,587,719

Filed June 10, 1946

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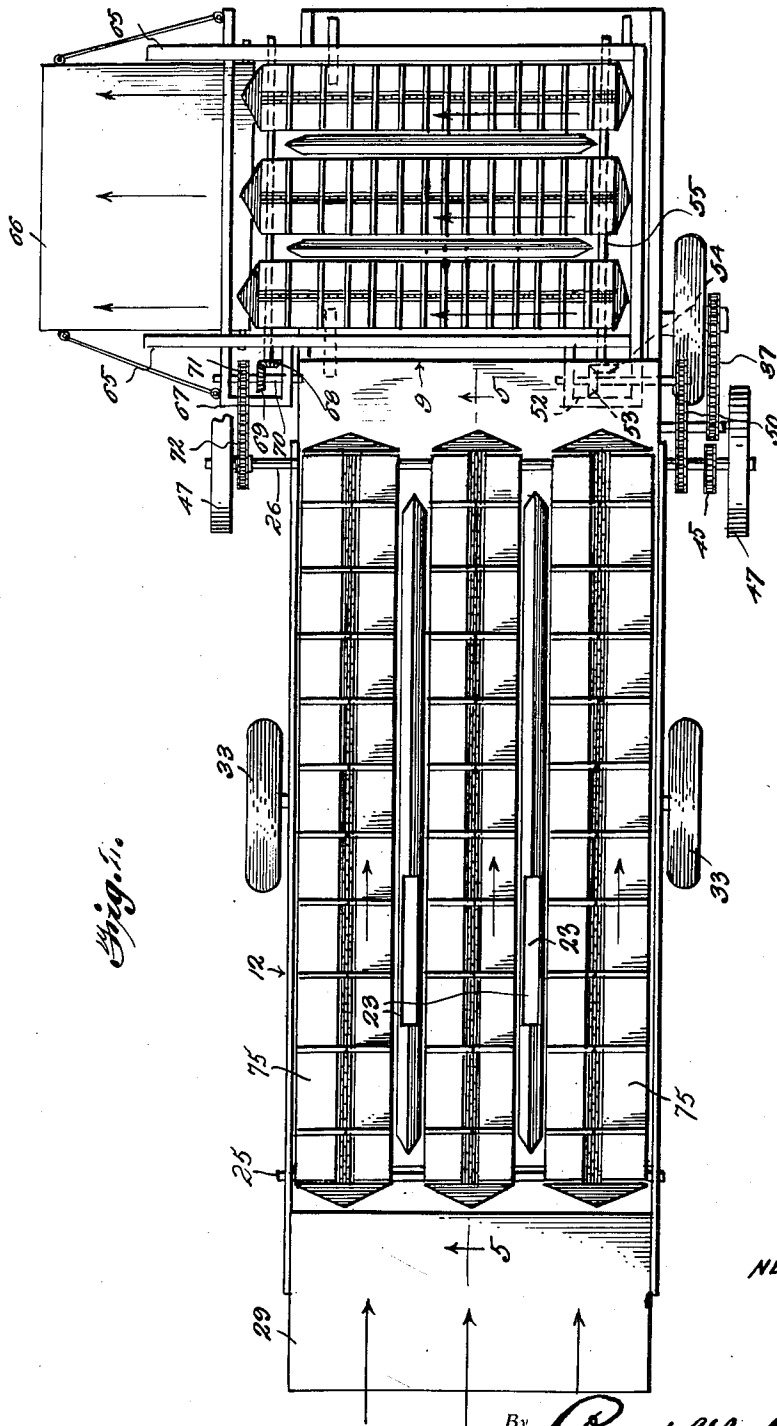


Fig. 1.

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Fig. 3.

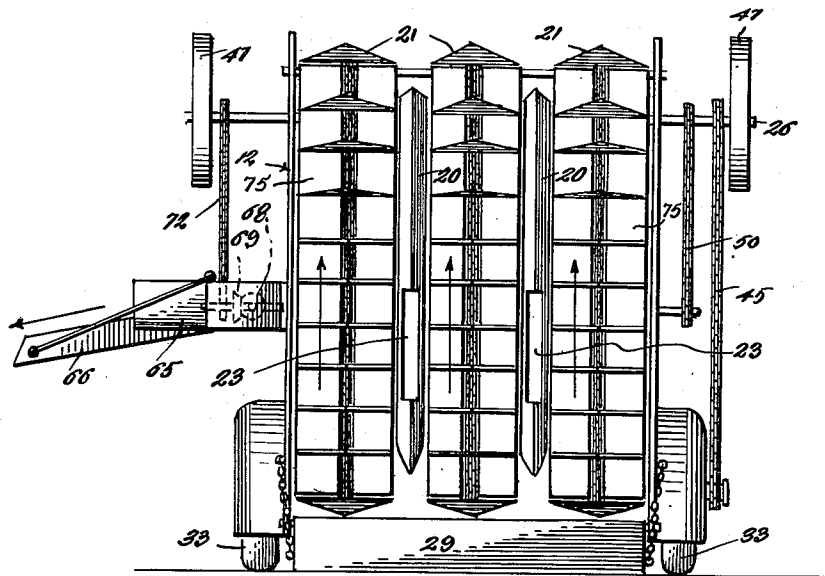
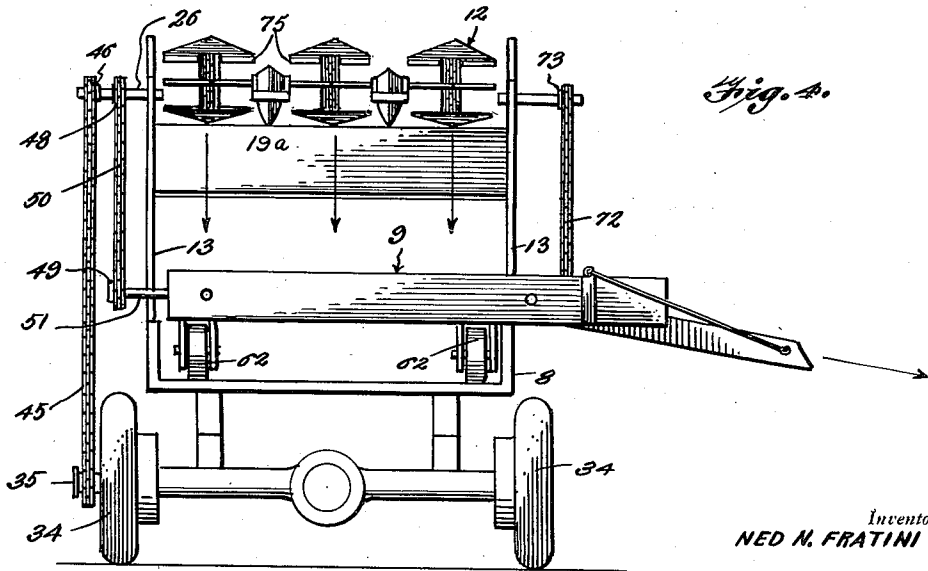


Fig. 4.



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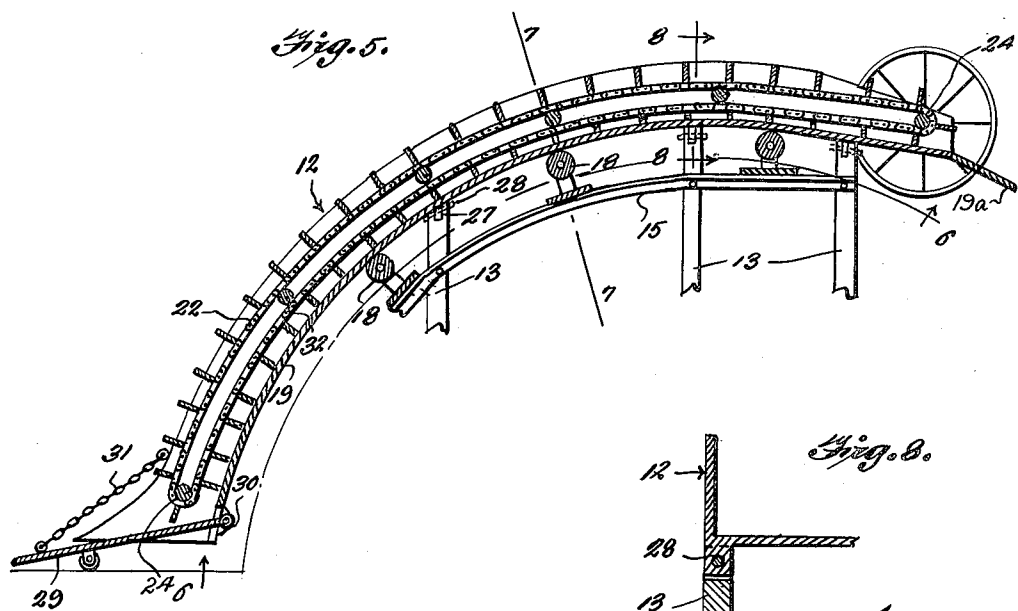
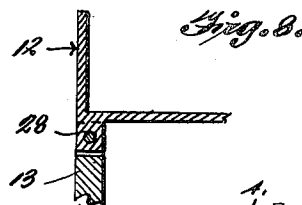
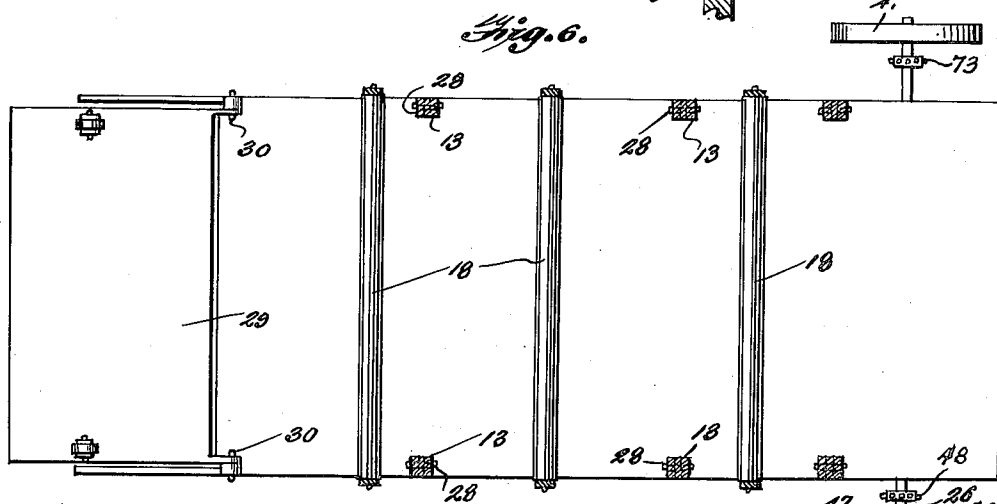
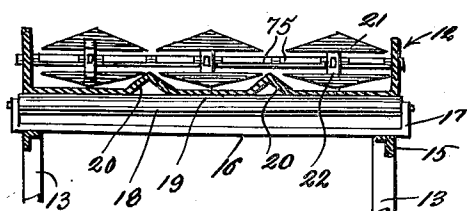
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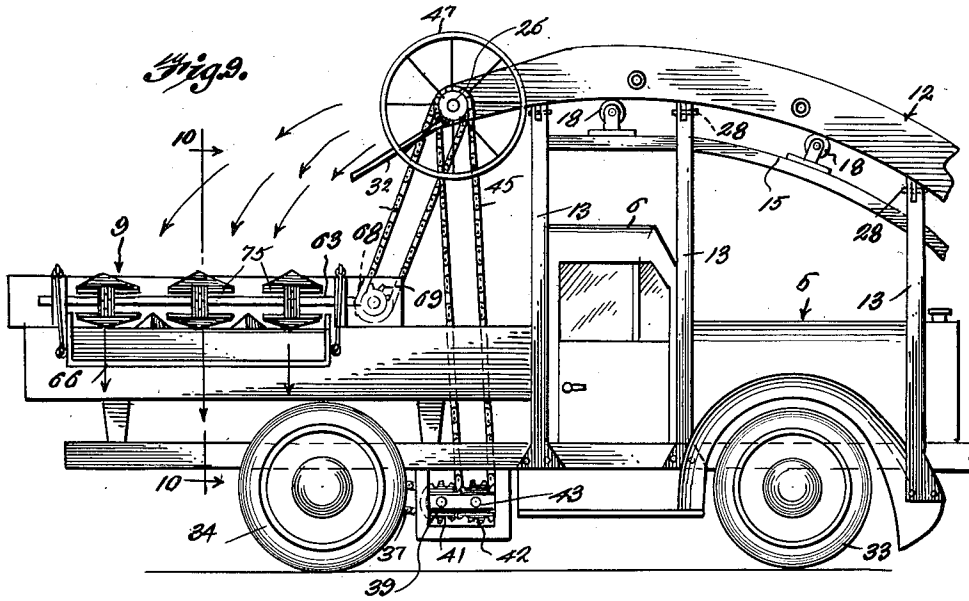
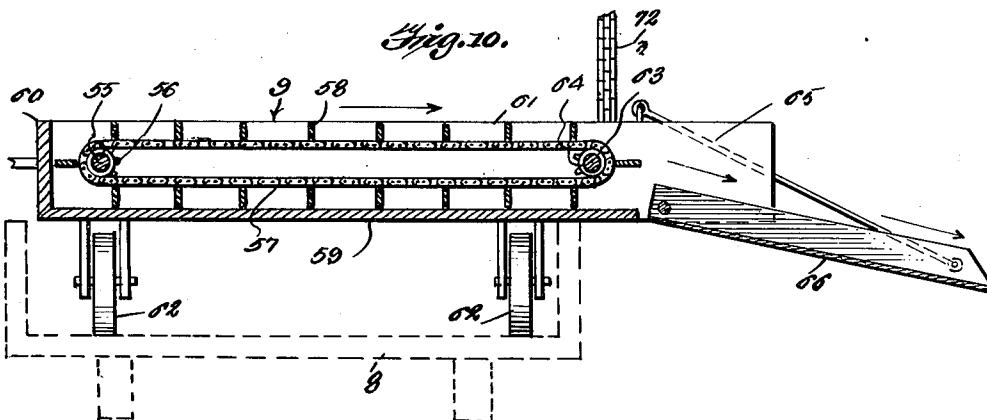
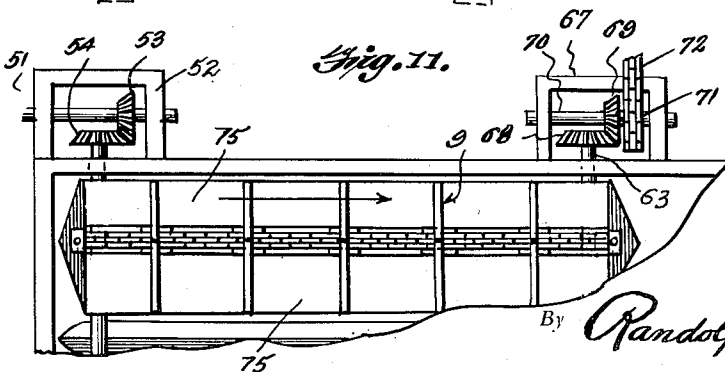
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UNITED STATES PATENT OFFICE

2,587,719

SNOW REMOVING MACHINE

Ned Nazzareno Fratini, Meyersdale, Pa.

Application June 10, 1946, Serial No. 675,653

1 Claim. (Cl. 37-45)

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The present invention relates to snow removing apparatus for removing snow from streets and highways in a quick and expeditious manner.

An important object of the invention is to provide a snow removing apparatus supported by a power driven vehicle which can be driven quite rapidly, as high as thirty or thirty five miles per hour, for the quick removal of snow, in order to open up long stretches of highway to traffic in a short period of time.

Another important object of the invention is to provide a snow removing apparatus employing conveyor means for elevating snow in considerable volumes and rapidly discharging the snow to the side of the highway, this machine being especially practical in rural districts.

A further object of the invention is to provide an apparatus of the character stated which can be mounted on a conventional truck, preferably one having a closed cab, so as to protect the driver against inclement weather.

These and various other important objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 is a side elevational view of the machine;

Figure 2 is a top plan view;

Figure 3 is a front elevational view of the machine;

Figure 4 is a rear elevational view of the complete machine;

Figure 5 is a fragmentary longitudinal sectional view taken on line 5-5 of Figure 2;

Figure 6 is a fragmentary sectional view taken on the curved line 6-6 of Figure 5;

Figure 7 is a section taken on line 7-7 of Figure 5;

Figure 8 is a fragmentary detailed sectional view taken on line 8-8 of Figure 5;

Figure 9 is a fragmentary side elevational view looking at the opposite side from that shown in Figure 1;

Figure 10 is a fragmentary vertical sectional view taken on line 10-10 of Figure 9;

Figure 11 is a fragmentary top plan view of the lateral conveyor assembly;

Figure 12 is a fragmentary elevational and sectional view of the drive means.

Referring to the drawing, numeral 5 denotes generally a truck including a driver's cab 6 and a chassis 7 on the rear portion of which is a bed or platform 8 for supporting a lateral conveyor assembly generally referred to by numeral 9 and forming part of the present invention.

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The chassis 7 has a forward extension 10, abridged as at 11 to serve as an abutment for the lower portion of the arcuate elevator generally referred to by numeral 12, when the elevator is in lowered position, as shown in Figure 1.

Rising from the front fenders of the vehicle and from the chassis 7 are posts 13 and also forwardly inclined short posts 14 supported by the chassis extension 10. An elongated frame 15 is supported by the posts 13 and 14, as in the manner shown Figure 1. Bridge members 16 span the frame 15 and have upturned end portions 17 supporting rollers 18, which in turn, serve to assist in supporting the elevator assembly 12.

As is shown in Figure 7, the elevator assembly 12 consists of a bottom or pan 19 having dividers 20, defining channels in which the outstanding blades 21 on endless chains or other lineal elements 22 ride. The dividers 20 are interrupted or formed with substantially large openings 23 to form windows through which the driver of the apparatus can see ahead of his vehicle. As is apparent in Figure 5, the pan 19 is of arcuate shape and has rollers or sprocket wheels 24, 24' at its lower and upper ends, mounted on shafts 25, 26 respectively for the chains 22.

The post 13 and 14 are bifurcated at their upper ends to receive lugs 27 depending from the bottom side of the pan 19 and these parts are apertured to receive fastening pins 28, whereby the pan 19 is positively secured to the posts.

The lower end of the pan 19 has a pivotal shovel blade 29 hinged thereto as at 30 and a limiting chain 31 is interposed between the blade 29 and one side portion of the pan 19. Rollers or supports 32 are provided between the upper and lower flights of the elevator chains 22 (see Figure 5).

The upper end of the pan 19 has a declining lip or apron 19a down which snow can slide and be displaced onto the lateral conveyor 9.

The vehicle 5 is supported by front wheels 33 and rear wheels 34, the rear wheels 34 being on an axle shaft 35, carrying a sprocket wheel 36 over which a sprocket chain 37 is trained. The chain 37 is also trained over a small sprocket wheel 38 on a shaft 39 mounted within a bracket structure 40, the shaft 39 carrying a gear 41, which meshes with a gear 42 on a counter shaft 43, the latter shaft having a sprocket wheel 44 thereon, under which a chain 45 is trained. The chain 45 is directed upwardly and over a sprocket wheel 46 on the shaft 26, which supports the sprocket wheels 24', at the upper end of the elevator 12. On the ends of the shaft 26 are power

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take off means 47 for outside drive use and also a sprocket wheel 48 between which and a sprocket wheel 49, an endless chain 50 is trained.

The sprocket wheel 49 is located on a shaft 51 journaled through a frame 52 and carries a bevel gear 53, meshing with a bevel gear 54, located on a shaft 55, which forms part of the lateral conveyor 9 and on which are sprocket wheels 56 over which are trained conveyor chains 57, these chains carrying outstanding snow pushing blades 58.

A pan 59 having an end wall 60 and side walls 61 is mounted upon wheels 62 which are rideable on the floor of the truck body or bed 8 and through the side walls 61 a shaft 63 is journaled and has sprocket wheels 64 thereon over which the conveyor chains 57 are trained. The conveyors of the lateral conveyor 9 are shown three in number, or a greater number may be employed as seen fit. The side walls 61 of the pan 59 extend as at 65 beyond the discharge end of the pan and between these extending portions 65 a pivotal chute 66 is provided.

The shaft 63 at one end projects into a frame 67 and there has a bevel gear 68 meshing with a bevel gear 69 on a counter shaft 70, this shaft also carrying a sprocket wheel 71, under which a chain 72 is trained. The chain 72 extends upwardly and over a pulley 73 on the aforementioned shaft 26. Thus the transverse or lateral conveyor 9 is doubly driven. As is clearly shown in Figures 2 and 7 as well as in Figures 9 and 11, each conveyer is supplemented by the presence of a pair of pans 75 extending under the top flight of each conveyer and fitting in close proximity to the upper flight of the chain as shown in Figure 11. This construction prevails both in the transversed conveyor and the elevator.

In the operation of the apparatus, the elevator 12 is in the lowered position shown in Figure 1 and by driving the vehicle 5 forwardly, snow is carried onto the shovel plate 29 and is picked up by the lower flight of the elevator chains and blades 22, 21. The snow is carried up along the pan 19 and is discharged over the apron 19a, onto the transverse or lateral conveyor 9 and from thereon to the chute 66, from where it is discharged along the side of the road or into the wagon or other receptacle that may be carried along with the apparatus aforescribed.

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When it is desired to return this apparatus to a garage or other storage place, the pins 28 at the upper ends of the posts 14, 13 are removed, thus freeing the elevator 12 so that it may be pushed backwardly over the rollers 18 so that its rear end rests upon the transverse conveyor 9.

At the end of the snow season, the apparatus may be demounted from the truck and stored for the summer. The truck can then be used for other purposes, it being apparent that the transverse conveyor 9 can be rolled off of the bed or body 8 and the elevator 12 simply lifted from its position resting upon the rollers 18, after the pins 28 have been removed from the posts 13, 14.

While the foregoing description sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

A snow removing apparatus comprising a vehicle, an upwardly extending and curved elevator provided with a shovel at its lower end and a transverse conveyor at the rear of the vehicle and underlying the upper end of the elevator, said vehicle comprising a body having a floor, said conveyor being provided with supporting wheels adapted to be rolled along the floor of the vehicle body when removing the elevator from the vehicle body.

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