Aug. 26, 1924.

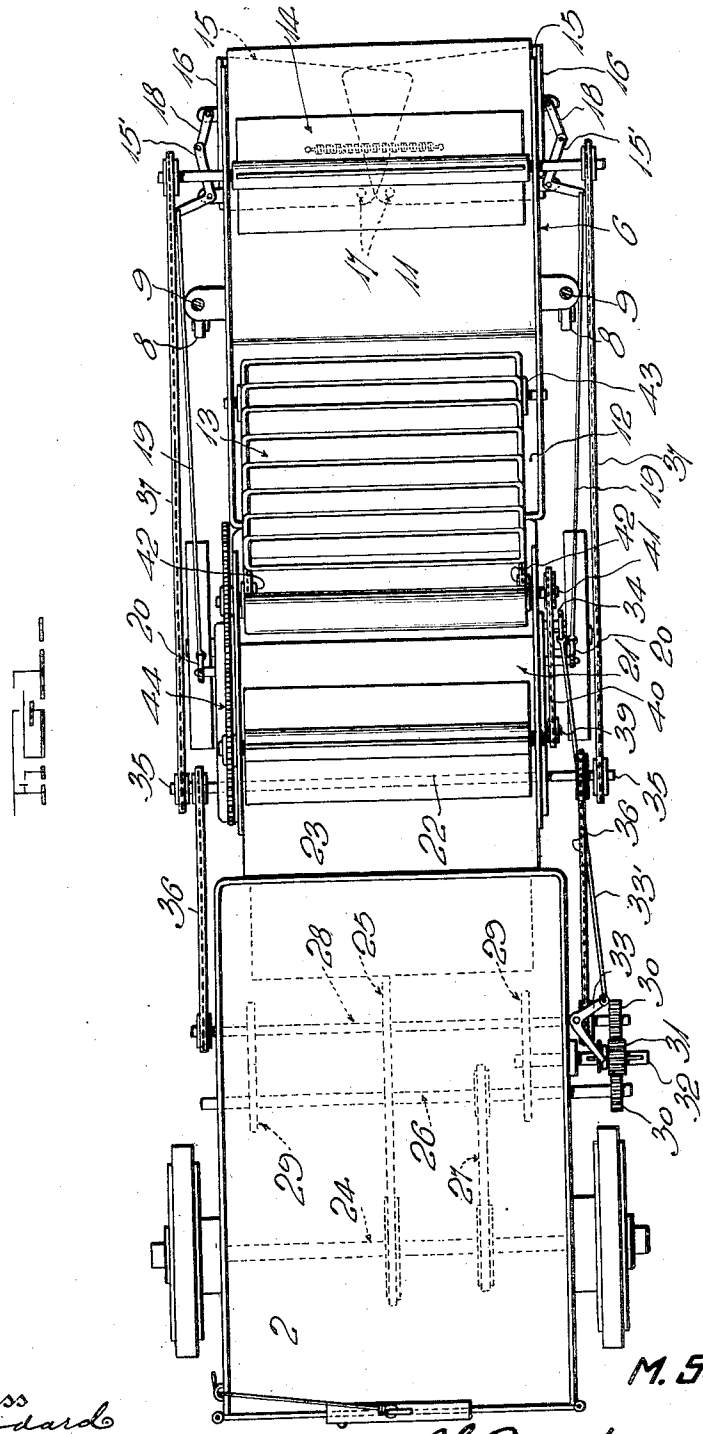
1,506,263

M. SOUHIGIAN

SNOW REMOVING MACHINE

Filed July 30, 1923

4 Sheets-Sheet 1



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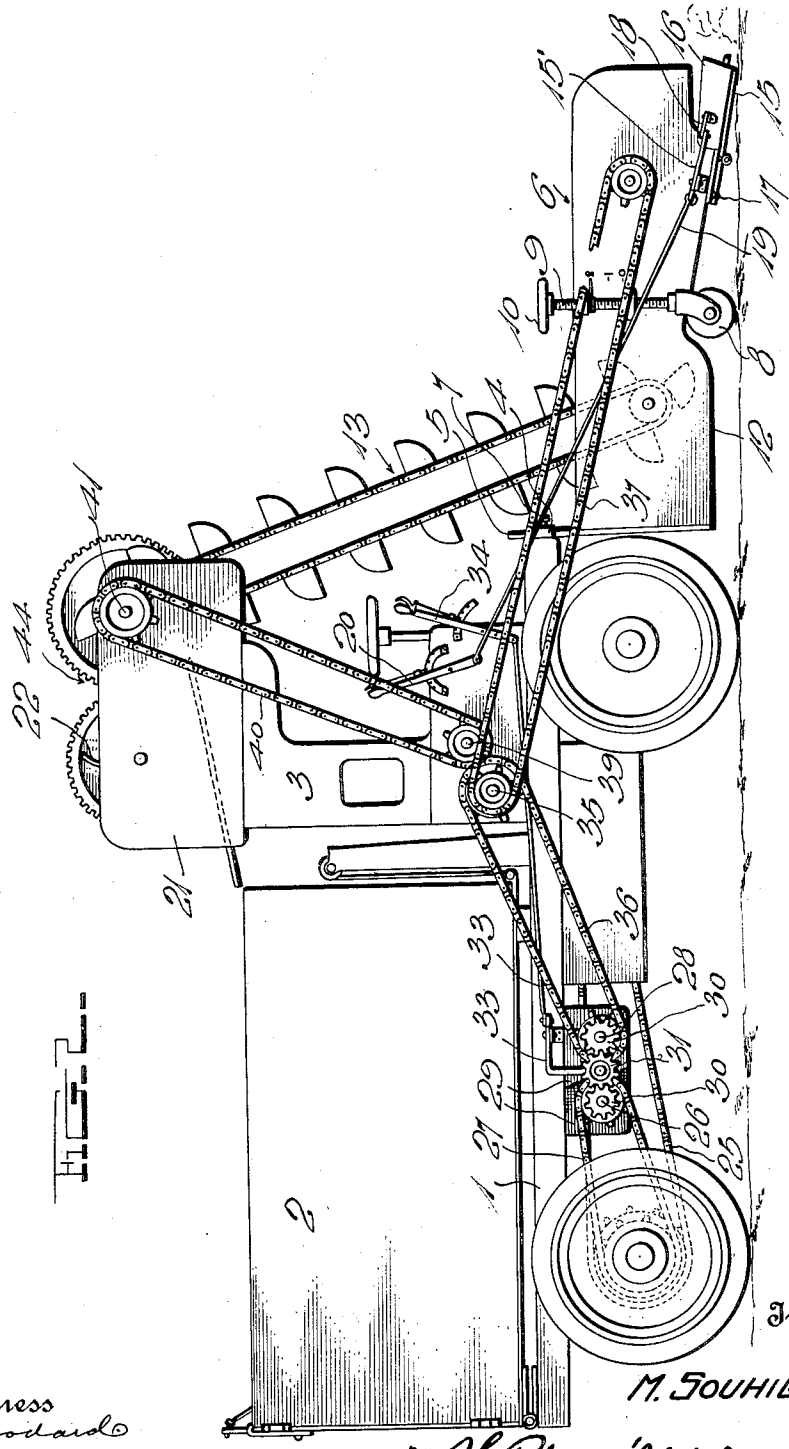

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4 Sheets-Sheet 3

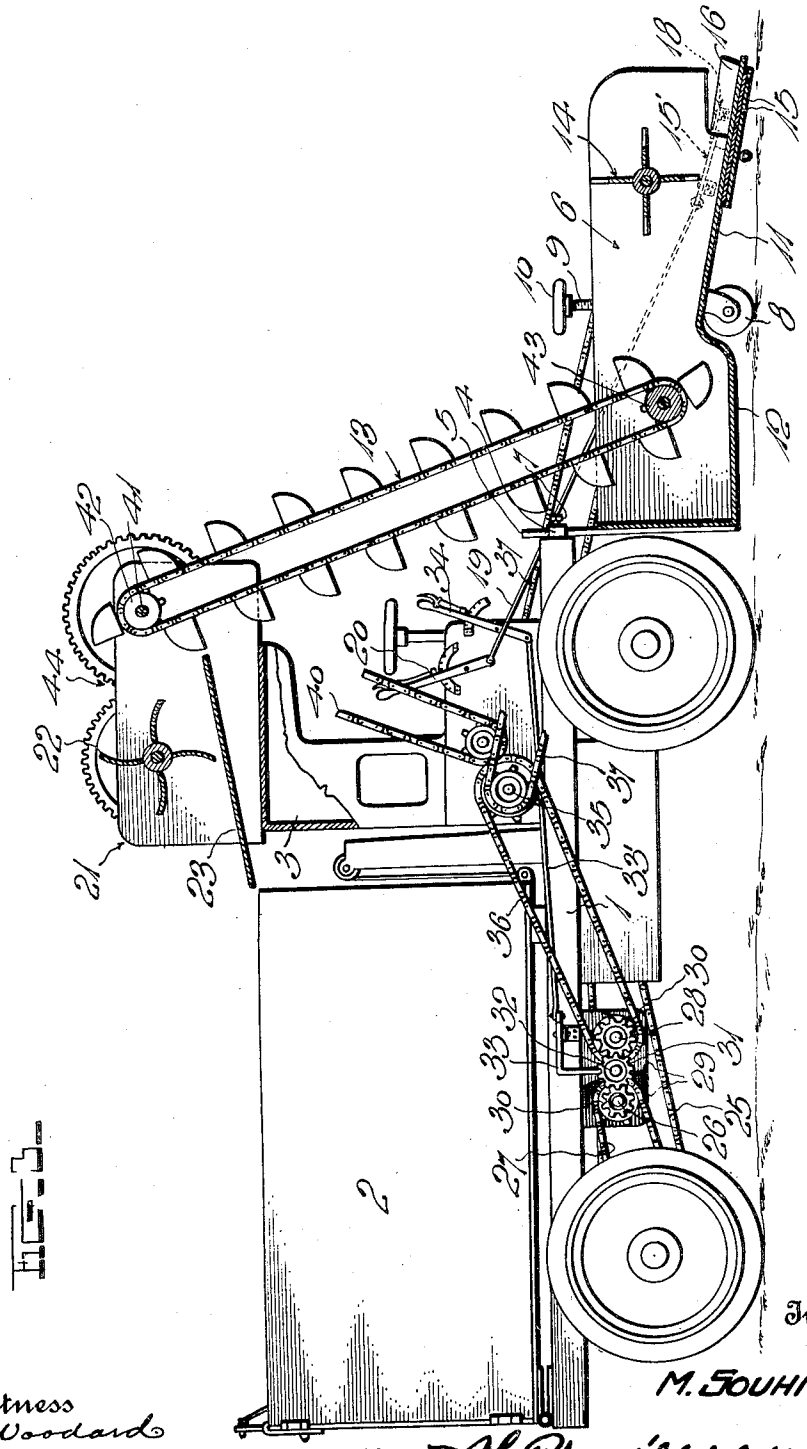

Fig. 3.

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Filed July 30 1923 4 Sheets-Sheet 4

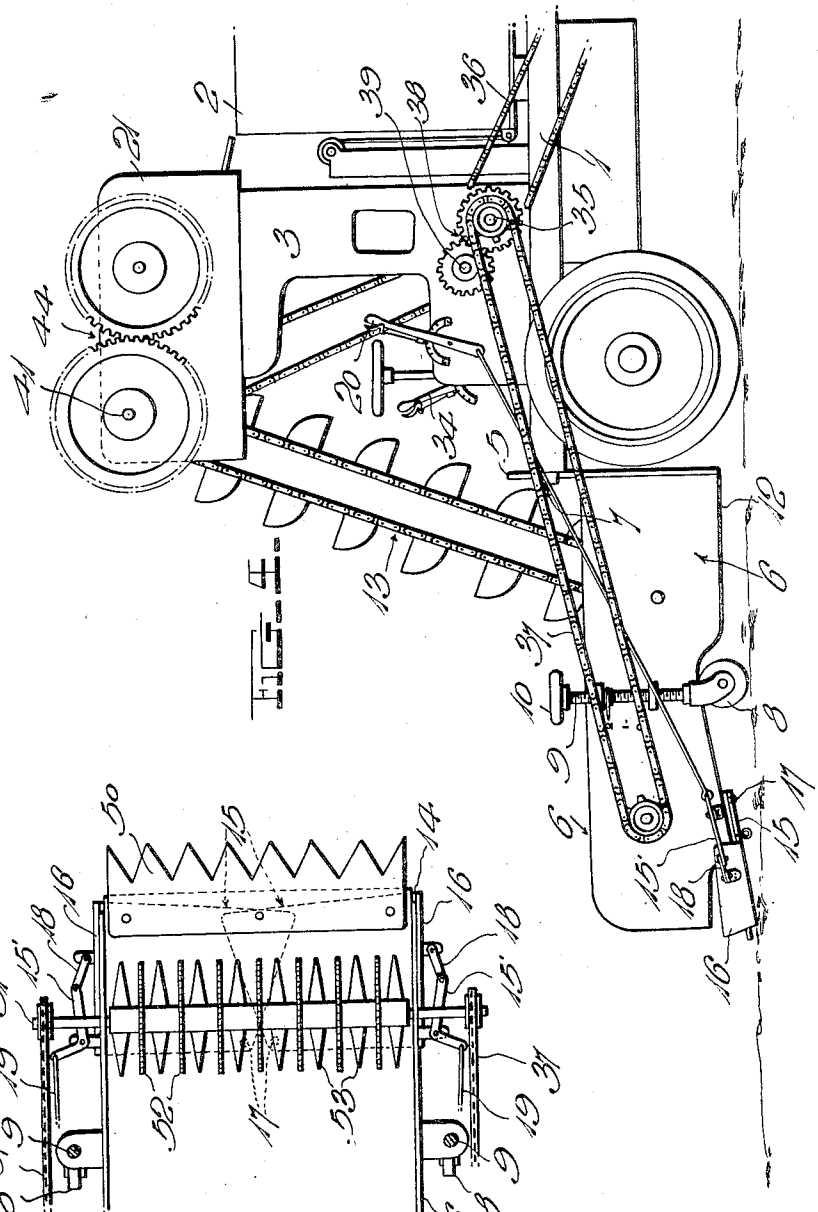

FIG. 4.

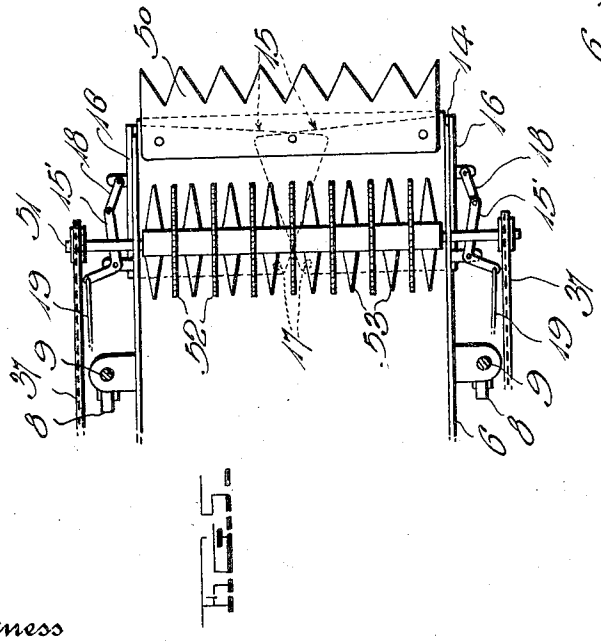

FIG. 5.

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UNITED STATES PATENT OFFICE.

MARSOP SOUHIGIAN, OF LAWRENCE, MASSACHUSETTS.

SNOW-REMOVING MACHINE.

Application filed July 30, 1923. Serial No. 654,757.

To all whom it may concern:

Be it known that I, MARSOP SOUHIGIAN, a subject of the Turkish Empire, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Snow-Removing Machines; and I do 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.

My invention relates to improvements in street cleaning machines and relates more particularly to those designed for rapidly removing snow.

The object of the invention is to provide a comparatively simple machine of the class set forth which may be advantageously used upon the front of a motor truck to scrape the snow from the streets and dump it into the truck body to be carried to a suitable place for discharge.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing:

Figure 1 is a top plan view of a machine constructed in accordance with my invention.

Fig. 2 is a side elevation.

Fig. 3 is a side elevation partly in vertical section.

Fig. 4 is a partial side elevation looking in the opposite direction from Fig. 2.

Fig. 5 is a fragmentary plan view showing the arrangement which may be employed if the snow has packed and frozen upon the street.

In the drawings above briefly described, the numeral 1 designates the chassis frame of any desired form of motor truck, this truck being provided with a suitable dump body 2 and having a driver's cab 3 in front of said body. The front end of the chassis frame 1 carries a pair of horizontally spaced guides 4 for a pair of upstanding arms 5 which rise from a longitudinally disposed snow scoop 6, said arms being normally held in the guides 4 by set screws or the like 7. The scoop 6 is provided with a pair of caster wheels 8 having adjusting screws 9 equipped with hand wheels 10, whereby said scoop may be vertically adjusted to any desired height when the screws 7 are loosened. In the preferred form of construction, the bottom of the scoop 6 inclines rearwardly as indicated at 11, to a point near its rear end, the rear portion of said bottom however, being downwardly off-set to provide a depression 12 into which the snow is forced and from which it is elevated by an endless elevator 13. In the front portion of the scoop 6, I preferably mount a rotary beater 14 which feeds the snow rearwardly in said scoop and prevents it from piling up at said front end of the latter. Also, in order that a wider area may be cleaned at a single operation if desired, I prefer to provide a pair of extension plates 15 slidably contacting with the lower side of the bottom 11 and provided with upstanding side flanges 16. These plates are pivoted at 17 to the bottom 11 and may be swung outwardly when desired. For swinging the plates 15, I have shown bell cranks 15' fulcrumed on the sides of the scoop 6 and connected with the flanges 16 by links 18, said bell cranks being connected to rearwardly extending rods 19 leading to appropriate hand levers or the like 20 adjacent the driver's seat.

Mounted longitudinally upon the cab 3, is a trough 21 into which the snow is dropped by the elevator 13 and a rotary beater 22 extends across the rear end of said trough and operates in close proximity to the rearwardly declined bottom 23 of said trough and thus prevents accumulation of snow on said bottom and forces said snow to discharge into the dump body 2.

I prefer to drive the parts 13, 14 and 22 in the manner illustrated, from the rear axle 24 of the truck. At 25 I have indicated a drive chain for the axle 24, although other driving means could of course be employed. The axle 24 drives a transverse horizontal shaft 26, under the body 2, by means of a chain 27 and suitable sprocket wheels, or other desired means, and another transverse shaft 28 is provided in front of the shaft 26, the two shafts being rotatably supported by appropriate bearing plates 29, suitably mounted on the chassis frame 1. For driving shaft 28 from shaft 26, I have provided said shafts with spur gears 30 both of which mesh with another gear 31 slidably mounted on a suitable stub shaft 32, provision being made whereby said gear 31 may be shifted out of mesh with the gear 30 when the machine is to be thrown out of operation. In the construction shown, a bell crank 33 mounted on the frame 1, has piv-

otal connection with the hub of the gear 31 and a rod 33′ extends forwardly from said bell crank to a hand lever 34 within reach of the driver.

Under the driver's seat, or at some other suitable location, I provide a transverse horizontal shaft 35 which is driven by a chain or the like 36 from the shaft 28, said shaft 35 being connected with the shaft of the rotary beater 14, by chains 37. Gearing 38 at one end of the shaft 35 connects this shaft with another transverse horizontal shaft 39 which is connected by a sprocket chain 40 with a transverse shaft 41 extending across the front end of the trough 21, said shaft 41 having sprockets 42 which drive the endless elevator 13, the lower end of this elevator being passed loosely around a roller 43 in the rear end of the scoop 6. The shaft 41 is operatively connected with the shaft of the beater 22, by suitable gearing 44.

The construction so far described will operate effectively for cleaning comparatively loose snow from the streets, but if the snow has become packed and frozen, it is desirable to use the arrangement disclosed in Fig. 5. In this figure, I have shown a toothed plate 50 bolted to and extending beyond the front end of the scoop 6 and instead of the rotary beater 14, I make use of a driven shaft 51 having a plurality of spaced saws 52 with pointed pick teeth 53 between them. By employing this association of parts, the hard frozen snow, sleet or the like, may be effectively scraped from the street, broken up and then carried upwardly by the elevator 13. This elevator discharges into the trough 21 and the beater 22 forces the snow or the like rearwardly and distributes it into the body 2.

Whenever the machine is loaded the lever 34 may be operated to throw the gear 31 out of mesh with the gears 30, thus permitting the entire machine to be driven to a suitable dumping point.

As excellent results may be obtained from the details disclosed, these details may if desired be followed, but within the scope of the invention as claimed, numerous minor changes may be made.

I claim:—

1. The combination with a motor truck having a driver's cab and a dump body in rear of said cab and extending to the rear end of the truck; of a trough-shaped snow scoop in front of and connected to said truck, a longitudinal trough supported horizontally on top of said cab and extending from front to back thereof to discharge into the truck body, an elevator in front of the cab from the rear end of the scoop bottom to the front end of the trough, a rotary beater in the front end of the scoop above the bottom of said scoop and spaced rearwardly from the front end of said bottom for forcibly throwing the snow rearwardly to the elevator, and a rotary beater in the rear end of said trough for throwing the snow directly rearward into the truck body.

2. The combination with a motor truck; of a pair of transversely spaced vertically disposed guides carried by the front end of said truck, a snow scoop in front of the truck having rigid upstanding arms slidably received in said guides for vertical adjustment, vertically adjustable caster wheels for assisting in supporting said scoop, and means for securing said arms to said guides in any position to which they may be slid.

3. The combination with a motor truck having a driver's cab, an open topped dump body in rear of said cab, and a pair of transverse shafts under the driver's seat driven by parts of the truck driving mechanism; of a horizontally disposed trough-shaped snow scoop in front of and connected with the truck, a horizontally disposed snow conducting trough mounted on top of the driver's cab and extending from front to back thereof, an elevator driving member extending across the front end of said trough, a driving connection between said driving member and one of the above named transverse shafts, a rotary beater spaced above the bottom of the aforesaid scoop and spaced inwardly from the front end of said scoop for forcibly throwing the snow rearwardly, a driving connection between the other of the aforesaid transverse shafts and said rotary beater, an inclined endless elevator from the rear end of the scoop to the front end of said trough and driven by said elevator driving member, a second rotary beater in the rear end of said trough for throwing the snow rearwardly therefrom into the truck body, and intermeshing gears on said second rotary beater and said elevator driving member for driving the former from the latter.

4. A street cleaning attachment for trucks comprising a scoop having transversely spaced upright rigid guide arms at its rear end, guides slidably receiving said arms and adapted to be connected with the front end of the truck, vertically adjustable caster wheels for assisting in supporting the weight of the scoop, and means for securing said arms in said guides in any positions to which they may be slid.

5. A street cleaning attachment for trucks comprising a scoop having a bottom and side walls, a pair of extension plates pivoted to the lower side of the scoop bottom at the front end of the latter, said plates being extensible laterally from said scoop bottom and having upstanding wings at their outer edges.

6. An attachment for a motor truck com-

prising a trough-shaped snow scoop for disposition in front of the truck, means for connecting said scoop with the truck, a longitudinal trough adapted to be supported upon the top of the truck driver's cab, the front end of said trough being open to receive snow and the rear end being open to discharge said snow into the truck body, an elevator from the rear end of the scoop to the front end of the trough, a rotary beater in the front end of the scoop above the bottom of the latter and spaced rearwardly from the front end of said bottom for forcibly throwing the snow rearwardly to the elevator, a rotary beater in the rear end of said trough for throwing the snow directly rearward into the truck body, and means adapted to be driven by driven parts of the truck for driving the two rotary beaters and the elevator.

In testimony whereof I have hereunto affixed my signature.

MARSOP SOUHIGIAN.