

L. BLAKE.
SNOW SCRAPER.

APPLICATION FILED JAN. 11, 1912.

1,064,282.

Patented June 10, 1913.

3 SHEETS-SHEET 1

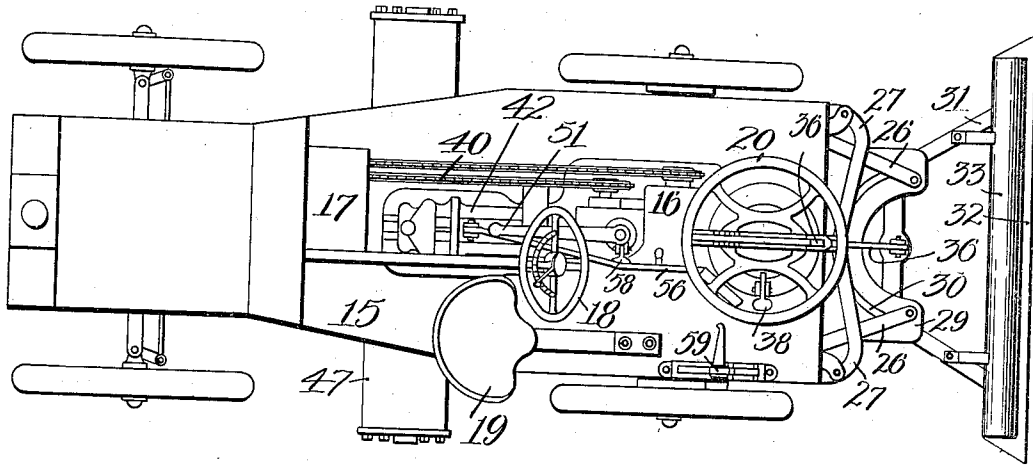


Fig. 1

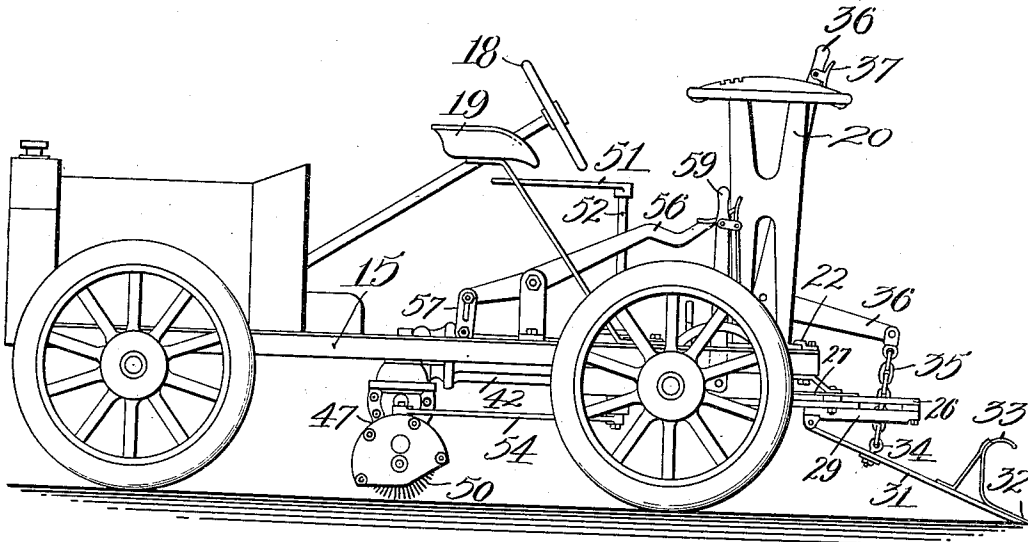


Fig. 2.

Witnesses:

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Inventor:
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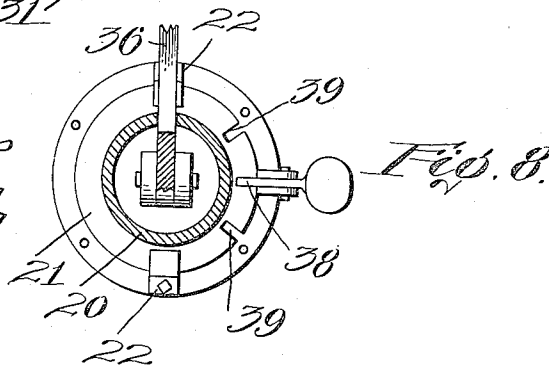
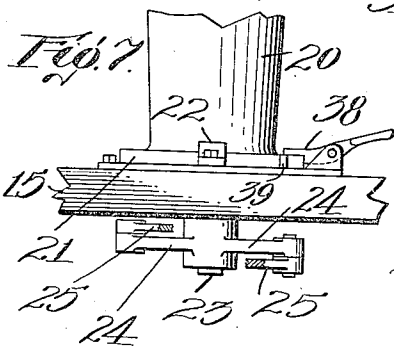
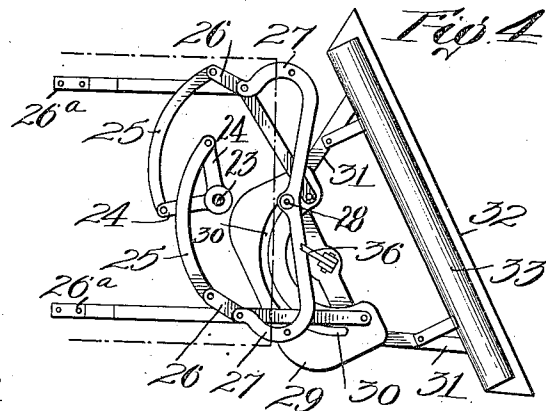
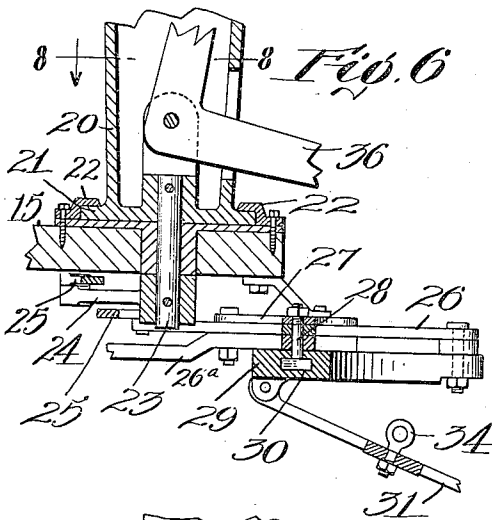
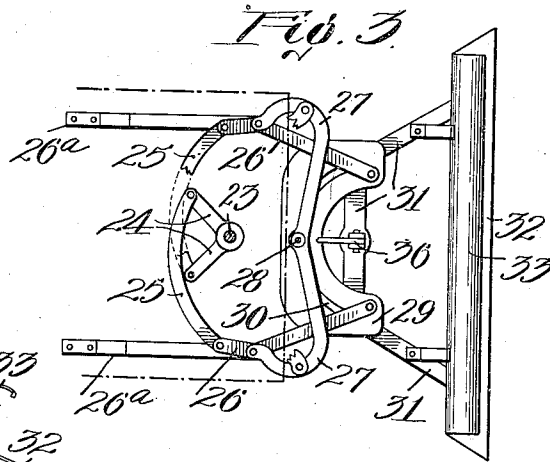
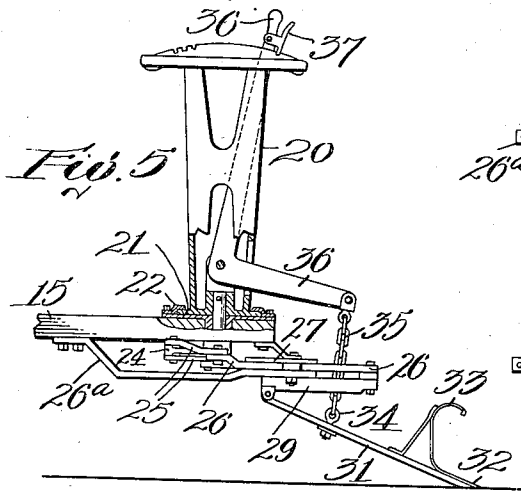
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3 SHEETS-SHEET 2.

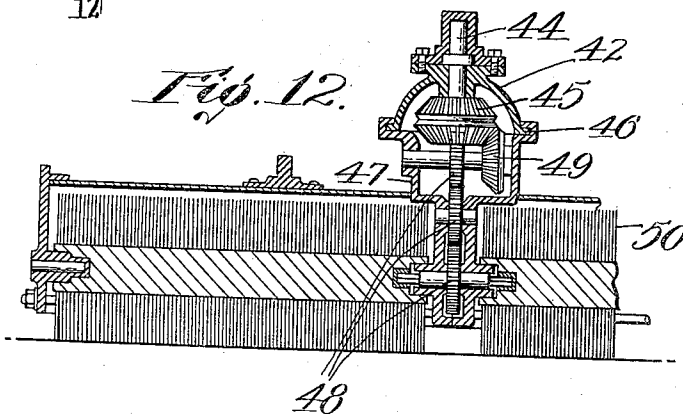
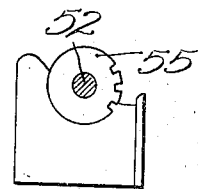
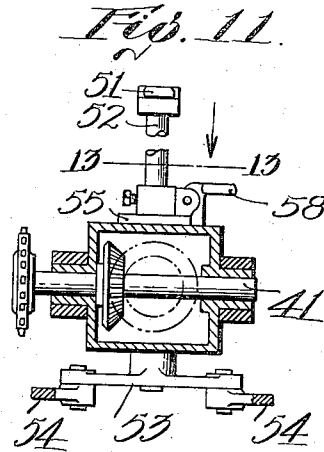
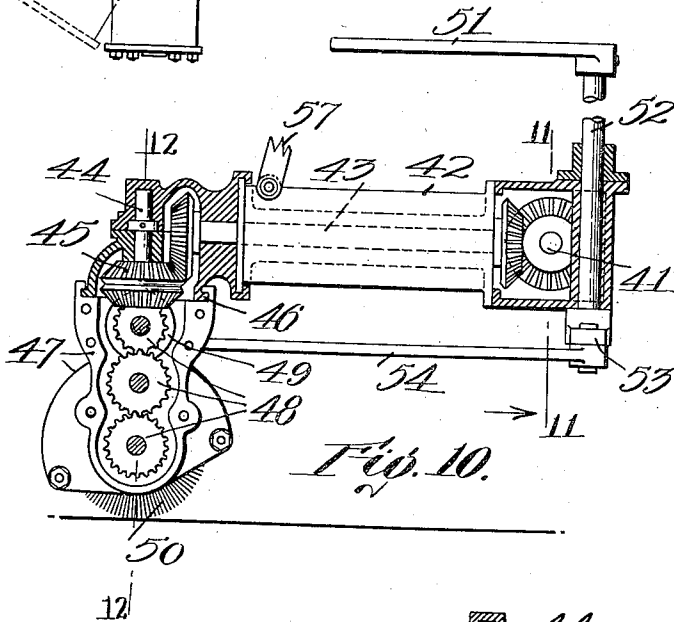
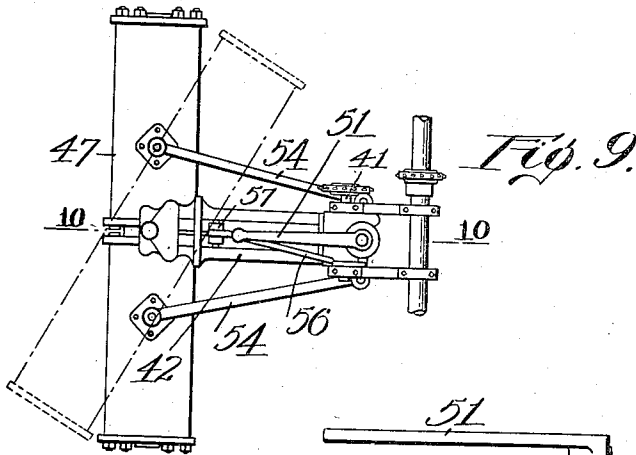


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 3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

LOUISA BLAKE, OF WORCESTER, MASSACHUSETTS.

SNOW-SCRAPER.

1,064,282.

Specification of Letters Patent. Patented June 10, 1913.

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To all whom it may concern:

Be it known that I, LOUISA BLAKE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Snow-Scraper, of which the following is a specification.

The principal objects of this invention are to provide efficient means for scraping the bulk of the snow from a street and then cleaning the surplus from the surface thereof; to provide means whereby the scraping device can be conveniently turned from side to side so as to leave the snow at either side of the vehicle and also to construct it so that it can be raised out of operative position in a very simple and convenient manner; to provide a cleaning brush of such a character that it can be operated positively from the power used to drive the vehicle, and at the same time can be moved bodily into a diagonal position at either side without disconnecting it from the power; and to provide an automobile snow scraper of such a character that it can be used for snow scraping purposes when running backward, whereby the vehicle can be run at comparatively high speeds when not in operation for scraping snow without changing the ordinary forms of transmission now in use. The invention also involves improvements in various features of the invention as will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a plan of a snow scraping vehicle constructed in accordance with this invention; Fig. 2 is a side view thereof; Fig. 3 is a plan of the mechanism for directly operating the scraping blade with the top part of the vehicle removed; Fig. 4 is a similar view with the parts in a different position; Fig. 5 is a side elevation partly in section of the blade supporting operating mechanism; Fig. 6 is a similar view on enlarged scale of a portion of the parts; Fig. 7 is a side view of the bottom of the turret for operating the scraper blade; Fig. 8 is a sectional view on the line 8—8 of Fig. 6; Fig. 9 is a plan of the cleaning brush and connected parts; Fig. 10 is a sectional view thereof on the line 10—10 of Fig. 9; Fig. 11 is a sectional view on the line 11—11 of Fig. 10; Fig. 12 is a sectional view of the brush casing and connected parts on the

line 12—12 of Fig. 10; and Fig. 13 is a sectional view on the line 13—13 of Fig. 11.

The invention is shown in a form in which a well-known type of motor vehicle 15 is employed having the usual motor 16, transmission 17 and steering wheel 18. Mounted adjacent to this steering wheel but at one side thereof, and facing backward is a seat 19 for the operator. He can operate the vehicle while seated on this seat either to drive it backward or forward. In going from place to place the vehicle is intended to be driven forward in the usual manner, but in scraping snow it is intended to be driven backwardly. For this purpose the vehicle is provided with a vertical turret 20. This has a bottom circular flange 21 which fits under clips 22 arranged in a circle on the floor of the vehicle. The turret is provided with a vertical shaft 23 fixed to it extending down through the bottom of the vehicle and having a pair of arms 24 at its lower end at an angle to each other. Each of these arms is connected by a link 25 with one arm of a lever 26 which is pivoted to a bracket 26^a on the frame. Also fixed to the frame of the vehicle is a metal piece 27 having a central bolt 28 thereon provided with a head at the bottom. Connected with the ends of the levers 26 is a horizontal plate 29 provided with an arcuate slot 30 enlarged below to receive the headed bolt 28 and be guided thereby. It will be obvious that when the shaft 23 is turned by rotating the turret on its own axis the levers 26 will swing the plate laterally as guided by the bolt 28 and slot 30.

Pivoted on horizontal pivots near the front of the frame 29 is a swinging frame 31. At the end this carries a scraping blade 32 having an upwardly extending hood 33 for preventing the snow from passing over it and being deposited behind it. Mounted on the frame 31 is an eye-bolt 34 connected by a chain 35 with the lever 36 pivoted within the hollow turret 20. This lever is adapted to swing back and forth in the turret to raise and lower the scraping blade. It is adapted to be held in its adjusted positions by a spring-catch 37. The eye-bolt 34 is in such position that as the frame swings the eye-bolt will always move in a circle about the shaft 23. In this way the end of the lever 36, which of course moves with the turret, will always be

directly over the eye-bolt and the chain will be substantially vertical. The turret is held in its adjusted positions by a foot catch 38 adapted to enter slots 39 in the flange 21.

5 The motor is arranged to drive a horizontal shaft 41 by an extra chain 40. On this shaft is pivoted a frame 42 on which is mounted a second horizontal shaft 43 driven from the shaft 41 preferably by bevel gears. 10 At the other end of the frame 42 is a vertical shaft 44 driven by the shaft 43 by gearing which comprises a double bevel gear 45. This shaft 44 is located at the center of the vehicle and the frame 42 is provided with a 15 circular flange 46 concentric with the shaft 44, on which flange is mounted to swing a casing 47. This casing carries a train of gearing 48 which has a bevel gear 49 at the top meshing with the bottom half of the 20 double bevel gear 45. This train of gearing drives a double rotary brush 50, mounted to rotate horizontally in this casing.

Adjacent to the operator's seat 19 is a 25 handle 51 on a vertical rod 52 which is provided with a pair of arms 53 on opposite sides thereof connected by links 54 with the brush casing 47. By swinging this arm 51 this casing is swung about the axis of the 30 shaft 44 as a center so as to give it any desired angle on either side as indicated in dotted lines in Fig. 9. On the rod 52 is a notched disk 55 which is engaged by latch 58 to hold the brush casing in adjusted positions. Mounted adjacent to the seat 19 also 35 is a foot lever 56 connected by link 57 with the frame 42 and adapted to swing the frame about the shaft 41 as a center so as to raise the brush off the ground whenever desired. The usual brake lever 59 is shown 40 at the rear of the seat 19.

From the description of the parts given the operation will be obvious. It is to be 45 observed, however, that as the operator faces backwardly on the vehicle he is in position to operate the device conveniently as a scraper and sweeper, and that all the parts necessary for him to operate in order to 50 raise the brush or scraper or turn them from side to side are within convenient reach. The turret is designed to be operated by both hands and the lever 36 can be operated simultaneously with one hand. 55 While operating these parts the locking latch 38 can be operated by the operator's foot. The brush is raised and lowered by the operator's foot and is swung from side to side by hand. It is obvious, of course, that these various adjustments occur ordinarily at long intervals and chiefly when 60 turning from one street to another or reversing on a street.

Although I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be 65 made therein by any person skilled in the

art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details herein shown and described, but What I do claim is:—

1. In a snow scraper, the combination of 70 a vehicle, a pivoted scraping blade projecting from the end thereof beyond the driving wheels, means for turning the blade from side to side, means for raising the blade relatively to the vehicle, a brush mounted between the front and rear wheels and adapted 75 to operate on the same surface as the blade after the blade has passed, means for propelling the vehicle toward the scraping blade, and means connected with said propelling means for rotating the brush. 80

2. In a snow scraper, the combination of a vehicle, a scraping blade at the end thereof pivoted to swing on a vertical axis, means 85 for turning the blade from side to side, means for raising the blade relatively to the vehicle, a brush mounted between the first and rear wheels behind said blade, means for propelling the vehicle, means connected 90 with said propelling means for rotating the brush on a horizontal axis, and means for turning the brush on a vertical axis.

3. In a snow scraper, the combination of a vehicle, means thereon for propelling the 95 vehicle, a steering wheel therefor, a seat on the vehicle arranged back to said propelling means, a scraping blade at the opposite end of the vehicle from the propelling means, means adjacent to the seat for controlling the scraping blade, a brush extending 100 across the vehicle between the propelling means and blades, and means adjacent to the seat for controlling the brush.

4. In a snow scraper, the combination of 105 a vehicle, a vertical shaft thereon, an arm on said shaft, a lever pivoted to the frame of the vehicle and connected on one side of its pivot with said arm, a horizontal plate on the vehicle connected with said lever and 110 adapted to be moved thereby in its own plane, and a snow scraping blade fixed to said plate.

5. In a snow scraper, the combination of a vehicle, a vertical shaft thereon having a 115 pair of arms, a pair of levers mounted on the frame of the vehicle, each connected with one of said arms to be operated thereby, a horizontal plate pivotally connected with both of said levers, a fixed guide for said 120 plate, and a snow scraping blade fixed to the plate, whereby the turning of the shaft on its axis will swing the blade in either direction from a transverse position.

6. In a snow scraper, the combination of 125 a vehicle, a plurality of clips thereon arranged in a circle, a turret having a flange resting under and guided by said clips, whereby the turret is adapted to turn on a central vertical axis, a horizontal plate, 130

means connected with the turret for moving said plate from side to side, and a snow scraping blade mounted on the plate and movable therewith.

5 7. In a snow scraper, the combination of a vehicle, a turret mounted thereon to turn on a vertical axis, a fixed frame on the vehicle having a headed guide depending therefrom, a horizontal plate having an
10 arcuate slot for receiving said headed guide, means connected with the turret for moving the plate from side to side so that the slot will be guided about said headed guide, and a scraper blade mounted on the plate to
15 move therewith.

8. In a snow scraper, the combination of a vehicle, a plurality of clips thereon arranged in a circle, a turret having a flange resting under and guided by said clips,
20 whereby the turret is adapted to turn on a central vertical axis, a fixed guide on the frame, a horizontal plate movable in its own plane about said guide, means connected with the turret for moving said plate

from side to side about said guide, a snow 25 scraping blade mounted on the plate and movable therewith, and means carried by said turret for raising the scraper blade off the ground.

9. In a snow scraper, the combination of 30 a vertical hollow turret adapted to turn about its own axis, means for limiting the turning motion of the turret in both directions, a snow scraping blade mounted to turn horizontally, means connected with 35 said turret for turning the blade when the turret turns, said blade being pivoted on a horizontal axis, and a lever located within the turret connected with the blade, whereby when the lever is turned to one position 40 it will lift the blade off the ground.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

LOUISA BLAKE.

Witnesses:

ALBERT E. FAY,
C. FORREST WESSON.