

Aug. 2, 1938.

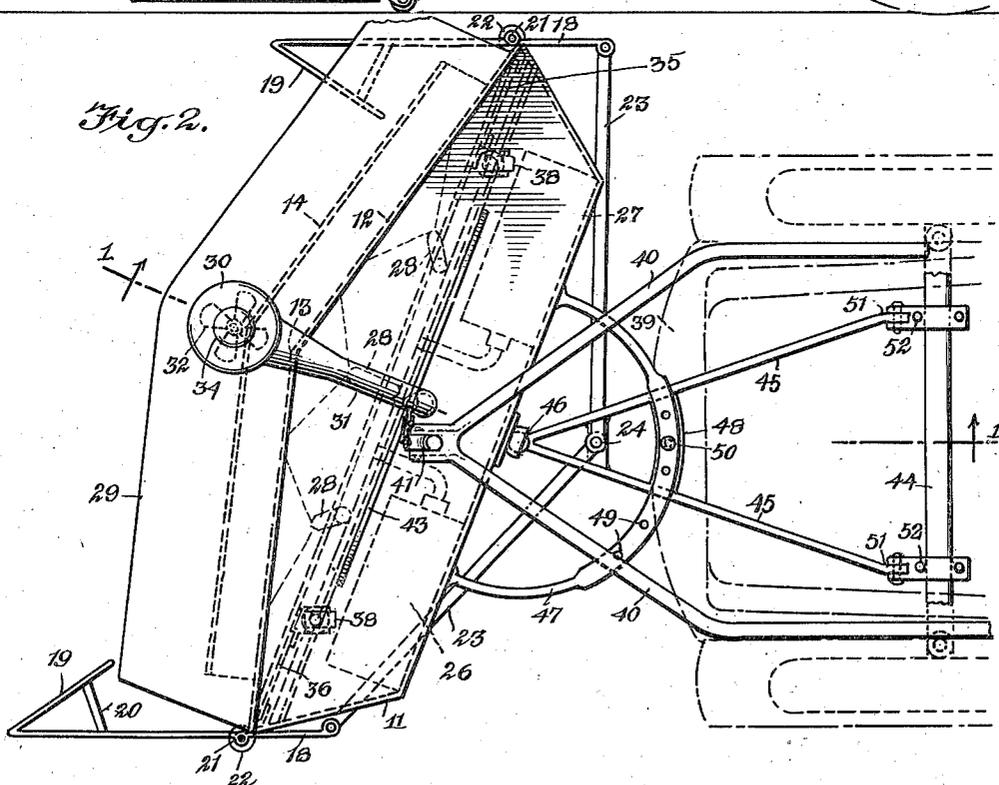
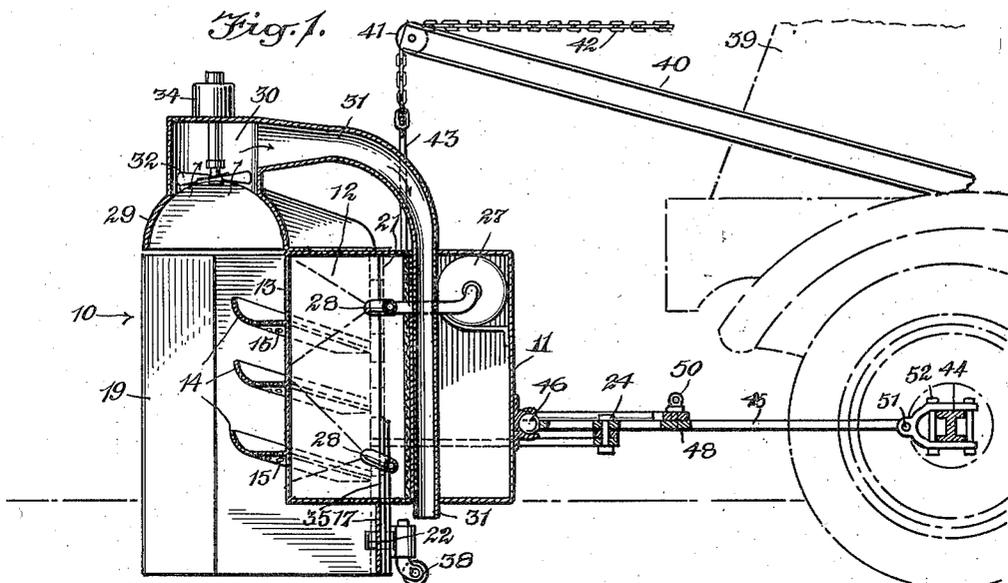
J. J. MARINO

2,125,797

SNOW REMOVAL MACHINE

Filed June 8, 1937

2 Sheets-Sheet 1



WITNESSES  
*George Taylor*  
*John V. Glaccum*

INVENTOR  
*John J. Marino*  
BY  
*Wm. Anderson & Liddy*  
ATTORNEYS

Aug. 2, 1938.

J. J. MARINO

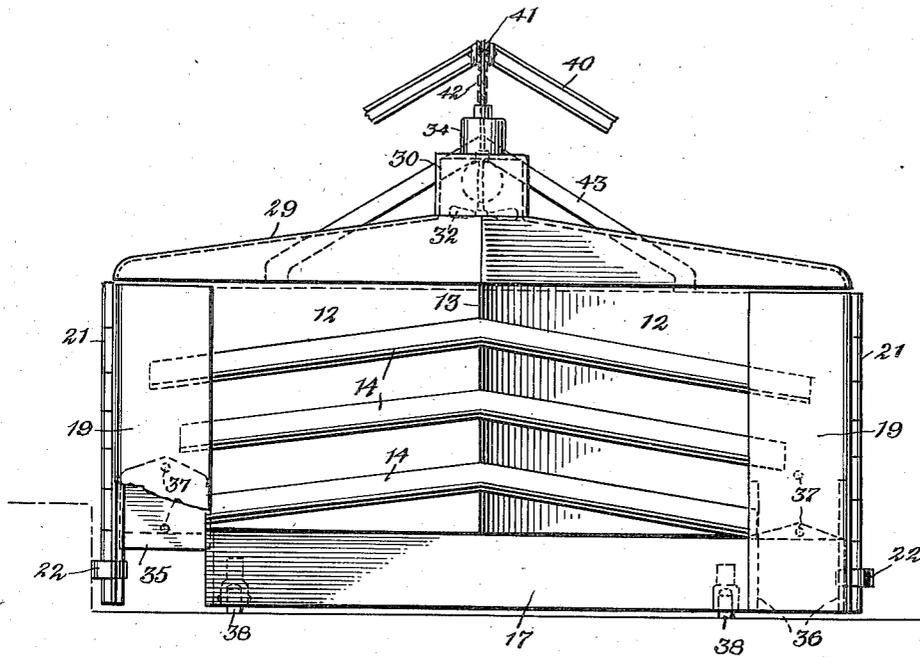
2,125,797

SNOW REMOVAL MACHINE

Filed June 8, 1937

2 Sheets-Sheet 2

Fig. 3.



WITNESSES  
*George Taylor*  
*John V. Staccum*

INVENTOR  
*John J. Marino*  
BY  
*Wm. Anderson & Liddy*  
ATTORNEYS

# UNITED STATES PATENT OFFICE

2,125,797

## SNOW REMOVAL MACHINE

John J. Marino, New York, N. Y.

Application June 8, 1937, Serial No. 146,995

7 Claims. (Cl. 37-12)

This invention relates to snow plows, and more particularly to plows adapted to the cleaning of streets, and the disposal of the snow at the same time.

In the past, various types of plows or snow removers have been used to clean streets, roads and other thoroughfares. Some of these plows are drawn by a motor element, while others are pushed by motor means. In the past, machines have been constructed for disposing of snow, but have been impractical for many reasons.

An object of this invention is to provide a snow removing machine of great mobility and one which will dispose of the snow by contact therewith.

Another object is to provide a device which will melt the snow and provide for the disposal of the water resulting therefrom.

In the past, machines were provided for melting snow but made no provision for taking care of the resulting vapors, which tend to freeze on the sidewalks, windows and other surfaces, thus rendering the use of the machines impractical. One of the objects of this invention is the condensation of the vapors caused by melting snow.

A still further object is to provide a device which is mobile and which may be attached to the ordinary truck, which is the standard equipment of most city street cleaning departments.

With these and other objects in view, which will appear as the description proceeds, reference is had to the accompanying drawings, in which Fig. 1 represents a cross-sectional view of my improved machine, taken on the line I-I of Fig. 2.

Fig. 2 represents a top view thereof.

Fig. 3 represents a front view of my device.

The machine 10, which consists of a body or cabinet portion 11, has a front or contact plate 12. The contact plate 12 is divided and slopes gradually back from the peak 13 thereof. On the side contact plate are a plurality of gutters, 14, which slope gently downward from the peak, 13. These gutters are adapted to pick up the snow and hold it against the contact plate 12. The gutters are provided with openings 15 so that the melting water under the snow will drop through to the next gutter and the surplus water will flow to the sides of the contact plate and be disposed of. On the bottom portion of the contact plate is a straight plate 17 which is adjustable and may be replaced when worn. On either side of the contact plate, 12 there are pivoted side arms 18 provided with wing members 19; for the purpose of strength, the wing members 19

may be re-inforced by a bar, 20. Side arms 18 are pivoted at 21 and a roller 22 is provided at this point to prevent scraping of the device against a curb or other obstruction. The rear portions of the arm 18 are connected by bars 23, which in turn, are united and fixed by means of a pivot at 24.

Behind the contact plate 12 is a compartment, or cabinet 11 in which are placed fuel and air tanks 25 and 27 which supply burners 28. These tanks, 25 and 27 are provided with standard compressing units. The burners 28 throw a flame against the rear of the contact plate 12 and while any number of burners may be used, it is believed that six is the most practical number. The burners 28 are pivotally mounted so that the flame may be thrown on any desired portion of the contact plate or concentrated on any particular section thereof. The burners 28 are controlled by the customary valves which may be of any standard type.

Situated above the contact plate 12 is a shield, 29. This shield is semi-circular and slopes upwardly toward the center. At the central portion thereof, there is an opening leading into a chamber 30 and the pipe 31. A fan or blower 32 is mounted in the chamber and driven by a motor 34. Thus it will be seen that when the device is pushed against a pile of snow, the vapor and steam caused by the melting snow will be drawn into the chamber 30 by the fan 32, and through the pipe 31, where it will be condensed and discharged. At the bottom of the contact plate 12 and at either side thereof, there are doors or shutters, 35 and 36. These shutters are slidably mounted so that they may be raised and fastening means 37 are provided to hold them open when it is so desired.

When the device is used for melting snow against a curb, the inner shutter would ordinarily be open as shown in Fig. 3, thus allowing the melted snow to run into the gutter. The entire device 10 is mounted on casters or suitable rolling means 38 and is supported by an A-frame on a standard truck 39. The frame consists of an upwardly extending pair of girders 40, which meet on their outer ends and support a pulley 41 through which a chain is placed. The chain 42 is connected to the frame 43 extending upwardly from the machine. Extending forward from the axle 44 are two additional girders, 45, which are pivoted to the back of the chamber 11 at 46. A semi-circular member 47 is fastened to the back of the chamber 11 and adapted to move over the girders 45; at that point, the girders 45 are con-

5 nected by a plate 48 having upwardly extending  
flanges to register with the member 47. The  
member 47 is provided with a series of holes 49  
through which a pin 50 may be placed to fix the  
10 position of the member 47 with relation to the  
plate 48. The arms 23 are similarly fixed to the  
girders 45. Since the members 45 are pivoted at  
51 to the fastening means 52, the entire device  
15 may be raised or lowered by the operator of the  
truck by means of the chain 42. It will be seen  
that the angle at which the entire device rests in  
relation to the truck may be varied by removing  
the pin 50 and sliding the member 47 to a differ-  
20 ent position. While the angle at which the  
device is placed will vary from time to time, due  
to the arms 23, the side arms 18 will remain par-  
allel to the truck and of course, parallel to the  
side of the road or curb.

In operation, the device may be fastened to  
20 the customary frame which is the standard  
equipment of most street cleaning department  
trucks in the manner shown, the burners 28 then  
lighted, thus heating the contact face 12. The  
driver of the truck then pushes the device against  
25 the snow and the arms 18 push the snow into  
and against the contact plate 12, while the wing  
members 19 direct the snow against the center  
of the contact plate, thus leaving the shutters  
free to allow the melted snow to flow backwardly  
30 down the gutter. As the snow melts, the water  
runs off through the gutters 14, and backward  
through the door 35 or 36. Vapor and steam  
caused by the melting snow is picked up by the  
fan 32 and condensed and discharged by the  
35 pipe 31.

The entire unit is compact and highly mobile  
and, since it is adaptable for use with the ordi-  
nary truck, economical, as well as practical.  
When not in use, it may be stored in a relatively  
40 small space.

I claim:

1. A device for melting snow, comprising a con-  
tact plate, burners situated behind said contact  
plate and adapted to heat the same, and shutters  
45 in said contact plate to allow the passage of  
melted snow therethrough.

2. In a device for melting snow, comprising a  
cabinet, a contact plate on said cabinet and

means in said cabinet for heating said contact  
plate, a pair of arm members pivoted on either  
end of said contact plate, said arm members hav-  
ing connecting means so that they are held in  
5 parallel relation one to the other.

3. A device for melting and disposing of snow,  
comprising a cabinet, a contact plate on said  
cabinet, a plurality of gutters, mounted on said  
contact plate, a shield extending over and above  
said contact plate, a chamber above said shield, 10  
tubular means leading from said shield to the  
rear of said cabinet and a fan in said chamber  
to draw vapors into said chamber and through  
said tubular means.

4. A device of the character described, com- 15  
prising a cabinet and a contact plate on said  
cabinet, means for mounting said device on the  
front of a motor vehicle, and further means for  
varying the position of said cabinet, with rela-  
tion to said motor vehicle, side arm members 20  
pivoted on either end of said plate and means  
for maintaining said side members parallel to  
each other in the direction of the truck.

5. A device of the character described, includ- 25  
ing a contact plate, means for heating said plate,  
shutters on the lower and outer edges of said  
plate, side arm members pivoted to the edges of  
said plate and wings on said side arm members to  
force the snow toward the center of the said  
30 contact plate and away from said shutters.

6. A device for melting snow comprising a cabi-  
net, a contact plate at the front of said cabi-  
net, adjustable burners in said cabinet adapted  
to heat said contact plate, semi-tubular gutters  
on said contact plate and openings in said gutters 35  
to allow the melted snow to pass through from  
the upper gutters to the lower one.

7. In a device for melting snow, a contact  
plate and means for heating said plate, arm  
members pivoted to the side of said contact plate  
adapted to push snow toward the center of said  
40 contact plate, means for varying the position of  
said contact plate, said arm members having con-  
necting rods joined together at a fixed pivot, so  
that said arm members are at all times parallel  
45 to each other regardless of the position of said  
contact plate.

JOHN J. MARINO.