J. L. BOYLE.

STEAM HEATED SNOWPLOW.

APPLICATION FILED MAY 10, 1919.

1,376,741.

Patented May 3, 1921.

3 SHEETS—SHEET 1.

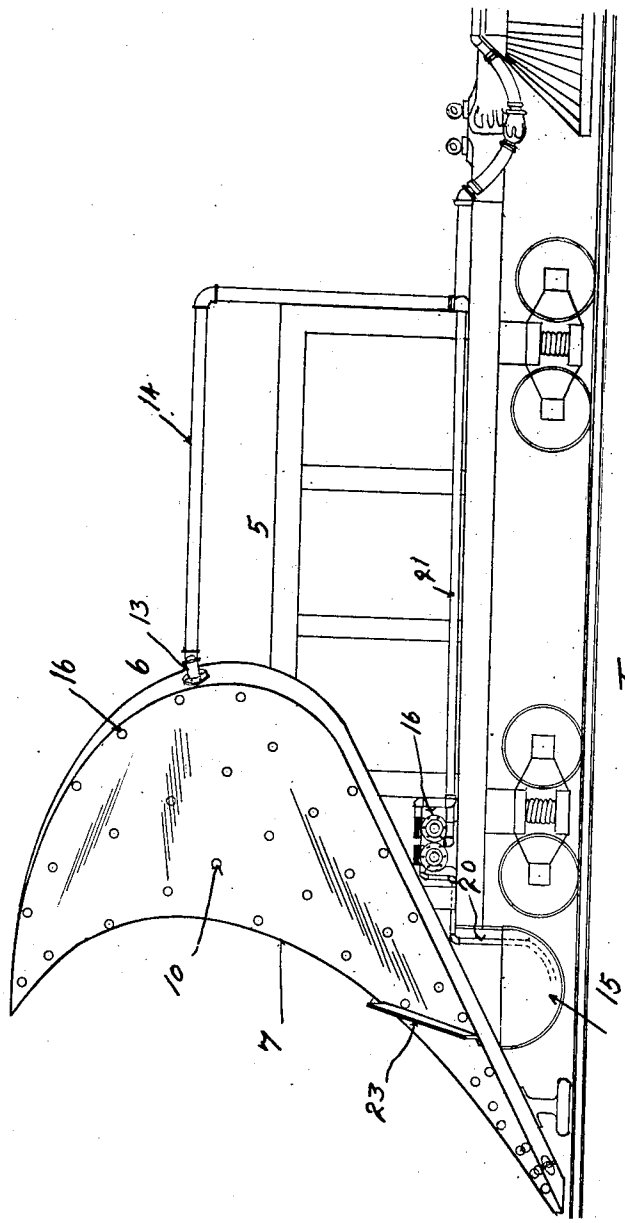

Fig 1

James L. Boyle. INVENTOR.

BY

ATTORNEYS.

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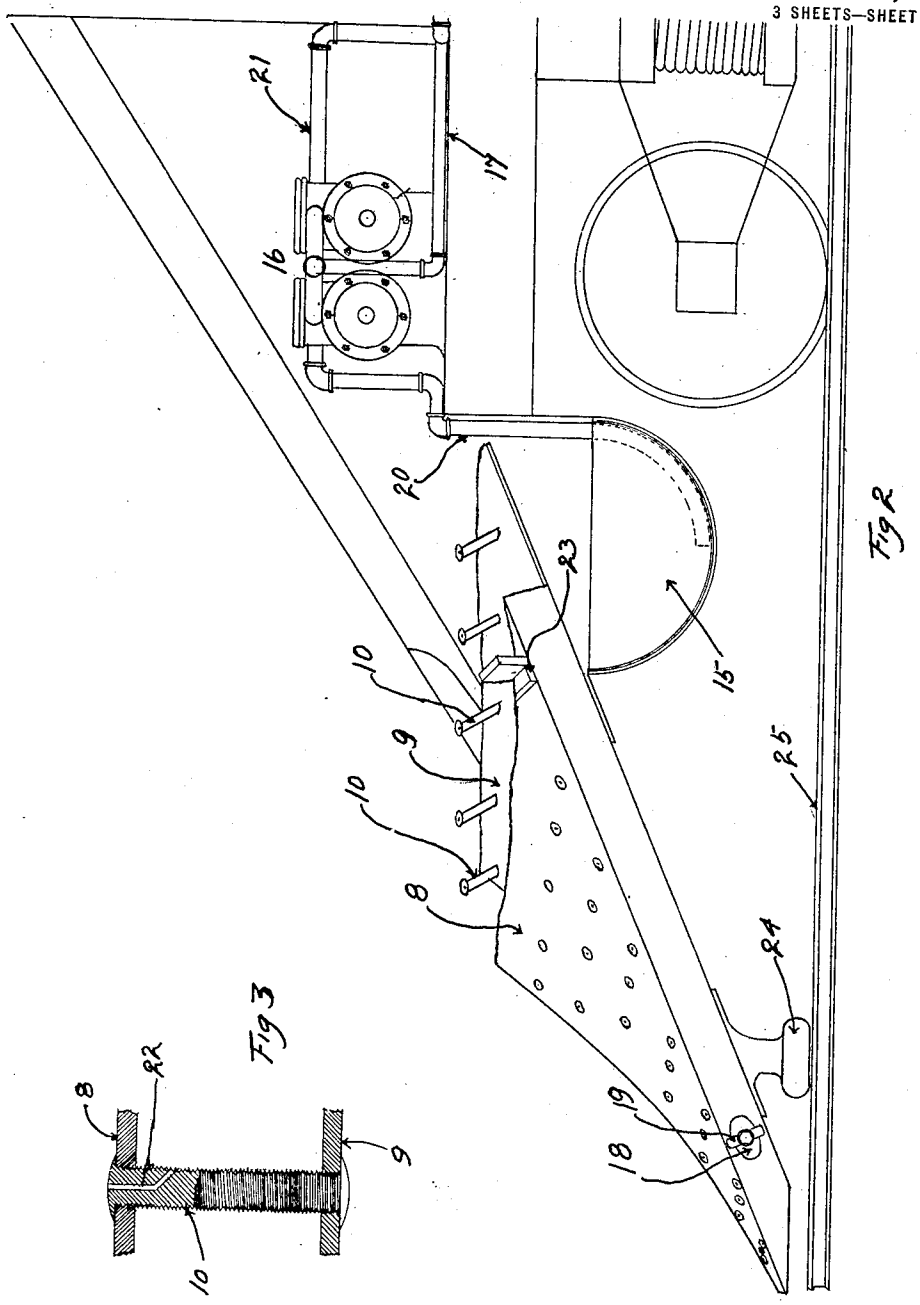

Fig 2

Fig 3

James L. Boyle. Inventor

Attorney

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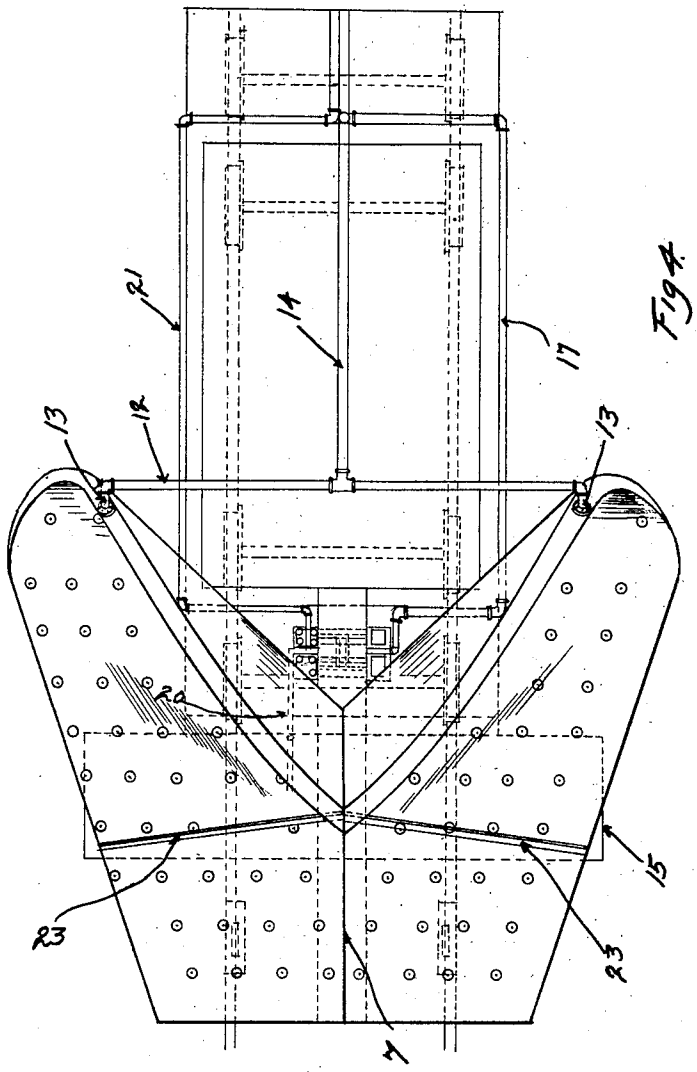

Fig 4.

James L. Boyle. INVENTOR.

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES L. BOYLE, OF GOODLAND, KANSAS.

STEAM-HEATED SNOWPLOW.

1,376,741. Specification of Letters Patent. Patented May 3, 1921.

Application filed May 10, 1919. Serial No. 296,258.

To all whom it may concern:

Be it known that I, JAMES L. BOYLE, a citizen of the United States, residing at Goodland, county of Sherman, and State of Kansas, have invented certain new and useful Improvements in Steam-Heated Snowplows; 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in snow plows adapted for use in clearing the snow from railway tracks. So far as the general shape of my improvement is concerned, it is similar to the so-called wedge plow now in use and is shaped somewhat like a double shear ground plow.

The novel feature of my improved snow plow is that its walls are double and spaced by staybolts to form a cavity into which steam is introduced from the boiler of the locomotive, whereby the plow is heated to such an extent that it serves to melt the snow, thus facilitating the function to be performed by an apparatus of this class.

The two walls of the plow member are connected by staybolts, and the latter are perforated to allow steam which enters the cavity to pass upwardly into direct contact with the snow upon the outer surface of the plow, thus facilitating the performance of the snow-melting function.

Provision is made whereby, as the snow is melted, the water therefrom is directed into a tank or receptacle supported underneath the plow. Provision is made for pumping the water from this receptacle back into the tank for supplying the locomotive boiler.

Having briefly outlined my improvement, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof. In this drawing:

Figure 1 is a side elevation of a railway truck located in front of the locomotive, my improved snow plow being mounted on the truck.

Fig. 2 is a fragmentary view of the same structure, showing the parts on a larger scale.

Fig. 3 is a sectional view of the double wall construction of the plow, illustrating one of the staybolts, the parts being shown on a still larger scale.

Fig. 4 is a top plan view of the structure shown in Fig. 1, the locomotive connection being omitted.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a truck, upon the forward end of which is mounted my improved plow, which will be designated in its entirety by the numeral 6. This plow has a central apex, 7, from which its upper wall curves outwardly in both directions to facilitate the throwing of the snow away from the track and on opposite sides of the latter. This plow member is composed of an outer wall 8 and an inner wall 9, the two walls being connected by staybolts 10, the said walls being suitably spaced to receive a considerable volume of steam, which is introduced or delivered to the cavity between the plates by a transversely arranged pipe 12, whose opposite extremities are in communication with the cavity of the plow on opposite sides, as shown at 13. The pipe 12 is in communication, by means of a rearwardly extending pipe 14, with the steam of the locomotive boiler (not shown).

It will be readily understood that as the steam from the boiler is introduced into the cavity of the plow, it will quickly heat the latter and serve to melt and soften the snow, thus enhancing the utility of the plow. The water resulting from the melting of the snow on the upper or outer surface of the plow will be guided by flanges 23 into a tank or receptacle 15, which is supported on the forward extremity of the truck and extends underneath the lower portion of the plow, its opposite extremities projecting laterally beyond the plow sufficiently for the purpose.

A pump 16 is mounted on the truck and connected with the water in the tank 15 by means of a pipe 20, the pump also being connected by a pipe 21 with the tank (not shown) of the locomotive, which is connected with the truck 5 immediately in the rear of the latter. Furthermore, the necessary steam for operating the pump is supplied by a pipe 17, one extremity of which is connected with the pump while the other extremity is connected with the boiler (not shown) of the locomotive, whereby the water is taken from the tank 15 and delivered to the tank from which the boiler

water is taken, thus making it practicable to supply the boiler with water from the melting snow when the snow plow is in use.

There is a considerable number of staybolts employed in connecting the two walls or plates of the plow, and each of these is provided with a duct 22, which communicates with the cavity in the plow at one extremity and with the atmosphere adjacent the outer surface of the plow at its opposite extremity, whereby the steam from the chamber of the plow is constantly escaping into the snow with which the upper or outer surface of the plow is in contact.

The staybolts are threaded into the plates 8 and 9 of the plow, whereby these plates are suitably spaced and securely connected.

Below the guide flanges 23 which direct the water of the melting snow into the tank, there is a shallow cavity or portion of the chamber in which a small quantity of water of condensation might collect. This water may be allowed to escape through an outlet 18, which is controlled by a valve 19.

Extending downwardly from the body of the snow plow on opposite sides, are shoes 24 which engage or run very closely to the track rails 25 when the plow is in use, and as these shoes will be heated by the steam which enters the chamber of the snow plow, they will serve to melt the snow adjacent the rails and prevent the same from packing into the space between the ball and the base or flange of the rail. Hence these shoes are intended to perform the function of flangers or devices heretofore used for scraping the snow away from the rails.

From the foregoing description, the use and operation of my improved snow plow will be readily understood.

When the same is in use, steam from the boiler will be introduced into the chamber or cavity of the plow between the two plates 8 and 9, and will heat the latter sufficiently to aid in melting the snow with which the plow is in contact. Besides, a jet of steam will escape through the duct 22 of each staybolt, thus introducing live steam from the boiler directly into the snow adjacent and in contact with the upper and outer surface of the snow plow. This will enable my improved plow to work through snow much faster than can be accomplished with the plows heretofore in use, as will be readily understood.

I claim:

A snow plow, composed of plates spaced and connected by staybolts, forming a chamber, the staybolts being provided with ducts to allow the steam to escape from the chamber to the upper and outer surface of the plow.

In testimony whereof I affix my signature.

JAMES L. BOYLE.