G. ROYAL.

SNOW-PLOW.

No. 193,384. Patented July 24, 1877.

Fig. 1.

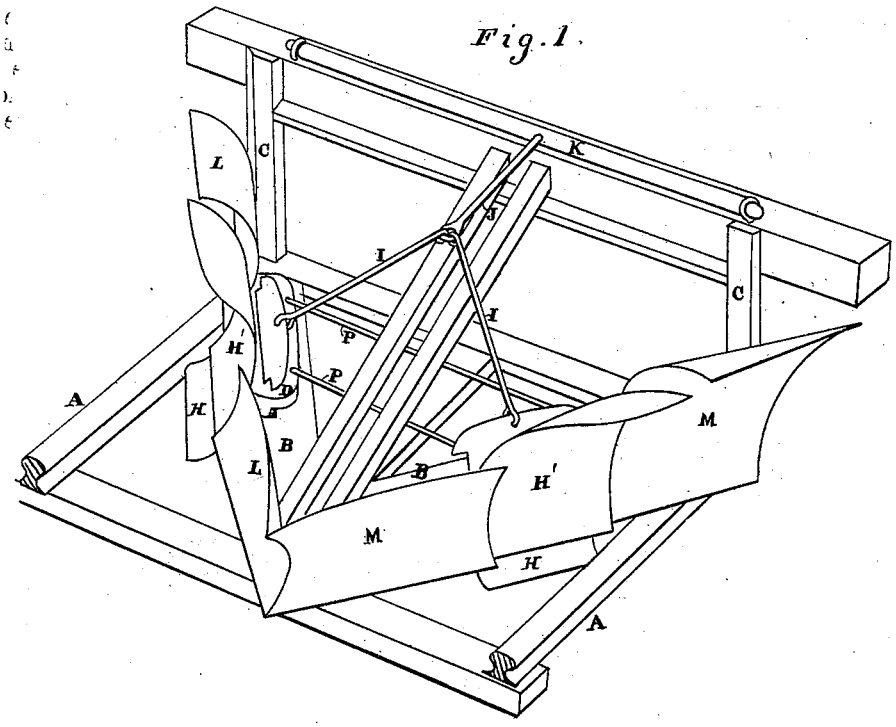
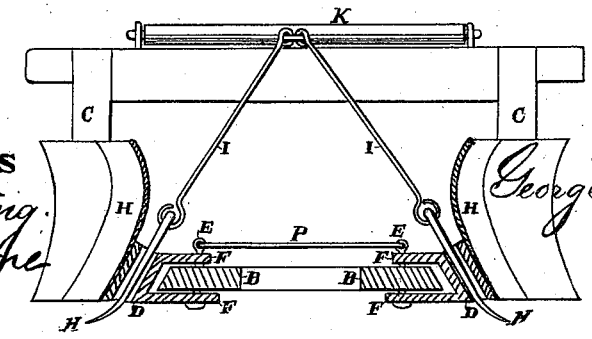


Fig. 2.



Witnesses
Geo. H. Strong.
Jno. L. Bothe

Inventor
George Royal
by Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

GEORGE ROYAL, OF TRUCKEE, CALIFORNIA.

IMPROVEMENT IN SNOW-PLOWS.

Specification forming part of Letters Patent No. **193,384**, dated July 24, 1877; application filed March 15, 1877.

To all whom it may concern:

Be it known that I, GEORGE ROYAL, of Truckee, Nevada county, and State of California, have invented an Improved Flanger and Snow-Plow for Railway-Trains; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improved flange attachment to railroad-trains; the object of which is to cut up, and remove to the outside of a railway-track, the ice which accumulates on the side of a railroad in cold weather, and which would otherwise interfere with the flanges of the wheels.

My invention consists in the combination, with a cutter or share with one or more mold-boards on each side of the track, so that the cutter or mold-board will cut up the ice, while the mold-board forces it to the outside of the track, of boxes pivoted to the angular timbers, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a perspective view of my plow. Fig. 2 is a vertical section.

Let A A represent the two rails of a railway-track.

In cold weather, after the fall of a snow, the passage of railway-trains over the track soon packs the snow on the inside of the rails until it is converted into solid ice, which must be removed occasionally, or it will accumulate until it runs the cars off the track, or, by causing the driving-wheels of the engine to slip on rails many times, completely disables the engine.

I can either apply my flange attachment to the ordinary pilot or cow-catcher of the engine, or I can build a special frame, which can be attached in front of any ordinary car.

For the purpose of this application I have represented a special frame, which is constructed after the same general plan and shape of an ordinary cow-catcher. In this frame B B are two horizontal timbers, which form the V-shaped projection in front of the car or engine, and C C are the timbers of an upright frame, with which the timbers B B are connected.

At or near the middle of each of the horizontal timbers B I secure a box, D, by means of a bolt, E, so that the box can swing a certain distance either way on this pivot or bolt as a center. In the present instance the box is constructed with two flanges, F F, one of which passes over the upper side of the timber, while the other passes under the lower side, so that the box, which is constructed on an angle outward, will stand across the outside face of the timbers on each side. The bolt E passes through both of these flanges and through the timber, sufficient space being left between the box and side of the timber for the swinging movement. The cutters or shares H fit in these boxes, one on each side, and as the box is secured at an angle the shares will stand at an inclination, and slide through the boxes like drawers.

Each share consists of a steel blade, the lower edge of which is sharpened. The angular position of the timbers B and boxes D will cause the lower edges of the shares to stand at an angle to the rails, so that the heel of the shares will be close up against the inside of the rails, while their points diverge from it. To each box D I secure a curved mold-board, H′, which curves upward and outward above the share, so that the ice which is detached by the share as the car moves forward will be forced by the mold-board out over the rails to the outside of the tracks.

The shares I suspend, by means of rods I I, from a lever-arm, J, which projects from a horizontal rock-shaft, K, above the frame C C. This rock-shaft I operate by means of a lever, which extends back into the car or cab, so that a person on the car can, by raising or lowering the lever, raise the share up into the boxes and out of cutting action, or lower them down, so they cut the ice, as above specified.

The top flanges F of the boxes D I connect by means of two rods, P P, one of which connects the flanges in front and the other in rear of the bolt or central pivot E, so as to connect the action of the boxes. The object of this is to permit the shares or cutters to be adjusted about the pivot by the single movement of a lever, so that they will stand in the proper relation to the rails in passing around curves.

The shares could be permanently attached to the mold-board, if desired; but I prefer

the above-described plan. They could also be lengthened, so as to extend across the entire space between the rails, and thus avoid the necessity of shoveling the snow out, as heretofore.

L C and M M are other mold-boards, which are similarly attached to the cow-catcher or pilot in front and rear of the boxes D, for the purpose of removing the snow from between the rails, and for preventing the accumulating of snow on pilot or cow-catcher by throwing it entirely out of the way. It also prevents the slide-boxes from being jammed or blocked with accumulating snow and ice.

I shall usually place a spring in rear of each share or cutter, which will be strong enough to keep it to its work, so that in case the share should strike a tie or other fixed object the spring will allow it to give, rather than break any part of the mechanism.

I thus virtually combine a flanger with a snow-plow, although the mold-boards which are not connected with the action of the shares could be dispensed with if the snow-plow is not required.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The boxes D, pivoted to the angular timbers B B, and connected as described, in combination with the adjustable shares or cutters H H and the fixed mold-boards H′ H′, substantially as and for the purpose above described.

In witness whereof I have hereunto set my hand and seal.

GEORGE ROYAL. [L. S.]

Witnesses:
T. C. PLUNKETT,
W. R. WATSON.