

No. 775,293.

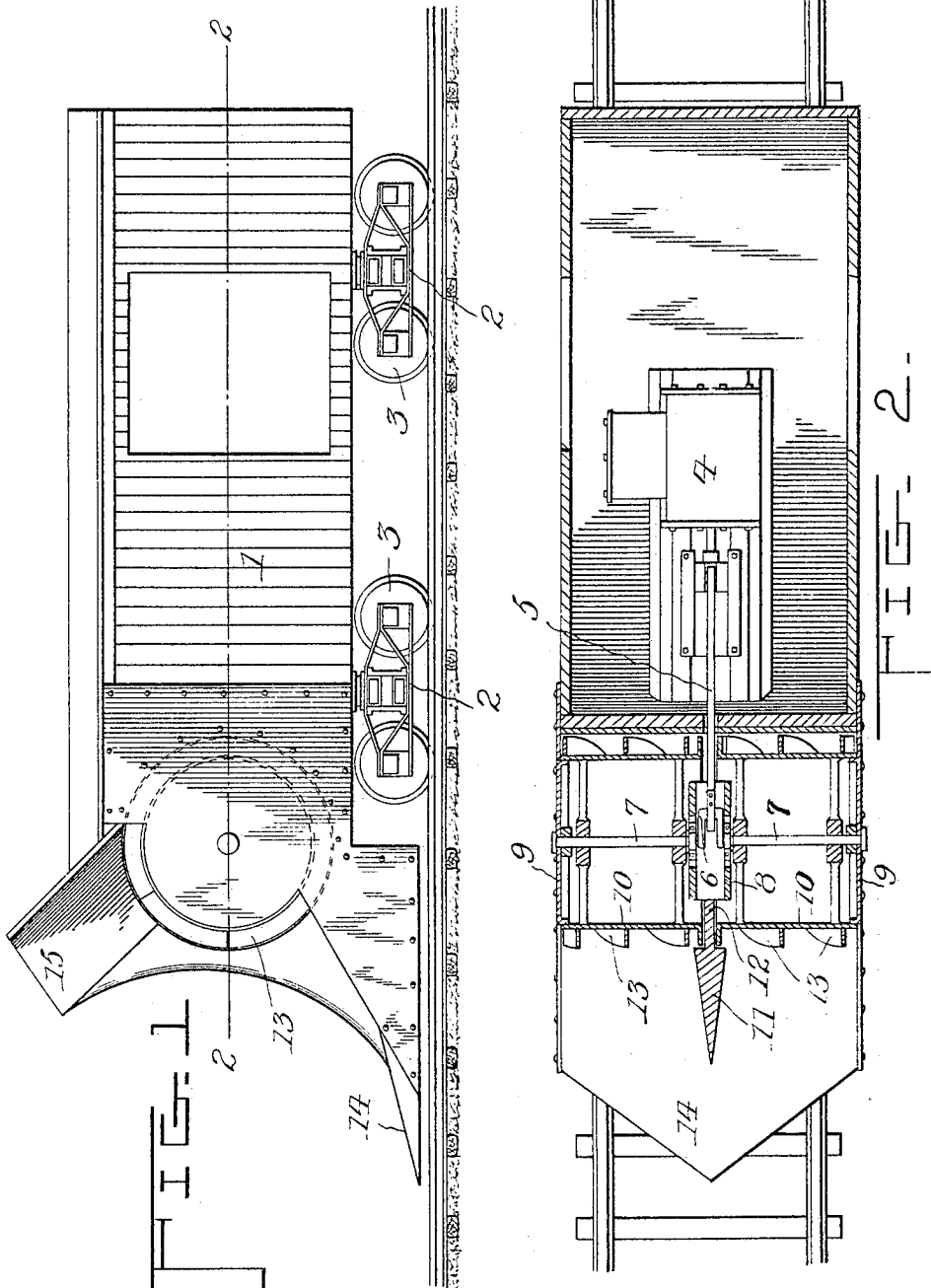
PATENTED NOV. 22, 1904.

E. BOWMAN.
SNOW PLOW.

APPLICATION FILED JUNE 22, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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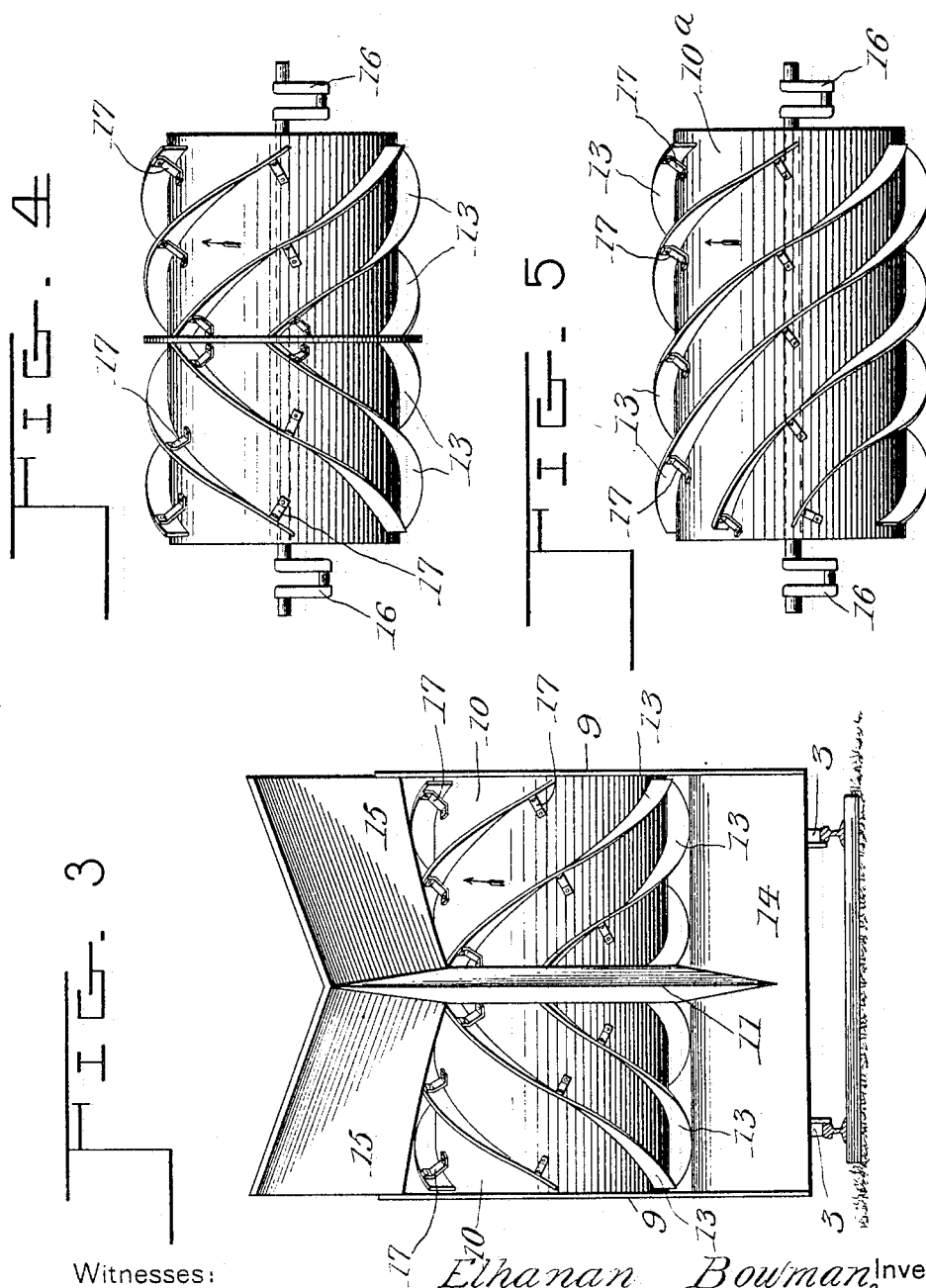
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UNITED STATES PATENT OFFICE.

ELHANAN BOWMAN, OF ELMWOOD, CANADA.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 775,293, dated November 22, 1904.

Application filed June 22, 1904. Serial No. 213,657. (No model.)

To all whom it may concern:

Be it known that I, ELHANAN BOWMAN, a subject of the King of Great Britain, residing at Elmwood, in the county of Bruce, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Snow-Plows; and I do hereby declare that the following is 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.

This invention relates to new and useful improvements in power-actuated snow-plows designed especially for use in clearing railway-tracks of accumulations of snow, ice, &c.; and the invention consists in certain features of novelty in the detail construction, operation, and arrangement thereof, all as hereinafter more fully described, and specifically pointed out in the claims.

The object of the invention is to provide a device of the character described which may be utilized for the purpose specified either upon single lines of track or upon double tracks and which will work with perfect satisfaction in either place.

Referring to the drawings, in which similar numerals of reference indicate corresponding parts in all the views, Figure 1 is a side elevational view of my improved snow-plow. Fig. 2 is a transverse sectional view of Fig. 1, taken approximately on the line 2 2. Fig. 3 is a front elevational view. Fig. 4 is a detached detail view of a form of plow-cylinder slightly modified from the construction shown in Figs. 2 and 3, and Fig. 5 is a still further modification of such cylinder.

As indicated by the drawings, the snow-plow proper is carried within a car 1, which for convenience is mounted upon the trucks 2, carrying wheels 3.

I have shown diagrammatically illustrated in the drawings an engine placed within the car 1 for the purpose of driving the snow-plow cylinder, which engine, as therein shown, is substantially centrally located within the car; but it is evident that any number of such engines or other driving means may be applied for the purpose, and the illustration shown is merely for convenience.

Referring to the parts in detail, 4 is an engine provided with the usual appurtenances, from which extends the pitman 5, which is connected with the crank 6 of the horizontal shaft 7, which shaft is supported in suitable bearings within the abutment 8 centrally and in the side cutting-plates 9, which parts are hereinafter referred to in detail.

In the preferred form of my invention when it is intended to be used upon a single track the shaft 7 is mounted as shown in Fig. 2 and has connected thereupon a plurality of cylinders 10 10, which cylinders are mounted between the cutting-plates 9 at the outer sides and said pitman 5, and a cutting-prow 11, which is provided with the rearward extension 12. Each of the cylinders 10 is provided with approximately circumferentially-disposed spiral blades 13, which, as shown in Figs. 2, 3, and 4, are oppositely disposed—that is, the line of projection of such blades is such that when the cylinders are rotated in the direction indicated by the arrow in Figs. 3 and 4 such rotation will cause the blades 13 to project the snow outwardly at both sides from the snow-plow.

To facilitate the operation of the rotatable cylinders 10 and blades 13, a forwardly and downwardly extending platform 14 extends beyond the front end of the car 1, and such platform extends upwardly, as shown in Figs. 1 and 3, so that snow engaged thereby will be conducted upwardly to the rotatable cylinders before referred to. To facilitate the operation of the plow, the prow 11 extends from approximately the middle of the platform 14 upwardly, and said prow is in cross-section substantially wedge-shaped, as shown in Fig. 2, so as to serve as a cutting means for snow, &c., projected against the same when the plow is in use. The prow 11 extends upwardly, as shown, and merges in the laterally and rearwardly inclined deflecting-wings 15, which wings extend upwardly above the cylinders 10, as best shown in Fig. 1, and thereby serve as means for deflecting snow away from the track at a sufficient elevation to carry such snow over the surrounding embankment, if any exists.

As noted, the prow 11 is provided with a

rearward extension 12, which extends to the abutment 8, which is preferably rigidly connected with the car-frame in any suitable manner, so as to serve as a convenient rigid support not only for the prow 11, but also for the driving-shaft 7, as shown in Fig. 2.

When it is desired to substitute a single cylinder for the plurality of cylinders 10 shown in Figs. 2 and 3, the modification shown in Fig. 4 may be substituted, in which case the engine should be connected with the cranks 16, in which case a plurality of engines would probably be required or a plurality of connections from a single engine extending to each crank. Likewise when it is intended to use the snow-plow on a double track and project the snow either to the right or left a single cylinder 10^a, such as is illustrated in Fig. 5, may be substituted for the plurality of cylinders 10 shown in Fig. 2, in which case it will be evident that rotation of such cylinder 10^a will drive the snow in a direction depending upon the direction of rotation of such cylinder.

For the purpose of reinforcing the spirally-arranged blades 13 angle-brackets 17 are connected to the cylinders 10 10^a and to such blades 13, such brackets being preferably arranged at the rear side of such plates.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

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

1. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform, a cutting-prow, oppositely-inclined wings above said prow, a centrally-disposed abutment secured to the car, a plurality of rotatable drums, spiral blades on the drums, and means for ro-

tating the said drums comprising a crank-shaft, supported on said abutment, and a pitman, and means for actuating the pitman.

2. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform, a cutting-prow, oppositely-inclined wings above said prow, a plurality of rotatable drums on a substantially horizontal axis, spiral blades attached along their edges to said drums, and driving means interposed between said drums, comprising a crank and a pitman.

3. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform, a cutting-prow, a plow-cylinder, spirally-disposed blades on said cylinder extending substantially the length thereof, braces on the rear sides of said blades, and means for rotating said cylinder.

4. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform therefor, a cutting-plate at each side of the car, a rotatable cylinder mounted between said cutting-plates, spirally-disposed blades attached substantially their entire length to said cylinder, and means for rotating the cylinder, comprising a crank-shaft and a piston, and means for actuating the pitman.

5. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform therefor, a cutting-prow, oppositely-inclined wings above said prow, cutting-plates at the sides of the car, a cylinder rotatably mounted therein, oppositely-disposed spirally-arranged blades on the cylinder, and means for rotating the cylinder.

6. In a snow-plow, a supporting-car, a forwardly and downwardly inclined platform therefor, a cutting-prow, a rear abutment for said prow within said car, a crank-shaft mounted in said abutment, a plurality of cylinders mounted on said shaft, and oppositely-disposed spiral blades on said cylinders.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ELHANAN BOWMAN.

Witnesses:

P. P. PARK,
RICHARD J. LILICO.