E. PERRY & A. J. MANLEY.

TRACK-CLEARER.

No. 182,699. Patented Sept. 26, 1876.

fig. 1.

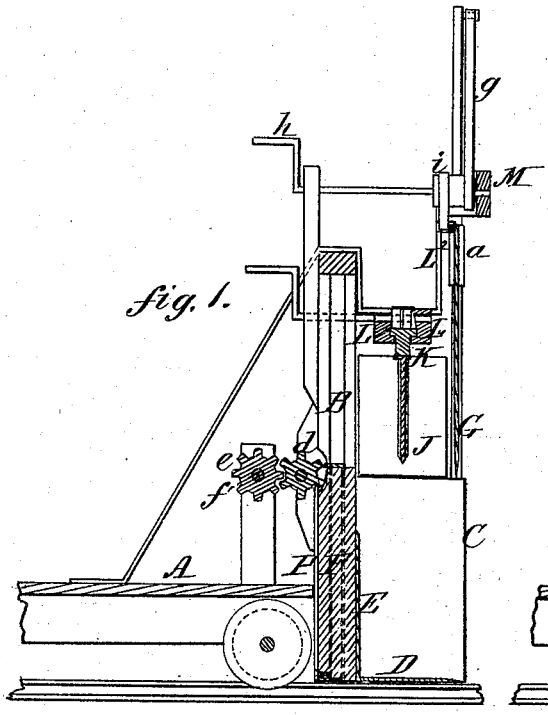


fig. 2.

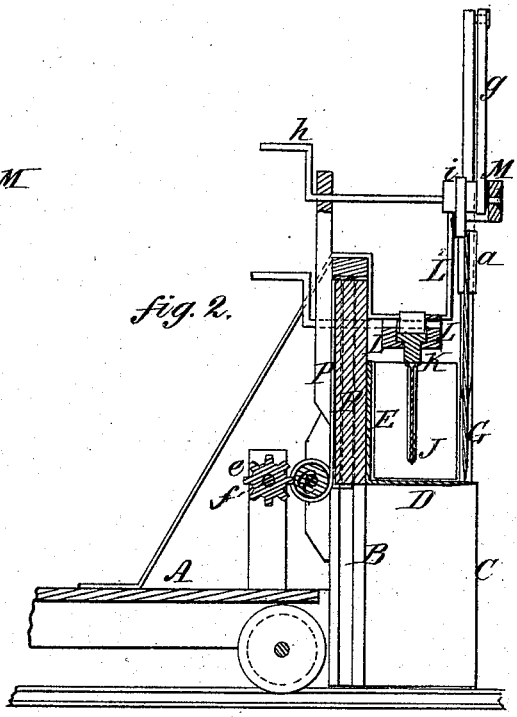


fig. 3

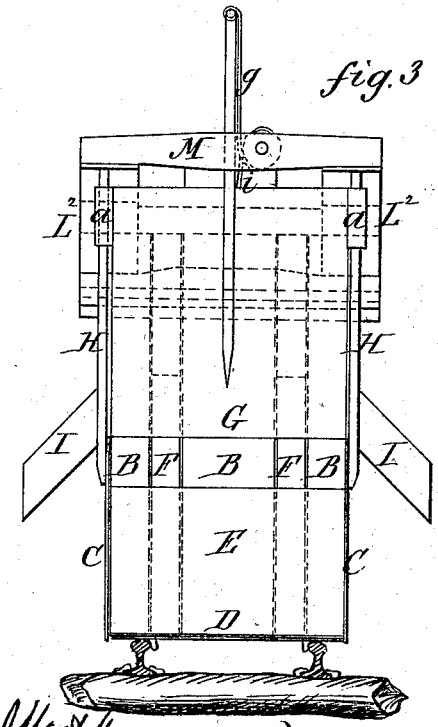
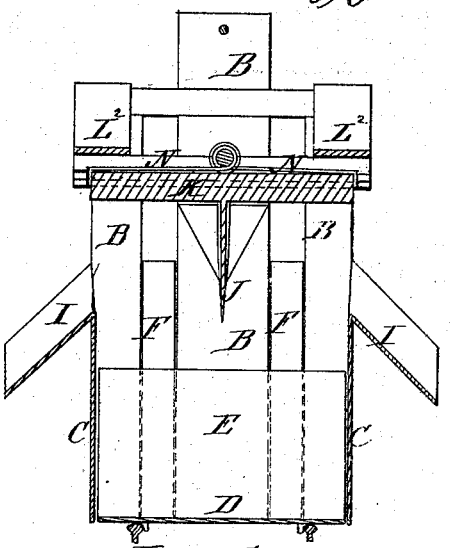


fig 4.



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UNITED STATES PATENT OFFICE

ELI PERRY AND ANDREW J. MANLEY, OF FOX LAKE, WISCONSIN.

IMPROVEMENT IN TRACK-CLEARERS.

Specification forming part of Letters Patent No. **182,699**, dated September 26, 1876; application filed March 21, 1876.

To all whom it may concern:

Be it known that we, ELI PERRY and ANDREW J. MANLEY, of Fox Lake, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Snow-Plows; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The object of the present invention is to construct a snow-plow which is especially designed for removing the snow from heavy drifts, where an ordinary snow-plow is entirely useless.

The principal feature of the invention consists in the employment of a horizontal vertically-sliding knife or platform, which is located between two stationary side cutters at the front end of a car, and in such relation to a sliding vertical cutter that when the plow is forced into a snow-drift the horizontal and side cutters will excavate or cut out a block of snow, which is then separated from the main mass by the descending vertical cutter, after which the horizontal and vertical cutters are simultaneously raised to bring the snow opposite lateral discharge-chutes or troughs.

The invention also consists in the provision of a laterally-movable knife or spade, which is located between the stationary side cutters, and in rear of the sliding vertical cutter, so as to first cut the mass of snow elevated by the horizontal cutter into two parts, after which it is moved in opposite directions from the center of the plow, so as to deliver the snow to the discharge chutes or troughs, which convey it to the side of the track or road.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a snow-plow embracing my invention, showing the vertical cutter elevated; Fig. 2, a similar section, showing the horizontal platform cutter elevated; Fig. 3, a front elevation, with the parts in the position shown in Fig. 1; and Fig. 4, a transverse section, showing the action of the laterally-acting spade.

In the drawing, A denotes a platform or flat car, which carries the snow-plow mechanism at its forward end, and is designed to be propelled along a railway-track by a locomotive, or by other suitable means coupled behind. B are vertical standards, which rise from the front of the car, and form a frame for supporting the entire plow mechanism, and guiding the movement of the movable parts. To the side of each outside standard is attached a vertical side cutter-plate, C, the front edge of which is made sufficiently sharp to readily cut its way into the snow. Between the stationary side cutters C there is located a horizontal cutter or platform, D, the forward edge of which terminates at the front edges of the side cutters. Said horizontal cutter is attached by means of a rear vertical extension or plate, E, to sliding strips or bars F, which are fitted in ways or tracks between the vertical standards B. A vertical knife, G, extends the entire width of the horizontal cutter D, and is made to slide up and down on guide-rods H rising from the side cutters C, loops or tubes *a* on the knife G encircling the guide-rods. When the plow is brought into operation the horizontal cutter is located at the bottom of the side cutters, and the vertical knife is raised to such an extent as will cause it not to interfere with the excavation or separation of a mass or block of snow by the horizontal and side cutters. A mass of snow is removed from the drift by the forward movement of the plow, and is forced into the space or chamber formed between the cutters and rear frame-standards. The vertical knife G is then caused to descend, so as to cut through the snow and separate the excavated portion from the main mass. The horizontal cutter D and the vertical knife are then raised, together with the snow, until the latter is in line with a discharge-opening and chutes I at the sides of the plow. The excavated mass of snow is in the form of a quadrilateral block, and as it is elevated it is cut into two parts by means of a centrally-located cutter or spade, J, which is carried by and extends in a downward direction from a horizontally-sliding bar K. Said bar runs between two guide-rails, L, which extend across the front portion of the plow, and are attached to the standards B by means of metallic brackets L^2.

Said brackets are extended to support a transverse cross-bar, M, which supports the operating devices of the vertical knife. The cutter or spade J is moved toward either side of the plow for delivering the bisected mass of snow to the discharge-chutes by means of two belts or bands, N, and a revolving shaft journaled in one of the rails L, and in the middle frame-standard B. Other means for reciprocating the spade may be resorted to—as, for example, a rack-bar and pinion-shaft.

The horizontal cutter and snow-elevating platform is raised and lowered by means of belts P, which are attached to the opposite ends of the bars F, and pass around a drum or pulley shaft, Q, at the rear side of the supporting-standards B. Said shaft Q carries a central spur-wheel, *d*, which gears into a spur-wheel, *e*, on a hand or crank shaft, *f*. The vertical cutter G is lowered by force by means of a belt, *g*, and crank-shaft *h*, and an additional belt, *i*, is provided for raising the knife when it is preferred to do it by hand, and not by the movement of the horizontal cutter. Rack-bars and pinions, and other mechanical expedients, are in all instances to be employed when the belts and pulley-shafts are not used.

The discharge chutes or troughs may also be attached by hinges, so that they can be turned down or lowered in passing over bridges, &c. The central knife, which parts the snow-block centrally, may be arranged at either side, and slide the whole mass of snow one way, instead of dividing it.

We claim—

1. In a snow-plow, the combination of a horizontal vertically-movable cutter-platform, D, vertical stationary side cutters C, and a vertical sliding knife, G, substantially as herein described, and for the purpose set forth.

2. The combination of a laterally-sliding cutter or spade, J, with the horizontal cutter-platform D, and vertical sliding knife G, for cutting the excavated snow into two parts, and conveying it to discharge-chutes, substantially as herein described.

3. The combination, in a snow-plow, of a centrally-located cutter, J, with a rising platform, D, elevating a mass or block of snow, for cutting the same into sections, substantially as herein described.

In testimony that we claim the foregoing as our own we have affixed our signatures in presence of two witnesses.

ELI PERRY.
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