(No Model.)

L. J. BERGENDAHL.

RAILWAY TRACK CLEARER OR SNOW PLOW.

No. 379,441. Patented Mar. 13, 1888.

Fig. 1.

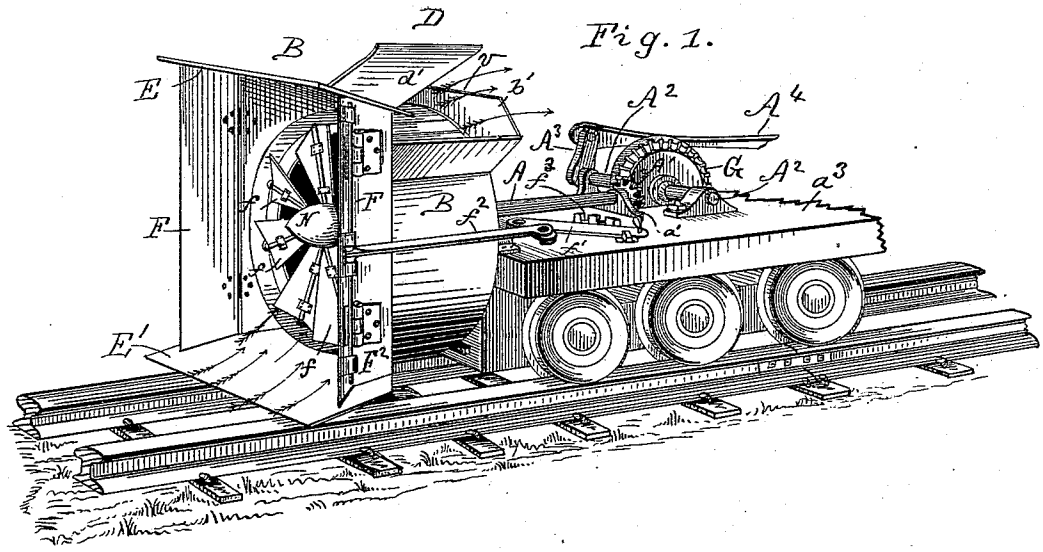


Fig. 2.

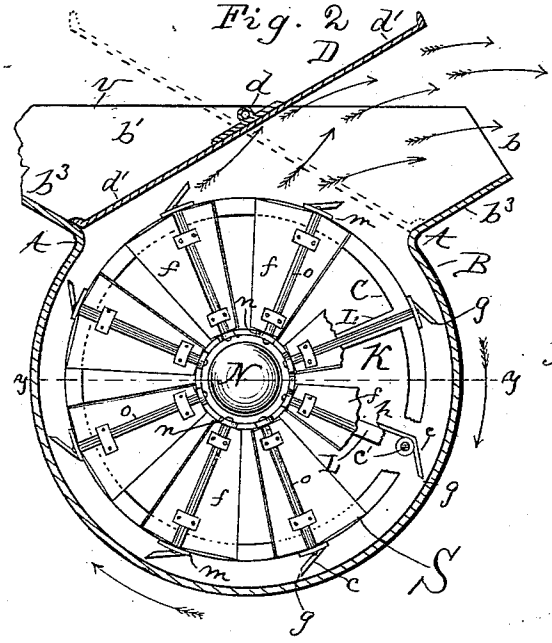
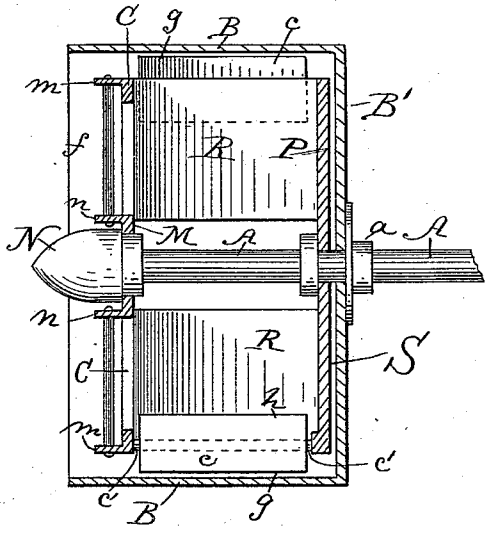


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

LEWIS JOHN BERGENDAHL, OF PENDLETON, OREGON.

RAILWAY-TRACK CLEARER OR SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 379,441, dated March 13, 1888.

Application filed November 3, 1887. Serial No. 254,140. (No model.)

To all whom it may concern:

Be it known that I, LEWIS JOHN BERGENDAHL, a citizen of the United States, residing at Pendleton, in the county of Umatilla and State of Oregon, have invented certain new and useful Improvements in Railway-Track Clearers or Snow-Plows; 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 letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of the device. Fig. 2 is a cross vertical section through casing B, with a front elevation of spider K and cutters *f* and *c*, partly broken away. Fig. 3 is a section on line *y y* of Fig. 2.

This invention relates to railway-track clearers or snow-plows; and it consists in the construction hereinafter pointed out.

The invention is an improvement upon that contained in my United States Patent No. 342,566.

A is the main shaft, mounted in the center, longitudinally, in suitable bearings, *a a'*, near the forward end of a truck-platform, a^3. At the forward end of shaft A is rigidly secured a flat ring or spider, K, provided with radial arms L, made integral with rim C and central portion or hub M. The center of hub M is provided with a cylindro-conical point, N. The rim and hub of spider K are provided with perforated lugs *m n*, projecting outwardly from said spider K, which serve as bearings for and support radial rock-shafts *o*, as shown in Fig. 2.

Rigidly attached to each rock-shaft *o* is a two-edged cutter-blade, *f*, bent in the center longitudinally, the same as scrapers *c*. Cutters *f* reach from the central or hub portion M nearly to the outer edge of rim C of spider K, as shown in Figs. 1 and 2. By this arrangement and shape of the radial cutters *f* it will readily be seen that they will be automatically rocked on their shafts to the one side or the other, according to the direction of rotation of shaft A, the amount of their motion being limited by the angle given the two sides of the cutter. When one edge of cutters *f* is in operation, the other side will lie down against radial arms L and rim C of spider K. Back of spider K, and parallel thereto, is a solid circular plate, P, keyed or otherwise secured to shaft A. Between plate P and spider K are radial plates R—one to each arm L of spider K—forming a series of compartments. At the outer end of each arm L is pivotally secured an angular-shaped scraper, *c*, having parallel scraping-edges *g h*, as shown in Fig. 2. Each scraper is pivoted over the outer edge of a radial plate at *c'*, as shown in Figs. 2 and 3, and they will turn automatically to either side by the revolution of shaft A.

It will be seen from the above that circular plate P, spider K, and radial plates R constitute a hollow drum, S, open at one end and sides, which is provided with radial front cutters, *f*, and scrapers *c*, both cutters and scrapers being adapted for automatic adjustment, said drum S being mounted on shaft A.

B is a circular casing inclosing about three-fourths of the circumference and one end of drum S. At points *t t* said casing is bent outwardly and extends radially a short distance to form the lower part of a double-delivery chute.

The front end of casing B is open and terminates in a hopper-shaped cutter, E. At each side of said hopper-shaped cutter is hinged a door, F, capable of being opened more or less to regulate the quantity of snow received by the revolving drum.

The inner end of casing B is entirely closed by vertical plate B', which extends upward to a horizontal line, *v*, a sufficient distance to form a guide to the snow thrown out by drum S. At the opposite or open end of the casing it is also continued upward, like the inner end, to a line, *v*. A large top opening is thus formed over drum S, which is partially covered by an inclined double shutter, D, pivoted at *d*, so as to alternately close one side or the other of said opening, and, in conjunction with upward projections *b'* of each end of casing B and inclined side portions, b^3, forms a delivery-chute to direct the snow thrown out during the revolution of drum S. Side cutters or doors, F, are set at any required angle by means of levers

f' and connecting-rods f^2, and are retained and locked in position by means of racks f^3, of which one only is shown in Fig. 1.

To the inner end of shaft A is secured a bevel-pinion, A′, which engages with bevel-wheel G, secured on a counter-shaft, A^2. The outer end of shaft A^2 carries a crank, A^3, to which is connected a pitman, A^4, which transmits motion from the engine to drum S.

The entire snow-plow may be driven and propelled on a railway-track by its own engine; or it may be attached, when required, in front of any locomotive and operated from said locomotive.

The operation of my plow is as follows: Doors F are set as required, then locked in position by means of levers f' and rack f^2, and then drum S is caused to revolve rapidly. Meanwhile cutters f at the front of the drum will adjust themselves according to the direction of rotation of said drum S. Now, if the plow be propelled forward through a snow-bank, the flaring hopper in front of drum S will scoop in the snow, which will be cut up and thrown into the several chambers formed by the radial plates R, as before described. From thence the snow will be hurled by centrifugal force through the top opening of casing B. Here it will strike against the pivoted double shutter D, which will be automatically tilted in the right position (and held there by the force of the snow) to discharge the snow on one side of the track, and by reversing the rotation of drum S the snow will be discharged on the opposite side of the track.

I prevent the snow from clogging drum S fast to its casing B by the automatically-setting scrapers c, above described.

Having described my invention, what I claim is—

1. In a wheel-casing with an open-top delivery, the combination therewith of a double tilting shutter automatically moved to either side of said opening, as herein set forth.

2. A snow-plow consisting of a revolving drum provided with front automatic cutters mounted on a spider or open front end and a solid rear end plate connected to said spider by radial plates, said radial plates surmounted by automatic scrapers, all mounted on a driving-shaft and inclosed in a casing provided with a front hopper-shaped mouth and an alternating top delivery-opening governed by an automatically-operating shutter, as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS JOHN BERGENDAHL.

Witnesses:
A. M. STARR, Jr.,
THOS. FITZ GERALD.