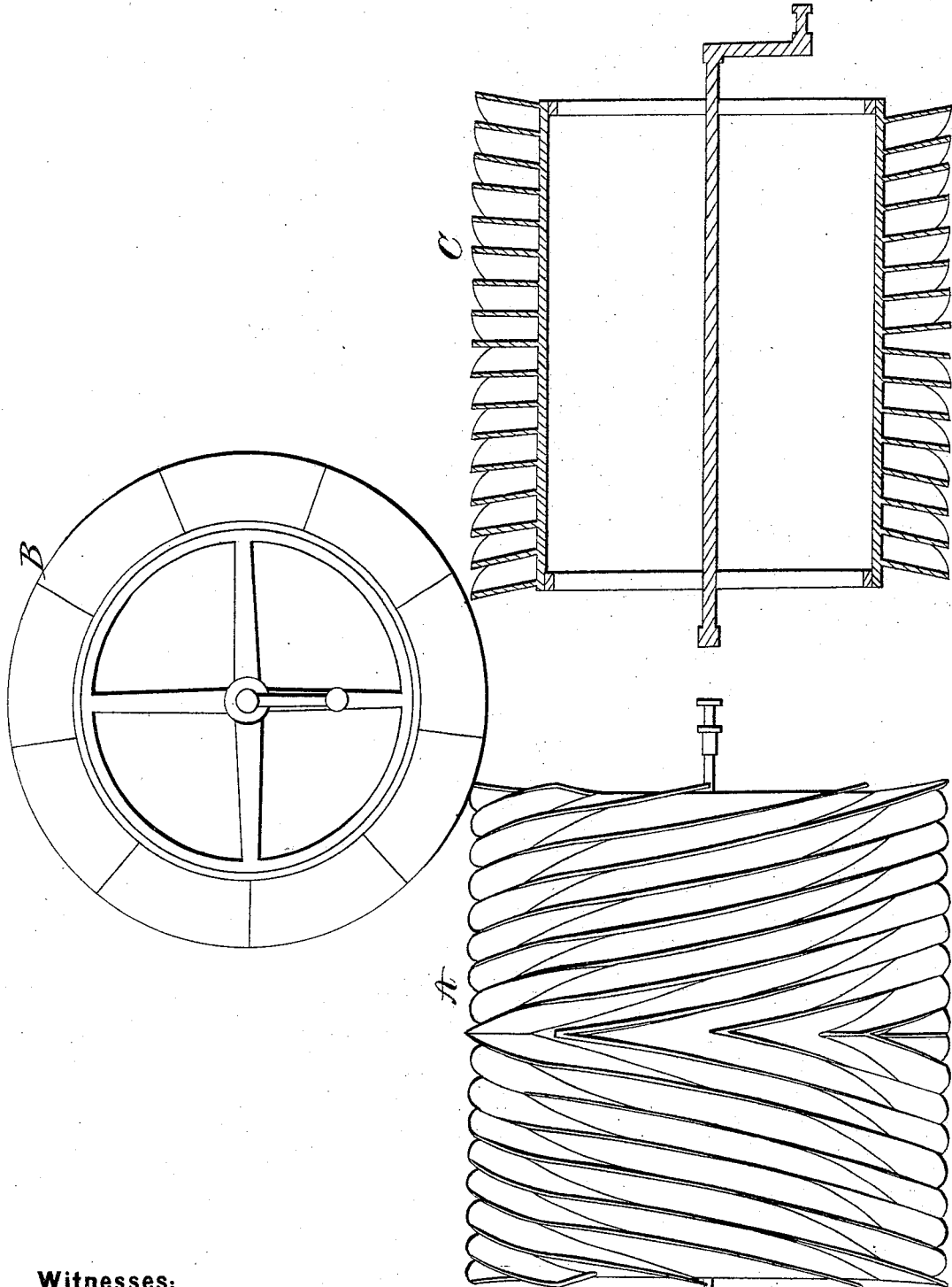


MOORE & WOODWORTH.

Car-Track Clearer.

No. 1,843.

Patented Oct. 31, 1840.



Witnesses:

Geo. Foster
Willard Phillips

Inventor.

Joseph H. Moore
Benjamin Woodworth

UNITED STATES PATENT OFFICE.

JOSEPH H. MOORE, OF WORCESTER, AND BENJN. WOODWORTH, OF BOSTON,
MASSACHUSETTS.

MODE OF CLEARING SNOW FROM RAILROADS.

Specification of Letters Patent No. 1,843, dated October 31, 1840.

To all whom it may concern:

Be it known that we, JOSEPH H. MOORE, of Worcester, in the county of Worcester and State of Massachusetts, railroad-car conductor, and BENJAMIN WOODWORTH, of Boston, in the county of Suffolk, in the same State, engineer, have invented a new and useful Machine for Clearing the Snow from Railroad-Tracks, of which the following is a true, full, and exact description.

Our snow-clearer, intended as a substitute for the snow-plow heretofore in use, is constructed in the following manner. A drum of five or six feet in diameter, and of a sufficient length to extend across the railroad track to be cleared, and a foot and a half more or less beyond the rail on each side, constructed of wood, iron or other suitable materials, is placed upon strong supports attached to the engine frame in front of the engine and geared by spur-gearing and a crank to the axis of the engine wheels, so that the revolution of those wheels will cause a reverse revolution of the drum or snow-clearer, in such manner that the rotary velocity of the periphery or circumference of the drum, shall be to that of the periphery of the engine wheel, about as five to three. We deem this to be an advantageous proportion of the velocities of the two, but the proportion may be varied very much, and still the principle and character of the machine will be the same. So the method of gearing the machine, and its length in comparison with the breadth of the track, and also its diameter may be varied materially, and still the distinguishing character and principles of the machine remain the same. As to the requisite strength and thickness of this drum, it will be apparent to any engineer, that it must be firmly and strongly made in order to answer the purpose for which it is to be used; and the degree of strength requisite will be sufficiently within the knowledge, experience and skill of a skillful engineer, and need not be particularly described. A thickness of pine plink of an inch and a half for the drum will be sufficient, and if constructed of iron three-sixteenths of an inch in thickness will be enough. The snow-clearer is formed by means of plates of iron, brass, copper or other suitable metal or material standing out perpendicularly or edgewise on the surface of the drum, in a series around the

drum, as represented in the annexed drawings, A and C.

Each pair of plates in the series around the drum, start from the same point in the longitudinal center of the periphery of the drum, where the edges of the ends of the two plates in the pair are strongly fastened together, or the two plates of the pair are there welded and joined at an angle. Each plate of the pair then passes off from this angle or juncture, spirally or obliquely over the periphery of the drum to its end on one and the other side. So that if a transverse section of the drum be made at its longitudinal center, the plates of each half will represent a transverse section of the threads of a many threaded screw, and so any transverse section of the drum and plates will present a similar appearance. The breadth of these plates, or the extent to which these plates should stand out from the drum, must depend on the rotary velocity of the snow-clearer in comparison with that of the engine wheels, for they ought to be of such a breadth that the velocity of the engine may not drive them, to more than half or at most two-thirds of their breadth into the snow, since, if they are of too small breadth the machine will be liable to clog up and founder. Any engineer of ordinary skill will be able readily to compute the requisite breadth in planning this machine. Where the driving engine wheels are four feet in diameter, and the snow-clearer drum from five feet to five and a half feet in diameter, the clearing plates should be about one foot in breadth. As to the obliquity or spiral angle of the two plates of each pair of the series around the drum, we deem an angle of between sixty or ninety degrees to be a convenient and advantageous one: that is, so that each plate makes an angle of thirty to forty-five degrees with the central transverse section of the drum. But this angle may be varied still more and not change the character and principles of the machine. So the distance of the plates from each other may advantageously be from four to six inches, but their distance apart may be something more or less, and yet the machine be essentially the same.

The plates may be attached to the drum by nails, bolts, or screws through narrow flanches at the inner edge next the drum, or otherwise, as the constructor may choose.

It is evidently an object to make these drawing plates as thin as practicable, leaving them sufficiently stiff and strong, since their thickness evidently causes resistance, and
5 therefore metal is preferable to wood as a material for making them. An iron plate of one-fourth of an inch in thickness, is sufficient. The clearing plates come down within about three inches of the rails. As
10 the snow-clearer is revolved by the motion of the engine the clearing plates will throw the snow out on each side of the tracks.

Instead of continued spiral plates, as above described, the cylinder may be studied with plates a foot or two in length,
15 more or less, that is, each plate may be divided in pieces, and the pieces put on in a spiral or oblique direction instead of the entire plates. This would be in principle
20 the same machine, but the inventors think the continued plates preferable.

The pieces of pine plank or other material forming the cylinder of the drum, may be so put on as to leave an open space
25 between these pieces, of greater or less

breadth, though the inventors do not see any advantage in so forming the machine.

In the above description the engine wheels are assumed to be of about the usual diameter, namely, about four and a half feet or
30 four feet.

The inventors claim as their invention and ask a patent for the machine above described.

Consisting of the cylinder or drum with
35 its shaft as above described, with the spiral plates or snow-clearers constructed and attached to the drum as above described, with a crank or gear-wheel for driving or propelling the machine as above described in
40 connection with a railroad engine for the purpose above described.

In testimony whereof we have hereunto set our hands this twenty-sixth day of June A. D. 1840.

JOSEPH H. MOORE. [L. s.]

BENJAMIN WOODWORTH. [L. s.]

Witnesses:

GEORGE BEMIS,
RICHD. ROBINS.