W. DUNBAR.

TRACK-CLEARERS.

No. 183,044. Patented Oct. 10, 1876.

Fig. 1.

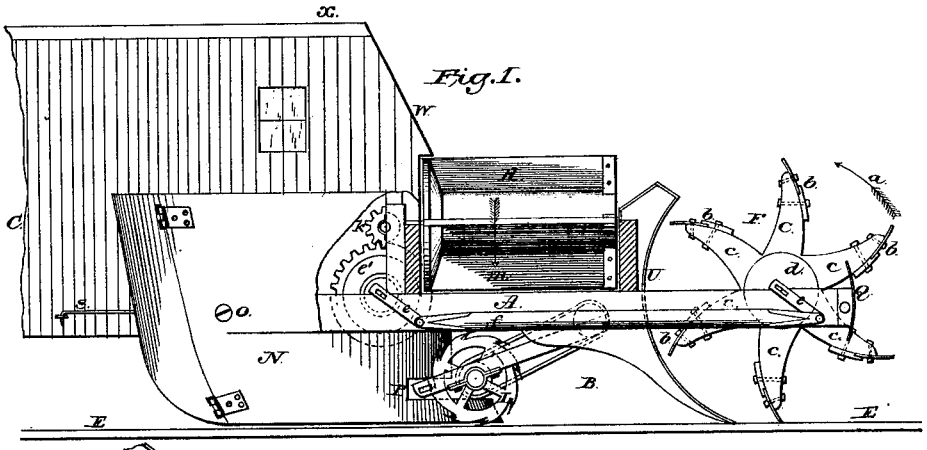


Fig. 2.

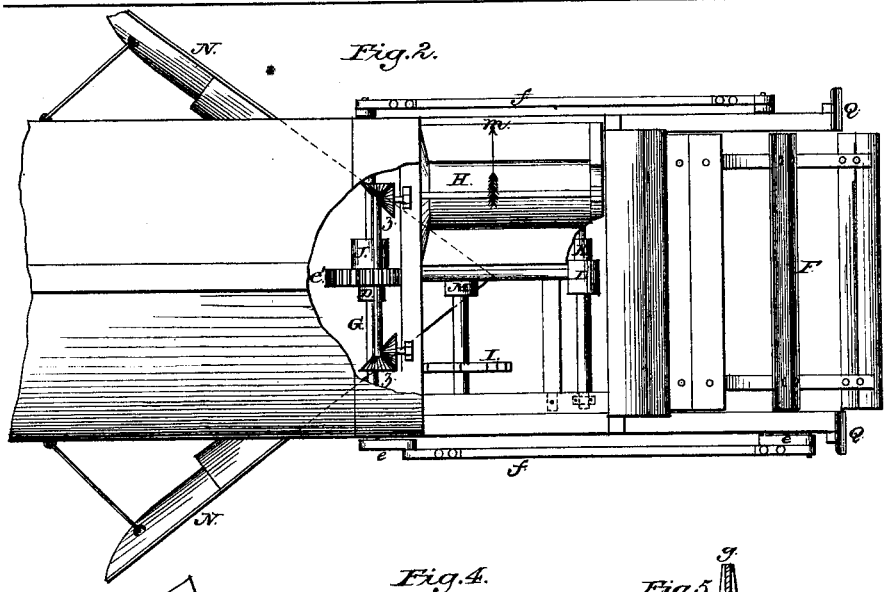


Fig. 3.

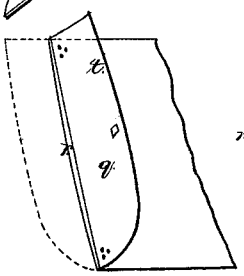


Fig. 4.

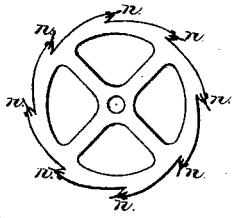
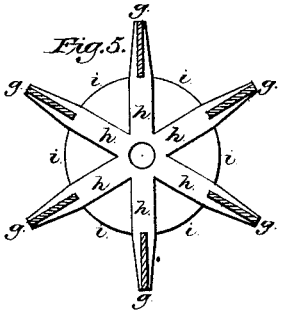


Fig. 5.



Attest:

Edwin Ellis,
Edmund Smith

Inventor:

Warren Dunbar

UNITED STATES PATENT OFFICE.

WARREN DUNBAR, OF ASHLAND, WISCONSIN.

IMPROVEMENT IN TRACK-CLEARERS.

Specification forming part of Letters Patent No. **183,044**, dated October 10, 1876; application filed May 29, 1876.

To all whom it may concern:

Be it known that I, WARREN DUNBAR, of Ashland, in the county of Ashland and State of Wisconsin, have invented a new and useful Combination Machine for Removing Snow and Ice from Railroad-Tracks, which machine is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to thoroughly clear the snow and ice from any railroad-track by the combined operation of the following-described machinery, which is to be placed and adjusted on the forward part of a car-bed, A, Figure 1, all the machinery to be operated by a portable engine to be placed in the rear part of said car, which is to be inclosed, as is partly represented at C, Fig. 1. The power to be transmitted by belting from engine to pulley D, Fig. 2.

The top of rail is shown by E, Fig. 1. The snow is to be scooped or taken up by means of a large fan-wheel, F, Figs. 1 and 2. This fan-wheel is to be made with curved fans *b b*, either of all plate-iron or of solid wood edged with iron, and bolted on arms *c c*, made of wood bolted together by means of flanges *d*, Fig. 1, or all of iron. This wheel is operated by cranks *e e*, Fig. 1, and connecting-rods *f f* to driving-shaft G.

The snow is thrown by wheel F backward, as indicated by arrow at *a*, Fig. 1, upon two smaller fan-wheels, behind and at right angles with it, and parallel to each other, the position of which is indicated by H, and the form of which is better shown in Fig. 5, which is an enlarged end view of one. The fans *g g*, Fig. 5, should be of good tough wood, set in arms *h h*, the line of which should be a radius to the circle of the wheel. They may be made of good strong wood or iron. The center of these wheels should be filled up to the base of fans by a core, *i i*, which may be made of wood, or wood covered with sheet-iron. These wheels are operated by two sets of bevel-gear, *z' z'*, Fig. 2, and cog-wheel *k*, Fig. 1, on same shaft as bevel-gear, and cog-wheel *e'* on shaft G. They are to revolve rapidly outward, or apart, as shown by arrows at *m m*, at a speed at least three times that of fan-wheel F. The design of these wheels is to throw the snow off on either side of track.

I I, Figs. 1 and 2, show a pair of flange-wheels set in a swing-frame, and placed under the car, just behind the forward trucks. The construction of these flange-wheels is shown in Fig. 4. They should be of cast-iron, with adjustable teeth of steel set in and fastened with set-screws, as shown by *n n*, Fig. 4, or they could be of wrought-iron, with tempered teeth. These wheels are to be operated by belting from J to K and L to M, Fig. 2; and the design is to cut the ice clean from the inside of each rail.

N N, Figs. 1 and 2, show the positions of wings of plow, made of plate-iron, and attached to the sides of car by a bolt on each side at *o*, Fig. 1, allowing the forward part of it, in conjunction with the flange-wheel frame P, Fig. 1, to be raised or lowered by means of a lever inside the car.

Fig. 3 shows a portion of the wing of plow, thrown forward by means of hinges, to admit of backing the car without dragging the snow back upon the track. The section of wing *q*, Fig. 3, is to be supported, when in place, by a rest of wood or iron, as shown by dotted line at *r*, Fig. 3, and by one or more movable braces or brace-rods attached to side of car, as shown by *s*, Fig. 1. The movable section of wing may be strengthened by riveting on a flat bar of iron on the inside rear edge.

Q, Figs. 1 and 2, shows a guard of iron to be placed in front of forward cranks and front end of connecting-rods, to push the snow away from them, which should be firmly bolted on frame. There should be a concave backing of sheet-iron or thin plate-iron back of fan-wheel F, (see *v*, Fig. 1,) also under and between fan-wheels H H, and on front and top of inclosed part of car. (See *w* and *x*, Fig. 1.)

It is evident that in the construction of this machine it will be necessary to vary the length and size of fan-wheels and all other parts of machine to suit the gage of the railroad upon which it is to be used; also the degree of curvature and form of fans or floats on fan-wheel F to conform to the depth and

amount of snow in which it is designed to operate it.

I claim as my invention—

A combination machine composed of one fan-wheel with curved fans, two fan-wheels with straight fans, a pair of flange-wheels, and a plow with hinged sections to the wings, substantially as described, and for the purpose set forth.

WARREN DUNBAR.

Witnesses:

EDWIN ELLIS,
EDMUND SMITH.