

(No Model.)

2 Sheets—Sheet 1.

M. HOFFMAN.
STREET RAILWAY SNOW PLOW.

No. 564,998.

Patented Aug. 4, 1896.

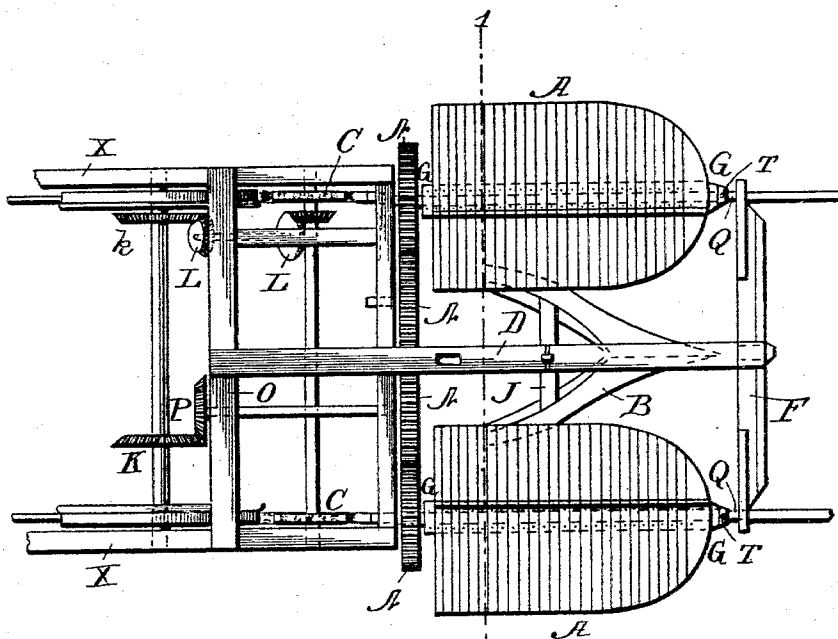


Fig. 1.

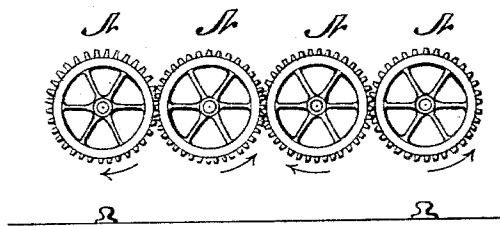


Fig. 4.

Witnesses

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Attorney

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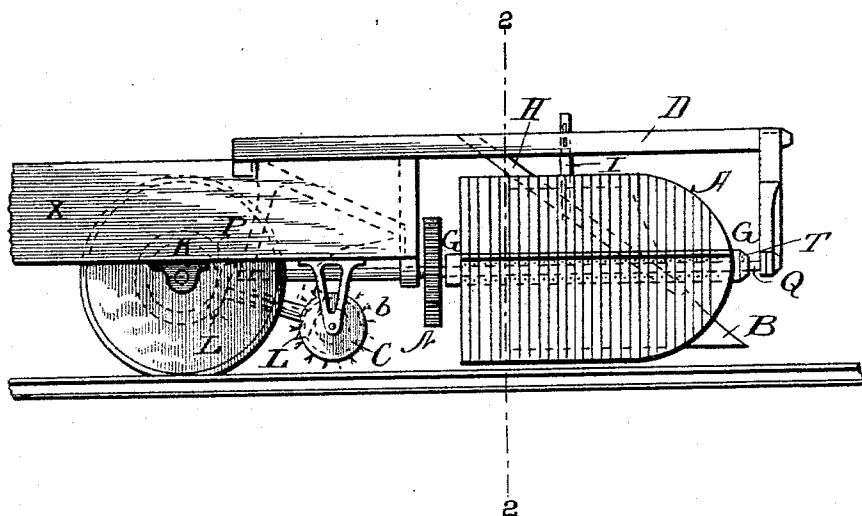


Fig. 2.

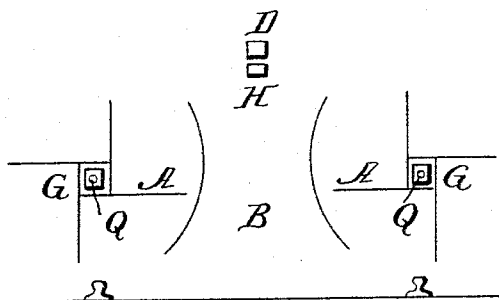


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

MATTHIAS HOFFMAN, OF WILKES-BARRÉ, PENNSYLVANIA.

STREET-RAILWAY SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 564,998, dated August 4, 1896.

Application filed July 11, 1894. Serial No. 517,261. (No model.)

To all whom it may concern:

Be it known that I, MATTHIAS HOFFMAN, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented a new and efficient Street-Railway Snow-Plow, of which the following is a specification.

My invention relates to improvements in machines for clearing obstructing snow from street-railway tracks; and the object of my improvement is to give a machine which may be pushed before any street-car, and which, as it advances, thoroughly cleans the track and rails of obstructing snow with little or no retardation of the ordinary speed. I attain this object by means of the machine illustrated in the accompanying drawings, in which—

Figure 1 is a ground plan of the entire machine; Fig. 2, a longitudinal vertical section of same; Fig. 3, a diagram of a part of the machine on the line 1 2, Figs. 1 and 2. Fig. 4 shows the arrangement and motions of cog-wheels in relation to the rails of the track.

Similar letters refer to similar parts throughout the several views.

To the car-truck X, which is to be pushed by a street-car or operated by a separate motor, is attached a framework of beams O, D, E, and F. These, with the truck, support the necessary gearing, an adjustable plow B, and two spindles Q Q, which are directly over and parallel to the rails. These spindles are fixed, and on them revolve the hubs R R, Fig. 6, and two square hollow shafts G G, each of which carries four flat vanes or brushes A A A A. These vanes are made of strips of thin spring-steel of such a length as to almost touch the rails and bolted or otherwise secured to the sides of the square hollow shafts G G.

As the machine advances the flat vanes A A A A sweep the snow from over the rails and that thrown into them by the double-sheared adjustable plow B outward and clear of the track. As the strips of which these vanes are composed are placed as closely together as possible without impairing their freedom in bending, they present for operation a continuous surface which will prevent the snow from escaping through them and remaining on the track. This is an advantage

over other machines with open blades or paddles. These strips also form an elastic yielding surface, so that if in revolving one of them should strike any projection along the track it would bend and pass the obstacle without injury, while in ordinary operation the slight deflection of the vanes produced by the weight of the snow would, when released, result in extra force in removing the snow. The vanes are of such length and driven at such speed that the car advances only the distance cleaned by one vane before the next vane sweeps around.

The hollow shafts G G, carrying the vanes A A A A and the hubs R R, are operated in the required direction and at required speed by means of the four equal-sized cog-wheels N N N N and the two beveled cog-wheels P and K. K is attached to the forward axle of the truck, and P may be varied in size to give any desired speed to the vanes A A A A. By this system of gearing the shafts G G can be suspended and operated directly over the rails, and as the vanes sweep around they clear the snow from directly over the top of the rails, which advantage is not gained by previous inventions for a like purpose.

The shafts G G are secured in place by washers held by pins T T. By removing these the shafts G G may be pulled forward and separated from the hubs R R. The vanes will then remain stationary. This is desirable when, as in the case of a terminus, it would be necessary to run the machine backward.

Suspended directly behind and operating in conjunction with the vanes are the whisks W W, the object of which is to clear the rails of any snow left by the vanes.

To the hubs R R, which are attached to the cog-wheels N N by the screw-bolts I I, Fig. 6, are secured the spring-steel arms S S, which carry the whisks W W. These whisks are composed of bunches of spring-wire or other suitable material secured in blocks U U, which are fastened to arms S S by set-screws.

The whisks W W are arranged so that in revolving they just touch the rails and can be adjusted or replaced by loosening set-screws V V and sliding blocks U U along the arms S S.

The motion imparted to the whisks is the

same as that of the vanes. The whisks in revolving meet with a slight resistance on striking the rails. This slightly bends the arms SS, which, when released, gives a whisking motion and throws the snow clear of the rails.

By pulling the shafts G G forward out of their sockets in hubs R R the whisks can be operated separately from the vanes. This would be expedient in light snows.

The plow B is double-sheared and may be either lowered or raised several inches, it being desirable in city streets to clean the space between the rails as thoroughly as possible, while this might be unnecessary on country roads.

The plow B is placed well forward between the vanes and throws the snow directly into them. The point of the plow is tapered to such an acute angle that as the truck moves forward the snow slides with great facility along the sides of the plow and within sweep of the vanes. These actions are quite distinct from those of other devices for a similar purpose.

The plow B extends above the plane of the spindles Q Q and is of such height as to prevent the snow from escaping over the top and remaining on the track. It also acts independently of a scoop or platform. In these respects it differs from other plows for a similar purpose.

The adjustment of plow is shown in Fig. 2. Through the beam D and the stem Y is passed a round pin which forms a hinge between these two arms, so by raising or lowering the post M the plow can be adjusted and secured by means of a key through the upper end of the post M.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, a car having a frame, shafts extending forwardly therefrom in alinement with the rails, vanes consisting of strips of spring-steel mounted on the shafts, a vertically-adjustable, double-sheared plow between the shafts adapted to feed the snow to the vanes, brushes on the shafts back of the vanes, and means for propelling the shafts in opposite directions, as and for the purpose described.

2. In a snow-plow, shafts extending in front of the car over the tracks, vanes and brushes mounted on the shafts, a double-sheared plow between the vanes adapted to feed snow to the vanes and brushes, and means for propelling the shafts in opposite directions, as and for the purpose described.

MATTHIAS HOFFMAN.

Witnesses:

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