G. ROYAL.

Track-Clearer

No. 204,092. Patented May 21, 1878.

Fig. 1.

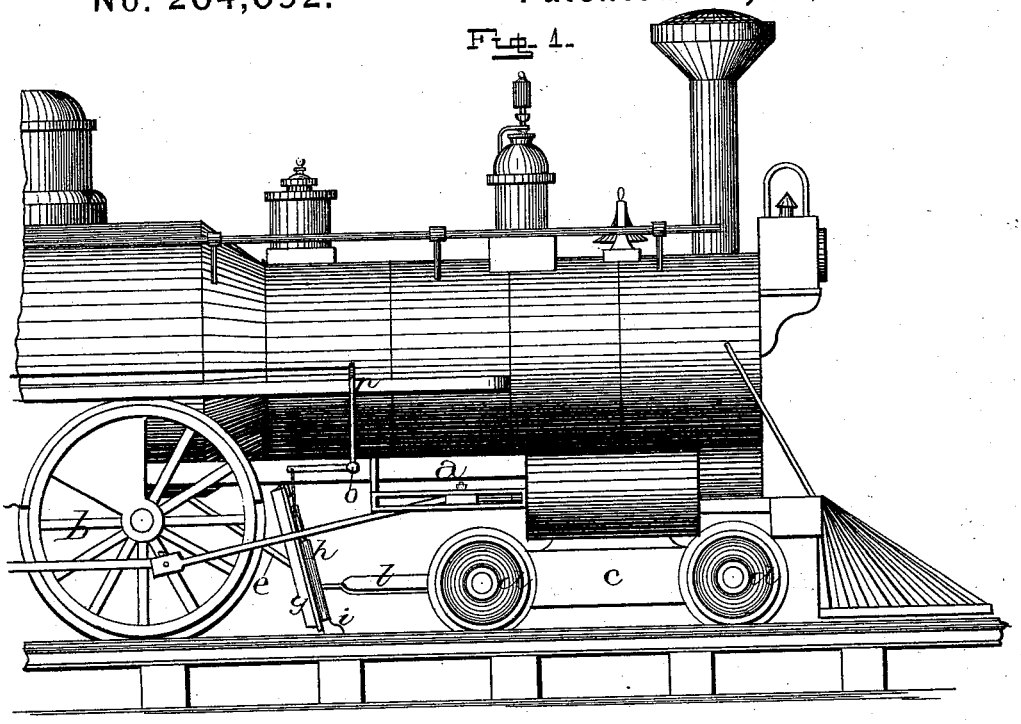


Fig. 2.

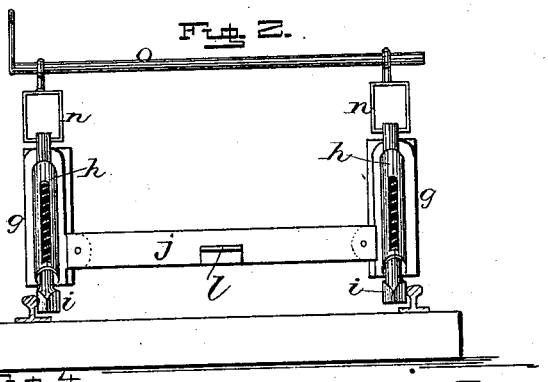


Fig. 4.

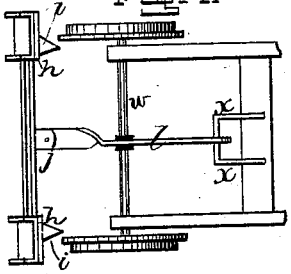


Fig. 3.

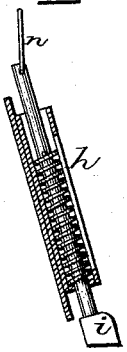
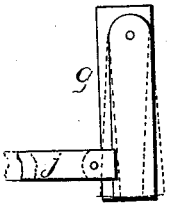


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE ROYAL, OF TRUCKEE, CALIFORNIA.

IMPROVEMENT IN TRACK-CLEARERS.

Specification forming part of Letters Patent No. **204,092**, dated May 21, 1878; application filed April 6, 1878.

To all whom it may concern:

Be it known that I, GEORGE ROYAL, of Truckee, in the county of Nevada and State of California, have invented certain new and useful Improvements in Devices for Cleaning Switches, Frogs, Guard-Rails, and Railroad-Crossings; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in devices for cleaning switches, frogs, guard-rails, and railroad-crossings; and it consists in the arrangement and combination of parts that will be more fully described hereinafter, whereby all the snow, ice, frozen dirt, and other obstructions may be cleaned from the frogs, guard-rails, and switches of a railroad, and thus prevent the cars from being thrown off the track or in anywise injured.

Figure 1 is a side elevation of my invention. Fig. 2 is a vertical cross-section. Fig. 3 is a vertical section of the sleeve. Fig. 4 is an inverted view of the operating-lever and its connections. Fig. 5 is a detail of the sleeve and connecting-rod.

a represents the frame of an engine; *b*, the driving-wheels; *c*, the truck-frame, and *d*, the truck-wheels, all of which parts may be constructed and arranged in the usual manner.

Secured to the under side of the frame, between the driving and rear truck wheels, are the two inclined braces or supports *e*, which are rigidly connected together, so as to be as strong and durable as possible. Pivoted to the under side of the frame *a*, just in front of the front ends of these two braces, are the hangers *g*, upon the front sides of which are pivoted the sleeves *h*. Passing up through these sleeves are the shanks of the cutters *i*, which cutters are made V-shaped, so that they will adapt themselves to their proper positions in between the guard-rails, frogs, or switches. Around these shanks in the sleeves are placed coil-springs, which are sufficiently strong to keep the cutters in their proper positions, but which will allow the cutters to rise over any obstruction which they are not sufficient to remove. By thus giving these cutters a vertical play, so as to ride over an obstruction and then spring back in position again, they will be prevented from being broken or injured, or from impeding the motion of the train or engine should they strike an obstruction which cannot be removed by ordinary means.

The two sleeves *h* are connected together near their lower ends by means of the rod *j*, which is pivoted at each end, and as the sleeves are pivoted both at their upper and lower ends they can readily adjust themselves to curves in the track or to the insides of the rails, under any and all circumstances without the slightest danger of breaking or injuring the cutters.

Pivoted to the center of the connecting-rod *j* is the rod *l*, which extends forward, has the axle *w* of the rear truck-wheels pass through it near its center, and has its front end loosely fastened to the loop *x*. The axle *w* serves as a fulcrum, upon which the rod *l* has a slight movement, and in order to prevent any lateral movement, a collar or stop is secured to the axle on each side of the rod, to hold it in position. As the front end of the rod has a slight lateral movement upon the loop *x*, the truck, in moving around a curve, will not move the cutters too far toward the opposite side. By means of this arrangement of parts the motion of the truck, whether upon a straight track or upon the heaviest curve, will guide the cutter so as to enter guard-rails, frogs, switches, and railroad-crossings without the slightest danger of ever moving them too far sidewise. By thus connecting the cutters to the truck all danger of the cutters not entering the space in the frogs or between the guard-rails is entirely done away with.

Connected to the upper ends of the shanks of the cutters are the rods *n*, which rods have their upper ends fastened to the rocking shaft *o*, from which extends the lever *p* up to within easy reach of the one who is to raise and lower the cutters. When there is no necessity for these cutters they can be raised high above the track and then lowered whenever needed.

Although my invention is here shown as being used in connection with a locomotive, it is evident that it may be attached to the under side of trucks and cars of different

kinds, and may be used for removing snow and ice from the inside of the rails for the entire length of street-railways, as well as being used upon railroads. These cutters may be lowered and kept in action as long as the engine or car is going in one direction; but as soon as the motion is reversed they are to be raised above the rails, so as to be out of the way.

Although the motion which guides the cutters is obtained by means of a rod connecting with axle and center of truck, as here shown, still it can be arranged in different ways by connecting the wheel or truck axles either back or in front of the wheels, or by having two horizontal rods attached to each hanger at or near its middle, and then have the rods run one on each side of the wheels.

Instead of the hangers being pivoted, a special frame may be provided, so as to allow both the hangers and the cutters to slide in frame instead of working on pivots.

Having thus described my invention, I claim—

1. The combination of the cutters *i*, connected together by a pivoted cross-bar, *j*, with the rigid rod *l*, which has its front end fastened to the middle of the truck-frame, its center being pivoted to the axle and its rear end fastened to the cross-bar, substantially as shown.

2. The combination of the hangers *g*, sleeves *h*, connected together across the track by a pivoted cross-bar, *j*, cutters *i*, and rod *l*, the sleeves being pivoted at their upper ends to the hangers *g*, so that the cutters *i* are allowed a lateral motion, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of March, 1878.

GEORGE ROYAL.

Witnesses:
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