N. E. LISTER.

FLANGER FOR RAILWAYS.

APPLICATION FILED JULY 10, 1911.

1,019,811. Patented Mar. 12, 1912.

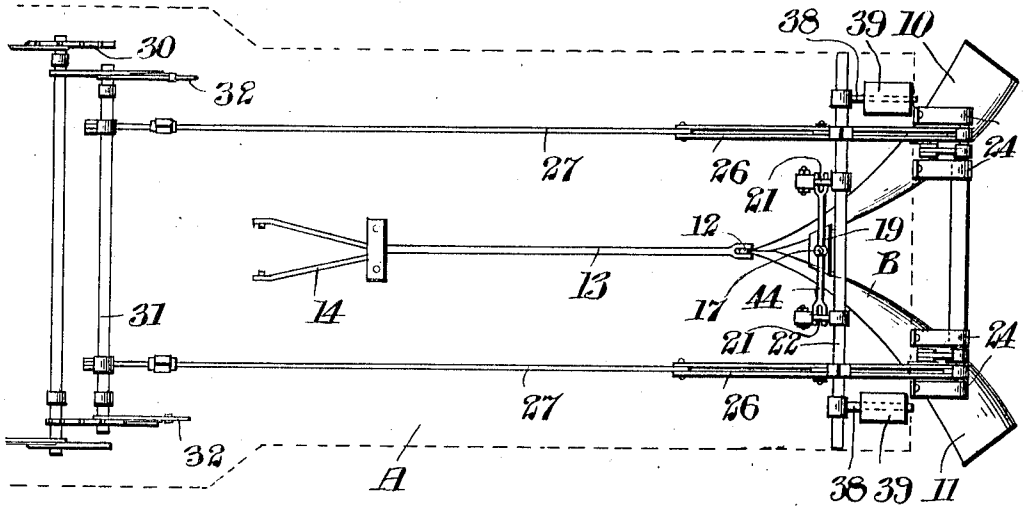

FIG. 1.

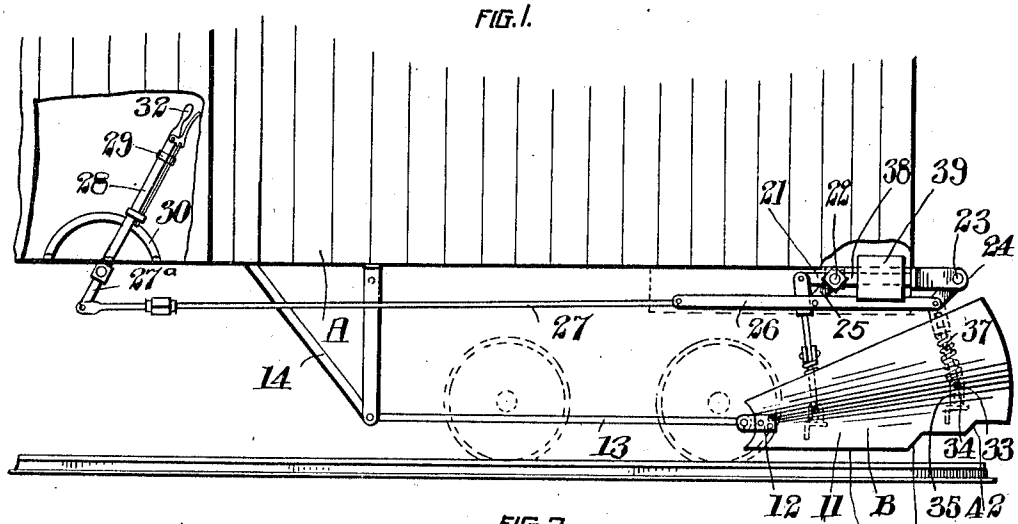

FIG. 2.

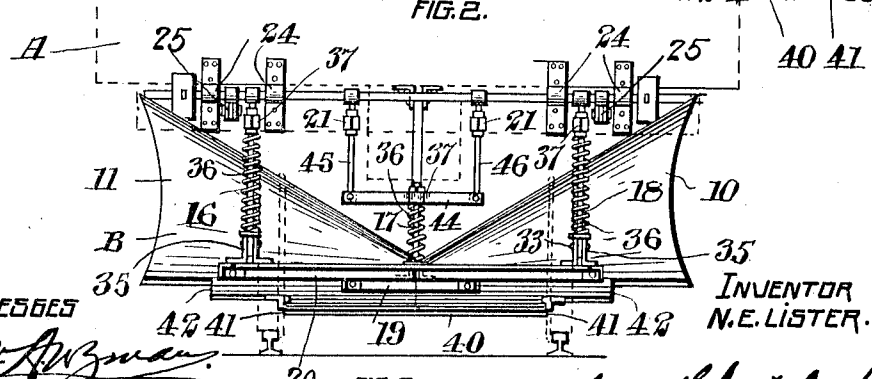

FIG. 3.

WITNESSES

INVENTOR
N. E. LISTER.

BY

ATT'Y.

UNITED STATES PATENT OFFICE.

NICHOLAS EDWARD LISTER, OF WEST ST. JOHN, NEW BRUNSWICK, CANADA, ASSIGNOR OF TWENTY-FOUR ONE-HUNDREDTHS TO JOSEPH SUTTON CLARK, OF ST. GEORGE, CANADA, AND TWENTY-FOUR ONE-HUNDREDTHS TO GEORGE HART WARING, OF ST. JOHN, CANADA.

FLANGER FOR RAILWAYS.

1,019,811. Specification of Letters Patent. **Patented Mar. 12, 1912.**

Application filed July 18, 1911. Serial No. 639,131.

To all whom it may concern:

Be it known that I, NICHOLAS EDWARD LISTER, of 384 Watson street, West St. John, in the county of St. John, in the Province of New Brunswick, Dominion of Canada, have invented certain new and useful Improvements in Flangers for Railways, of which the following is a specification.

My invention relates to improvements in flangers for railways or devices for clearing the rails and track of snow, weeds or similar obstructions; and the objects of my invention are to give resiliency to the flanging element in order that it may give to ride over the obstructions, and further to hold the same in firm contact with the rail and give perfect freedom of action to each part, whereby one side may move upwardly independent of the other.

Further objects are to provide simple means for raising and lowering the flanging element and enabling it to swing backwardly in case the supporting means at the front thereof become broken.

Further objects still are to provide an article to facilitate the ready operation of the element and to counter balance the weight thereof, whereby it may be readily moved to and from operative position.

Another object is to provide an instrumentality of the class specified, which from an operative standpoint will in usage possess a high degree of efficiency and effectiveness and which, structurally considered, will be of the greatest possible simplicity, being composed of but a few parts, all adapted for being made at a minimum of cost and individually so formed as to be capable of being readily assembled in a neat and compact arrangement for accomplishing the purpose intended.

Other objects and advantages will be in part obvious and in part pointed out hereinafter, and with these and other ends in view, this invention accordingly consists in the features of construction, combination of parts and arrangement of elements hereinafter more explicitly set forth as an exemplification of the underlying principles involved in the invention.

In order that this invention may be more fully understood and to be comprehensible to others skilled in the art, drawings illustrating a convenient means of carrying out the same are pointed out as a part of this specification, and while the controlling principles of the invention may be otherwise applied by modifications falling within the scope of the claims, the hereinafter disclosed embodiment is that which will ordinarily be preferable to employ in practice and is regarded as representing substantial improvements over the many obvious or implied variations of the same.

In such drawings it is to be noted that like numerals refer to corresponding parts throughout all the figures of the drawings.

In the drawings: Figure 1 is a plan view of the flanger with the bottom of the car to which it is attached indicated in dotted lines. Fig. 2 is a side view. Fig. 3 is a rear elevation.

Referring to the drawings, A represents the car to which the flanger is attached and from which it is supported. In practice it will be found convenient to support the apparatus on the crew's car, but it is apparent of course, that it might be supported from any car.

In practice it will be found convenient to provide four flangers on each car, one behind each truck. For the sake of clearness, I only illustrate one of the flangers.

B represents the flanging element in the form of diverging curved blades 10 and 11 meeting at their centers and supported from the car in the manner hereinafter described. Each blade is curved both longitudinally and transversely as indicated in the drawings, whereby it may effectively throw the snow or the like from the track. The meeting forward ends of the blades are connected by a strap 12 which is supported from a tie rod 13 being pivotally supported from a bracket 14 on the car body. The rear portion of the flanging element is supported by means of links 16, 17 and 18, the links 17 being connected to a cross brace 19 on the forward part of the element, while the rear links are connected to a cross brace 20 on the rear part. The upper ends of these links are pivoted to arms 21 on cross shafts 22 and 23 which are supported from suitable bearings 24 on the underside of the car body. The shafts are adapted to be oscillated in order to raise and lower the links

by means of levers 25 thereon which have their outer extremities pivoted to connected rods 26 which are connected by links 27 to levers 27ª on a cross shaft 31 having an adjusting hand lever 28 and the usual latch device 29 and sector 30 by which the flanger may be held in raised or lowered position. In order to operate the device from the opposite side of the car, a second hand lever 32 may be provided on the shaft 31.

In order to provide for the resilient support of the flanging element, the lower extremities of the links 16, 17 and 18 are connected to the flanging elements through the means of bolts 33 which extend through slots 34 in bracket members 35 on the flanging elements, the links having spiral springs 36 thereon which extend between the collars 37 on the links and the top of the bracket members and normally tend to force the flanging element to lowermost position, but at the same time permitting it to move upwardly when encountering any obstacle.

In order to counterbalance the weight of the flanging element, counterbalancing levers 38 are provided on the shaft 22 having weights 39 thereon.

In order to cause the flanging elements to clean the track well out between the rails, the lower edges of the blades 10 and 11 are provided with projections 40 which are conveniently formed by notchês 41 cut in the blades. In order to enable the flanging element to be lowered still farther between the tracks, a second notch 42 may be provided which will enable the flanging element to be lowered still farther. In this case it may be necessary to increase the inclination of the blades to each other in order that the lateral spread will be less. The link 17, in place of being directly connected to the arms 25 on the shaft 22 is connected to a cross bar 44 and this cross bar is provided with links 45 and 46 pivoted thereto and having screw threaded ends which are engaged with the arms 25.

It will be seen that, in raised position, the flanging element B is clear of the tracks. To lower it, the lever 28 is swung to the opposite side, moving the links 27 and connecting rods 26 longitudinally, oscillating the shafts 22 and 23 and swinging the arms 21 thereon downwardly, thus carrying the links 16, 17 and 18 downwardly and carrying the blades 10 and 11 downwardly and into position on the tracks with the projections 41 extending between the tracks and the edges of the blades running on the tracks. It will be seen that any obstacle on each side, owing to the connection between the links and the blades, is free to ride independently. Should any accident happen to the forward supporting link or tie rod 13, the links 16, 17 and 18 may swing about the point at which they are pivoted to the arms 21 and permit the blades 10 and 11 to swing backwardly and upwardly without damaging them or digging into the ties of the track.

It may be stated that the term flanger is intended to include any form of device for carrying away material such as snow, ballast or the like from between, and at the sides of the rails of a track, and the term flanging element to include any means such as the blade of the character described, which will perform this function.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention, within the scope of the claims, constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:

1. A device of the class described comprising a pair of diverging blades and jointed distensible links supporting the blades.

2. A device of the class described comprising diverging blades, shafts having arms thereon, jointed distensible links connecting the arms with the blades, and means for actuating the shafts.

3. A device of the class described comprising a flanging element, a plurality of jointed links supporting the same, shafts, arms on the shafts connected to the links, an operating lever, and connecting mechanism between the operating lever and the shafts, by which they may be oscillated to raise and lower the flanging element.

4. A rail flanger comprising a flanging element, slotted brackets thereon, links having means engaging the slots and springs on the links bearing against the brackets and normally forcing the flanging element to lowered position.

5. A flanger comprising flanging elements, including two centrally meeting blades, a tie rod supporting the jointure of the blades, a plurality of longitudinally distensible spring supporting members connected to the blades.

6. A flanger comprising diverging blades, a tie rod supporting the jointure of the blades a plurality of braces extending between the blades and longitudinally distensible and resilient members connected to and supporting the braces.

7. A device of the class described comprising diverging blades, a link connected to the forward part of the blades, a pair of links connected to the opposite sides of the rear portion of the blades, means for supporting the links and raising and lowering the same, and a tie rod connected to the forward part of the blades.

8. A device of the class described com-

prising in combination a pair of diverging blades, cross bars extending between the blades, links pivotally connected to the cross bars, cross shafts, arms on the cross shafts pivotally connected to the links, levers on the cross shafts, connecting rods for the levers, links connected to the connecting rods, an operating lever connected to the links and a tie rod connected to the juncture of the blades.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

NICHOLAS EDWARD LISTER.

Witnesses:

HENRY S. CULVER,

CLARENCE CARRIGAN.