(No Model.)

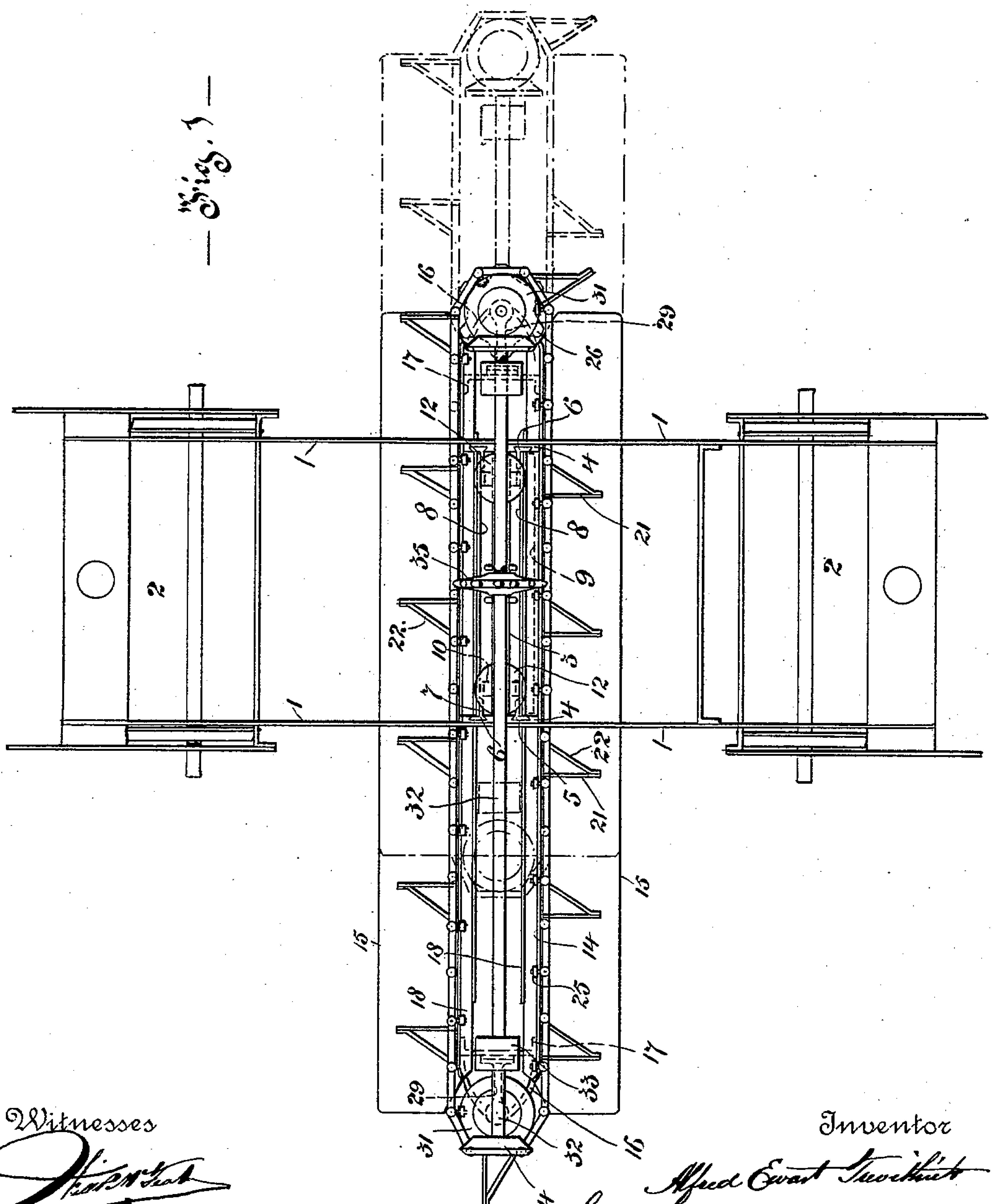
3 Sheets—Sheet 1.

A. E. TREVITHICK.

TRACK CLEARING APPARATUS.

No. 541,580. Patented June 25, 1895.

Fig. 1



Witnesses

R. Alb. Kimber

Inventor

Alfred Ewart Trevithick

By his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

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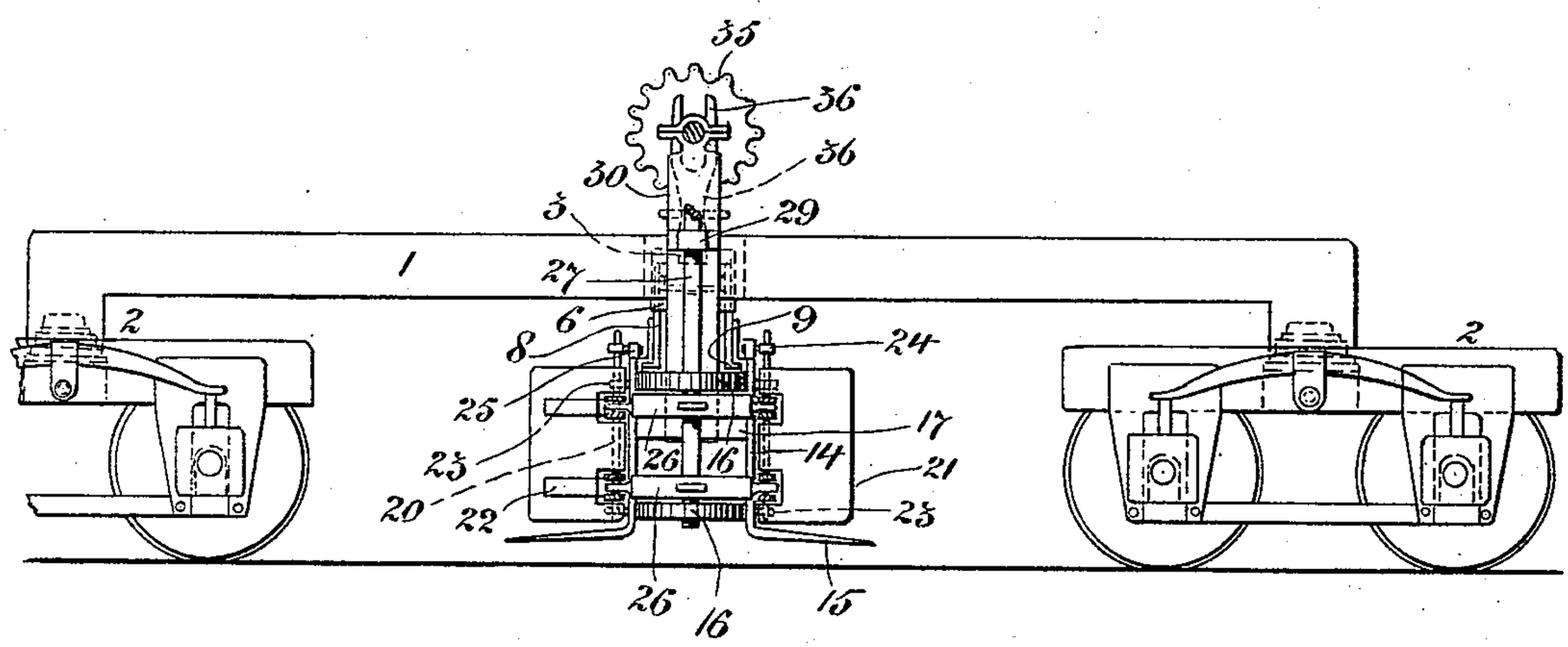
TRACK CLEARING APPARATUS.

No. 541,580. Patented June 25, 1895.

—Fig. 2—



Witnesses

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(No Model.) 3 Sheets—Sheet 3.

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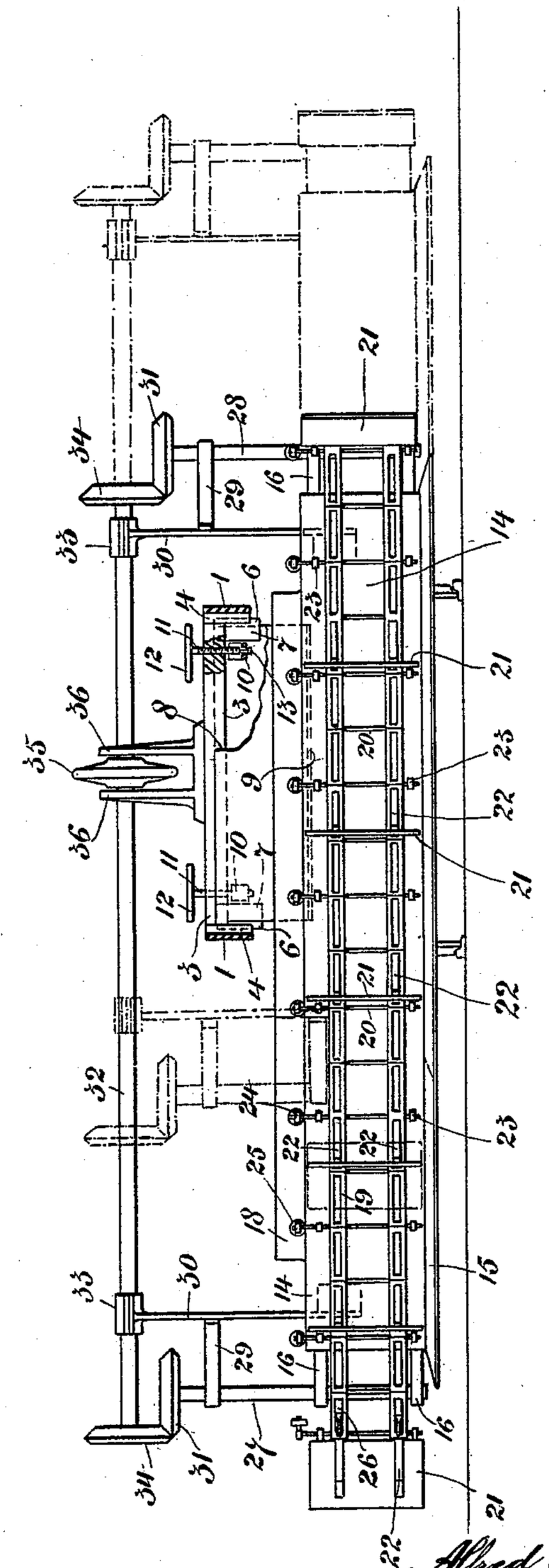

Witnesses

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By his Attorney

Edwin Evans

UNITED STATES PATENT OFFICE.

ALFRED EWART TREVITHICK, OF MONTREAL, CANADA.

TRACK-CLEARING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 541,580, dated June 25, 1895.

Application filed November 12, 1894. Serial No. 528,593. (No model.)

To all whom it may concern:

Be it known that I, ALFRED EWART TREVITHICK, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Track-Clearing Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates more particularly to apparatus for clearing snow from street railways and has for its object to provide a simple and economical apparatus which will effectively remove the snow from the track and roadway in an even and uniform manner to either side thereof near the curbstone and which can be adjusted as to working height from the level of the rails, thus avoiding the objection to the usual sweepers which, in order to be effective must reach the ground and consequently leave that portion between the rails almost bare while the roadway immediately adjacent to the sides of the rails is heaped with the snow brushed thereon.

The invention consists in the combination with a suitable carriage, of a transverse gathering device or devices, two being preferably used to avoid any necessity for turning the carriage at the end of the line, provided with a traveling shifter adapted, as the snow is gathered, to push it from the gathering device to one side of the roadway, with of course the necessary mechanism for actuating such shifter.

The invention also embodies as an important feature the adjustability of the gathering device and shifter both transversely of the carriage, so as to be capable of working to the fullest extent on one side or the other of the roadway, and vertically thereof for the purpose of regulating the working height of the gathering device,—while various details of construction fully described and pointed out in the claims are included as novel features.

For full comprehension however of the invention, reference must be had to the annexed drawings, forming a part of this specification, in which like symbols indicate corresponding parts, and wherein—

Figure 1 is a plan view of my improved apparatus; Fig. 2, a side elevation of same, partly broken away; and Fig. 3, a transverse vertical section thereof.

1 represents the longitudinal bars of any suitable carriage body or frame mounted on wheel trucks 2 2, adapted to be propelled along the street railway tracks by any suitable motor, which latter not forming any part of my invention is not shown and need not be further alluded to. The bars 1, about midway of their length, are connected together by means of a transverse beam 3 and blocks 4 the latter being wider than the cross section of the beam and located between the ends thereof and the bars.

As a preferred method of supporting and securing the vertical adjustment of the gathering device and shifter relatively to the roadway I use the following means: Vertical dovetail guideways 5 are cut in the faces of the blocks 4 on each side of the beam and in these guideways are arranged to work dovetailed slides 6, to which are secured through flanges 7, on said slides, the ends of transverse plates or carriers 8 having horizontal flanges 9 along their lower edges. These transverse plates are connected together near their ends by angular ribs or cross pieces 10, which extend between them beneath the transverse beam 3 and are perforated to receive freely the diminished unthreaded lower end portions of vertical adjusting screws 11 extending through threaded apertures in the beam 3 and provided at their upper ends with suitable operating hand wheels 12, collars 13 on the extreme lower ends of the screws serving to properly connect the screws with the cross pieces 10 while leaving their ends free to revolve therein. The horizontal flanges 9 serve to support the remainder of the apparatus to be described all of which is capable of being shifted laterally across the carriage so that a greater portion of its length will project on one side thereof in order that the snow shall be shifted from the center of the roadway pretty well to the curbstone.

Since the gathering devices carry both the shifter and its actuating mechanism I will first describe such gathering devices. Each consists preferably of a plate in length amounting to a little more than double the width or gage of the railway track or suffi-

cient to reach from a central point in the roadway, between double tracks, to within a few feet of the curbstone, and each bent longitudinally approximately at right angles to form a vertical back portion 14 and horizontal scoop or gathering portion 15 which latter has its front edge thinned somewhat to more readily cut and gather the snow. The two plates 14, 15, are connected together, with the back portions facing each other by means of end bearers 16, 16, and inner bearers 17 for the shafting of the actuating mechanism of the shifter to be presently described, and they are supported upon the flanges or ledges 9 by means of angular strips 18 secured to the rear sides of the back portions 14 at their top edges and adapted to bear upon and slide along said ledges.

The shifter is preferably in the form of an endless traveler or chain composed of two horizontal lines of links 19 connected by vertical pivot pins or spindles 20, and carrying laterally projecting wing plates 21 suitably braced by bars 22. The chain is situated close to the back portion 14 of the gathering device and to facilitate its travel rollers 23 are mounted on the upper and lower ends of the spindles 20 at intervals throughout the length of the chain to bear upon the surface of such back portions 14. It is also desirable in some cases where sag must be avoided to extend several of such spindles 20 up sufficiently to allow of their carrying horizontal bracket arms or stub axles 24 for rollers 25 adapted to bear down upon the angular strips 18.

The actuating mechanism for the shifter preferably comprises the following: Sprocket wheels 26, to engage the chains of the shifter are mounted on vertical counter shafts 27 and 28 the lower ends of which have bearings in the bearers 16, 16 at each end of the gathering device, and the upper ends of which are carried in bearings furnished by arms 29 projecting from the sides of standards 30 rising from the inner bearers or cross pieces 17; bevel gears 31 mounted on the upper ends of such vertical shafts; a horizontal driving shaft 32 mounted in bearings 33 at the upper ends of said standards 30; bevel gears 34 on the ends of said driving shaft to engage the bevel gears 31, and a sprocket wheel 35 having a feather and groove connection with the driving shaft 32 to allow of such shaft being slid through the wheel as the gathering device is being shifted laterally from side to side of the carriage, the sprocket wheel 35 being maintained in a position centrally of the carriage by means of forks 36 rising from the transverse beam 3 of the carriage, and being connected by any suitable drive chain with an operating motor. Not shown.

What I claim is as follows:

1. In a track clearing apparatus, the combination with a suitable carriage, of a gathering device provided with a traveling shifter extending transversely beneath the carriage for the purpose set forth.

2. In a track clearing apparatus, the combination with a suitable carriage having transverse supporting guides, of a transverse gathering device with a traveling shifter, supported by and movable along said guides, for the purpose set forth.

3. In a track clearing apparatus, the combination with a suitable carriage having vertical guideways in its framing, of a transverse frame adjustable vertically in said guideways with means for adjusting and supporting same, and a gathering device provided with a traveling shifter extending transversely beneath the carriage and supported by said frame, for the purpose set forth.

4. In a track clearing apparatus, the combination with a suitable carriage having vertical guideways in its framing, of a transverse frame furnishing supporting guides transversely of the carriage and being adjustable vertically in said guideways, with means for adjusting and supporting same, and a gathering device provided with a traveling shifter and supported by and movable along said guides for the purpose set forth.

Montreal, 24th day of October, 1894.

ALFRED EWART TREVITHICK.

In presence of—

FRED. J. SEARS,

R. A. C. KIMBER.