No. 648,685. Patented May 1, 1900.

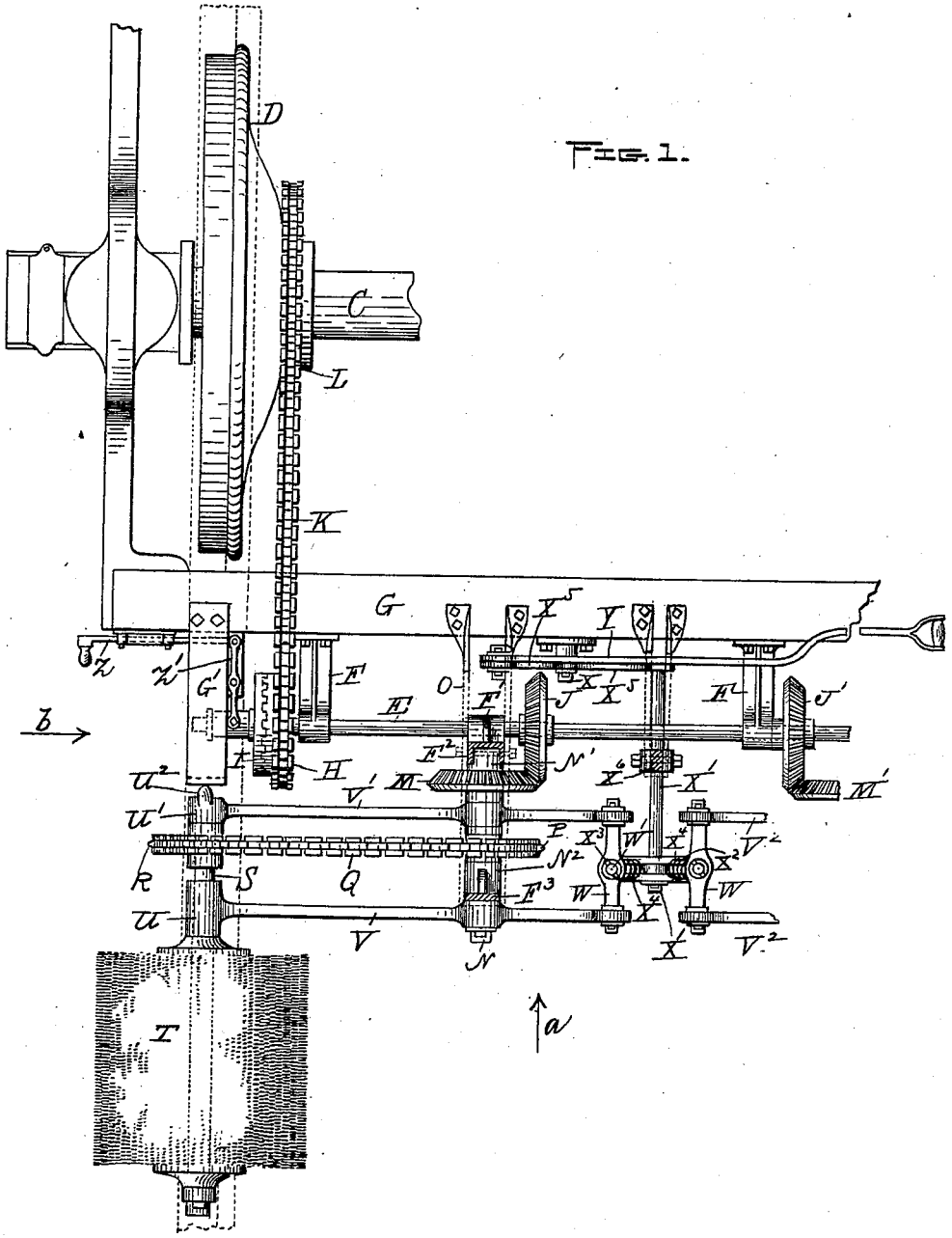
F. X. FAUCHER.

TRACK SWEEPING ATTACHMENT FOR STREET CARS.

(Application filed Jan. 3, 1900.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1.



Witnesses;
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Arthur A. Gilbert.

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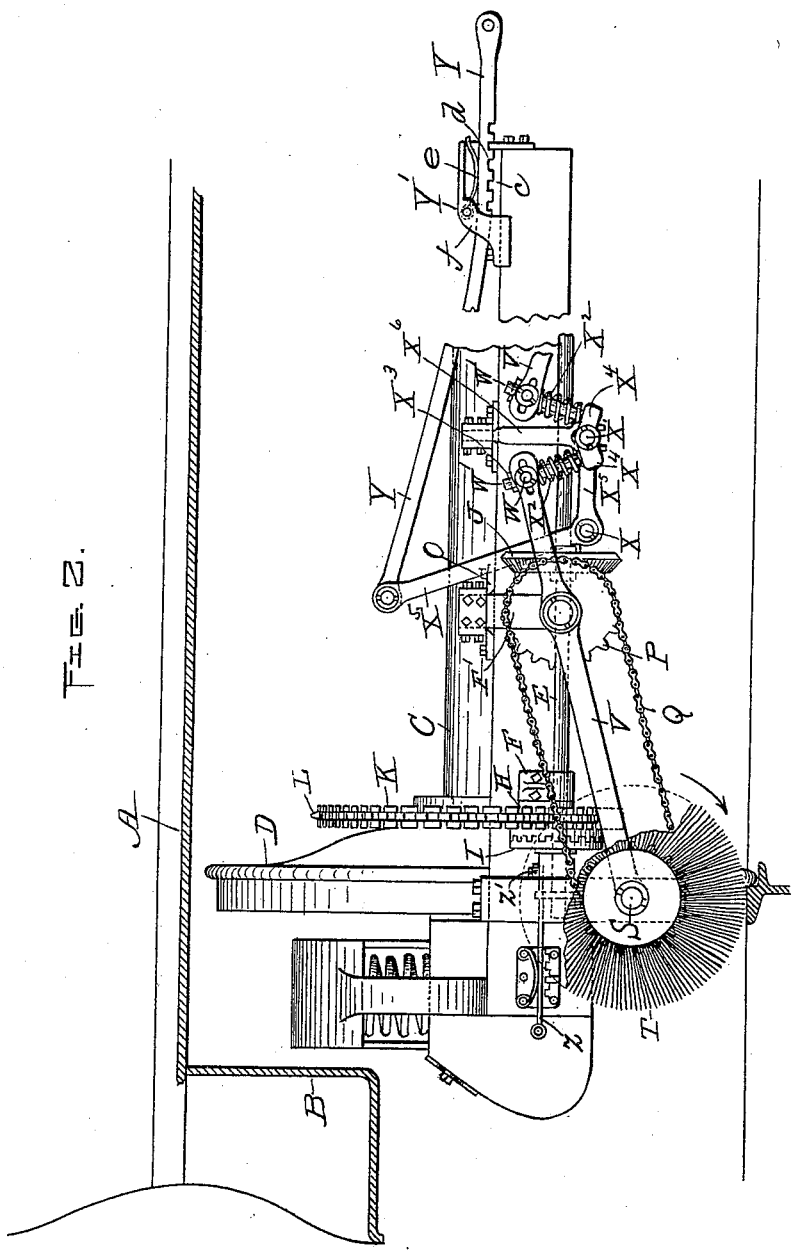
(No Model.) 3 Sheets—Sheet 2.

FIG. 2.



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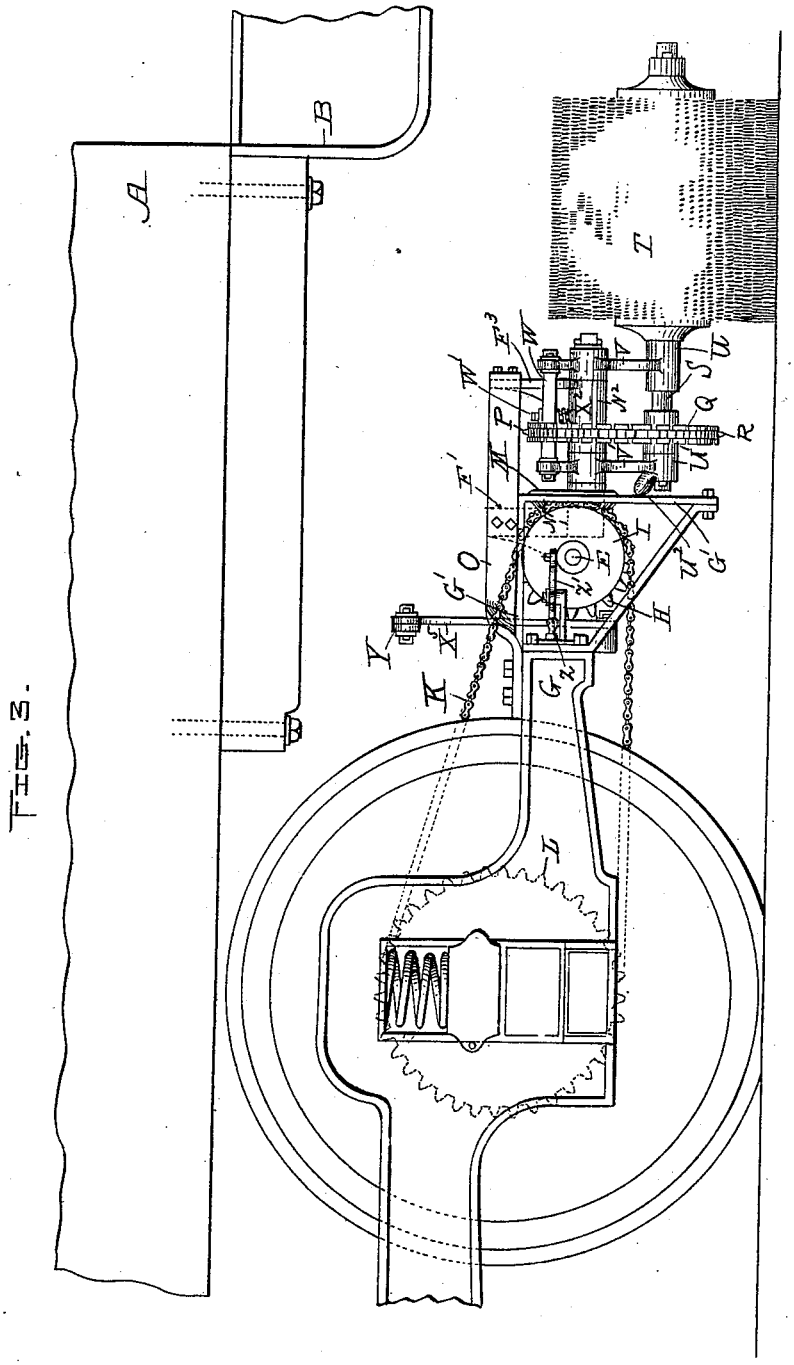

FIG. 3.

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UNITED STATES PATENT OFFICE.

FRANCIS X. FAUCHER, OF WORCESTER, MASSACHUSETTS.

TRACK-SWEEPING ATTACHMENT FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 648,685, dated May 1, 1900.

Application filed January 3, 1900. Serial No. 209. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS X. FAUCHER, of the city and county of Worcester, in the State of Massachusetts, have invented certain new and useful Improvements in Track-Sweeping Attachments for Street-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan of so much of my said improved track-sweeping attachment as is necessary to illustrate my invention. Fig. 2 is a front end view of the parts shown in Fig. 1 looking in the direction of arrow *a*, same figure, part of the brush being shown broken away to better illustrate the parts coming back of the same; and Fig. 3 is a side view of the parts shown in Fig. 1 looking in the direction of arrow *b*.

In all of said figures only so much of the car to which my attachment is applied is shown as is necessary to illustrate the application of my invention thereto.

Said invention consists of certain improvements in the construction of mechanism employed for supporting the brushes in their proper positions over the tracks, for rotating said brushes by power transmitted from the car-axle, for adjusting said brushes toward and from said tracks, and for permitting them to yield upward against a yielding pressure when said brushes come in contact with obstructions on the tracks, as will be hereinafter more fully set forth, and pointed out in the claims.

In order that others may better understand the nature and purpose of my said invention, I will now proceed to describe it more in detail.

Referring to the drawings, A represents part of the platform, and B one of the steps, of a street-car.

C is part of one of the axles, and D one of the wheels mounted thereon and which constitute the motive power for driving my improved track-sweeping attachment.

Said sweeping attachment, it will be understood, is in practice designed to be applied to both ends of a street-car and each attachment provided with two brushes, one for each track; but as the mechanism for supporting each brush is alike it will be necessary to describe only that for supporting and operating one of said brushes, as is shown in the drawings. Said mechanism is constructed and arranged to operate as follows: A transverse shaft E, extending in practice nearly the whole width of the car, is mounted and fitted to turn in suitable bearings F, attached to the frame of the car-truck G, and in bearings F′ on stationary hangers F^2, and upon said shaft E are mounted the sprocket-wheel H, clutch I, adapted to be engaged with the hub thereof, and bevel-gears J J′, the sprocket-wheel being fitted to turn loose on said shaft and the other parts attached to and turning therewith. Said sprocket-wheel H is connected by an endless chain K with a sprocket-wheel L on the car-axle and receives its driving power therefrom. From the shaft E the driving power is transmitted, through the bevel-gear J and bevel-gear M, to a short longitudinal shaft N, fitted to turn in suitable stationary bearings N′ N^2, mounted, respectively, on the stationary hanger F^2, above referred to, and a similar stationary hanger F^3, both secured to a frame O, in turn secured to the car-truck G. The bevel-gear M is secured to shaft N, and upon said shaft is also secured the sprocket-wheel P, which is connected by an endless chain Q with another sprocket-wheel R, secured to the inner end of the short longitudinal shaft S, upon whose outer or forward end is mounted and secured the brush T, whose peripheral surface is adapted to lie centrally and longitudinally just above the surface of the track, so that it may sweep the snow therefrom when rotated, as hereinafter described. The said brush-shaft S in mounted and fitted to turn in suitable bearings U U′ upon the outer ends of transverse rock-levers V V′. Said levers are pivoted at a short distance from their inner ends to shaft N and at said inner ends to the outer ends of a short horizontal bar or bearing W, having a central vertical hole and fitted over a short vertically-arranged stud W′, secured to bearing X^4 on rock-shaft X′. Said shaft is arranged longitudinally and horizontally and is centrally pivoted to the lower forked end of stationary bearing X^6. Between the inner ends of the

levers V V′ and the top of bearing X^4 is interposed a spiral spring X^2, fitted over the stud W′, the purpose of said spring being to force said inner ends of the levers V V′ upward against the transverse holding-pin X^3 and at the same time permit the levers to be forced down against said upward yielding pressure of the spring when the brush T comes in contact with any obstruction, the inner ends of said levers V V′ being fitted to slide up and down on said stud to admit of said vertical movements. The bearing X^4 is provided with two short arms, one at each side of shaft X′, just long enough to form a support and bearing for the inner ends of each of the pair of levers V V′, as is shown in Fig. 2. The rock-shaft X′ has pivoted to its inner end a rock-lever X^5, in turn pivoted to stationary bearing X. To the outer end of lever X^5 is pivoted the lever Y for operating the various parts to adjust the brushes toward and from the tracks. Said lever may be connected with a shipper extended up where it may be conveniently operated by the motorman on the car-platform or in any other suitable manner. For convenience in illustration it is shown in this instance extended to one side of the car and its outer end provided with an adjustable spring locking device Y′, consisting of a toothed rack *c*, secured to the car-truck, with which a toothed rack *d* on the lever engages, being held in engagement by a spring *e*, mounted in a suitable stationary bearing *f*. The lever is operated longitudinally by raising its outer end against the spring-pressure, and after adjusting it longitudinally to the desired position the spring is allowed to force it back again into engagement with the toothed rack.

By the foregoing construction it is obvious that when said lever Y is moved outward the inner ends of the rock-levers V V′ are forced up and their outer ends, upon which the brush T is mounted, are forced down toward the track, and vice versa when said lever Y is moved inward toward the car. The brushes, therefore, it will be seen, may be easily adjusted to any desired position in relation to the tracks or lifted up out of the way when not required for use.

In the operation of the sweeper it will be apparent that as the brushes are carried forward they will meet with considerable longitudinal resistance in brushing the snow from the tracks, and in order that the parts which support said brushes may be braced against said longitudinal pressure I attach a frame or bumper G′ to the truck-frame G, against which the inner bearing U′ on shaft S′ or a boss U^2 thereon may impinge to prevent undue back pressure, that might be liable to disarrange said parts.

It will of course be understood that the gear-and-chain connections between the car-axle and brushes is made in practice to rotate said brushes in directions outward from the track-bed, as is indicated by the arrow in Fig. 2, so as to throw the snow out to either side of the tracks, the brush upon one side turning in an opposite direction to the one on the other side. It will also be understood that I do not limit myself to arranging the brushes longitudinally with the tracks, as by a slight modification in the construction of the supporting and operating parts in practice the brushes may be arranged obliquely or at an angle to the tracks without departing from the principle of my invention.

Power may be transmitted from the drive-shaft E to turn the brush upon the opposite side of the car from brush T through the bevel-gear M′ and rock-levers V^2 V^2, which connect with similar mechanism to that shown in the drawings, as previously described.

Any suitable and convenient mechanism may be employed for engaging and disengaging the sprocket-wheel H to and from the drive-shaft E. In this instance I have shown the outer side of the hub of said sprocket-wheel provided with notches, with which the clutch I, fitted to turn with shaft E, is adapted to engage. Said clutch is moved into and out of engagement therewith by means of a shipper Z, fitted to slide longitudinally in stationary bearings and pivoted at its inner end to a short lever Z′, centrally pivoted to a stationary bearing and whose inner end is pivoted to the hub of clutch I.

Having now described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. A track-sweeping attachment, comprising in combination a transverse, horizontal shaft E fitted to turn in suitable stationary bearings and driven by connection with the car axle or wheel, a clutch I and means for operating it, for shipping and unshipping the driving power to and from said transverse shaft; a short longitudinal shaft N supported in suitable bearings and having means for transmitting the driving power of shaft E thereto; transverse rock-shafts V V′ pivoted at a short distance from their inner ends to said shaft N, and at said inner ends to a bearing fitted to slide on a stud mounted on bearing X^4, and having means for controlling the upward movements of said inner ends of levers V V′; the short longitudinal shaft S fitted to turn in the outer ends of said levers V V′, and having the brush T mounted thereon; means for transmitting the driving power of shaft N to shaft S; spring X^2 for imparting an upward yielding pressure against the inner ends of levers V V′, rock-shaft X′ pivoted to a stationary bearing; rock-lever X^5 pivoted to a stationary bearing and to rock-shaft X′, and means connected with and for operating lever X^5 to adjust the brush T up or down, substantially as set forth.

2. In a track-sweeping attachment, the combination of transverse drive-shaft E, with short longitudinal shafts N and S, means for supporting shafts E and N; means for transmitting the power from shaft E to shaft N,

and thence to shaft S; brush T mounted on shaft S; rock-levers V V′ pivoted on shaft N and in whose outer ends the shaft S is supported and fitted to turn; the bearing W, to which the inner ends of levers V V′ are pivoted and which is fitted to slide on a stud on bearing X^4; means for controlling the upward movements of the inner ends of levers V V′ and for imparting an upward yielding pressure thereto, said bearing X^4; rock-shaft X′; its support; rock-lever X^5, its support and means for operating it, substantially as and for the purpose set forth.

3. In a track-sweeping attachment the combination of transverse drive-shaft E with short longitudinal shafts N and S, means for supporting shafts E and N; means for transmitting the power from shaft E to shaft N and thence to shaft S; brush T mounted on shaft S; rock-levers V V′ pivoted on shaft N and in whose outer ends the shaft S is supported and fitted to turn, means for preventing undue back longitudinal motion of shaft S and parts attached thereto; the bearing W to which the inner ends of levers V V′ are pivoted and which is fitted to slide on a stud on bearing X^4; means for controlling the upward movements of the inner ends of levers V V′ and for imparting an upward yielding pressure thereto; said bearing X^4, rock-shaft X′; its support; rock-lever X^5, its support and means for operating it, substantially as and for the purpose set forth.

4. In a track-sweeping attachment, the combination of shaft N, having means for supporting and turning it, with rock-levers V V′ pivoted thereto and carrying at their outer ends the brush-shaft S which turns therein; means for transmitting the driving power from shaft N to shaft S; brush T mounted on shaft S; bearing W, fitted to slide on a stud on bearing X^4 and to which the inner ends of rock-levers V V′ are pivoted, means for controlling the upward movements of said inner ends of levers V V′ and for imparting an upward yielding pressure thereto; said bearing X^4, rock-shaft X′; its support; rock-lever X^5, its support and means for operating it, substantially as and for the purpose set forth.

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