

(No Model.)

H. A. BRUHNS.
RAIL SWEEPER.

No. 509,871.

Patented Dec. 5, 1893.

Fig. 1.

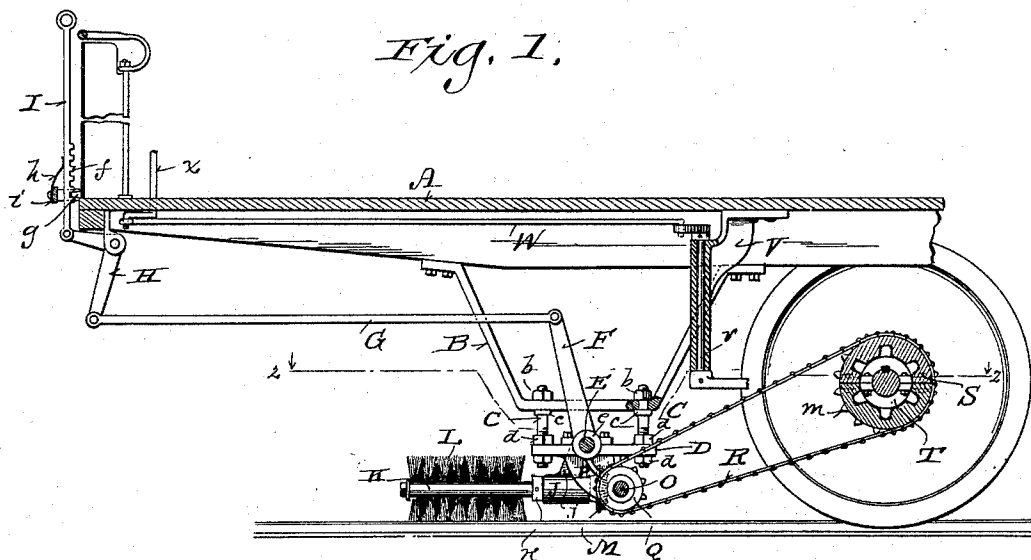


Fig. 2.

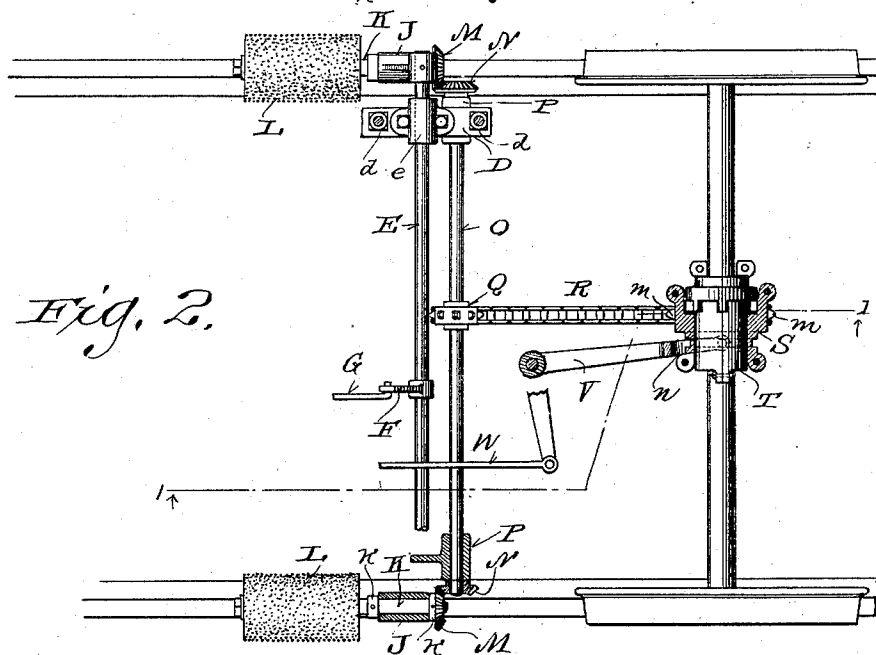
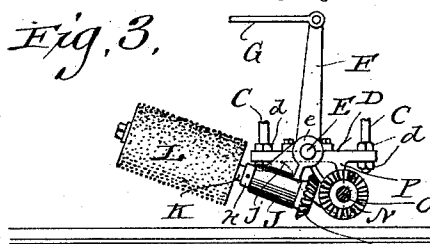


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY A. BRUHNS, OF MILWAUKEE, WISCONSIN.

RAIL-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 509,871, dated December 5, 1893.

Application filed May 12, 1893. Serial No. 473,964. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. BRUHNS, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Rail-Sweepers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a street-car with a simple and effective rail sweeping mechanism; said invention consisting in certain peculiarities of construction and combination of parts hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents an elevation partly in section on line 1—1 of the succeeding figure and illustrates my rail sweeping mechanism connected to a street-car; Fig. 2, a plan view of the same partly in section on line 2—2 of the preceding figure, and Fig. 3, a detail elevation showing a brush portion of the sweeping mechanism lifted away from a track-rail and out of gear with the driving mechanism.

Referring by letter to the drawings, A represents a portion of an ordinary street-car provided with depending brackets B having perforations engaged by hangers C the latter being held in place by means of nuts *b* and collars *c* thereon bearing against opposite sides of the brackets, as shown in Fig. 1. The hangers pass through plates D, and by means of set-nuts *d* arranged on the hangers to bear against opposite sides of the plates, the latter are held in the positions to which they may be vertically adjusted.

Loose on bearings *e* on the plates D is a rock-shaft E having a lever-arm F, and a link-rod G connects this lever-arm with a bell-crank H suspended beneath the platform of the car and controlled by a hand-lever I that comes within easy reach of the operator of said car. As herein shown the hand-lever is provided with a rack *f* for adjustable engagement with a stationary dog *g* on the car, and by means of a spring *h*, arranged on a guide *i* for said lever, the latter is automatically retained in its adjusted position.

Fast on the shaft E are wings *j* that extend upward from sleeves J and these sleeves serve

as bearings for the stems K of forwardly extended cylindrical rail-sweeping brushes L, the tufts of the latter being steel or other suitable material. The brush-stems K are held in their bearings against longitudinal movement by means of collars *k* upon opposite ends of said bearings and a bevel-gear wheel M on each of said stems meshes with a like wheel N fast on a shaft O that has its bearings in brackets P that depend from the vertically adjustable plates D above specified.

The shaft O is provided with a sprocket-wheel Q and a link-belt R runs on said wheel and sprockets *m* on the periphery of a sliding clutch-section S, the latter being loose on a stationary clutch-section T that is keyed to an axle of the car. For convenience in the attachment of the clutch to a car-axle, I prefer to make each of its sections in two parts having suitable ears, and by means of rivets or bolts engaging opposing ears of the parts belonging to each clutch section these parts are held together.

The clutch-section S herein shown is in the form of a sleeve having one of its ends enlarged and interiorly provided with teeth, the other clutch-section T being also shown in the form of a sleeve provided with an exterior flange having teeth thereon, and the toothed portions of both clutch-sections face each other.

The clutch-section S has a spanner-connection *n* with a bell-crank U that has its bearing in a bracket V depending from the car, and a link-rod W joins the latter bell-crank with a crank-rod X that is shown as extending through a platform of said car to come within easy reach of the operator.

From the foregoing description it will be seen that the sweeping-mechanism is driven by the same power employed to run the car, and that it may be thrown in and out of gear at the will of the operator. It is also to be observed that the rail-sweeping brushes may be raised and lowered by the operator without throwing the drive-mechanism out of clutch with the car axle, the operation being effected by a rock of the shaft E above specified. A lift of the brushes will throw their bevel-gear wheels out of mesh with the like wheels on the shaft O, as shown in Fig. 3, and thus the power necessary to the drive of said brushes

may be utilized to increase the speed of the car.

To compensate for wear on the brushes the plates D are lowered on their hangers C, and it will be seen that said brushes may be used until their tufts are worn down close to the stems, while at the same time the aforesaid brushes may be kept away from the adjacent rails when a sweeping operation is not necessary.

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

1. The combination of a street-car, brackets depending therefrom, horizontal plates suspended from the brackets, a lever-controlled rock-shaft having its bearings on the plates, other bearings depending from the rock-shaft, rail-sweeping brushes having stems loose in the latter bearings, gear-wheels fast on the brush-stems, other gear-wheels for engagement with those on the brush-stems, and a drive-mechanism for the latter gear-wheels having a lever-controlled clutch connection with an axle of the car, substantially as set forth.

2. The combination of a street-car, brackets depending therefrom, horizontal plates suspended from the brackets, a lever-controlled rock-shaft having its bearings on the plates, other bearings depending from the rock-shaft, rail-sweeping brushes having stems loose in the latter bearings, gear-wheels fast on the

brush-stems, a shaft loose in bearings depending from said plates, gear-wheels on the latter shaft for engagement with the ones aforesaid, and a drive-mechanism for the latter shaft having a lever-controlled clutch connection with an axle of the car, substantially as set forth.

3. The combination of a street-car, brackets depending therefrom, horizontal plates having a vertically adjustable connection with the brackets, a lever-controlled rock-shaft having its bearings on the plates, other bearings depending from the rock-shaft, rail-sweeping brushes having stems loose in the latter bearings, suitable gear-wheels fast on the brush-stems, a shaft loose in bearings that depend from the aforesaid horizontal plates, other suitable gear-wheels on the latter shaft for engagement with those on said brush-stems, a clutch on an axle of said car, a lever-mechanism controlling the loose section of the clutch, and a link-belt gear connecting said clutch-section with the shaft that gears with the aforesaid brush-stems, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

HENRY A. BRUHNS.

Witnesses:

N. E. OLIPHANT,

J. W. SEWENBERGER.