

(No Model.)

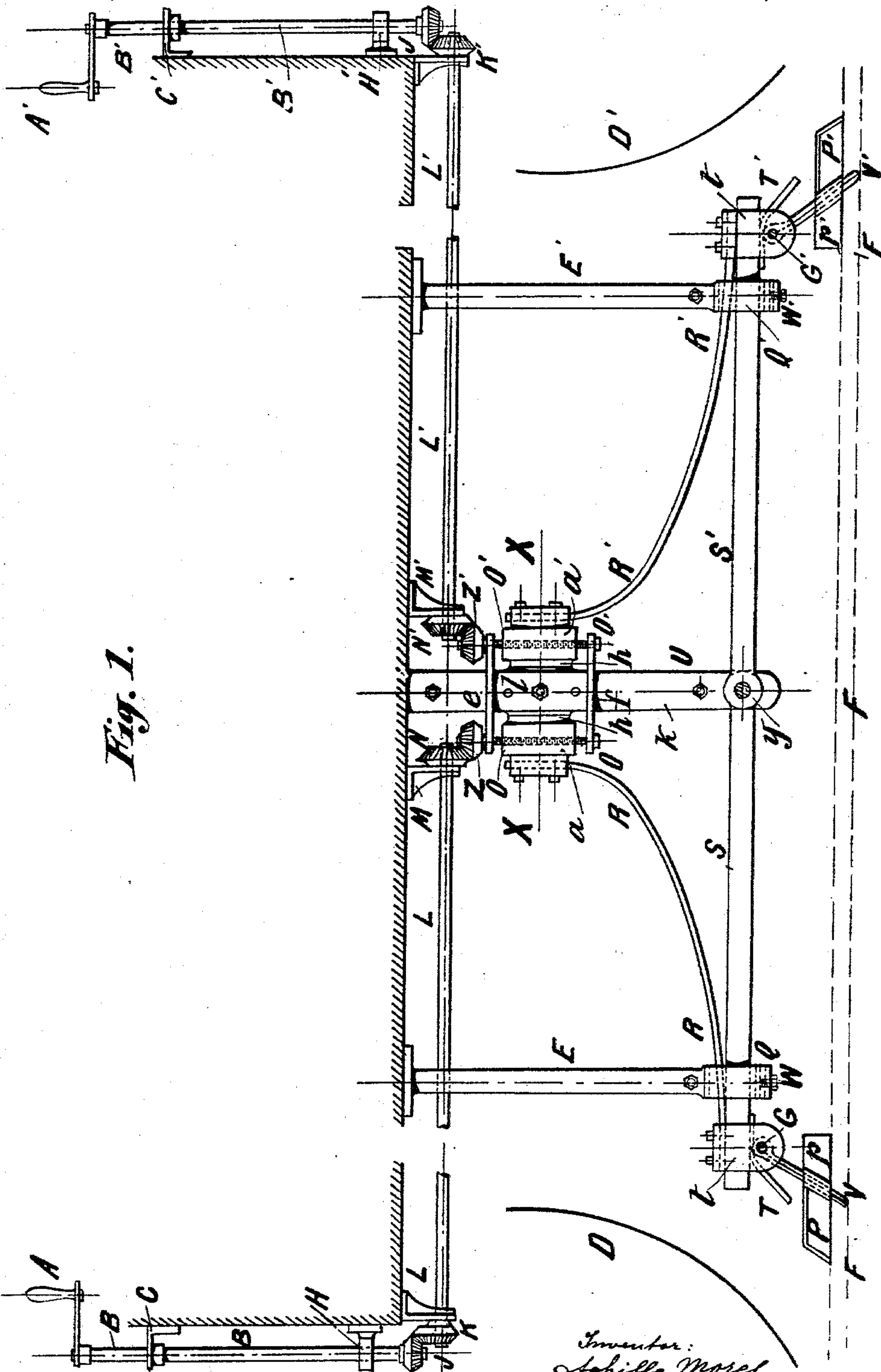
A. MOREL.

3 Sheets—Sheet 1.

APPARATUS FOR AUTOMATICALLY CLEARING TRAMWAY OR  
OTHER LINES.

No. 562,634.

Patented June 23, 1896.



Witnesses:  
A. C. van Winkle  
Huncan M. Robertson.

Inventor:  
Achille Morel  
by Gartner & Co  
Munich

(No Model.)

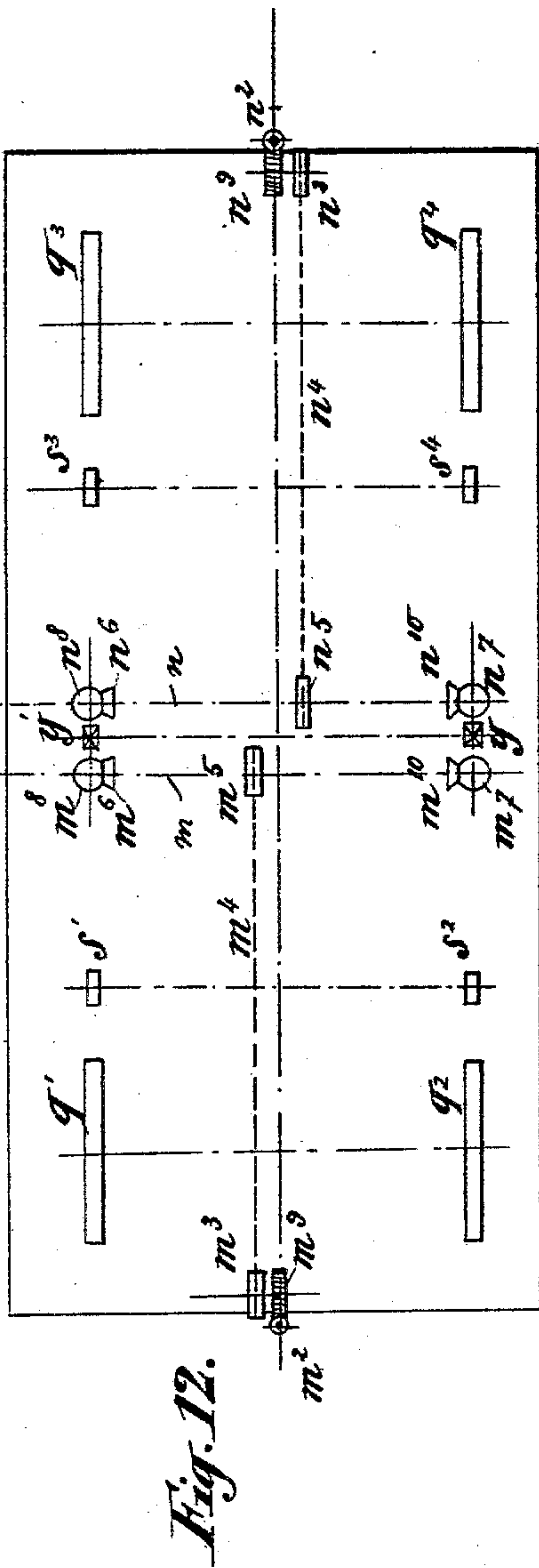
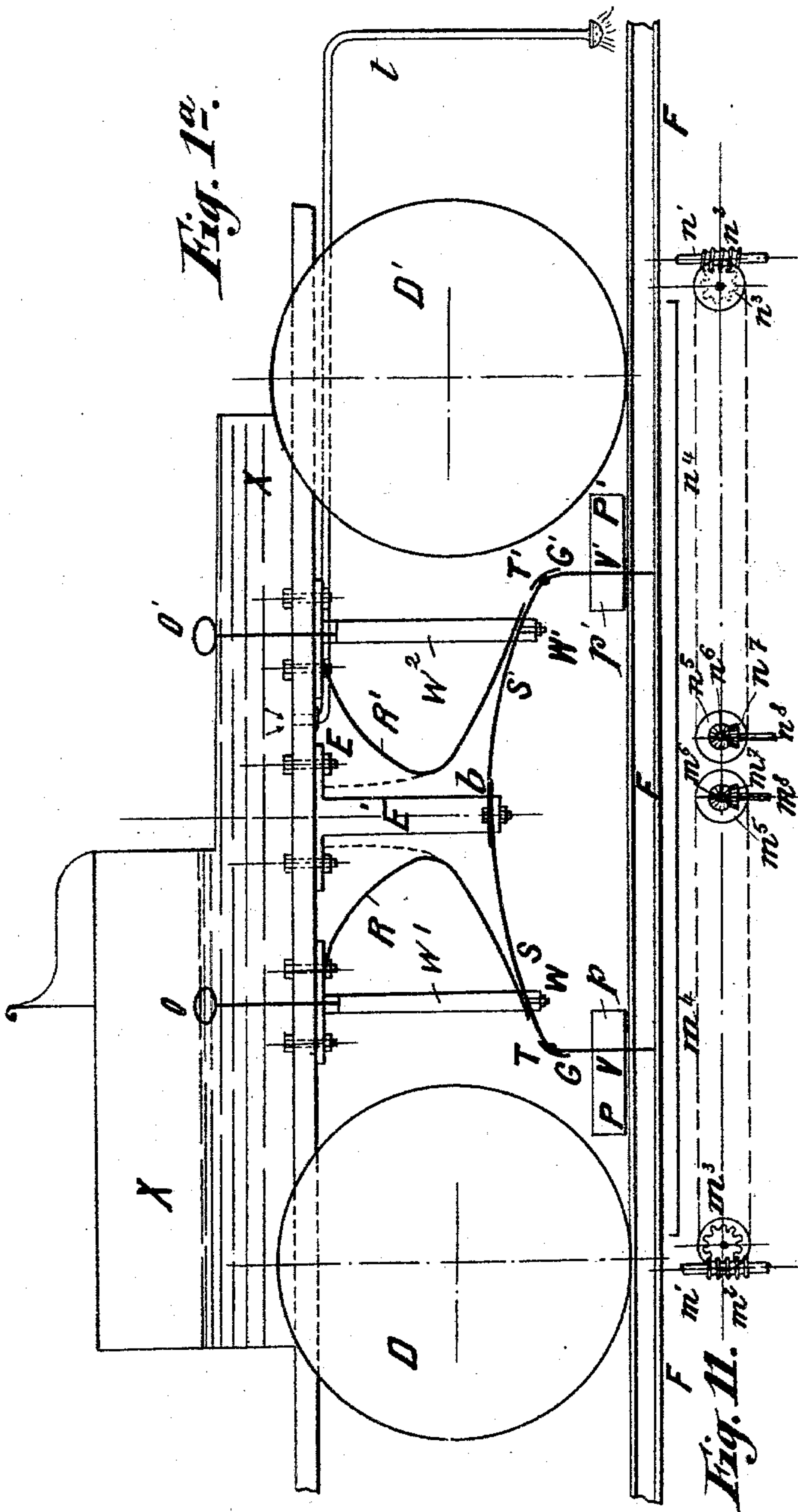
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August Rahm  
Huncan M. Robertson.

Inventor:  
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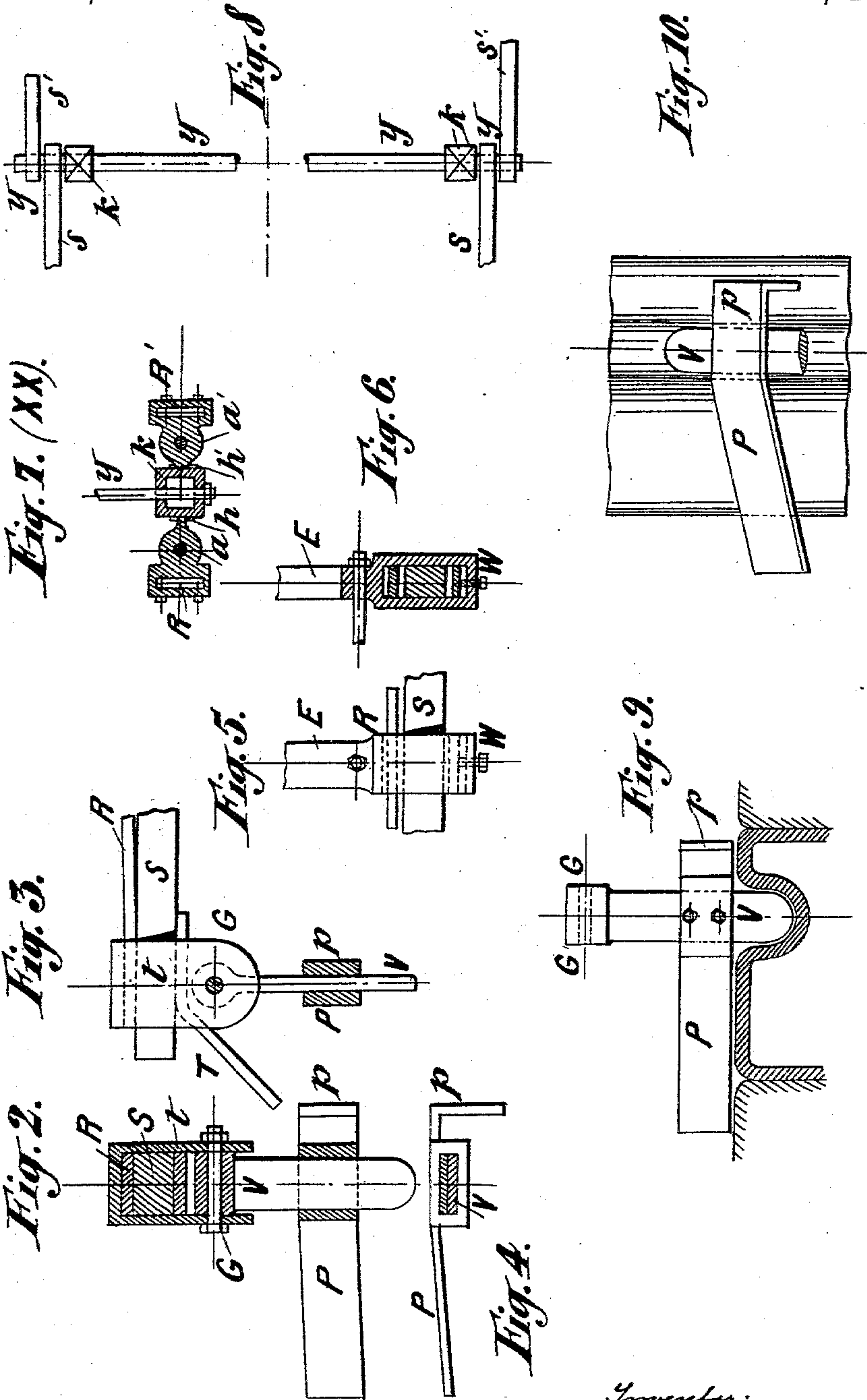
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Inventor:  
Achille Morel  
by Garton & Co  
Attys



# UNITED STATES PATENT OFFICE.

ACHILLE MOREL, OF BRUSSELS, BELGIUM.

APPARATUS FOR AUTOMATICALLY CLEARING TRAMWAY OR OTHER LINES.

SPECIFICATION forming part of Letters Patent No. 562,634, dated June 23, 1896.

Application filed April 1, 1896. Serial No. 585,699. (No model.)

*To all whom it may concern:*

Be it known that I, ACHILLE MOREL, a citizen of France, residing in Brussels, Belgium, have invented certain new and useful Improvements in Apparatus and Arrangements for the Automatic Cleaning of Tramway or other Lines; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a track-cleaner for street and railway cars, automatic in operation, simple, strong, and durable in construction, and easily attachable to cars of almost any construction.

The invention consists in the improved track-cleaner, and in the combination and arrangement of the various parts thereof, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of my improved apparatus attached to a car, only those portions of the latter being shown which are necessary to fully illustrate the nature of my said invention. Figs. 2, 3, 4, 5, and 6 are enlarged detail views of a certain cleaning-tool and its supporting and adjusting mechanism, respectively; Fig. 7, an enlarged detail sectional view on the line  $xx$  of Fig. 1; Fig. 8, a portion of a top plan view of the fulcrumed arms supporting the cleaning-tools; Figs. 9 and 10, enlarged detail views illustrating the relative position of the cleaning-tool to the rail; Figs. 11 and 12, diagrammatic views of a certain motion-transmitting device used in connection with my improved apparatus, and Fig. 13 a diagrammatic view of a modified form of the latter.

In said drawings, Fig. 1,  $k$  represents a standard secured to and vertically depending from the truck of the car and on each side thereof, which standards are connected by a brace  $U$  and shaft  $y$ , the latter serving as fulcrum for the arms  $S$   $S'$ . The standard  $k$ ,

which is preferably square, is provided at opposite sides with flanges  $h$  ( $h'$ ), forming a guide for the reciprocating carriage  $a$  ( $a'$ ), adapted to be raised or lowered by the elevator-screw  $O$  ( $O'$ ).

The following description refers to the parts on the left-hand side, and it is to be understood that the parts on the right-hand side are the same and symmetrically arranged and are indicated by the same reference-letters, but marked 1.

The carriage  $a$  is provided with a vertically-arranged slot, in which is adjustably secured, by means of set-screws, one end of the flat spring  $R$ , the other end of which is adjustably secured, by similar means, in the horizontally-arranged slot of the clamping-block or carrier  $t$ , supported at or near the free end of arm  $S$ .

On the bolt  $G$ , which penetrates the lower portion of said block, is fulcrumed the cleaning or scraping tool  $V$ , provided with flanges  $P$  and  $p$ , adapted to engage the surface of the rail  $F$  and its depression, respectively. (See Figs. 2, 3, 4, 9, and 10.) A flat spring  $T$ , inserted between the under side of the arm  $S$  and the top portion of the tool  $V$  and bent at an angle, as clearly shown in Figs. 1 and 3, is adapted to limit the backward movement of the said tool, as will be manifest.

A standard  $E$  is secured to and depends from the under side of the truck and in rear of the standard  $k$ , and is provided at its lower end with an elongated slot  $Q$ , through which the arm  $S$ , as well as the spring  $R$ , passes, and on its under side with a set-screw  $W$ , adapted to regulate the relative position of the said arm and spring, and thus the heights of the tool  $V$  from the rail. The action or tension of the said spring is controlled by the reciprocating carriage  $a$ , which is operated by the screw  $O$ , having its bearings in the frames  $l$  and  $f$ , secured to and projecting from the standard  $k$ . To the top portion of the screw  $O$  is secured a beveled gear  $Z$ , meshing with gear  $N$  on one end of shaft  $L$ , which latter has its bearings in the brackets  $M$  and  $L$ , and which is provided at its other end with a beveled gear  $K$ . Said gear  $K$  engages beveled gear  $J$ , secured to the lower end of the vertically-arranged shaft  $B$ , having its bearings in the brackets  $H$  and  $C$  and provided at its



top with the crank-handle A. When the latter is operated, the reciprocating carriage *a* is raised or lowered, and the tension of the spring R is thus increased or decreased, as will be manifest.

In Figs. 11 and 12 is (diametrically) illustrated an arrangement by means of which the screws on both sides of the car can be operated simultaneously. In said figures the reference-letters *m* to *m*<sup>10</sup> refer to like parts on the left-hand side and the letters *n* to *n*<sup>10</sup> to like parts on the right-hand side of the car. The letters *q*<sup>1</sup>, *q*<sup>2</sup>, *q*<sup>3</sup>, and *q*<sup>4</sup> represent the car-wheels, *S*<sup>1</sup> *S*<sup>2</sup> *S*<sup>3</sup> *S*<sup>4</sup> the cleaning-tools, and *y* *y*<sup>1</sup> the central standards, on which the reciprocating carriages are adapted to operate.

On the vertically-arranged shaft *m*<sup>1</sup> is secured the worm *m*<sup>2</sup>, engaging the gear *m*<sup>9</sup>, on the shaft of which is mounted the sprocket-wheel *m*<sup>3</sup>, transmitting motion, through chain *m*<sup>4</sup>, to the sprocket-wheel *m*<sup>5</sup>, secured on the shaft *m*, carrying at opposite ends the beveled gears *m*<sup>6</sup> and *m*<sup>10</sup>, meshing with the gears *m*<sup>8</sup> and *m*<sup>7</sup>, respectively, which again are secured to and operate their respective elevator-screws.

In the diagrammatic view, Fig. 1<sup>a</sup>, which illustrates a simplified form, the spring R is secured with its upper end to the under side of the truck and with its lower end to the spring S, adjustably arranged with its inner portion, by means of the set-screw *b*, on the standard *E*<sup>1</sup>. The cleaning-tool V is pivotally secured, as at G, to the center portion of the spring and is controlled in its backward motion by the spring-plate T. The tool V and its spring S can be adjusted by the set-screw W, while its tension is regulated by the rod O, which can be raised and lowered, as will be manifest. A tube *t*, communicating with the tank X, furnishes water for the rail, so as to keep the dust down.

From the foregoing it can be seen that the relative position between the tool V and the rail F can easily be regulated, as well as the tension on the spring, and thus the scraping action of the said tool.

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

1. In an automatic track-cleaning appa-

ratus, the combination with the truck, of a standard depending from said truck, a reciprocating carriage on said standard, a flat spring adjustably secured with one end in said carriage, a fulcrumed arm supported in said standard, a clamping-block adjustably arranged on the free end of said arm, and connected to the other end of the flat spring, a cleaning-tool pivotally secured in said clamping-block, and means for operating the reciprocating carriage, substantially as and for the purposes described.

2. In an automatic track-cleaning apparatus, the combination with the truck, of a standard depending from said truck, a reciprocating carriage on said standard, an arm fulcrumed in said standard, a clamping-block adjustably arranged at the free end of said arm, a flat spring adjustably secured with one end in said carriage and with its other end in said clamping-block, a cleaning-tool fulcrumed in said clamping-block, means for raising and lowering said tool, and means for operating the sliding carriage to thus increase the tension of the spring, substantially as and for the purposes described.

3. In an automatic track-cleaning apparatus, the combination with the truck, of a standard depending from said truck, a reciprocating carriage on said standard, an arm fulcrumed in said standard, a clamping-block adjustably arranged at the free end of said arm, a flat spring adjustably secured with one end in said carriage and with its other end in said clamping-block, a cleaning-tool fulcrumed in said clamping-block, means for raising and lowering said tool, a screw vertically penetrating the carriage, a vertically-arranged shaft provided at its upper portion with a crank-handle, and means for transmitting the motion of said shaft to the screw, all said parts, substantially as and for the purposes described.

In testimony whereof I have hereto set my hand in the presence of the two undersigned witnesses.

ACHILLE MOREL.

Witnesses:

ALFRED WUNDERLICH,  
GREGORY PHELAN.