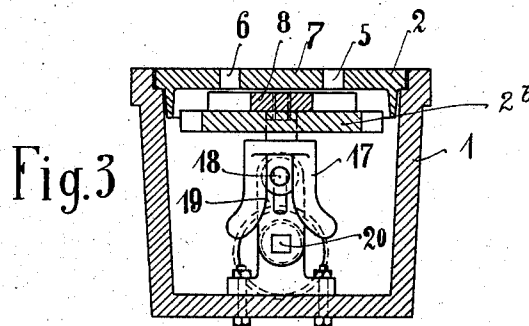
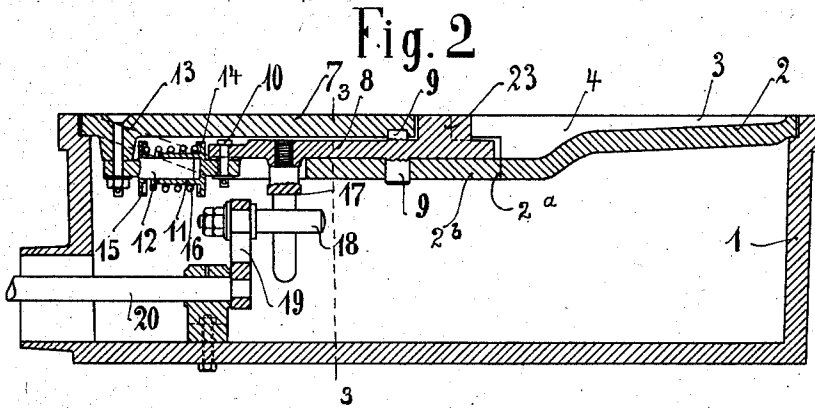
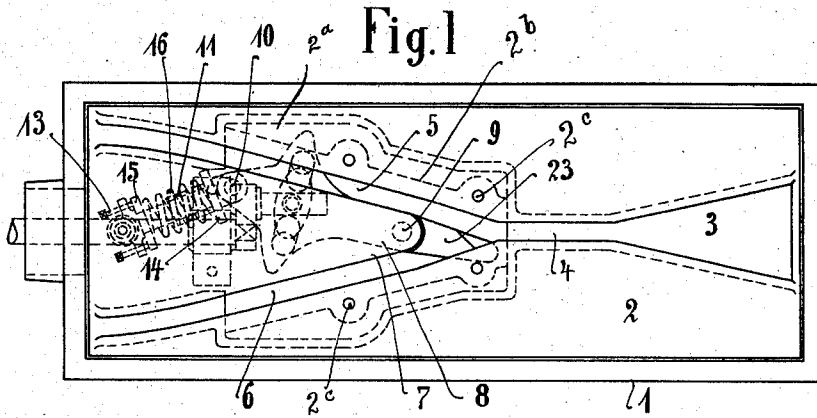


F. PAWEL.
 TRAMWAY SWITCH.
 APPLICATION FILED DEC. 30, 1910.

1,012,001.

Patented Dec. 19, 1911.

2 SHEETS—SHEET 1.



Witnesses:
 Arthur E. Gump
 Katherine Koch.

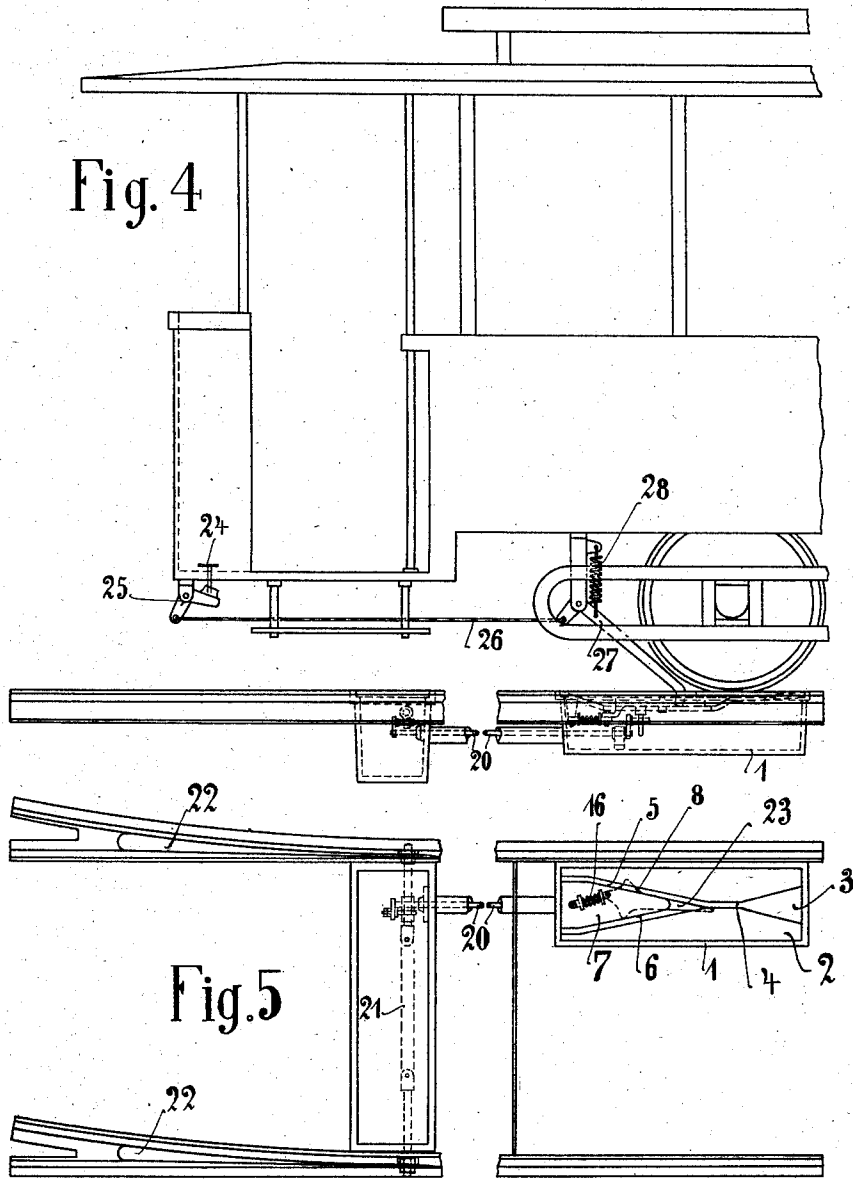
Inventor:
 Franz Pawel
 by his attorney
 Frank B. Bickel

F. PAWEL.
 TRAMWAY SWITCH.
 APPLICATION FILED DEC. 30, 1910.

1,012,001.

Patented Dec. 19, 1911.

2 SHEETS-SHEET 2.



Witnesses:
 Arthur E. Gump
 Katherine Koch

Inventor:
 Franz Pawel
 by his attorney
 Frank M. Sisson

UNITED STATES PATENT OFFICE.

FRANZ PAWEL, OF HANOVER, GERMANY.

TRAMWAY-SWITCH.

1,012,001.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed December 30, 1910. Serial No. 600,127.

To all whom it may concern:

Be it known that I, FRANZ PAWEL, a citizen of the German Empire, and residing at Hanover, in the Province of Hanover and Empire of Germany, have invented certain new and useful Improvements in Tramway-Switches, of which the following is a specification.

This invention relates to point operating mechanism of the type actuated from the vehicle and is primarily intended for setting tramway points from a distance. The setting mechanism must therefore be placed some way in advance of the points to which it is connected in some suitable manner.

According to this invention a casing containing the operating mechanism is sunk in the ground and has a cover provided with inclined slots which serve as guides for the actuating lever on the vehicle and determine the position into which the points are moved. To this end a setting member provided with a fork on its under side is pivotally mounted on the cover of the casing, a fork engaging the point actuating lever being mounted on the setting member and enabling the cover together with the setting mechanism to be readily removed for inspection or repair. The setting member is provided preferably with a spring toggle mechanism which retains it in the desired position and an extension or arm on the setting member is provided to close the guide slot into which the actuating lever on the vehicle is not intended to enter.

A construction of point operating mechanism constructed in accordance with this invention is shown in the accompanying drawings in which:—

Figure 1 is a plan of the setting mechanism, Fig. 2 is a longitudinal section thereof, Fig. 3 is a cross section, on line 3—3, Fig. 2, Fig. 4 is a side elevation of the general arrangement and Fig. 5 is a plan thereof.

The setting mechanism is protected as far as possible by being placed in a casing 1 which is sunk in the roadway, the casing having a removable cover 2 provided with guideways 3, 4, 5 and 6 to conform with the shape of the letter Y and representing the points which are to be shifted. The first portion of the guideway 3 is formed tapered and extends into a gradually deepening straight guideway 4 parallel to the rails, the diverging guideways 4 then diverging to form two diverging guideways 5 and 6

(which may be said to constitute the arms of the letter Y) the lower surfaces of which gradually rise toward the end of the casing as shown by dotted lines in Fig. 2. Guideways 5 and 6 are separated by an intermediate triangular plate 7 made integral with cover 2. The latter is partly cut out as at 2^a to accommodate a plate 2^b which is secured to cover 2 by screws 2^c. Intermediate plates 7 and 2^b, there is accommodated an oscillative setting member or tongue 8 provided with alined upper and lower pivots or studs 9 that turn in corresponding sockets of said plates. In this way the tongue 8 is almost entirely concealed below plate 7 and is of such a shape that in either of its extreme positions a projecting arm or cam surface formed on either side thereof extends into one of the inclined guideways 5 and 6 (Figs. 1 and 5).

A bolt or pin 10 is mounted on the end of the setting member remote from the pivot 9, a sleeve or cylinder 11 being pivoted to this bolt. Mounted within the sleeve is a bolt or plunger 12 (Fig. 2) the end of which is pivoted at 13 to the cover 2. The plunger is movable within the cylinder and has a flange or collar 15 formed near its pivoted end, a corresponding flange 14 being provided near the pivoted end of the cylinder. Disposed between the flanges 14 and 15 and surrounding the cylinder and the plunger which it incloses is a spiral spring 16 which is in compression.

The setting member 8 carries on its under surface a fork 17 which is rigidly connected thereto. This fork extends downward through a slot of the required size in the cover plate and engages a horizontal pin 18 of a crank arm or lever 19 rigidly connected to a shaft 20. The shaft 20 is carried underground to the points 22 which are to be actuated, the movement of the setting member being transmitted through another fork and crank or other mechanism. The points 22 are provided with a stretcher 21 in the well known manner.

The setting member 8 projects beyond its pivot point and is thickened to form an arm or head 23 the upper face of which is flush with that of the cover. This arm 23 serves to close the guideway into which the actuating lever on the car is not intended to enter, in Fig. 1 the guide 6 being shown closed in this manner.

At a suitable point in the driver's plat-

form of the tramcar a pedal is arranged, the shank of which projects through the floor and bears against one arm of a bell-crank lever 25. The other arm of the lever 25 is connected by a rod or cable 26 to a projecting arm of an inclined actuating lever 27 controlled by a spring 28. The curved lower end of the lever 27 is adapted to engage the guide slots 3, 4, 5 or 6.

The operation is as follows:—When the driver of the tramcar wishes to change the setting of the points he depresses the pedal 24 and so moves the bell-crank lever 25 to bring the actuating lever 27 into such a position that its lower end will enter the widened portion 3 of the straight guideway 4. The lever 27 will then enter one or other of the inclined guideways 5 or 6 according to the position of the setting member 8, in the construction shown the arm 23 prevents the lever 27 entering the guideway 6 so that it passes into the guideway 5. As the vehicle advances the end of the lever 27 having entered the guideway 5 strikes the projecting cam surface of the setting member and thus forces the latter to occupy the opposite position. As soon as the setting member has passed its central position the compressed spring 16 assists in completing its movement and prevents it assuming an intermediate position. When the setting member has thus been swung over, the extension 23 prevents access to the guideway 5, so that when the points are next to be moved the end of the actuating lever 27 must enter the other guide 6. During the movement of the setting member about its pivot 9 the fork 17 connected thereto also moves and thus partially rotates the shaft 20 in this way shifting the points.

To enable the actuating lever to oscillate laterally as well as in a vertical plane and thus freely enter either of the inclined guideways its pivot is formed with the requisite amount of play or the bearing surfaces can be beveled or rounded off. Normally, however, the length of the actuating lever

27 gives the latter sufficient spring to enable it readily to make the necessary lateral movement.

It will be appreciated that the details of construction may vary without departing from this invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A tramway switch setting device comprising a plate having a Y-shaped guideway, a tongue pivoted to the plate and having a pair of lateral cam faces adapted to respectively enter opposite branches of said guideway, and a switch operatively connected to the tongue.

2. A tramway switch setting device comprising a plate having a Y-shaped guideway and a tongue pivoted to the under side of said plate and having an upwardly extending head and a pair of lateral cam faces, whereby one of said faces is adapted to be projected across one of the branches of said guideway, while the stud simultaneously closes the other branch.

3. A tramway switch setting device comprising a plate having a Y-shaped guideway, a tongue pivoted to the under side of said plate and having an upwardly extending head and a pair of lateral cam faces, a cylinder connected to the tongue, a spring-controlled plunger engaging the cylinder, and a switch operable by the tongue.

4. A tramway switch setting device comprising a plate having a Y-shaped guideway, a tongue pivoted to the under side of said plate and having an upwardly extending head and a pair of lateral cam faces, a rock shaft operable by the tongue, and a switch operable by the rock shaft.

In testimony whereof I affix my signature in presence of two witnesses.

FRANZ PAWEL.

Witnesses:

MARTA L. THOMPSON,
R. P. THOMPSON.