

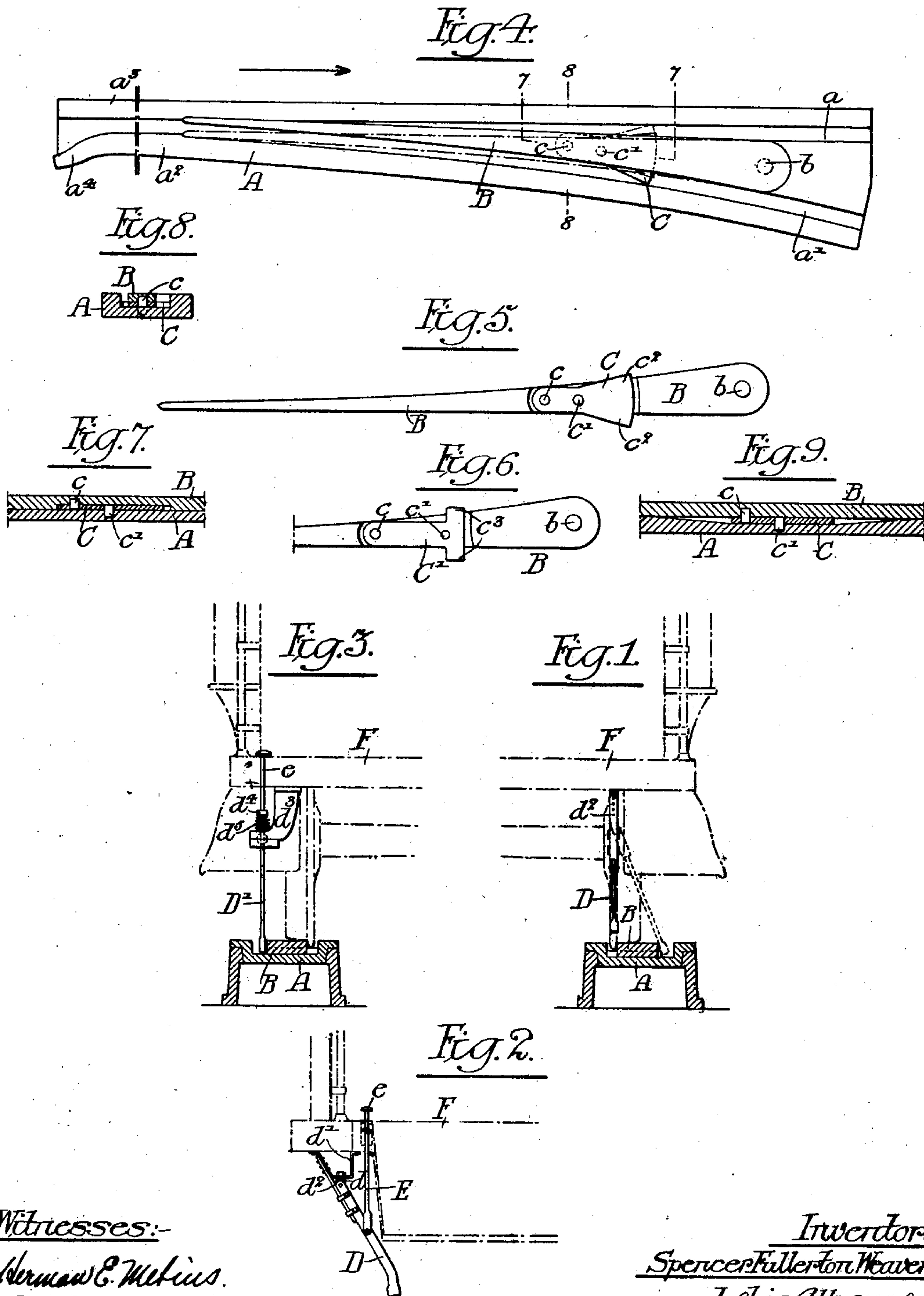
No. 701,781.

Patented June 3, 1902.

S. F. WEAVER.  
TRACK SWITCH.

(Application filed Mar. 10, 1902.)

(No Model.)



Witnesses:-

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# UNITED STATES PATENT OFFICE.

SPENCER FULLERTON WEAVER, OF PHILADELPHIA, PENNSYLVANIA.

## TRACK-SWITCH.

SPECIFICATION forming part of Letters Patent No. 701,781, dated June 3, 1902.

Application filed March 10, 1902. Serial No. 97,590. (No model.)

*To all whom it may concern:*

Be it known that I, SPENCER FULLERTON WEAVER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have  
5 invented certain Improvements in Track-Switches, of which the following is a specification.

My invention relates to certain improvements in railway-switches, and more particularly to an improved device for operating a switch from a car or other vehicle passing  
10 over the same.

The object of my invention is to provide a device applicable to an ordinary tongue-switch  
15 for operating the same which may be actuated by means of mechanism under the control of the motorman or other operator on a car approaching the switch.

A further object of the invention is to provide a device of the above-mentioned class  
20 which, while being of the greatest simplicity, shall at the same time be comparatively inexpensive to install and maintain.

These objects I secure as hereinafter set forth, reference being had to the accompanying  
25 drawings, in which—

Figure 1 is a sectional elevation of a portion of the switch, showing my device applied thereto and indicating a car with its mechanism in position for operating the same. Fig.  
30 2 is a side view of the operating mechanism carried by the car. Fig. 3 is a sectional elevation illustrating a somewhat simpler form of my invention. Fig. 4 is a plan view of a  
35 tongue-switch to which my improved device is applied. Fig. 5 is an inverted plan view of the tongue illustrated in Fig. 3. Fig. 6 is an inverted plan view of a portion of a switch-tongue, illustrating the application thereto of  
40 a slightly-different form of my device. Fig. 7 is a sectional elevation of a portion of the switch illustrated in Fig. 4, taken on the line 7 7 of said figure. Fig. 8 is a transverse sectional elevation of the switch shown in Fig.  
45 3, taken on the line 8 8 of said figure; and Fig. 9 is a sectional elevation of a slightly-modified form of the structure shown in Fig. 7.

In the above drawings, A is the body portion of a switch of any well-known form, consisting of the parts *a* and *a'*, joined, respectively, to the main and branch line tracks.

B is the movable member or tongue of the switch, in the present instance having a vertical pivot *b*, which operates in a corresponding recess in the body of the portion A.

In the form of my device shown in the figures the switch-tongue is recessed at a point about one-third of its length from the end having the pivot *b*, and within this recess is placed a lever C, provided with pivotal pins  
55 *c* and *c'*, projecting, respectively, from its upper and lower faces. The upper of these pins *c* enters a suitable cavity in the switch-tongue, while the second pin *c'* enters a cavity in the body portion A, this second pin being  
60 preferably located at a point substantially midway between the two ends of the lever. The above-mentioned pins *c* and *c'* are not necessarily fixed to the lever C, as, if desired,  
65 either or both of them may be fixed in the tongue and switch-body, respectively, so that they enter cavities in the said lever C.

It will be noted that the lever C at its forward end is approximately of the same width as the switch-tongue; but at its rear end its  
70 sides are extended laterally, so as to project beyond the said tongue, these laterally-projecting portions being, as shown in Figs. 1 and 3, at a level below that reached by the wheel-flanges of the car. I actuate the lever  
75 C, and through it the switch-point B, by means of a downwardly-projecting rod D, held to the body of the car and preferably of the form shown in Fig. 1. This bar is pivoted to a piece *d*, so as to be free to move in a vertical  
80 plane, this piece being preferably supported by means of a bracket *d'*, bolted to the under side of the platform of the car and having attached to it a spring *d<sup>2</sup>* in engagement with the said bar D. The tendency of  
85 the spring is to retain the said bar in the elevated position, as indicated in Fig. 1, although it is to be noted that since the piece *d*, to which said bar is pivoted, is movable on a  
90 vertical axis the said spring *d<sup>2</sup>* will also operate to turn the bar to its normal position after it has been moved on said axis.

For depressing the bar D, so that it will come into engagement with the lever C of my device attached to a switch-tongue, I provide  
95 a rod E, which, in the form of my device shown in Figs. 1 and 2, is pinned to said bar



and extends through an opening in the platform F of the car, there being a small removable footpiece *e*, by which the rod E may be operated by the foot of the motorman. In a simpler but less flexible form of my invention I provide a rod D', passing through a ball-and-socket joint carried in a bracket *d*<sup>3</sup>, fastened to the body of the car, the said rod having at its upper end a head *d*<sup>4</sup>. A spring *d*<sup>5</sup> normally tends to retain this bar in its elevated position, it being operated, as before, by a footpiece *e*.

In operation the motorman of a car traveling in the direction of the arrow on Fig. 4 desiring to shift the switch-point B, so that the car will continue on the straight track *a*, would depress the footpiece *e* on approaching the switch, thereby bringing the end of the bar D to such a level that it will enter the slot between the guard-rail *a*<sup>2</sup> and the main rail *a*<sup>3</sup>, being guided thereto by the outwardly-flaring end *a*<sup>4</sup> of said guard-rail. As the end of the bar D travels in the slot above mentioned it strikes the switch-point B and passes into the slot leading to the branch track *a*'. Before, however, the front wheels of the car have come into engagement with the point of the switch the end of the bar D has engaged the laterally-extended end of the lever C, pivoted to the tongue or point of the switch, and has turned this piece on its pivot *c*'. Such motion of said piece has through the pin *c* swung the switch-point B on its pivot *b*, thereby bringing it into position to guide the wheels of the car onto the main track *a*. After the switch-point has been turned pressure on the footpiece *e* is removed and the bar D is returned to its normal elevated position by the spring *e*<sup>2</sup>. Should, however, this pressure not be relaxed soon enough and the switch-point tend to continue to travel in the slot of the branch track *a*', it would turn on the axis formed by the piece *d* and be drawn out of the slot without damage to any of its parts.

An action similar to the above would take place should the switch-point be in the position indicated by dotted lines in Fig. 1 when it was desired for the car to travel on the branch track *a*'.

If desired, the lever C, with its laterally-extended sides *c*<sup>2</sup>, may be replaced by a lever of the form shown at C' in Fig. 6. This latter is T-shaped in form and its laterally-extending members *c*<sup>3</sup> enable the bars D or D' to move the switch-point without throwing them against the adjacent main rail.

While I preferably place the lever C in a recess in the switch point or tongue B, I may, if desired, form the recess in the body of the switch, as illustrated in Fig. 9. It is also obvious that while I have shown my invention as applied to a switch having but a single tongue it may be applied to the operation of a switch having two connected tongues, so

that the turning of the pivoted lever C will operate said tongues simultaneously.

I claim as my invention—

1. In a switch-operating device, the combination with the fixed and the movable members of a switch, of a lever pivoted to the fixed member and in engagement with the movable member, with mechanism to be carried by a car for engaging the lever and thereby operating the said movable member of the switch, said lever being placed relatively to the movable member so that it projects in the rear of the point of said member and is engaged by said mechanism after the latter has passed said point, substantially as described.

2. In a switch-operating device, the combination with the body of a switch having a movable member pivoted thereto, of a lever pivoted both to the body portion and to the movable member of the switch, and mechanism to be carried by a car for swinging said lever on one of its pivots, and thereby operating the movable member of the switch, said lever being placed so that it is engaged by said mechanism after this latter has passed the point of the movable member, substantially as described.

3. The combination of a switch, including portions of a main and a branch track, a movable member therefor constructed to guide the wheel of a vehicle into either of said tracks, a lever pivoted to the body of the switch having one of its ends in engagement with the said movable member, and being placed so that the movable member projects beyond it at both ends, substantially as described.

4. The combination of a switch having a fixed and a movable member, a lever under the movable member in engagement with the same and pivoted to the fixed member, and a car carrying a pivoted rod with means for bringing said rod to a level to contact with the lever to operate the movable member of the switch, said lever being placed on the switch so that the movable member extends beyond it at both ends, substantially as described.

5. The combination of a switch having a fixed and a movable member, a lever on the movable member in engagement with the same and pivoted to the fixed member, and a car carrying a universally-movable rod, with means for normally retaining the rod in an elevated position, and means for depressing said rod at will to a level to contact with the lever, thereby operating the movable member of the switch, said lever being placed on the rear portion of the movable member, substantially as described.

6. The combination of a switch including portions of a main and of a branch track, a movable member to the switch, a lever pivoted to the body of said switch and engaging said movable member, so as to project in the rear of the point thereof, said lever being constructed to project to one side of the mov-

able member toward the track for which said member is placed, a car, and a device thereon provided with means whereby it may be caused to engage a projecting portion of said  
5 lever and thereby set the movable member of the switch for the other of the two tracks, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SPENCER FULLERTON WEAVER.

Witnesses:

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