

1,041,951.

The diagram illustrates a mechanical linkage system. Two horizontal guides are shown, with the upper guide labeled a and the lower guide labeled b . A connecting arm is pivoted at its ends to the guides. The upper end of the arm is pivoted to the upper guide at point C , and the lower end is pivoted to the lower guide at point C' . The arm consists of two segments: the upper segment is labeled D and the lower segment is labeled E . The pivot points on the arm are labeled D^1 and E^2 . The arm is shown in two positions: a solid line and a dashed line. The dashed line represents the arm's position when it is horizontal, with the upper end at point A and the lower end at point A' . The solid line represents the arm's position when it is angled, with the upper end at point B and the lower end at point B' . The arm is also shown in a third position, labeled C and C' , where it is vertical. The arm is connected to a spring mechanism, labeled F , which is attached to the lower guide. The spring mechanism is shown in two states: a solid line and a dashed line. The solid line represents the spring in its extended state, and the dashed line represents the spring in its contracted state. The spring mechanism is also labeled E and E' . The spring mechanism is connected to a lever, labeled G , which is pivoted to the lower guide. The lever is shown in two positions: a solid line and a dashed line. The solid line represents the lever in its extended position, and the dashed line represents the lever in its contracted position. The lever is also labeled E and E' . The lever is connected to a spring mechanism, labeled F , which is attached to the lower guide. The spring mechanism is shown in two states: a solid line and a dashed line. The solid line represents the spring in its extended state, and the dashed line represents the spring in its contracted state. The spring mechanism is also labeled E and E' . The spring mechanism is connected to a lever, labeled G , which is pivoted to the lower guide. The lever is shown in two positions: a solid line and a dashed line. The solid line represents the lever in its extended position, and the dashed line represents the lever in its contracted position. The lever is also labeled E and E' .

Fig. 2

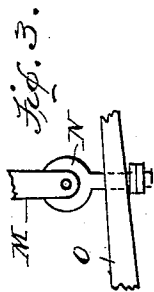
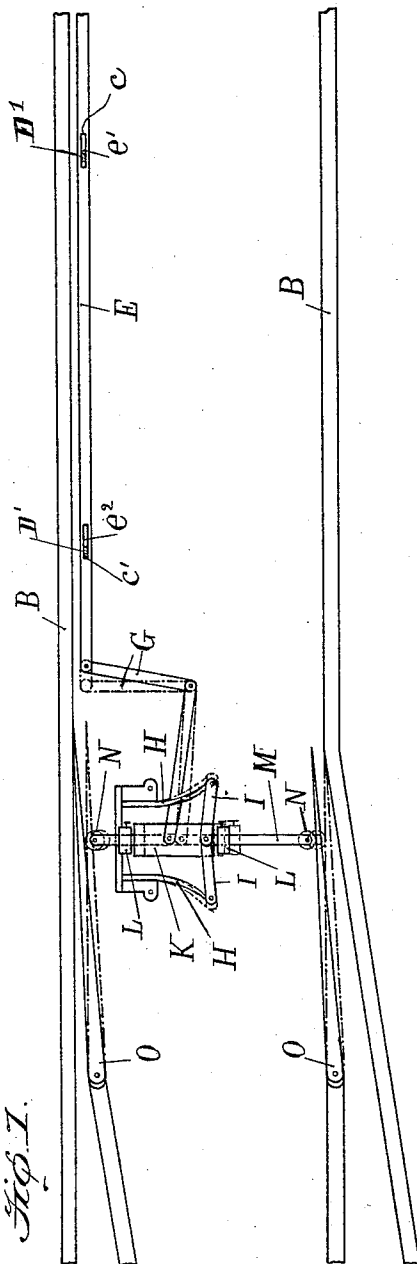


Fig. 1.



Witnesses
 [Signature]
 [Signature]

Inventor
Didier Beaudenon

Geo. W. Rintony
his attorney

UNITED STATES PATENT OFFICE.

DIDIER BEAUDENON, OF ST. OUEN-SUR-SEINE, FRANCE.

AUTOMATIC SWITCH.

1,041,951.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed February 1, 1910. Serial No. 541,300.

To all whom it may concern:

Be it known that I, DIDIER BEAUDENON, a citizen of the Republic of France, of 131 Avenue Frayce, in the city of St. Ouen-sur-Seine, Republic of France, engineer, have invented certain new and useful Improvements in Automatic Switches, of which the following is a full, clear, and exact description.

This invention relates to automatic car controlled switches and has for its object the provision of a novel track switch provided with actuating devices arranged adjacent the rail in a new manner and adapted for operation, by suitable apparatus carried by the car.

The invention is set forth fully hereinafter and the novel features are recited in the appended claims.

In the accompanying drawing Figure 1 is a plan view of a section of track and switch points with my invention applied thereto, the actuating levers being in section. Fig. 2 is a detail side elevation looking toward the actuating mechanism, and Fig. 3 is a detail showing the connection between the switch point and the coupling rod.

The rails are shown at B and the switch points at O.

M is a coupling rod for the switch points, said rod being provided with eye bolts N secured to the switch points. Slidable on the rod M is a sleeve or tube K which is adapted to play between and to engage the collars L on the rod M and, according to the direction in which it is moved to shift the switch points O one way or the other.

H represents springs secured to a track member and I toggle links engaged with the springs and with the sleeve K.

G is a bell-crank lever, suitably pivoted at its elbow, and connected to the sleeve K. Disposed longitudinally of the rails is an actuating bar E which is pivoted to the bell-crank lever G, and has vertical slots e' , e^2 which receive an arm of each of the bell-crank levers D, D', the said levers being connected by a spring F. On their other and upper ends the levers carry rollers or wheels C, C' which are engaged with the under-side of the head of the rail or disposed adjacent thereto.

The roller A is carried by the car and adapted to be positioned to engage either of the rollers C, C'. If the car is moving

in the direction of the arrow a , the roller A passing over the roller C, actuates the lever D which then moves in the slot e' and against the end c thereof. When the roller A passes over the roller C', the lever D' which is then against the left-hand end c' of the slot e^2 by virtue of the previous shifting of the bar E, is actuated, thereupon causing shifting of the switch points to a position shown by dotted lines. The movement of the bar E throws the bell crank lever G and actuates the sleeve K. The longitudinal movement of this sleeve causes the toggle links I to push the springs H apart, thereby putting them under tension, so that as soon as the middle line or dead center is passed, said springs clamp the toggle links again and throw the sleeve to the end of its stroke. In so doing it strikes one of the collars L on the rod M and thereby suddenly and forcibly throws said bar lengthwise and shifts the switch points. The springs thus not only throw the switch, but serve to lock it against any return movement until the bar E is thrown in the other direction by the action of the levers D D'. The same effect is produced if the car is moving in the direction of the arrow b , in which case, the moment the bar E is displaced by virtue of the engagement of the roller A with the roller C', the right-hand end c of the slot e' is thereby thrown into engagement with the lever D and consequently, when the roller A strikes and passes over the roller C, the lever D will shift the bar E in the direction of the arrow b^2 and the switch points O will be shifted to their original position shown by full lines. The spring F serves to return and maintain the rollers C, C' against the under-side of the head of the rail B after the car has passed for the purpose of preventing mud or stones from the track getting in between the rollers and the head of the rail, which would thereby interfere with the operation.

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

1. In an automatic track switch, the combination with a movable track switch member, of means for shifting said track switch member, an actuating mechanism therefor having movable members both normally in position to be actuated from the car while

moving in either direction, spring means co-
operating with said movable members, an
actuating bar, and a lost motion operative
connection between said movable members
5 and said bar.

2. In an automatic track switch, track
switch operating means embodying an ac-
tuating bar, levers having a lost motion op-
erative connection therewith and both posi-
10 tioned normally for operation from the car,
and spring means for holding said levers in
engagement with the bar and biasing them
toward each other.

3. In an automatic track switch, track
15 switch operating means embodying an ac-
tuating bar, levers positioned and adapted
for actuation from the car, loose operative
connections between the respective levers and
the bar, and a coil spring connecting the
20 said levers together.

4. In an automatic track switch, the com-
bination with switch points and a coupling
bar therefor, of a member movable in rela-
tion to said bar and having a loose opera-
25 tive connection therewith, whereby the bar
is actuated at the limits of the movement of
said member, an actuating bar operatively
connected to said member, and spring-ac-
tuated movable members adapted to shift

said bar and themselves adapted for opera- 30
tion from the car.

5. In an automatic track switch the com-
bination with two switch points, of a rod
connecting the same, collars on said rod, a
sleeve sliding loosely between said collars, 35
springs adjacent to said sleeve, toggle links
connecting said sleeve with said springs, an
actuating bar connected with said sleeve and
means for actuating said bar upon the pas-
sage of the car. 40

6. In an automatic track switch the com-
bination with two switch points, of a rod
connecting the same, a sleeve sliding on the
said rod and adapted to actuate it, springs
adjacent to said sleeve, toggle links pivoted 45
to said sleeve and to said springs, and ar-
ranged to pass the dead center at each ac-
tuation of said sleeve, and means for ac-
tuating said sleeve upon the passage of the
50 car.

The foregoing specification of my im-
provements in switching signed by me this
21st day of January, 1910.

DIDIER BEAUDENON.

Witnesses:

ADOLPHE CHEVANET,
J. GUSTAVE EHOUVENIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."