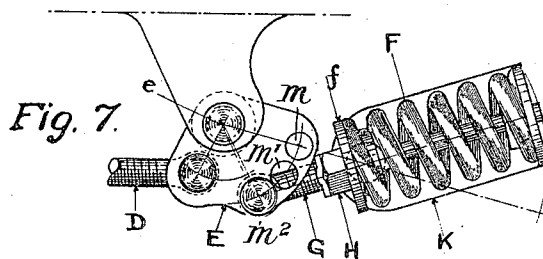
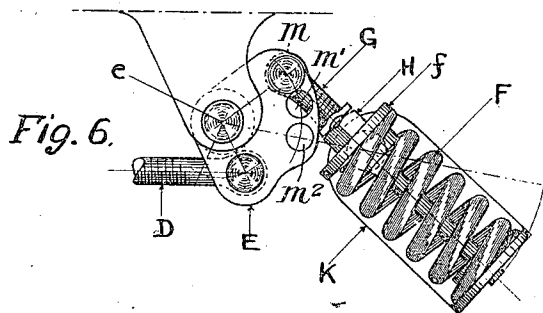
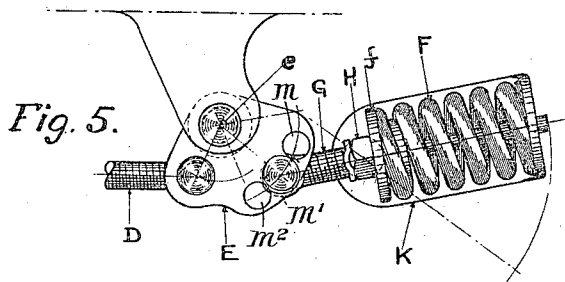
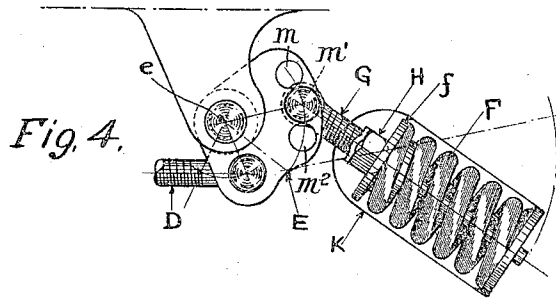
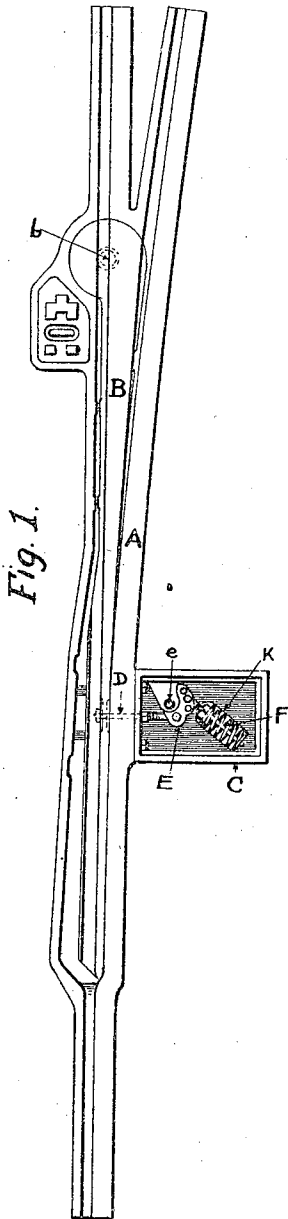


W. M. BROWN.
RETAINING DEVICE FOR SWITCH POINTS.
APPLICATION FILED SEPT. 30, 1909.

960,265.

Patented June 7, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

R. A. Balderson.
Walter J. Amariss.

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W. M. Brown.

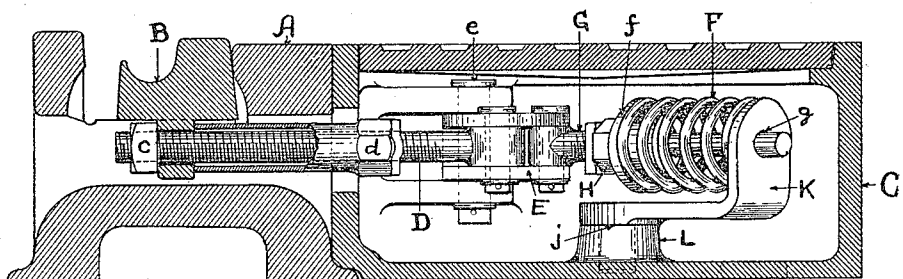
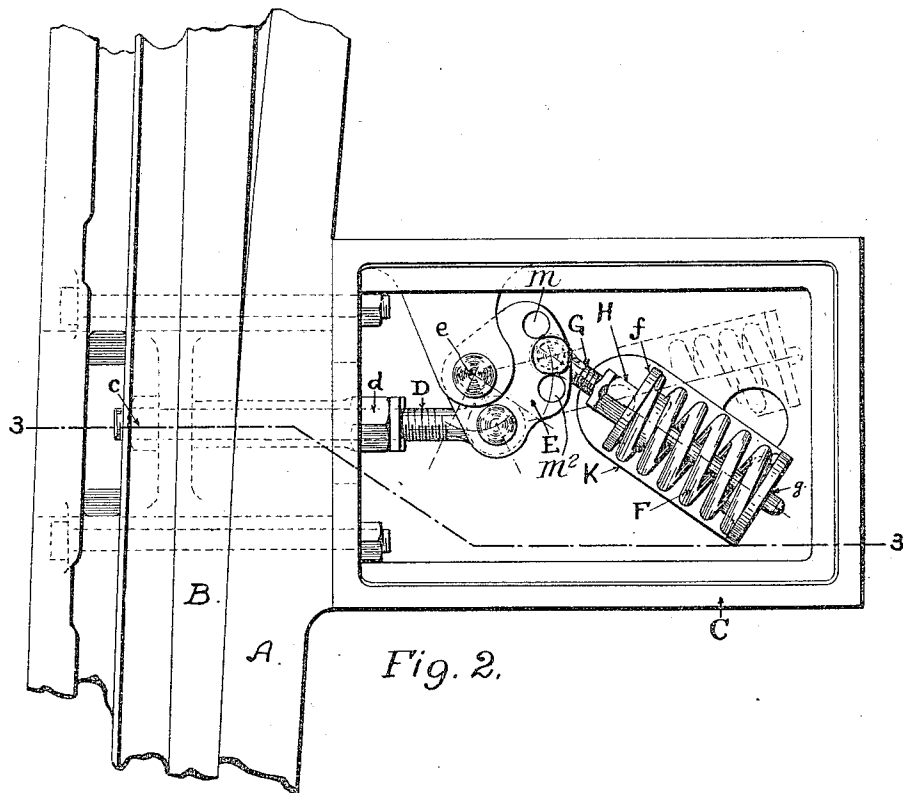
BY
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM MILTON BROWN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

RETAINING DEVICE FOR SWITCH-POINTS.

960,265.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed September 30, 1909. Serial No. 520,292.

To all whom it may concern:

Be it known that I, WILLIAM MILTON BROWN, of Johnstown, in the county of Cambria and State of Pennsylvania, have
5 invented a new and useful Improvement in Retaining Devices for Switch-Points, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of
10 this specification, in which—

My invention relates to switch point retaining devices, and is designated to provide a cheap and efficient means for retaining the point or tongue in either of its thrown positions, and which may readily be adjusted so
15 as to retain the point in one only of its two extreme positions.

Another object of my invention is to so arrange the mechanism that the spring which acts to retain the point in its thrown positions will be compressed to a greater degree in proportion to its length than has heretofore been possible without materially increasing the area of the box containing the
20 mechanism.

The precise nature of my invention will be best understood by reference to the accompanying drawings which will now be described, it being premised, however, that
25 various changes may be made in the details of the construction and general arrangement of the parts without departing from the spirit and scope of my invention, as defined in the appended claims.

Figure 1 is a plan view of a switch structure provided with one form of my improved retaining device; Fig. 2 is a similar view on an enlarged scale of a portion of the switch structure and the switch point
30 retaining mechanism; Fig. 3 is a sectional view on the line 3—3 of Fig. 2; Figs. 4, 5, 6, and 7 are diagrammatic plan views of the point retaining mechanism in different positions.

In the drawings, the letter A designates the switch structure, B a movable point or tongue which is pivoted to the switch structure at *b*.

C is a box for containing the actuating mechanism for the point, and which may be formed integrally with the switch structure or secured thereto in any well known
35 manner.

Pivotally mounted at *e* in the box C is a
40 bell-crank lever E.

D is a screw threaded rod, one end of which is pivotally connected to the bell-crank E, and the other end of which is secured to a downwardly projecting member of the point or tongue B, by means of the
45 nuts *c, d*.

Pivotally mounted at *j* in a lug L, is a frame K, which is provided with an upwardly extending member having an orifice *g*, for the purpose hereinafter described.
50

Pivotally connected to the bell-crank E, is a screw-threaded rod G, which is provided with a reduced portion extending through an orifice *g* in a member K. Mounted on the screw threaded portion of the rod
55 G, is a nut H, and surrounding the rod G, and adjacent to the nut H, is a cone *f*. Surrounding the rod G, and interposed between the upwardly extending end of the frame K, and the cone *f*, is a spring F, which normally exerts pressure against the upwardly
60 projecting portion of the frame K and through the medium of the cone *f* and rod G, upon the bell-crank lever E.

The bell-crank E is provided with three
65 orifices *m, m', and m''*, any one of which is adapted to receive the pin for connecting the rod G to the bell-crank. When the rod is connected to the orifice *m'*, as shown in Figs. 1, 2, 4 and 5, the switch point will be
70 held in either of its extreme positions. In other words, if the switch point is thrown from one position to a point slightly beyond the center of the throw of the point, the spring will complete the throw of the tongue
75 or point in that direction. If the rod G is connected by means of the pin extending through the orifice *m*, as shown in Fig. 6, the point will be held in the position shown in Figs. 1 and 2, and if the spring is connected at the point *m''*, as indicated in Fig. 7, the point will be held to the opposite side from that indicated in Figs. 1 and 2.
80

The operation is, as follows: When the switch point B is thrown from the position
85 shown in Figs. 1 and 2, the movement of the point B, through the medium of the rod D, will shift the bell-crank lever E together with the frame K from the position shown in Figs. 2 and 4, to the position shown
90 in Fig. 5. The first portion of this movement from the extreme position until the centers *j, m'* and *e* are in line with each other, will compress the spring F, and as the point *m'* passes slightly beyond a line
95 100 105 110

drawn through the three last mentioned centers the spring will expand and force the point to its other extreme position.

Heretofore the outer end of the spring F was fixedly held and engaged a point which was centrally located between the extreme positions of the heel end of the spring illustrated in Figs. 4 and 5, and owing to the limited amount of space in the box for mechanism of this character, a very limited amount of compression was given to the spring, which would have a tendency to allow the point to remain at its central position. The advantages of my invention, result from the provision of a pivoted frame adapted to carry the spring, and which is capable of movement on its pivotal point, thereby placing the spring in such a position that it is compressed to a maximum extent by the movement of the bell-crank. Further, by the provision of a pivoted frame for carrying the spring, the spring, together with the bell-crank operating rod assume a greater angle with relation to the bell-crank, and are consequently placed in a position in which the spring can exert a greater pressure on the bell-crank without increasing its length.

I claim:

1. In a switch point retaining device, a movable switch point, a pivoted bell crank, connections between the switch point and the bell-crank, a pivoted frame having a rearward extension, and a spring bearing against the bell-crank and the rearward extension of the frame beyond its pivot; substantially as described.

2. In a switch point retaining device, a movable switch point, a pivoted lever, connections between the switch point and the lever, a pivoted frame having a rearward extension, a rod carried by the rearward extension of the frame and connected to the lever, a spring engaging the rod and rearward extension of the frame and means to

shift the connection between the spring-pressed rod and the lever; substantially as described.

3. In a switch point retaining device, a movable switch point, a pivoted bell-crank to which the point is connected, a pivoted frame having a rearward extension, a spring interposing between the rearward extension of the frame and the bell-crank, and adapted to exert pressure on said bell-crank and means to change the angle of the frame with relation to the bell-crank; substantially as described.

4. A switch point retaining device, a movable switch point, a pivoted lever, connection between the switch point and the lever, a pivoted frame having a rearward extension, a rod carried by the rearward extension of the frame and connected to the lever, a spring engaging the rod and rearward extension of the frame and means to adjust the pressure of said spring; substantially as described.

5. In a switch point retaining device, a movable switch point, a pivoted lever, connections between the switch point and the lever, a pivoted frame having an extension beyond its pivot, and a spring interposed between said extension and the pivoted lever; substantially as described.

6. In a switch point retaining device, a movable switch point, a pivoted lever, connections between the switch point and the lever, a pivoted frame having a rearward extension, and a spring carried by the rearward extension of the frame, said spring engaging the lever and the frame beyond its pivot; substantially as described.

In testimony whereof, I have hereunto set my hand.

WILLIAM MILTON BROWN.

Witnesses:

H. W. SMITH,
A. V. REYNOLDS.