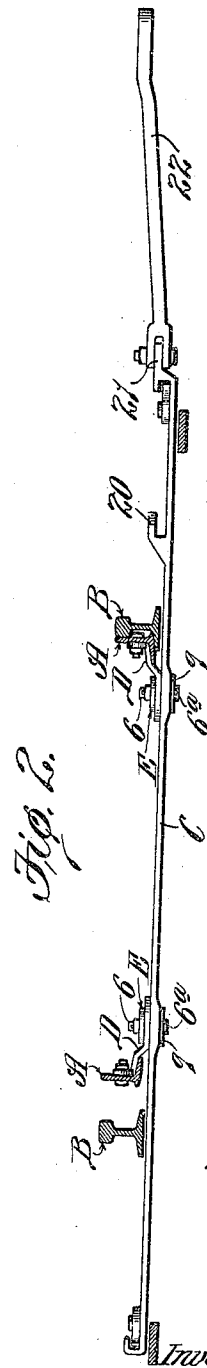
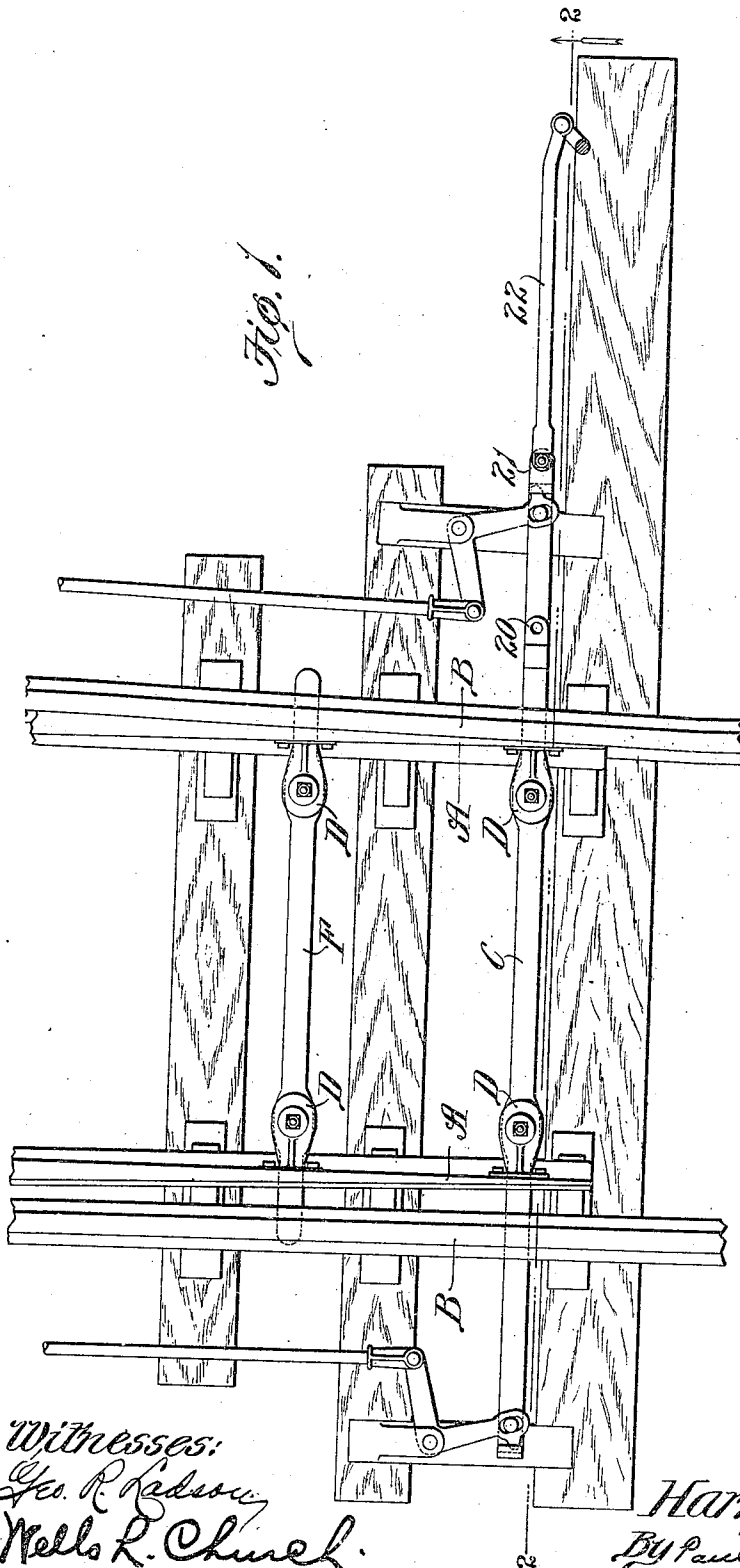


H. F. ROACH.
ADJUSTABLE HEAD ROD.
APPLICATION FILED MAR. 7, 1910.

961,535.

Patented June 14, 1910.

3 SHEETS—SHEET 1.



Witnesses:
Geo. R. Kelson
Wells L. Church.

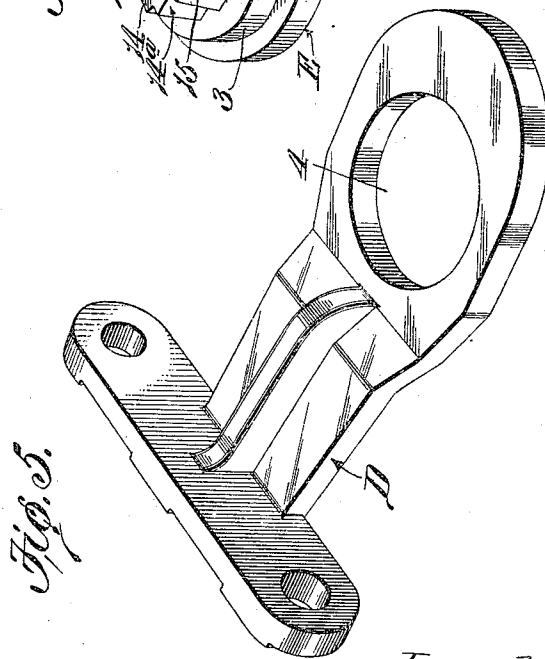
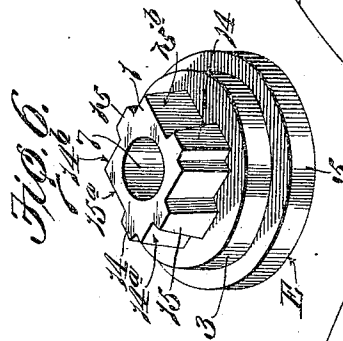
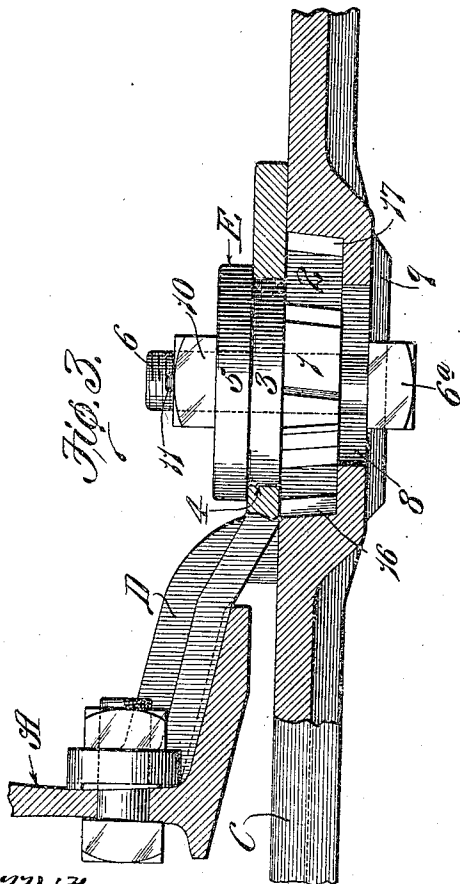
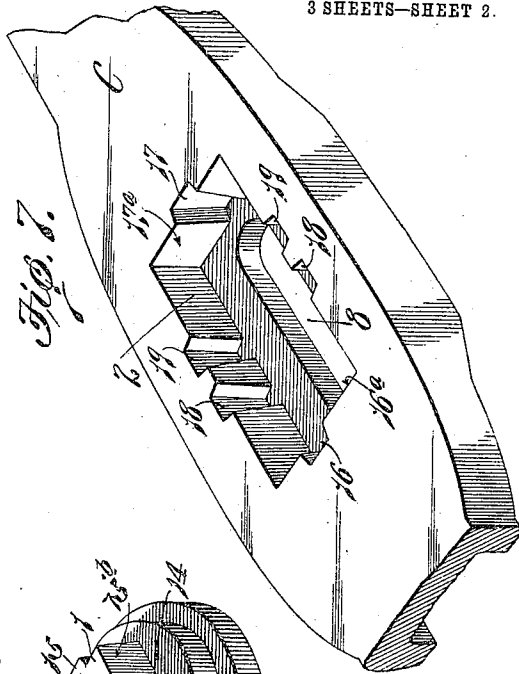
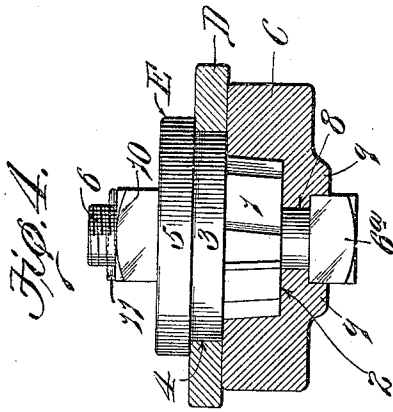
Inventor:
Harry F. Roach.
By Paul Parkerwell, Atty.

H. F. ROACH.
ADJUSTABLE HEAD ROD.
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961,535.

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3 SHEETS—SHEET 2.



Witnesses:
Geo. R. Adams
Wells L. Church

Inventor:
Harry F. Roach.
By Paul Bakerwell Atty.

961,535.

Patented June 14, 1910.

3 SHEETS—SHEET 3.

Fig. 8.

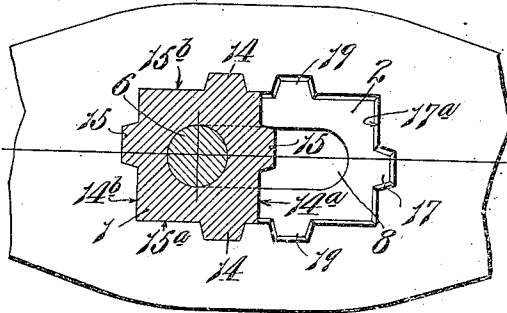


Fig. 15.

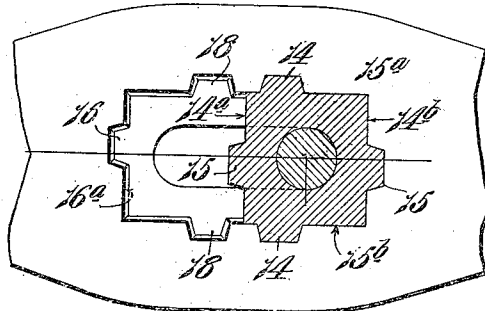


Fig. 9.

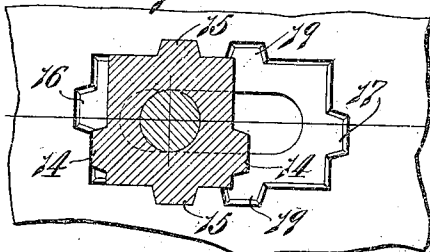


Fig. 14.

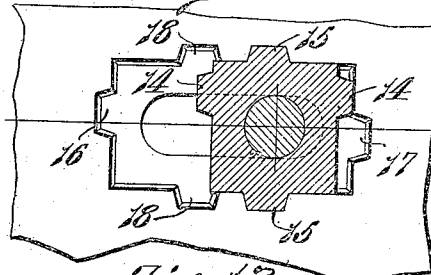


Fig. 10.

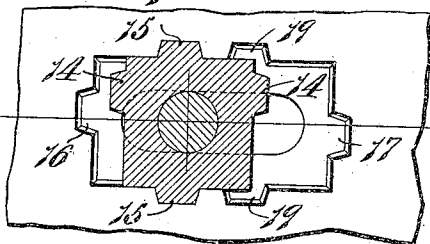


Fig. 13.

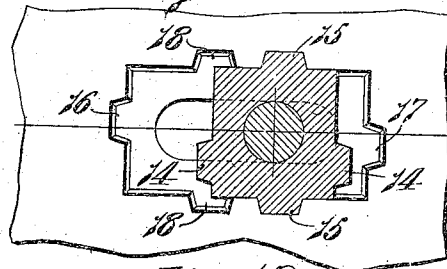


Fig. 11.

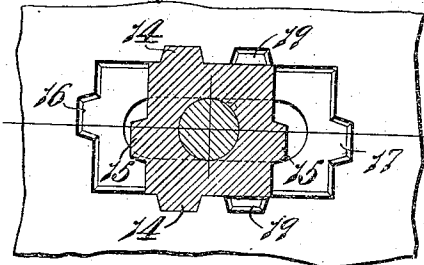
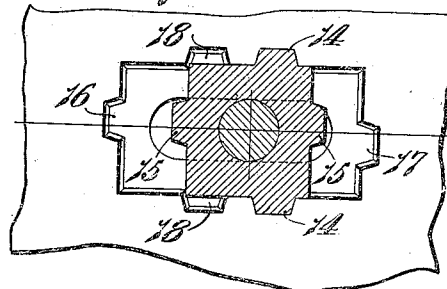


Fig. 12.



Witnesses:
Geo. R. Hudson.
Nello L. Church.

Inventor:
Harry F. Roach.
By Paul Bakewell
Atty.

UNITED STATES PATENT OFFICE.

HARRY F. ROACH, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CONTINUOUS RAIL & SAFETY SWITCH CO., OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

ADJUSTABLE HEAD-ROD.

961,535.

Specification of Letters Patent. Patented June 14, 1910.

Application filed March 7, 1910. Serial No. 547,855.

To all whom it may concern:

Be it known that I, HARRY F. ROACH, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Adjustable Head-Rods, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to adjustable head rods such as are used in railway track structures for operating the movable rails or points of a switch.

One object of my present invention is to provide an adjustable head rod which is so designed that the brackets which connect the rod to the switch-points can be adjusted longitudinally of the rod without throwing said brackets out of alinement with the rod or moving them laterally relatively to the rod.

Another object is to provide an adjustable head rod which is so designed that the bolts or fastening devices which connect the brackets to the rod will not be subjected to shearing strains.

Another object is to provide an adjustable head rod which is so designed that the brackets can be adjusted delicately or only slightly relatively to the rod and thus insure an accurate adjustment of the switch-points. And still another object is to provide an adjustable head rod of simple construction that is strong and not liable to get out of order.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a top plan view of a railway switch equipped with my improved head rod; Fig. 2 is a cross sectional view taken on approximately the line 2—2 of Fig. 1; Fig. 3 is an enlarged longitudinal sectional view of the head rod, the adjustable portion thereof being shown in elevation; Fig. 4 is a cross sectional view of said rod; Fig. 5 is a perspective view of one of the brackets that connects the rod to the switch-points; Fig. 6 is a perspective view of the adjustable member or portion of the head rod, said member being arranged in an inverted position; Fig. 7 is a perspective view of the portion of the head rod that is provided with the pocket which receives

said adjustable member; and Figs. 8 to 15, inclusive, are detail views illustrating the different positions in which the adjustable member of the head rod can be arranged.

Referring to the drawings which illustrate the preferred form of my invention, A designates the movable rails or points of a switch, and B designates the stationary rails with which said points coöperate. The head rod C extends transversely underneath said switch-points and stationary rails, as shown in Fig. 2, and each switch-point is connected to the rod by means of a bracket D. The head rod is provided with two adjustable portions or members E to which the brackets are directly connected, and said members E are mounted in such a manner that they can be adjusted longitudinally of the rod so as to vary the position of the switch-points relatively to the head rod and thus enable said points to be adjusted accurately relatively to the stationary rails B.

In the construction herein shown, each of the adjustable members E comprises a square portion 1 that is adapted to project into a pocket 2 formed in the top face of the head rod, said square portion 1 being provided with a round boss 3 that fits in a circular opening 4 in the bracket, and a top flange 5 that lies upon the upper face of said bracket, as shown in Fig. 3.

In assembling the parts, the bracket D is placed on the head rod and the member E is then arranged in operative position, the boss 3 on said member projecting into the circular opening 4 in the bracket and the square portion 1 of said member projecting into the pocket 2 in the head rod. A connecting device, preferably a bolt 6, is then inserted in an opening 7 in the member E so as to clamp the member E, the bracket D, and the head rod together. As shown in Fig. 7, the bottom wall of the pocket 2 is provided with an elongated slot 8 through which the bolt 6 passes, and the head rod is provided on its under side with a pair of parallel ribs 9 that reinforce and strengthen the rod and also engage the head 6^a of the bolt so as to prevent the bolt from turning. The bolt is preferably arranged in the manner shown in Fig. 3 with its head in engagement with the ribs 9 and its nut 10 bearing upon the top face of the member E, and, if

desired, a cotter pin 11 can be inserted in an opening in the upper end of the bolt so as to prevent the nut from working loose or becoming detached. It will, of course, be obvious that the bolt could be arranged in the reverse position and that other means than the ribs 9 and cotter pin 11 could be provided for locking the bolt and the nut thereon.

The adjustable member E is so constructed that it can be arranged in eight different positions, as shown in Figs. 8 to 15, inclusive, Figs. 8 and 15 illustrating the two extreme positions of said member, and Figs. 9 to 14, inclusive, illustrating the intermediate positions of said member. The opening 7 in the member E which receives the fastening device, is located at the center of the square portion 1 of said member so that all of the sides or edges of said square portion 1 will be located an equal distance from the center of said opening, and the oblong-shaped pocket 2 in the head rod is twice as long as the diameter of the square portion 1 of the adjustable member so as to enable said member to be adjusted longitudinally of the head rod in a straight line. In the construction herein shown, the means for retaining the member E in adjusted position consists of laterally projecting lugs on said member that are adapted to fit in notches or recesses formed in the side walls of the pocket 2, and it will, of course, be obvious that this construction could be reversed without departing from the spirit of my invention. Furthermore, I do not wish it to be understood that my invention is limited to a head rod having an adjustable member that can be arranged in eight different positions for if desired the adjustable member and the pocket which receives same could be modified so as to enable said member to be arranged in a different number of positions.

I prefer to provide the square portion 1 of the member E with a pair of lugs 14 that project laterally from two of its oppositely disposed side edges, and a separate pair of lugs 15 that project laterally from the other two oppositely disposed side edges of said square portion. The oblong-shaped pocket 2 is provided at one end with a notch 16, at its opposite end with a notch 17, and in its sides with two pairs of oppositely disposed notches or recesses 18 and 19. These cooperating lugs and notches are so arranged that the member E can be moved progressively from one of its extreme positions to its other extreme position with only a slight variation between each position. The lugs 14 are arranged a comparatively short distance from the edge 14^a of said square portion 1 and a comparatively great distance from the oppositely disposed edge 14^b of said portion 1, and the lugs 15 are so ar-

ranged that the distance between said lugs and the edge 15^a of the square portion 1 will be greater than the distance between the lugs 14 and the edge 14^a, thus causing said lugs 15 to be spaced away a less distance from the edge 15^b than the lugs 14 are spaced away from the edge 14^b of the square portion 1. The distance between the notches 18 and the end wall 16^a of the pocket corresponds to the distance between the lugs 14 and the edge 14^b of the square portion 1 of the adjustable member, and the notches 19 are located the same distance from the opposite end wall 17^a of the pocket, the distance between the notches 18 and 19 corresponding to the distance between the lugs 15 and the edge 15^b. In other words, I arrange the lugs on the square portion of the adjustable member at different distances from the four edges or side faces of said square portion so that the adjustable member can be arranged in eight different positions by turning it so that one pair of the lugs thereof will aline with one of the pair of notches or recesses in the pocket 2. The lugs and cooperating recesses could be arranged in various other relations however if desired.

Fig. 8 shows the adjustable member E arranged in one of its extreme positions with the lugs 14 on the square portion 1 projecting into the notches 18, and one of the lugs 15 projecting into the notch 16. If it is desired to move the member E a trifle to the right said member is lifted so as to withdraw the square portion 1 thereof out of the pocket 2, and said member is given a quarter turn in clockwise direction so that the lugs 15 will enter the notches 18, as shown in Fig. 9. By reversing the member E or turning it one-half a revolution in anti-clockwise direction from the position shown in Fig. 9, the lugs 15 will be brought into alinement with the recesses 18 and thus lock the member E in the position shown in Fig. 10, and if it is desired to move the member E still farther to the right said member is turned a quarter of a revolution in anti-clockwise direction from the position shown in Fig. 10 so that the lugs 14 will enter the notches 18, as shown in Fig. 11. The next adjustment of the member E to the right is effected by reversing said member or turning it one-half a revolution in anti-clockwise direction and then shifting it longitudinally of the pocket 2 so that the lugs 14 will enter the notches 19, as shown in Fig. 12. The member E is now arranged in its original position, shown in Fig. 8, but with the lugs 14 projecting into the second set of notches or recesses 19 which are closer to the right-hand end wall 17^a of the pocket. To obtain the adjustments illustrated in Figs. 13, 14 and 15, the member E is manipulated in the manner previously described in connec-

tion with Figs. 9, 10 and 11 so that the lugs thereon will cooperate with the recesses 19.

From the foregoing it will be seen that the notches 19 perform no function during the first four adjustments of the member E, and that the notches 18 perform no function during the last four adjustments of said member. The notches 16 and 17 only come into service when the member E is arranged in its two extreme positions, and while the principal function of said notches is to provide a clearance for one of the lugs on the square portion of the member E, nevertheless, they also serve as an additional locking means for said member.

A construction of the character above described provides for a wide range of adjustment with slight variations in the different positions of the adjustable portion of the head rod, and it also enables said adjustable portion to be moved longitudinally of the rod without throwing the bolt opening 7 out of alinement with the longitudinal axis of the rod owing to the fact that said bolt opening is formed in the center of a square block that is arranged in an oblong-shaped opening.

Another desirable feature of my construction is that the bolts which connect the brackets to the head rod are not subjected to shearing strains owing to the fact that the brackets contact directly with the bosses 3 on the adjustable members E which are locked to the head rod by means of a plurality of cooperating lugs and recesses. The adjustable member of the head rod can be manipulated easily and quickly, and as said member is so designed that very slight movement can be imparted thereto, a very delicate and accurate adjustment of the switch-points is assured.

The bridle rod F, which is arranged between the switch-points as shown in Fig. 1, is provided with adjustable members of the same construction as the adjustable members E on the head rod, and if desired, the head rod can be provided with a plurality of arms 20 and 21 for receiving the bifurcated end of the link 22 that connects the head rod to the switch-stand-operating mechanism so as to enable said link to be connected to the head rod at two different points.

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

1. A head rod provided with an elongated opening or pocket, an adjustable member arranged in said pocket, and cooperating means on said member and on the walls of said pocket for retaining said member in adjusted position.

2. A head rod provided with a pocket or opening that extends longitudinally of the center axis of said rod, a member arranged

in said opening and adapted to be adjusted longitudinally thereof, and means for retaining said member in adjusted position.

3. A head rod provided with an oblong-shaped pocket or opening, an adjustable member having a rectangular-shaped portion that is adapted to fit in said opening, and means for locking said member in a number of different positions.

4. A head rod provided with an approximately oblong-shaped pocket, an adjustable member having a square portion that fits in said pocket, and cooperating lugs and recesses on said square portion and on the walls of said pocket for retaining said member in a number of different positions.

5. A head rod provided with an approximately oblong-shaped pocket having notches formed in the walls thereof, an adjustable member having a square portion that fits in said pocket, and lugs on said square portion that cooperate with the notches in the walls of said pocket for retaining said member in adjusted position.

6. A head rod provided with an elongated pocket having notches or recesses formed in the walls thereof, and an adjustable member provided with a plurality of lugs that are adapted to enter said recesses and thus lock said member in adjusted position, said recesses and lugs being so arranged that they will cooperate with each other when said adjustable member is moved longitudinally of the head rod.

7. A head rod provided with an elongated pocket having notches or recesses formed in the walls thereof, an adjustable member having a portion that projects into said pocket, and a plurality of lugs on said portion that cooperate with said recesses so as to retain said member in adjusted position, said recesses and lugs being so arranged that they are brought into alinement with each other when said member is turned.

8. A head rod provided with an oblong-shaped pocket having notches formed in the side walls thereof, an adjustable member having a square portion that fits in said pocket, and a plurality of pairs of lugs on said square portion that cooperate with said recesses to retain said member in a number of different positions.

9. A head rod provided with an elongated pocket having notches or recesses formed in the walls thereof, an adjustable member provided with lugs that project into said recesses, a boss on said member that passes through an opening in the switch-point bracket with which the head rod cooperates, a flange on said member that laps over said bracket, and a fastening device passing through said member and head rod for connecting said parts together.

10. A head rod provided with an oblong-shaped pocket that is adapted to receive an

adjustable member, the bottom of said pocket being provided with an elongated slot for receiving a fastening device which retains said member in said pocket, and ribs on said head rod that extend parallel to said slot.

11. A switch-point-connecting member provided with elongated pockets having recesses formed in the walls thereof, adjustable devices arranged in said pockets and provided with lugs which are so disposed that said devices can be adjusted longitudinally by turning them so that the lugs

thereon will enter said recesses, switch-point brackets having openings through which said devices pass, and means for clamping said devices and brackets to said connecting member.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this fourteenth day of February 1910.

HARRY F. ROACH.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.