No. 648,681. Patented May 1, 1900.

# F. B. BRADLEY.

## SWITCH ROD.

(Application filed Mar. 1, 1900.)

(No Model.) 2 Sheets—Sheet 1.

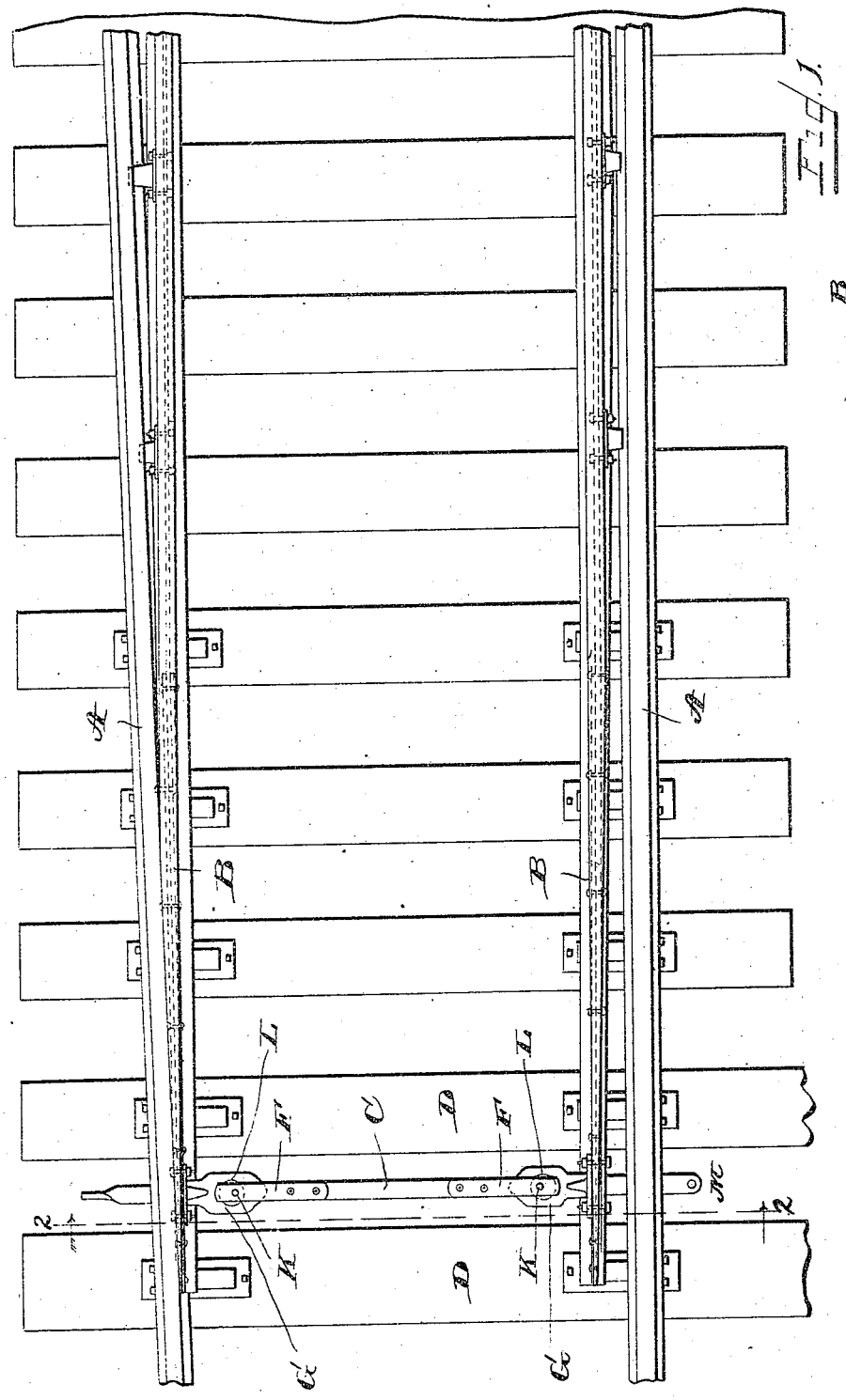


FIG. 1.

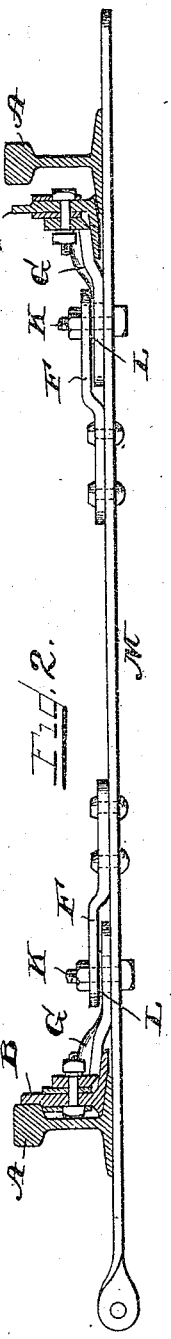


FIG. 2.

Witnesses
Jno. C. Perry
J. B. Weir

Inventor
Frank B. Bradley
By Raymond & Owen Attys

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Fig. 3.

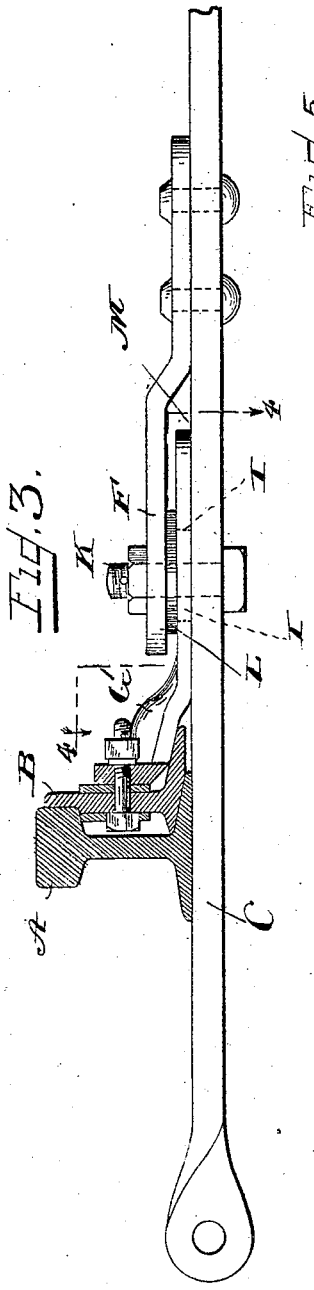



Fig. 5.

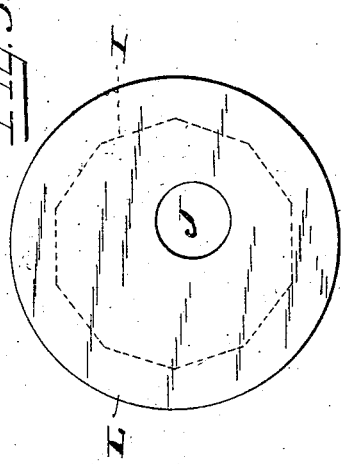



Fig. 6.

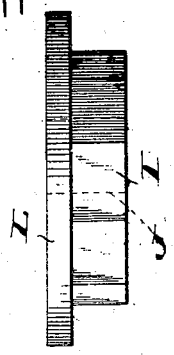
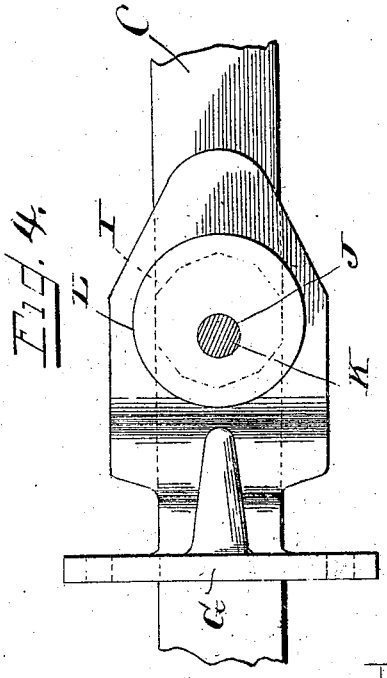



Fig. 4.




Witnesses

J. B. Weir

Ira D. Perry

Inventor

Frank B. Bradley

By Raymond & Quackenbush Atty's

# UNITED STATES PATENT OFFICE.

FRANK B. BRADLEY, OF CHICAGO, ILLINOIS.

## SWITCH-ROD.

SPECIFICATION forming part of Letters Patent No. 648,681, dated May 1, 1900.

Application filed March 1, 1900. Serial No. 6,906. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK B. BRADLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Switch-Rods, of which the following is a specification.

My invention relates to railway-switches, and has reference particularly to certain new and useful improvements in switch-rods designed for adjustably connecting the switch-rails, so that the proper position of the latter, with reference to the track-rails, may be accurately and positively maintained at all times.

One object of my invention is to provide simple and inexpensive means for quickly and easily adjusting the switch-rails to bring them into proper relation to the track-rails and to take up any wear which may occur from their frequent use.

Another important object of the invention is to provide simple means which can be readily manipulated to adjust the switch-rails in proper position and which will rigidly maintain the switch-rails in their proper relation to the track-rails under all circumstances.

A further object of the invention is to provide a simple adjusting device for switch-rods which can be manipulated without requiring a resetting of any of the other parts or devices to adjust the switch-rails as desired and which is always accessible for adjustment, while at the same time protected from displacement and from becoming loose.

With these and other ends in view the invention consists of the peculiar construction and arrangement of parts hereinafter described, and consisting, essentially, of a polygonal block or plate having a polygonal seat in a chair connected with the switch-rail and adapted to be located and arranged within a jaw on the switch-rod, being provided with an eccentric opening and a bolt by means of which it is eccentrically secured to the switch-rod and forming a rigid connection between the chair and the switch-rod.

In the accompanying drawings, Figure 1 is a plan view of a section of railroad-track, illustrating my invention applied to a switch. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional view more fully illustrating my invention. Fig. 4 is a horizontal sectional view on the line 4 4, Fig. 3. Figs. 5 and 6 are respectively top and side views of the adjusting-block.

In the drawings like letters of reference denote corresponding parts in all of the figures, and referring thereto A designates the track-rails, B the switch-rails, and C the switch-rod, one or more of which may be employed and with which my invention is embodied. The switch-rod preferably extends under both rails and between two of the ties, and it is provided with ears or plates F, which form, with the rod, jaws located between the rails and adapted to receive the chairs G, which are suitably fastened in any desired manner to the switch-rails.

The chairs G are each provided with a polygonal opening H, adapted to receive the adjusting block or plate I, which is polygonal in shape and adapted to be easily arranged in the socket of the chair and be locked against any rotary movement therein by reason of its angular shape. The block is provided with an eccentrically-located bolt-opening J to receive the bolt K, which also passes through openings in the switch-rod and its jaw-plate F, so as to rigidly secure the block in the chair and within the jaw, thus forming a fixed connection between the chair and the switch-rod. To facilitate the insertion and removal of this block in the chair-opening, I provide the block with a flange L, which rests upon the chair when the block is fitted in its opening.

While my improved adjusting device may be constructed so that only one will be necessary for each switch-rod, I prefer to use one for each rail in the manner illustrated in the drawings, and, furthermore, I would have it understood that I do not limit myself to a block having the exact number of sides, as shown in the drawings, as it would be obvious to those skilled in the art that blocks having any number of equal straight or curved sides can be used with chairs having correspondingly-formed openings, the number of sides the block has governing, of course, the fineness of adjustment of the switch-rails.

It will be apparent from the foregoing description and the accompanying drawings that the switch-rails can be readily adjusted by manipulating the blocks, as it will be understood that this adjusting-block has an ec-

centric relation to the chair, and therefore by removing the bolt and the block and turning the block more or less and replacing it in the opening H and securing the bolt in place will result in moving the chair farther out or into the jaw M, Fig. 3. As the sides and angles of the block are equal and correspond to the wall of the opening in the chair the insertion of the block in the chair can be accomplished easily and quickly, and then it is a simple matter to arrange the bolt in its proper position. The block and chair therefore have, in effect, an eccentric relation to the switch-rod; but as it is essential to maintain the chair in substantial alinement with the switch-rod it becomes necessary to provide an element similar to the eccentric block, which can be removed from the chair temporarily and turned instead of moving the chair itself. The shape of the block causes it to be locked rigidly in place in the opening in the chair, and at the same time it can be readily and easily removed whenever an adjustment of the switch-rails becomes necessary. It will also be observed that the adjusting-block is held in place by the bolt K between the switch-rod and the plate F—that is to say, in the jaw of the switch-rod—and being so arranged it will be impossible for the block to become disconnected from the chair as long as the bolt remains in place; but when the bolt is removed the switch-rod can be moved sidewise to permit of the block being readjusted in the chair.

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

1. The combination with a switch-rail and a switch-rod, provided with a jaw, of a chair rigidly secured to the switch-rail at one end and having its other end extending longitudinally of the switch-rod into the jaw and provided with a polygonal opening therein, an adjustable block shaped to correspond with the opening in the chair and adapted to be arranged therein and provided with an eccentric bolt-hole said block being also located in said jaw and a bolt extending through the jaw of the switch-rod, the chair, and the eccentric hole in the adjusting-block, substantially as described.

2. The combination with a switch-rail and a switch-rod, of a plate fastened to the switch-rod and extending longitudinally thereof to form a jaw with the rod, a chair secured at one end to the switch-rail and having its other end provided with a polygonal opening and adapted to be adjusted in said jaw, an adjusting-block of polygonal shape arranged in the jaw adapted to be snugly fitted in the opening in the chair and provided with an eccentric hole and a bolt passing through the switch-rod, the plate and the eccentric hole in the block for holding said chair and block in place between the switch-rod and the plate, substantially as described.

3. The combination with a switch-rail and a switch-rod, of a jaw formed on the switch-rod, a chair secured at one end to the switch-rail and provided with a polygonal opening in its other end, an adjusting-block of polygonal shape adapted to be arranged in the opening in the chair and within the jaw, a flange on said block, the block being provided with an eccentrically-disposed bolt-hole and a bolt passing through the switch-rod, the plate and the opening in the block, substantially as described.

FRANK B. BRADLEY.

Witnesses:
C. L. WOOD,
J. N. RAYMOND.