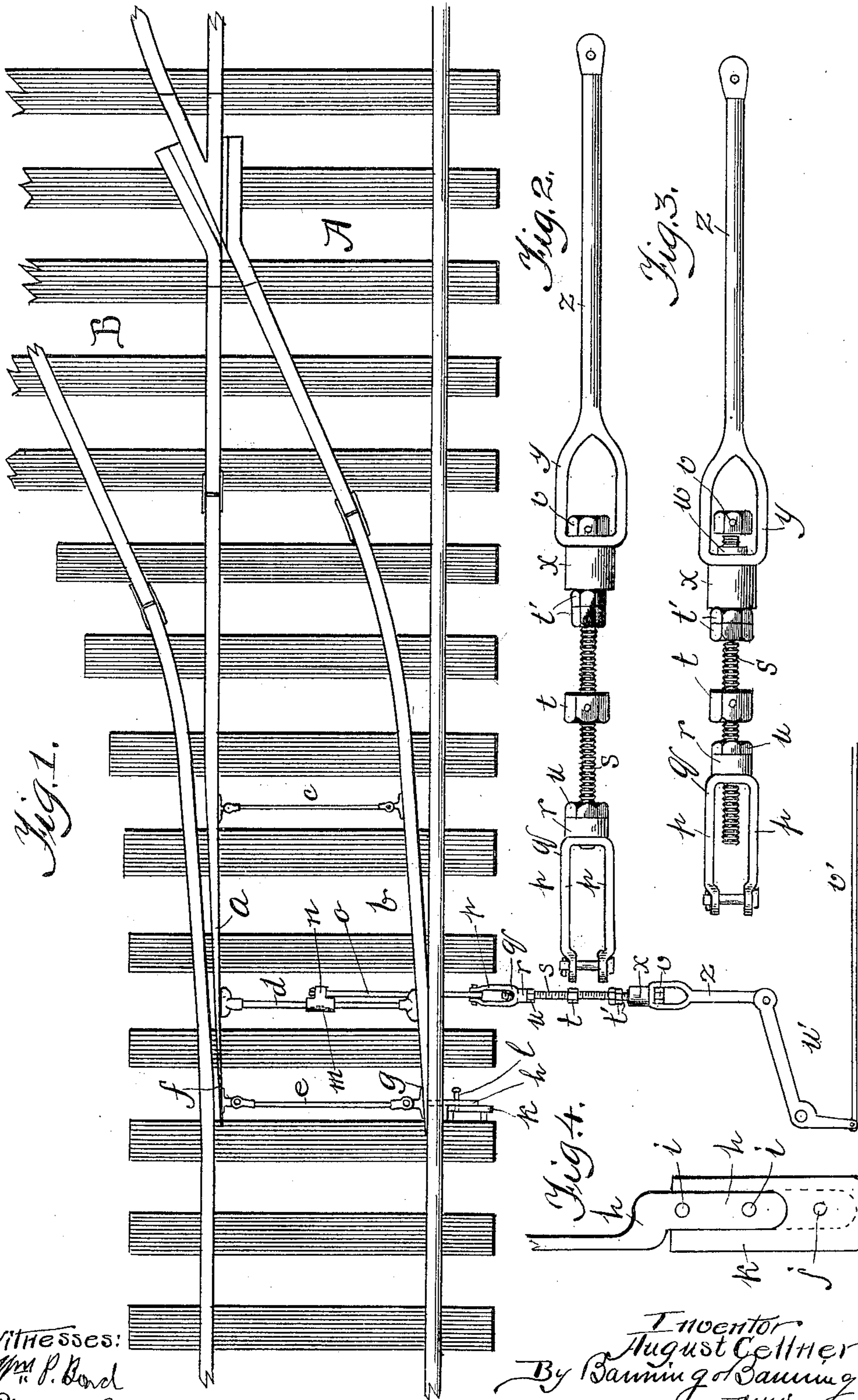


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ADJUSTING MECHANISM FOR SWITCH POINTS.
APPLICATION FILED MAR. 11, 1905.



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ADJUSTING MECHANISM FOR SWITCH-POINTS.

No. 803,093.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed March 11, 1905. Serial No. 249,636.

To all whom it may concern:

Be it known that I, AUGUST CELLNER, 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 Adjusting Mechanism for Switch-Points, of which the following is a specification.

This invention is intended to provide means for regulating the movement of a pair of switch-points from any suitable position, preferably outside of the track-rail, where the adjustment can be performed without interruption from passing trains and without danger and delay.

It has hitherto been the practice to adjust the swing of the switch-points from a position between the track-rails and between a pair of ties, which position is obviously dangerous and unsatisfactory for the location of the adjusting mechanism. In adjusting the switch-points in this way it is often necessary to delay the passage of trains and to make use of special tools peculiarly adapted for the purpose. The danger of injury to the operator is also great, for the reason that as hitherto constructed the adjusting mechanism has been below the level of the ties at a point difficult of access and unsuitable for the adjusting operation.

The adjusting mechanism of the present invention is adapted to be located at any point between the switch-actuating mechanism and the switch-points, and the location of the mechanism may be determined in each particular case with reference to the nature of the switch and the space available for the purpose.

The invention consists in the features of construction and the combination of parts herein after described and claimed.

In the drawings illustrating the invention, Figure 1 is a plan view of a section of track, showing the switch-points thrown into one position and showing the adjusting mechanism of the present invention; Figs. 2 and 3, enlarged views of the adjusting mechanism in different adjusted positions, and Fig. 4 a detail of the locking plate and arm.

The invention as shown is applied to a section of track of the ordinary character, consisting of a main track A and a siding B, and the switch consists of an outer switch-point *a* and an inner switch-point *b*, which are ta-

pered in the usual manner and are secured together by means of inner, intermediate, and outer fixed braces *c*, *d*, and *e*, respectively. The outer fixed brace *e* is located near the tips *f* and *g* of the switch-points *a* and *b*, respectively, and the brace is of suitable length to hold the tips of the switch-points distended a distance slightly less than the space between the rails of the track, so that when thrown to one side or the other a space will be left for the passage of the flanges of the wheels. In order that the switch-points may properly abut against the desired rail, it is necessary that the movement of the switch-points be perfectly adjusted, so that when the switch-points are thrown to one position one of the switch-points will closely abut against the adjoining rail and when thrown to the other position the companion switch-point will closely abut against its rail, and if the adjustment be not correct the contact will be defective at one point or the other. The outer brace *e* has secured thereto a projecting arm *h*, which may be called a "locking-arm," and said arm is provided with perforations *i*, which are adapted to register with perforations *j* in the locking-plate *h*, with which the locking-arm coöperates. When the movement of the switch-points is properly adjusted, the holes in the locking-arm will register with the holes in the locking-plate, so that the pin *l* may be inserted through the holes to lock the switch in place. When, however, the adjustment is imperfect, the holes will not properly register, so that it will be impossible to lock the switch, thereby endangering the trains passing over the switch and requiring a proper adjustment of the parts.

Surrounding the intermediate brace *d* is a collar *m*, having on one side a lug *n*, through which passes an actuating-rod *o*, which is rigidly secured to the lug and adapted to move the switch-points back and forth. The rod *o* projects beyond the track-rails and is secured between arms *p* of a yoke *q*, which terminates in a screw-threaded head *r*, through which passes an adjusting-screw *s*. The adjusting-screw has rigidly secured thereto an adjusting-nut *t*, which enables the screw to be rotated by means of a wrench or similar implement, and between the adjusting-screw and the head of the yoke is a jam-nut *u*, which is screw-threaded onto the adjusting-screw and

adapted to be screwed down onto the head r after the adjustment has been made by the rotation of the rigidly-mounted nut t . The adjusting-screw terminates at its opposite end in a head v , and the screw passes through a bearing-sleeve w , which is loosely mounted within a head x , carried by a yoke y , which terminates in a shank z . The position of the collar w and surrounding head x , which are loosely mounted on the adjusting-screw, may be regulated by means of jam-nuts t' , which may be screwed up into the position shown in Fig. 2 for the purpose of holding the head x of the yoke rigid between the jam-nuts and the nut on the end of the adjusting-screw, or the jam-nut x can be screwed back in the position shown in Fig. 3 for allowing a considerable play of the yoke-head when the switch is thrown. The shank z is actuated by means of a bell-crank lever u' , to which is pivoted an operating-rod v' , leading to the switch-tower or other suitable position.

The adjusting mechanism has been described as located between the bell-crank and the switch-points; but it may be located at any other available point between the switch-tower and the switch-points, since the regulation of the mechanism at any point along the line will serve to adjust the position of the switch-points, and the particular location of the adjusting mechanism will be determined by the amount of available space and the conditions of operation.

In use if it is found that the farther switch-point fails to properly abut against the farther track-rail when the switch is thrown the adjusting mechanism will be lengthened by screwing back the adjusting-screw, as shown in Fig. 2, and locking the adjusting-screw in adjusted position by means of the jam-nut u . This adjustment will lengthen the distance between the end of the bell-crank lever and the lug on the brace d , so that the switch-point a will be thrown farther over when the switch is operated, thereby bringing said switch-point into proper contact with the farther rail. Likewise, if the switch-point b fails to properly contact the nearer rail the adjusting mechanism can be shortened by reversing the operation hitherto described. The jam-nuts t' enable the yoke y to have a certain amount of play or lost motion where the movement of the operating-rod v' is excessive, so that the movement of the switch-points can be properly regulated regardless of the movement of the operating-rod. This is an important feature in that it enables the actuating mechanism for each individual switch to be properly regulated regardless of the movement of the operating-rods leading to the switch-tower.

It will be seen from the foregoing description that the mechanism is located from a safe and advantageous point and that the mechanism combines within itself means for perform-

ing all the adjustment necessary to insure a perfect operation of the switch.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a switch-adjusting mechanism, in combination with the switch-points and track-rails, an adjusting-screw connected with the switch-points, and provided at one end with an enlarged head, a yoke through which the adjusting-screw passes, and within which the head is rotatably held for allowing the adjustment of the switch-points by the regulation of the adjusting-screw, substantially as described.

2. In a switch-adjusting mechanism, in combination with the switch-points connected rigidly together and the track-rails, a rod connected with the switch-points, a yoke connected with the rod and provided with a screw-threaded head, an adjusting-screw, screw-threaded into the head at one end, and provided at its opposite end with a rigidly-mounted head, a yoke within which the head is rotatably held, a shank connected with the yoke, and means for imparting a longitudinal movement thereto, substantially as described.

3. In a switch-adjusting mechanism, in combination with the switch-points rigidly secured together, and the track-rails, a rod connected with the switch-points, a yoke provided with side arms to which the rod is connected and a screw-threaded head, an adjusting-screw, screw-threaded into the head, and provided at its opposite end with an enlarged head, a nut rigidly secured to the adjusting-screw, a jam-nut adapted to lock the adjusting-screw in adjusted position, a yoke provided with a bearing-sleeve through which the adjusting-screw loosely passes, a jam-nut for regulating the movement of the last-mentioned yoke along the adjusting-screw, and a shank on the yoke for imparting a longitudinal movement thereto, and to the adjusting mechanism, substantially as described.

4. In an adjusting mechanism for switches, in combination with the switch-points rigidly secured together and the track-rails, a head connected with the switch-points, an adjusting-screw adapted to be turned to regulate the position thereof, a yoke through which the adjusting-screw loosely passes, a jam-nut for regulating the longitudinal position of the yoke with respect to the adjusting-screw, a head on the end of the adjusting-screw and adapted to be contacted by the yoke, and means for imparting a longitudinal movement to the yoke, substantially as described.

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