

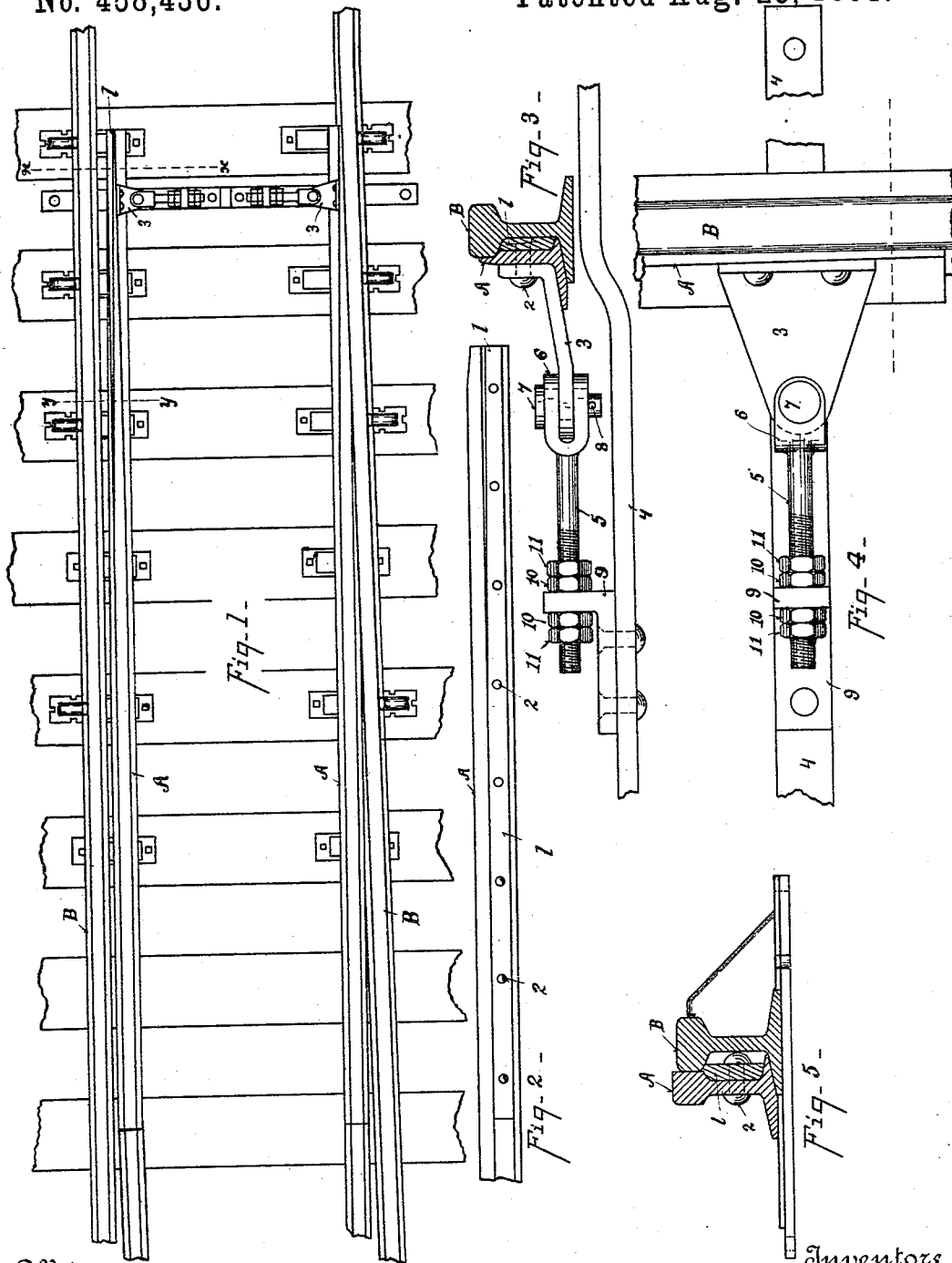
(No Model.)

2 Sheets—Sheet 1.

F. C. WEIR & N. O. GOLDSMITH.  
SWITCH.

No. 458,436.

Patented Aug. 25, 1891.



Witnesses

C. Miles  
T. Simmons

Inventors.

Fred. C. Weir & Nathaniel O. Goldsmith  
By their Attorneys Wood & Bond

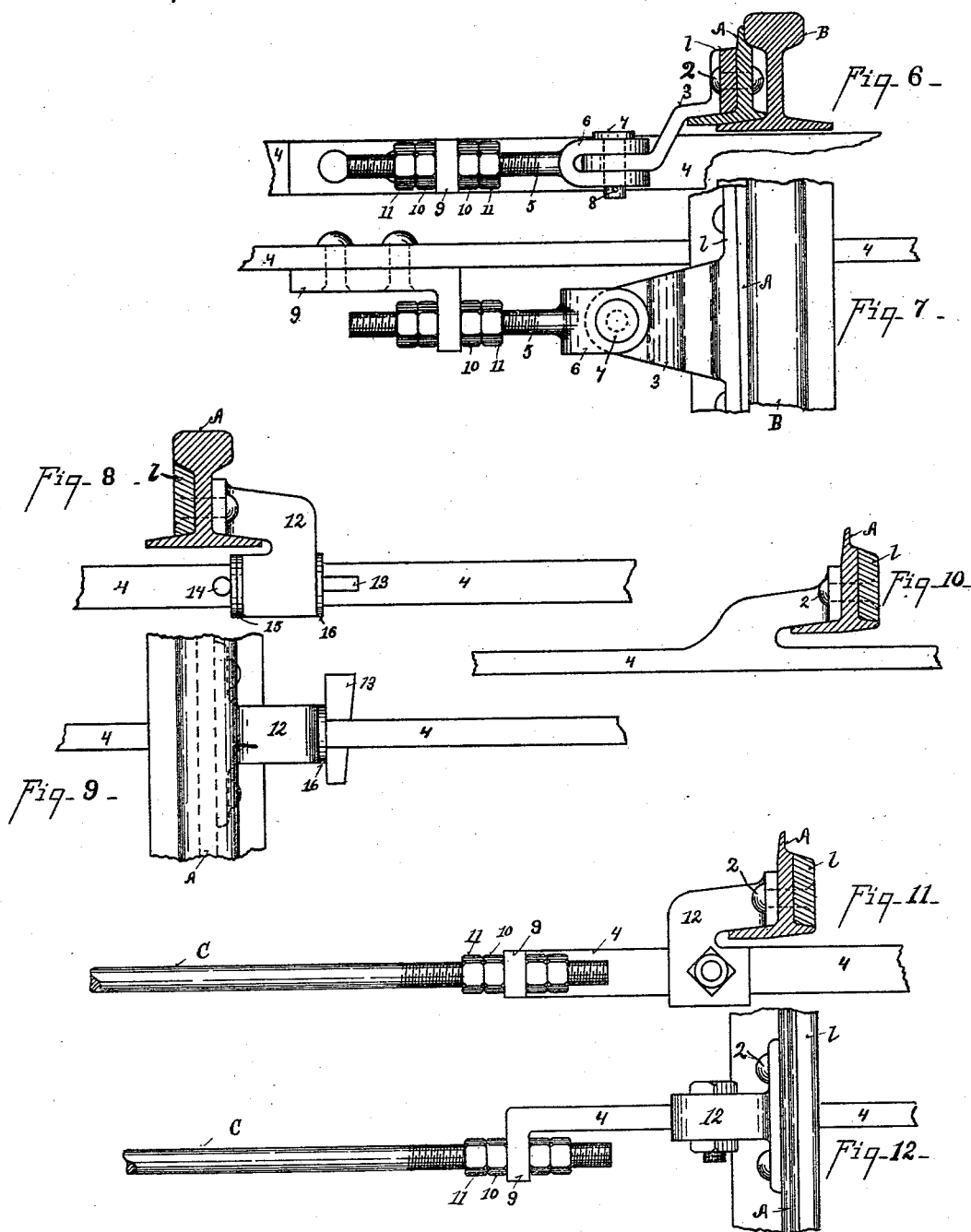
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# UNITED STATES PATENT OFFICE.

FREDRIC C. WEIR AND NATHANIEL O. GOLDSMITH, OF CINCINNATI, OHIO,  
ASSIGNORS TO THE WEIR FROG COMPANY, OF SAME PLACE.

## SWITCH.

SPECIFICATION forming part of Letters Patent No. 458,436, dated August 25, 1891.

Application filed December 15, 1890. Serial No. 374,779. (No model.)

*To all whom it may concern:*

Be it known that we, FREDRIC C. WEIR and NATHANIEL O. GOLDSMITH, citizens of the United States, and residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Switches, of which the following is a specification.

The invention herein described relates to what are known as "split switches," the object of which is, first, to strengthen the split point-rail, and, second, to provide a switch-bar which can be adjusted to any length to make the switch-rails the desired gage, and also to take up lost motion due to wear of the parts.

Figure 1 is a top plan view of the improvements in position for use. Fig. 2 is a side elevation of one of the split rails, showing the strengthening-bar. Fig. 3 is a section on line *x x*, Fig. 1. Fig. 4 is a top plan view of Fig. 3. Fig. 5 is a section on line *yy*, Fig. 1. Fig. 6 is a modification of Fig. 3. Fig. 7 is a top plan view of Fig. 6. Fig. 8 is another modification of Fig. 3. Fig. 9 is a top plan view of Fig. 8. Fig. 10 is a sectional elevation showing the stiff bar rigidly connected to the point-rail and strengthening-bar. Fig. 11 is another modification of Fig. 3. Fig. 12 is a top plan view of Fig. 11.

A A represent a pair of split switch-rails, which are adjusted to and from the main rails B B. In constructing split switch-rails so much of the head is cut away that it is materially weakened, and the web of the rail is apt to buckle at the point. In order to strengthen this thin point, and also to provide it with a firm abutment, a strengthening-bar 1 is rigidly united to the web of the rail, (the preferred form is shown in Figs. 1 and 3;) but this strengthening-bar can be more advantageously used in the modification shown in Fig. 6 by connecting it to the opposite side of the web of the rail than that shown in Figs. 2 and 3.

2 2 represent the rivets, which are preferably used for uniting the strengthening-bar 1 to the web of the rail. This strengthening-bar may be used either with a stiff or with an adjustable switch-bar.

Fig. 10 illustrates the use of the stiff bar,

the remaining figures illustrating the adjustable switch-bars.

3 represents an arm rigidly connected to the point-rail and adjustably connected to the switch-bar 4.

5 represents a connecting-rod provided with the fork 6 at one end for connecting it to the arm 3, preferably by means of the bolt 7, which is held in position by a split pin passing through the orifice 8. The shank of the connecting-rod is screw-threaded and passes through the ear 9, which is rigidly connected to the switch-bar 4.

10 represents adjusting-nuts, and 11 set-nuts, by means of which the switch-points can be adjusted toward or from each other so as to fit the main rails.

In Figs. 6 and 7 the arm 3 is welded to the re-enforcing-rail 1, which is bolted to the outside of the switch point-rail.

In Figs. 8 and 9 we have shown another modification for adjusting the gage of the split point-rails. The switch-bar 4 passes through the bracket 12, which is securely riveted to the point-rail A. 13 represents a taper pin passing through a slot in the switch-bar 4. 14 represents a stop passing through the switch-bar 4 on the opposite side of the bracket 12. 15 16 represent washers upon the switch-bar 4, each side of the bracket 12, by means of which and the taper key the gage of the point-rails can be adjusted.

In Figs. 11 and 12 the switch-bar 4 is shown as provided with an ear 9 instead of having it riveted to it, as shown in Fig. 3. Said switch-bar passes through the bracket 12, as in Fig. 8, for adjusting the gage of the split point-rails. The switch-bar is made sectional, the rod C forming the central portion of the switch-bar. It passes through the ear 9, the same as the connecting-rod in Fig. 6, and it is provided with adjusting and set nuts, which operate in the same manner. The stiffening-bar being rigidly connected to the split point-rail and the switch-bar rigidly connected to the point-rail and preferably to the stiffening-bar, materially strengthens the point-rail, so that the switches can be moved, and the spring of the web of the rail when the head is cut away is obviated. Hence more positive movement of the switch-rails is obtained and

astrong support to the switch-rail itself. The arm 3 being rigidly connected to the split rails can be accurately adjusted by means of the take-up device, avoiding the necessity of the use of washers or liners between the switch-rail and the bracket, which is the ordinary practice of adjusting the switch-rails to a gage. We show two take-up devices, one connected to each arm 3 of the switch-rails, which form a sectional switch-bar, because it is necessary to adjust the length of the switch-bar to the position of the switch-stand as well as to adjust the gage of the switch-rails to the main rails. The latter could be obtained by the use of one take-up device; but when both adjustments are required the two take-up devices are necessary, to avoid resetting the switch-stand on its base.

It will be observed that we have dispensed with the ordinary tie-bars which connect the two switch-rails together, but connect our rails directly to the switch-bar by means of the bracket rigidly connected to the reinforced split switch-rail. If desirable, however, for longer switches, two parallel switch-bars may be employed and two points of connection of the switch-rails to the switch-bars; but under ordinary circumstances a single switch-bar is sufficient.

Having described our invention, what we claim is—

1. In combination with a split switch-rail, a strengthening-bar 1, rigidly secured to said split rail, and brackets directly connected to the switch-bar and switch-rails, substantially as specified.

2. In combination with a split switch-rail, the switch-bar connected directly thereto by means of the bracket and take-up device, substantially as described.

3. In combination with a split switch-rail, the bracket 12, rigidly connected thereto, the switch-bar 4, having the ear 9, and a sectional switch-bar adjustably connected to said bracket, substantially as described.

4. In combination with split switch-rails, a strengthening-bar rigidly secured thereto and the switch-bar adjustably connected to said switch-rails by means of two take-up devices, substantially as described.

5. The combination of the split switch-rails with brackets secured to the same, a sectional switch-bar, and two take-up devices connecting said brackets to a switch-bar, whereby the switch-rails may be individually adjusted to the main rails and the switch-bar adjusted to the switch-stand, substantially as described.

6. The combination of two split switch-rails with strengthening-bars rigidly secured thereto, brackets rigidly secured to said switch-rails, and a single switch-bar adjustably connected to said brackets, substantially as specified.

In testimony whereof we have hereunto set our hands.

FREDRIC C. WEIR.  
NATHANIEL O. GOLDSMITH.

Witnesses:

T. SIMMONS,  
C. W. MILES.