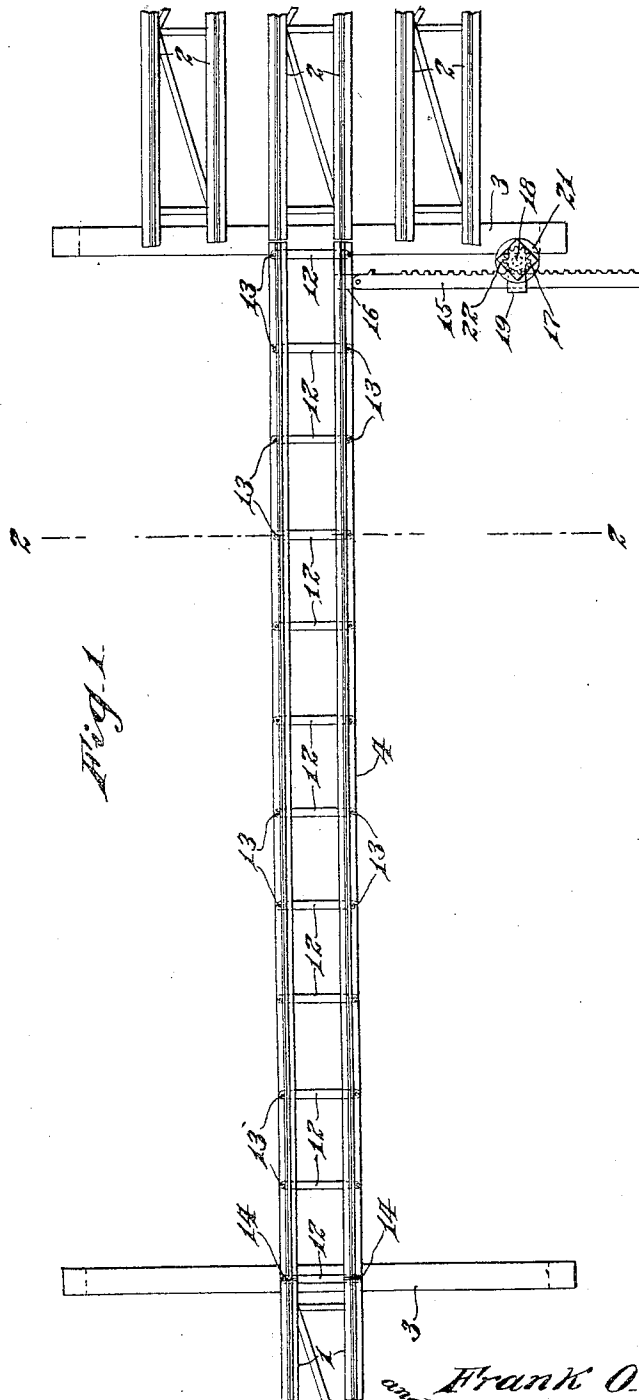


F. O. BUTLER & S. C. ROCKMAN.
SUSPENSION RAILWAY SWITCH.
APPLICATION FILED MAY 17, 1909.

945,752.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.



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Fig. 2.

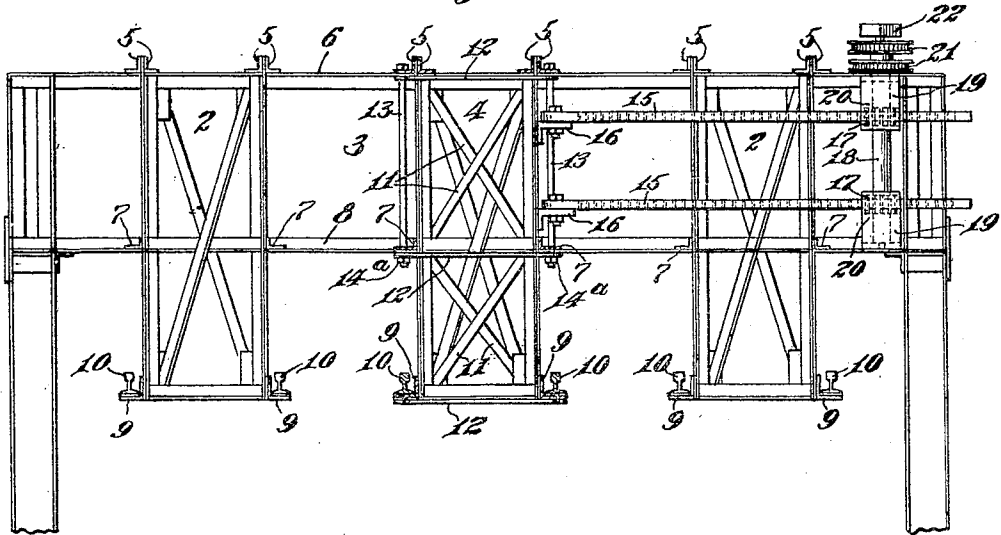


Fig. 3.

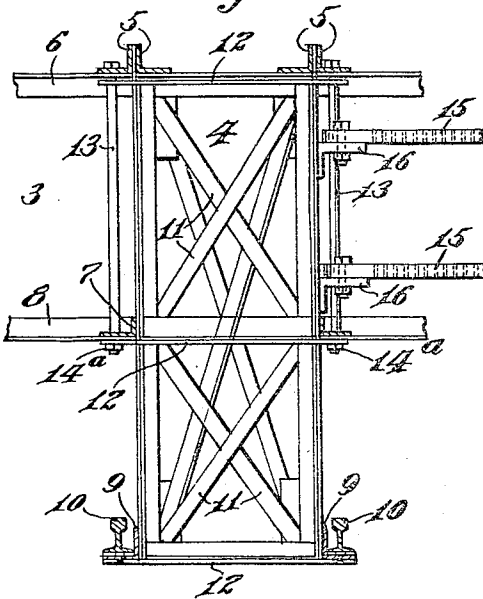


Fig. 4.

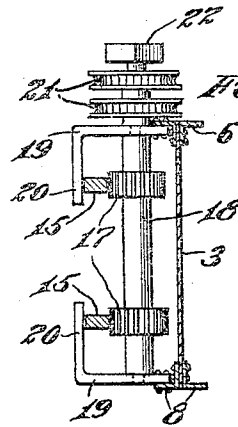
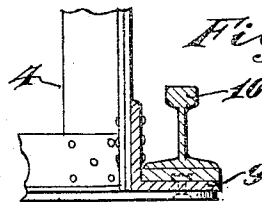


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK O. BUTLER AND SOREN C. ROCKMAN, OF PHILADELPHIA, PENNSYLVANIA.

SUSPENSION-RAILWAY SWITCH.

945,752.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed May 17, 1909. Serial No. 496,371.

To all whom it may concern:

Be it known that we, FRANK O. BUTLER and SOREN C. ROCKMAN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Suspension-Railway Switches, of which the following is a specification.

Our invention relates to an improved suspension railway switch, the object of the invention being to provide an improved pivoted track section, which enables a single track to be connected to any of a series of tracks, so as to allow a car or train to pass from said track onto any of said series of tracks, or from any of said series of tracks to said single track.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a plan view illustrating our improvements. Fig. 2, is a view in section on the line 2—2 of Fig. 1. Fig. 3, is an enlarged view in cross section through the switch section. Fig. 4, is a view of the switch operating mechanism, and Fig. 5, is an enlarged detail sectional view illustrating the rail-supporting beams.

1 represents a box girder supporting the rails of a single track, and 2, 2, 2, are box girders supporting the rails of three tracks of our improved suspension railway. These girders are supported upon cross or transverse girders 3, and any of the three tracks are adapted to be connected with the single track 1 by our improved switch 4, which bridges the span between cross girders 3, 3, as will more fully hereinafter appear. All of said track girders are of appreciably greater depth than the cross girders, and have their upper angle irons 5 supported upon the upper angle irons 6 of the cross girders, and have angle bars 7 secured to the sides of the longitudinal girders, and supported upon the lower angles 8 of the cross girders, as is more fully set forth in our application for an improved suspension railway structure, filed May 17, 1909, and given Serial No. 496,370. The lower angles 9 of the track girders support rails 10. The switch girder 4, while it is of the gen-

eral box girder type, the members of which however, are connected by the links or stays 11, which are pivotally supported at both ends, so as to allow the parallel members of the switch girder to move slightly toward and away from each other when the switch is thrown to its lateral positions, and compensates for the different arcs through which the ends of said sides move.

While in Figs. 2 and 3, the links or stays 11 would appear to engage each other as they project in opposite directions, by reference to Fig. 1, it will be seen that all of the pivot points of said stays, both the horizontal stays or links 12, and the diagonal stays or links 11, are in the same plane, and the diagonal links which are disposed at opposite inclines, are located at different pivot points. In other words, a stay 11 which inclines to the right from its lower to its upper end, is a distance of one link 12 back of the stay, which inclines to the left from its lower to its upper end, so that these diagonal stays do not abut against each other, and do not therefore interfere with the slight independent movement, or slightly different movements of the side members of the switch girder.

The upper pair of links or stays 11 and 12 are pivotally secured to the girder sections by bolts or rods 13, the latter held in place by nuts 14^a, and the lower pivotal points of the lower stays or links 11 and 12, are in line with these bolts or rods 13, and the ends of this switch girder, or rather the sides or sections of this switch girder are pivotally secured upon bolts or rods 14, (similar to the rods or bolts 13) and pivotally connecting the switch girder to the cross girder 3 adjacent the single track 1, so as to allow the girder 4 to be swung in the arc of a circle, and position its free end in alinement with the ends of any of the track girders 2. To move this switch girder, various means may be provided. We have shown one means, which consists in racks 15 pivotally connected by brackets 16 to the switch girder, and in mesh with pinions 17 on a shaft 18. This shaft 18 is supported in brackets 19 on the cross girder 3, and said brackets 19 have projections 20, which serve as guides for the racks 15, and maintain the racks 15 and pinions 17 always in mesh. On the upper end of this shaft, we have illustrated pulleys 21 and an angular head 22. The pulleys may be operated at a distance

by ropes or cables not shown, and the angular head may receive a wrench or other suitable tool, so as to enable the switch to be operated by hand if desired.

5 By this construction, it will be seen that a car or train of cars from track 1 may be transferred by the switch 4 to any one of the tracks 2, or a train from any of the tracks 2 may be switched onto track 1.

10 Various slight changes might be made in the general form and arrangement of parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth, but
15 consider ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

20 1. In a suspension railway structure, the combination with a track and a series of tracks, of a girder pivoted at one end at the end of the single track, switch track sections on said girder adapted to be moved
25 by the girder to connect said first mentioned track with any of said series of tracks.

30 2. In a suspension railway structure, the combination with a track and a series of tracks, of a girder pivoted at one end at the end of the single track, switch track sections on said girder adapted to be moved by the girder to connect said first mentioned track with any of said series of tracks, and
35 means at the free end of said girder for moving the girder and its track section.

40 3. In a suspension railway, the combination with a track and a series of tracks, of a switch track section pivotally supported at one end adjacent the first mentioned track, racks pivotally secured to said switch section near its free end, a shaft, pinions on said shaft meshing with said tracks, pulleys on said shaft, and an angular head on
45 said shaft, substantially as and for the purpose set forth.

4. In a suspension railway, the combination with a track and a series of tracks, of a switch track section pivotally supported at
50 one end adjacent the first mentioned track, a rack pivotally secured to said switch section near its free end, a shaft, a pinion on said shaft meshing with said rack, and means on said shaft for turning the same.

55 5. In a suspension railway structure, the combination with a track and a series of tracks, of a girder pivotally supported at

the end of the single track, switch track sections on said girder, a rack pivotally secured to said girder near its free end, a
60 shaft, a pinion on said shaft meshing with said rack, and means on said shaft for turning the same.

6. In a suspension railway, the combination with cross girders, a single track supported at one end upon one of said cross
65 girders, a series of tracks supported at one end upon the other of said cross girders, a switch track section supported at its ends upon said cross girders, and adapted to be
70 positioned to connect the single track with any of said series of tracks.

7. In a suspension railway, the combination with cross girders, a single track supported at one end upon one of said cross
75 girders, a series of tracks supported at one end upon the other of said cross girders, a switch track section supported at its ends upon said cross girders, means pivotally securing said switch section adjacent the first
80 mentioned track, and devices constructed and adapted to swing the opposite end of said switch section, so as to register with the ends of any of said series of tracks.

8. In a suspension railway, the combination with a single track and a series of
85 tracks, of a longitudinal girder comprising parallel side sections pivotally secured at one end adjacent the single track, pivot stays or links connecting said side sections of
90 said girder, and means for moving said girder to position its free end to register with any of said series of tracks.

9. In a suspension railway, the combination with a track and a series of tracks, of
95 a pivoted girder comprising two parallel members, a switch rail on each member, and pivoted links connecting said members.

10. In a suspension railway, the combination with a track and a series of tracks, of
100 a girder pivotally supported adjacent the end of the single track, and comprising two parallel members, pivoted links connecting said members, angle irons secured to said members, and rails on said angle irons.

105 In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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