

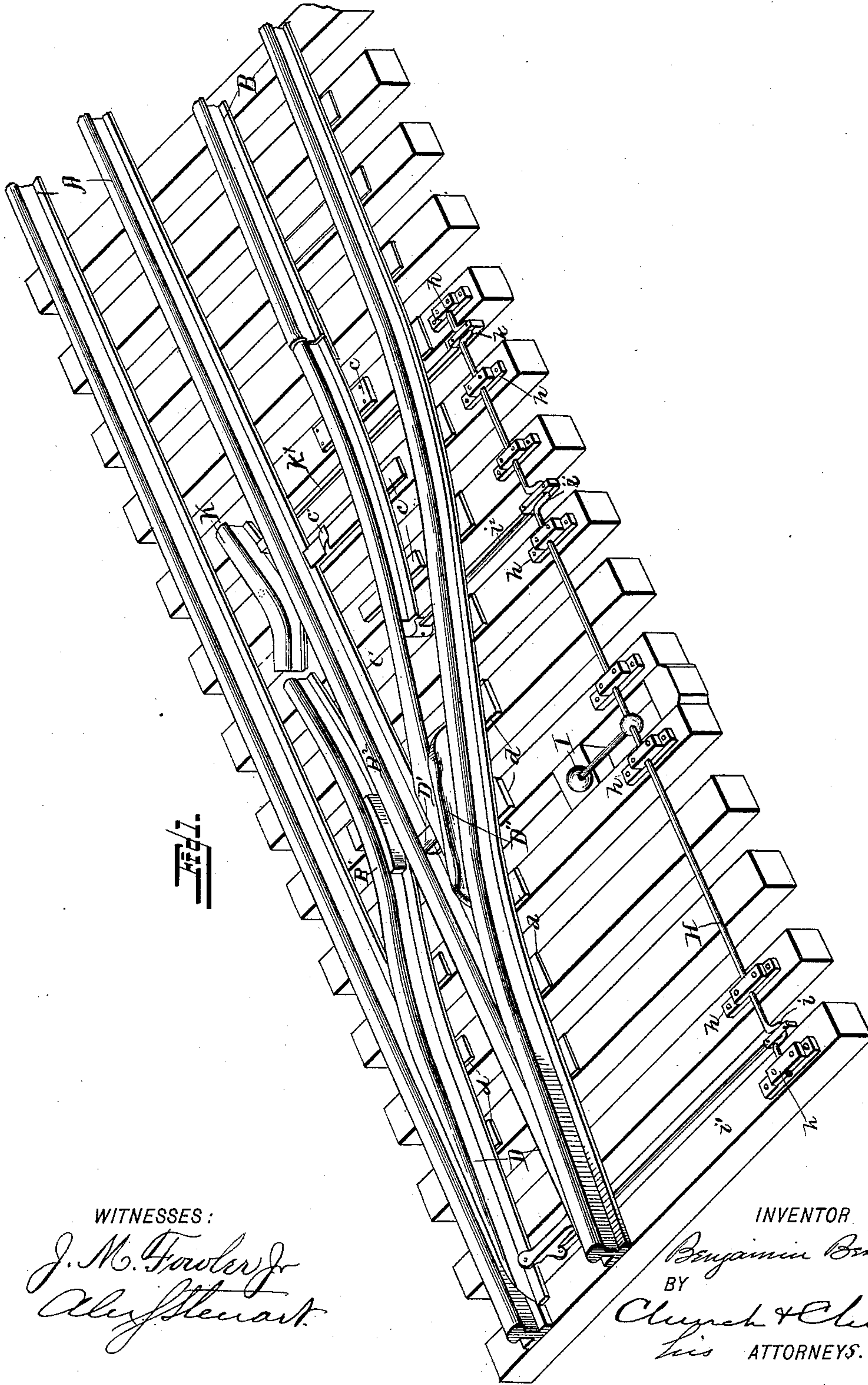
(No Model.)

2 Sheets—Sheet 1.

B. BENNETT.
RAILROAD SWITCH.

No. 487,705.

Patented Dec. 13, 1892.



WITNESSES:

J. M. Fowler Jr
Alex Stewart

INVENTOR

Benjamin Bennett
BY
Church & Church
his ATTORNEYS.

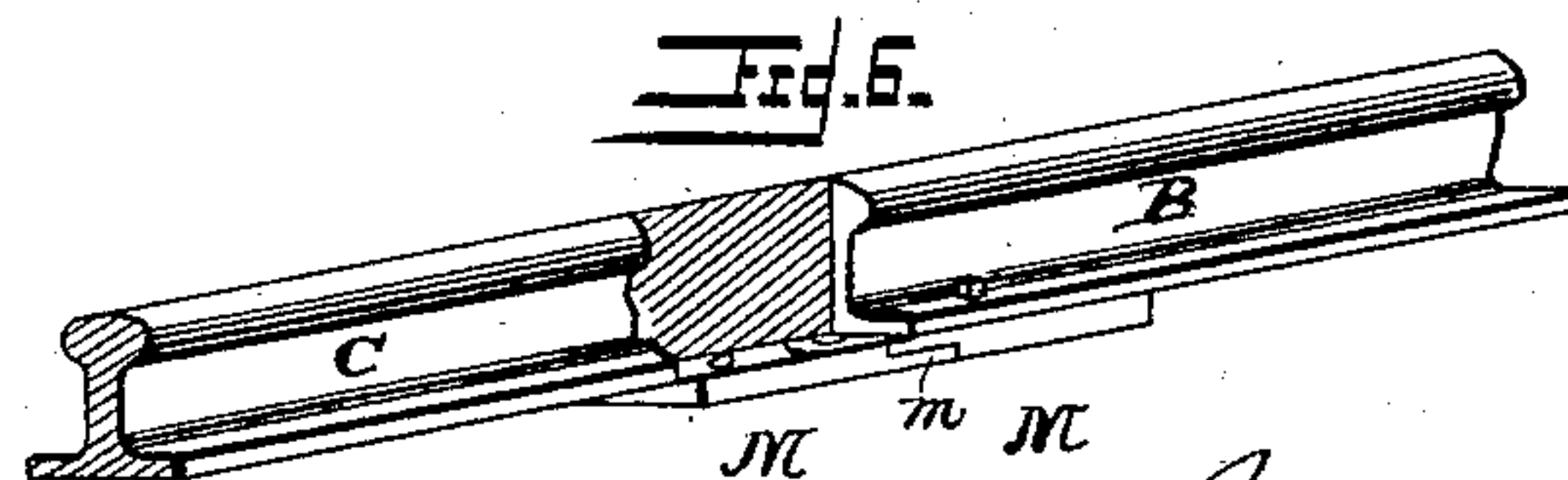
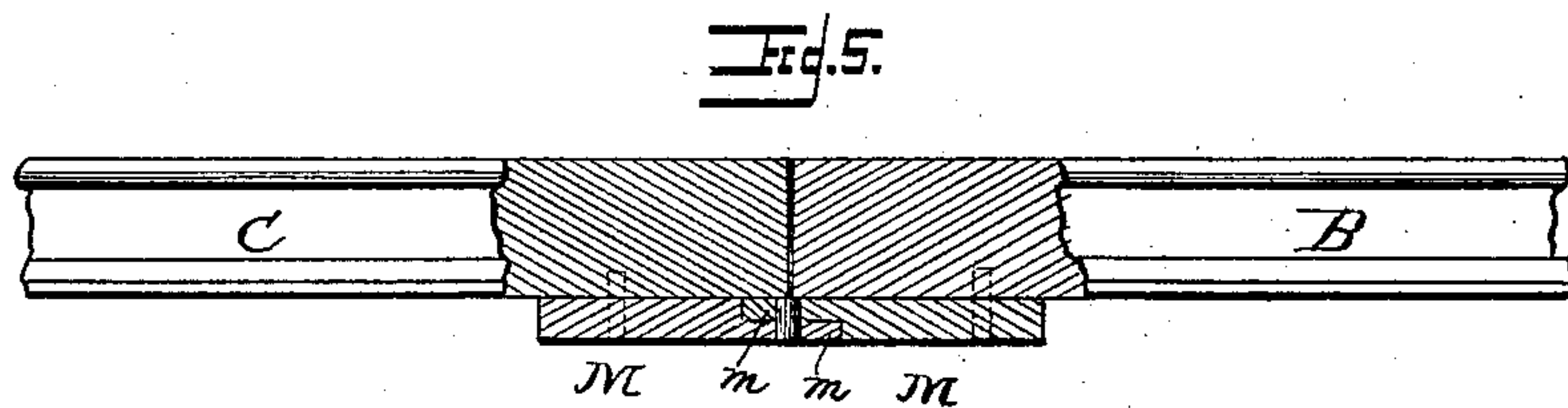
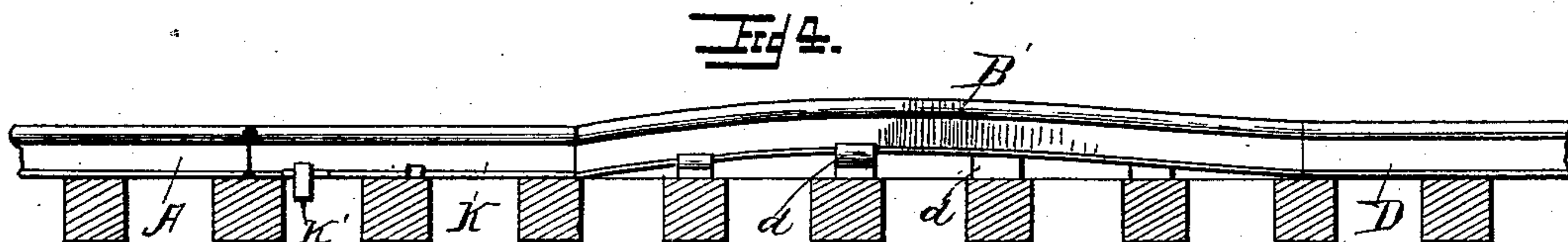
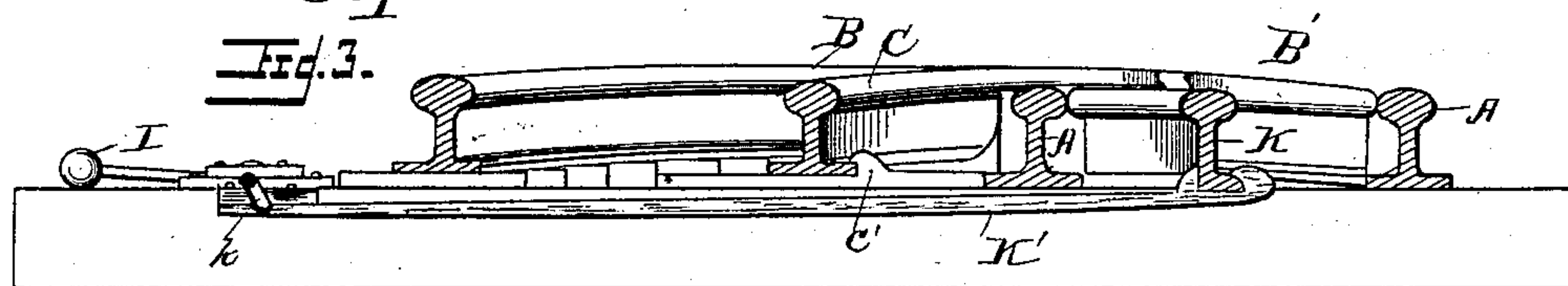
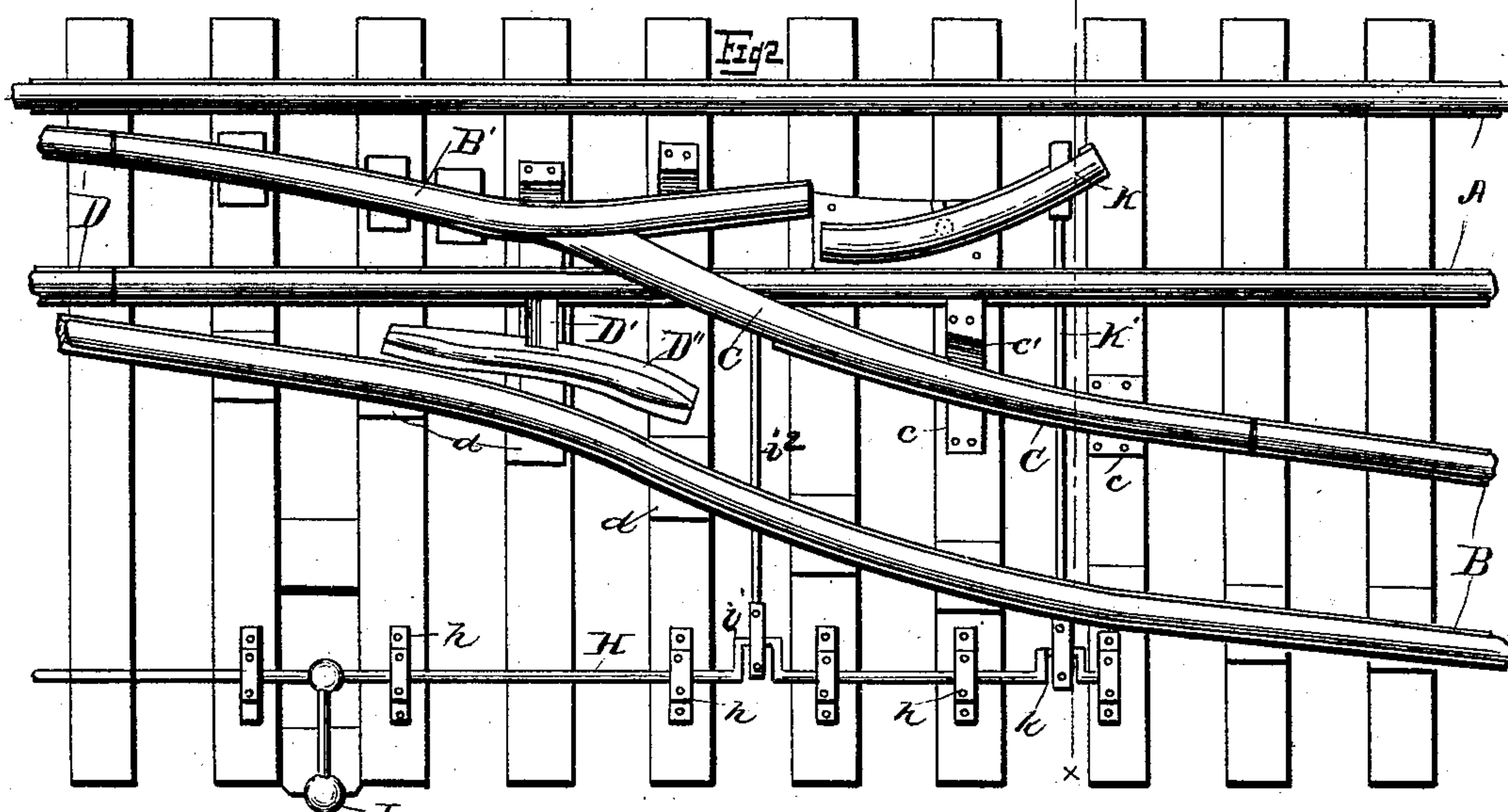
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RAILROAD SWITCH.

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WITNESSES:

J. M. Fowler Jr
Alex. Stewart

INVENTOR

Bryant Bennett
BY
Chas. Stewart
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN BENNETT, OF SCRANTON, PENNSYLVANIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 487,705, dated December 13, 1892.

Application filed March 4, 1892. Serial No. 423,755. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN BENNETT, of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Switches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in switches for railroads, and has for its object to provide a switch which shall preserve, as far as possible, the continuity of the main-track rails, and at the same time one which shall act with certainty, be automatically thrown shut by the approach of a train from the rear, and consist of simple mechanism not easily destroyed or rendered inoperative by changes in temperature or rough usage.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a switch constructed in accordance with my invention with the switch closed. Fig. 2 is a detail top plan of the crossing rail and adjacent parts with the switch open. Fig. 3 is a transverse section on the line *x x*, Fig. 2. Fig. 4 is a section taken longitudinally of the tracks and showing the rail between the main tracks in elevation. Fig. 5 is a longitudinal section through one of the joints for the movable rails. Fig. 6 is a detail perspective of the same.

Like letters of reference in the several figures denote the same parts.

In the main the present invention relates to that form of switch in which one of the switch-rails is elevated and crosses or is moved over the main-line rail when the switch is open.

Thus in the drawings A indicates the main-track rails, B the siding-rails, and C a movable rail adapted to swing over one of the main-track rails and complete the siding-tracks.

D are switch-points of ordinary construction, both located between the main-track rails and one or the other adapted to be in operative position under all circumstances. For instance, when the switch is closed the

right-hand point lies close to the right-hand rail, or vice versa, if the siding be on the left-hand side, and when the switch is open the left-hand point lies close to the left-hand rail in position to catch the flanges of the advancing wheels. From the switch-points both siding-track rails are gradually elevated above the level of the main-track rails, preferably, by means of chairs or track-plates *d*, of graduated height, until a point is reached where the inside rail must cross one of the main-track rails. From this point the inside rail (lettered B') runs substantially parallel with the main-track rail for a short distance, then curves away from said rail and is brought down to its original level, thereby overcoming an objection heretofore urged against the upwardly-projecting rail-points because of their liability to catch in depending parts of a passing car or train.

On the outside of the main-track rail and pivoted similar to a switch-point is the crossing rail C, having a strengthened end reduced on the under side and adapted to be swung over the main-track rail, as shown in Fig. 2, its extreme end being cut at a sharp angle, so as to form a long lap-joint with the center rail B', which, so far as operativeness is concerned, is unaffected by changes in temperature or change in the length of rails within reasonable limits through any cause. The crossing or movable rail takes a bearing on the top of the main-track rail, and to more effectually support and brace the end of the said crossing rail the center rail B' is provided along the side with a bearing B², upon which the end of the crossing rail rests when closed.

On the outside of the main-track rail a substantially-horizontal bearing D' is provided, upon which the crossing rail slides when opened, and at the end of this bearing a protecting-rail D'' is provided, against which the end of the crossing rail rests and by which it is protected, and all danger of catching in passing objects prevented. To more effectually accomplish this object, the ends of the protecting-rail are bent down or the upper surface curved to deflect any object striking the same, as will be readily understood from the drawings.

The crossing rail is supported on the outside of the main-track rail on chairs or track-plates *c*, of sufficient length to form bearings for said rail throughout its entire movement,

and one or more of said plates preferably provided with an undercut projection c' , beneath which one edge of the rail fits when closed and by which the rail is held firmly down to its place. Both the switch-points, crossing rail, and safety guard-rail (to be presently described) are operated simultaneously by means of a crank-shaft H, journaled in bearings h , lying substantially parallel to the main track, and having two cranks i projecting at substantially the same angle and connected the one to the switch-points by link i' and the other to the crossing-rail by link i'' . The cranks are of such length as that when the rail or points have been given their full movement they (the cranks) are on their "dead-centers," so to speak, or, in other words, the center of the crank is in line with the shaft center and bearing-point on the rail. Hence the rails are locked and exert no tendency to turn the shaft. The shaft may be operated by a weighted handle I, as usual.

Pivoted within the main-track rails at a convenient point in rear of the switch is what I term a "safety guard-rail" K, one end of which is connected to a crank k on the crank-shaft H by a link K' , and the opposite end of which is adapted to lie in proximity to the main-track rail when the switch is open and the crossing rail closed, in which position it will be engaged by the flange of a wheel approaching from the rear and be moved away from the main-track rail. The crank k is set at such an angle on the shaft as that any movement of the guard-rail will rotate the shaft. Hence as said rail is moved by the flange of the wheel the shaft is rotated and the crossing rail and switch-points moved to allow the car or train to pass.

The joints for the movable rail form an important part of the present invention, and by referring to Figs. 5 and 6 it will be seen that two plates M M are employed, each having a semicircular end projection m , jointed by a central pintle to the opposite plate. The plates are secured to the under surface of ordinary rails by screws or otherwise, with the ends of the rails at substantially the center of the pintle, just sufficient space being left between said ends to allow of the necessary movement. The rail ends, it will be seen, overlie the joints and prevent the entry of dirt, and, further, prevent the separation of the plates, forming a joint which cannot become separated and one which may be located in any position without injury and which will be practically as strong as the rails themselves.

As a whole it will be seen that the switch is simple and effective, presenting advantages not easily secured by other switches in that the main-track rails are practically unbroken, there being thus little or no danger in passing a closed switch.

Having thus described my invention, what I claim as new is—

1. In a switch such as described, the combi-

nation, with the main-track rails and switch-points, of the siding-rail between the main-track rails elevated at a point in proximity to one of the main-track rails, a bearing formed on one side thereof at the elevated point, and the movable crossing rail adapted to move across the main-track rail and rest on the said bearing at the elevated point of the center rail, substantially as described.

2. In a switch, such as described, the combination, with the main-track rails and switch-points, of the siding-rail between the main-track rails elevated at an intermediate point and having its ends bent down to the level of the main-track rails, a bearing at the elevated point of the side rail, and the movable crossing rail having its end cut at an angle and adapted to cross the main-track rail and rest on said bearing, substantially as described.

3. In a switch such as described, the combination, with the main-track rails, switch-point between said rails, the siding-rail leading from said switch-point to the opposite main-track rail, at which point it is elevated above the level of the main-track rails, and the long bearing formed on the side of said siding-rail at its highest point, of the crossing rail pivoted outside the main tracks and having the end reduced on the under side and cut off at a sharp angle, adapted to swing across the main-track rail and take its seat on the long bearing on the elevated point of the siding-rail, substantially as described.

4. In a switch such as described, the combination, with the stationary and movable rails, of the joint between the same formed by the plates secured to said rails and having the forwardly-projecting semicircular ends each projecting beneath the opposite rail end and joined together by a central pintle, substantially as described.

5. In a switch such as described, the combination, with the stationary and movable rails, of the joint between the same formed by the plates secured to the under side of the respective rails and each having the forwardly-projecting reduced semicircular end projecting beneath the end of the opposite rail and connected to the plate thereon by a pintle, substantially as described.

6. In a switch such as described, the combination, with the main-track rails, siding-rails, and the crossing rail forming part of said siding-rails and adapted to swing over the main-track rail, of the chair on which said crossing rail moves, having the undercut projection thereon co-operating with the bottom of said rail when closed, and the crank-shaft and link for moving said crossing rail, whereby it is held down when in closed position, substantially as described.

BENJAMIN BENNETT.

Witnesses:

G. M. GREEN,
J. H. FRUTCHEY.