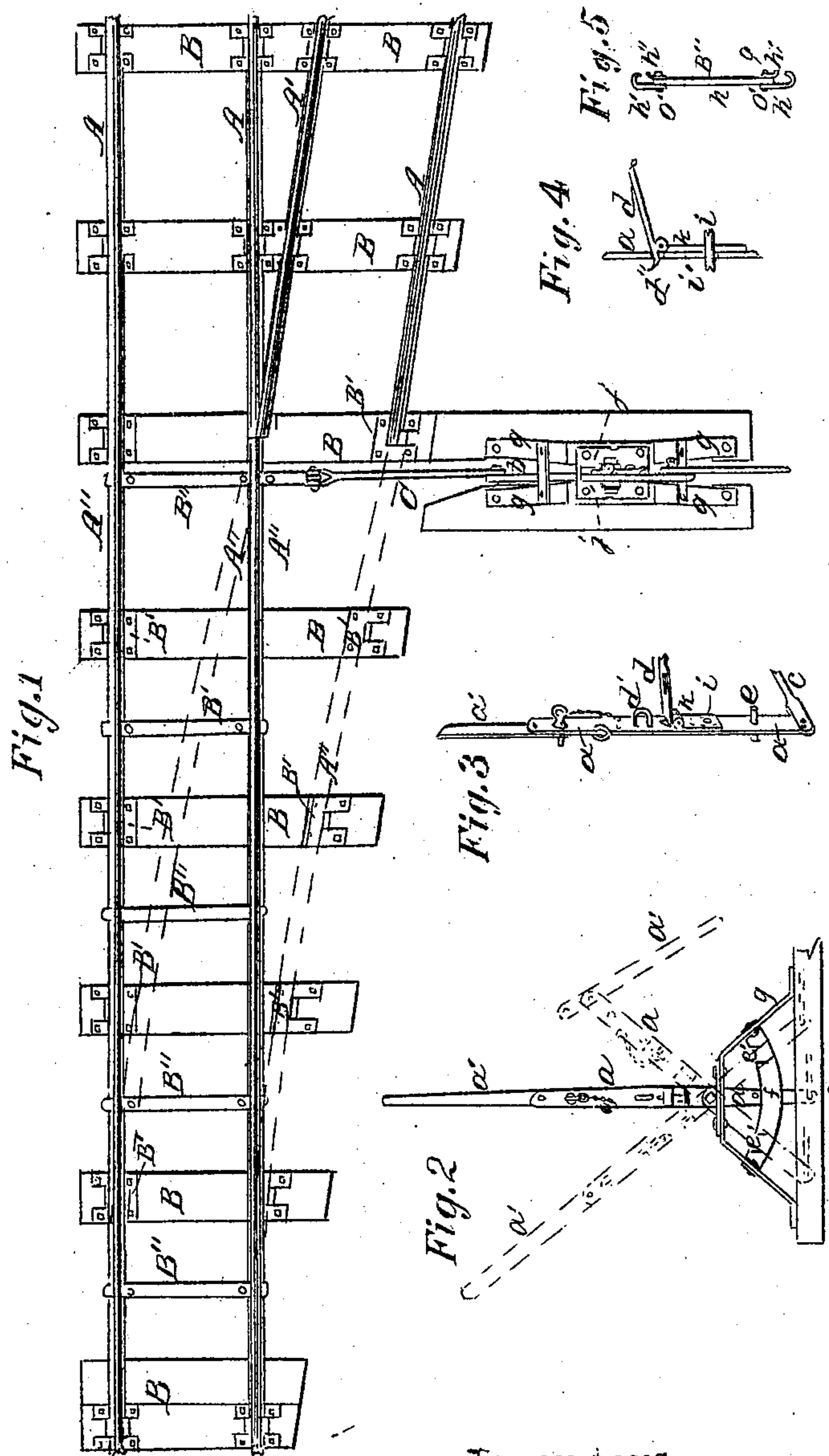


Cox, Conner & Cahallan,

Switch.

No. 93278.

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COLUMBUS, GEORGIA.

Letters Patent No. 93,278, dated August 3, 1869.

IMPROVED RAILWAY-SWITCH.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JOHN B. COX, JAMES O'CONNOR, and MICHAEL CAHALAN, of Columbus, in the county of Muscogee, and State of Georgia, have invented a new and improved Railroad-Switch and Switch-Stand; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention consists in the construction of a switch-track, in such manner that the straight track is changed, by the springing of the switch-rails, to form a curve, and connect the straight track with a turnout, or siding-track, by means of the said curved switch, by which means we are enabled to dispense with the use of frogs or points.

It further consists of the construction of the removable connecting-bar between the switch-rails.

To enable others skilled in the art to make and use our invention, we will describe its construction and operation.

Figure 1 is a plan view of a railroad-track and switch;

Figure 2 is an upright sectional view of switch-stand;

Figure 3 is a detached view of the switch-lever;

Figure 4 is a detached view of the lock-hasp on the switch-lever; and

Figure 5 is a view of the removable connecting-bar between the switch-rails.

In fig. 1, which represents a railroad-track, with a switch in it, in order to curve the main track to a side-track, or turnout,

A A represent the fixed rails of the main track;

A' A', the fixed rails of the side-track, or turnout; and

A" A", the switch-rails, that are bent in curved form, as shown in dotted lines, to connect with the side-track, or may remain as a part of the straight track, and in the position as now shown.

The track is laid in the usual manner, having sills, or ties B, with a common chair, by which the rail is secured to the tie.

B' B' are chairs secured to the ties that support the switch-rails, and have a raised flange on one side only, which engages with the flange on the bottom of the rail, and holds it in place. On one side of the track they are placed so that the rail will be in a continuous straight line, to intersect the fixed straight track; on the other, they will be placed so as to stop the rail on a regular curved line, to intersect with the fixed rails of the side-track, or turnout, as seen in said fig. 1.

B" B" are the connecting-bars between the switch-rails, and are constructed, as seen in fig. 5, or the equivalent thereof, by having a main bar, *h*, hook outside flange *h'* *h'*, and inside flange *h"* *h"*, secured firmly to-

gether, by screw-bolt *o* and nut *o'*, by which construction the bar may be easily removed from between the rails, whenever, for any cause, it may be necessary.

To one of these connecting-bars, B", which is near to the ends of the switch-rails A" A", is an intermediate connecting-bar C, which is attached to the bar B", by a hinged joint, at one end, and to the switch-lever *a*, at the other, by a hinged joint also, which allows the lever *a* to freely operate the switch-rails to any position desired to connect with any number of side-tracks, or turnouts, within the scope of its capacity to operate such switch.

When the switch-rails are moved over to connect with the side-track, they are caused to assume a regular curve, by means of the stop-chairs B', so that the turn from the straight track to the side-track will be on a curve, instead of a straight line, as is now practised, and thus avoiding the angle always produced where no stop-chairs are interposed, for the purpose of curving the track, at the point where the switch-rails do not move, and are connected, by the same chairs, with the fixed rail, thus producing an easier and safer transfer of a train of cars from one track to another, by means of the curved switch-rails, than can be had by the pivoted rail, or by simply moving one end of the switch-track, leaving the switch-rails in straight lines from end to end, and forming an angle at either end, where the switch-rails unite with the fixed rails, because it is at these angles in the track, when thus formed, where the cars are most liable to leave the track, and make trouble and expense to again replace on the track.

The switch-stand is entirely novel in its construction and operation, as well as safe, less liable to get out of order than ordinary switch-stands, and much cheaper in construction.

g g are the standards, securely fixed upon its sills, which may be elongated ties or otherwise, as desired, and as seen in figs. 1 and 2, and are connected together by cross-bars, or ties, for the purpose of strength and firmness, the legs of which are inclined and rise to the proper height, to give sufficient below the top of the stand to the point where the operating-lever *a* is hinged to the connecting-bar C, that operates the switch-track.

Between the legs of standards *g g* are curved guide-girders *f*, having notches *e' e'*. The upper edge of these notched girders is on a circle concentric with the point at which the lever *a* is pivoted on the top of the standards *g g*.

Lever *a* has a slot, *i*, in it, through which goes screw-bolt *i*, which attaches it to the eyes *j j*, on the standards, and upon this pin the lever *a* is worked, as seen in fig. 2; and midway, or nearly so, between the

pivoted point *i* and the connection of the lever with the connecting-rod *c*, is a pin, *e*, seen in fig. 3, which rests upon the circular girder *f*, and when the lever *a* is thrown either way, so as to have the switch-track coincident with either the main or side-track, the pin *e* will have arrived at notch *e'*, into which it is allowed to fall, by means of the slotted hole, in which is pivot-pin *i*, and is held firmly in its place and cannot be changed, without raising the lever, and thereby the pin out of notch *e'*. But that there may be greater security in making the switch fast in its position, and to avoid any danger from accidental displacement, a hook-lever hasp, *d*, fig. 4, is hinged to plate *k*, through which goes pin *i*.

The hook-end of the hasp goes through a slot in lever *a*, so that when lever *a* is thrown one side, so that the pin *e* will fall into notch *e'*, the lever falls, carrying with it the hasp *d*, in which is a slot, that is thrown over staple *d'*, in lever *a*, when any common padlock can be inserted in the staple, and the switch securely locked in its position.

When the lock is taken out, the lever *a* can be raised to take pin *e* out of notch *e'*, by simply throwing the lever-hasps off of staple *d'*, and turning it in the position seen in fig. 3, or it can be accomplished by simply lifting up the lever, by which operation the hasp-lever is disengaged from the staple, when the pin is released from the notch, and the lever is free to be turned in the other direction.

In order to lengthen the lever, and give greater leverage, part *a'* is hinged to the lever *a*, and is held in its place by a pin, as seen in figs. 2 and 3.

This switch-stand is simple in its construction; can be made out of bar-iron, at any common smiths' shop, and can be as easily repaired at the same shop; is light, requiring less material in its construction, while it is as strong as iron can make it.

We are aware that railroad-tracks have been moved

a few inches, in order to change the passing cars to another track, involving the necessity of inserting frogs and points in the main track, which are expensive and always a great detriment to the solidity of the track; but we have never known, prior to our invention, a switch-track to slide far enough to one side to completely take the passing cars from the main track, and thus avoid the use of such frogs and points.

We are also aware that in switch-stands, curved guides, having notches therein, to receive a pin or arm upon the switch-lever, whereby its further movement is arrested, until such pin or arm is forced out of the notch, are in use. Simply such construction and arrangement of devices we do not claim, as our arrangement is different, as, by our construction, we are enabled to move the switch and lock the lever, in the notch of the curved guide, by means of operating the lever alone, which cannot be done by other constructions.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

1. The main track *A*, siding-track *A'*, when arranged, with relation to the switch-track *A''*, in the manner and for the purpose substantially as described.

2. The combination of the switch-track *A''*, connecting-bars *B''*, stop-chairs *B'*, in curved lines, with the connecting-rod *C* and lever *a*, in the manner and for the purpose substantially as set forth.

3. The removable connecting-bar *B''*, when constructed in the manner and for the purpose substantially as described.

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