

W. M. MITCHELL.
SWITCH POINT.

APPLICATION FILED NOV. 14, 1905.

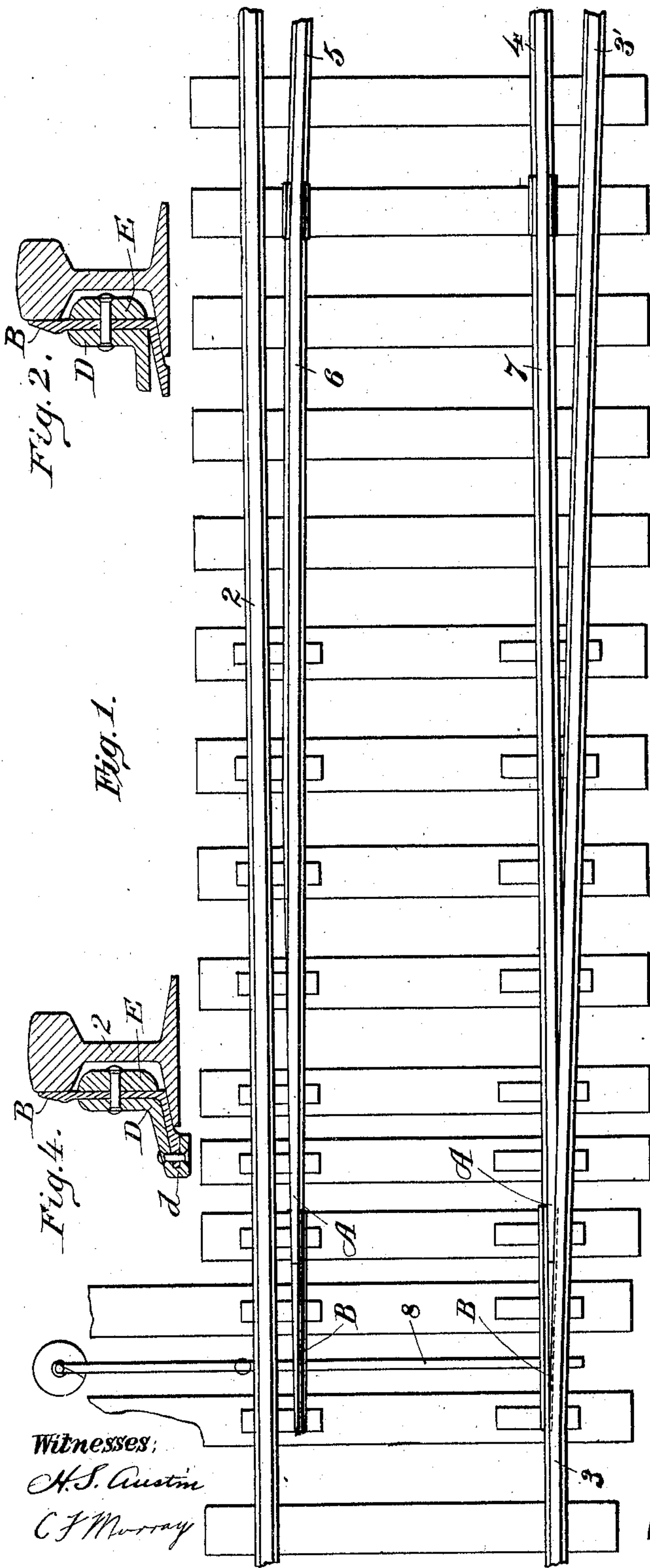


Fig. 1.

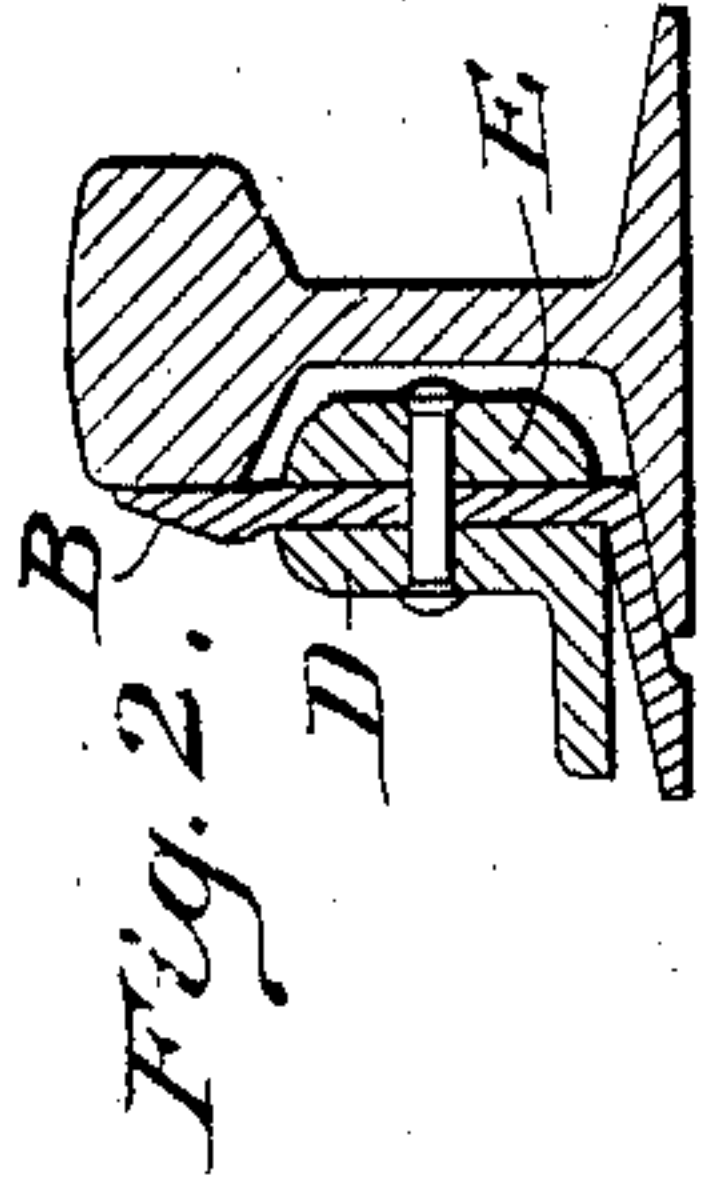


Fig. 2.

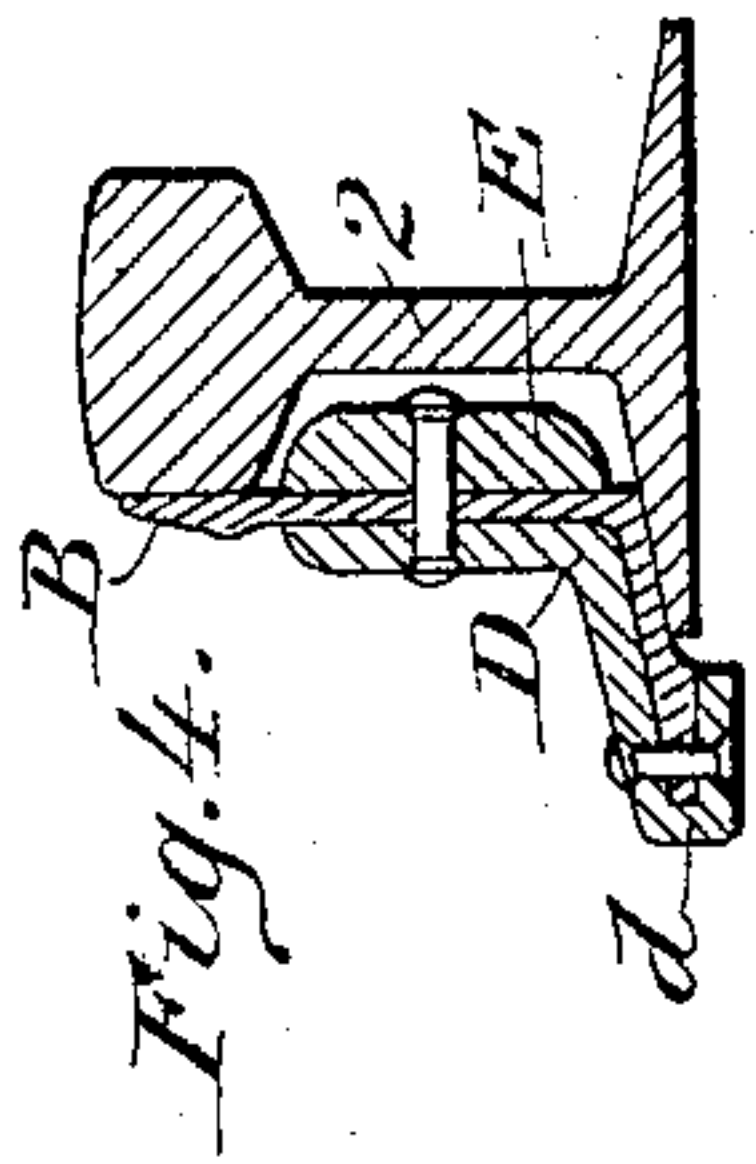


Fig. 4.

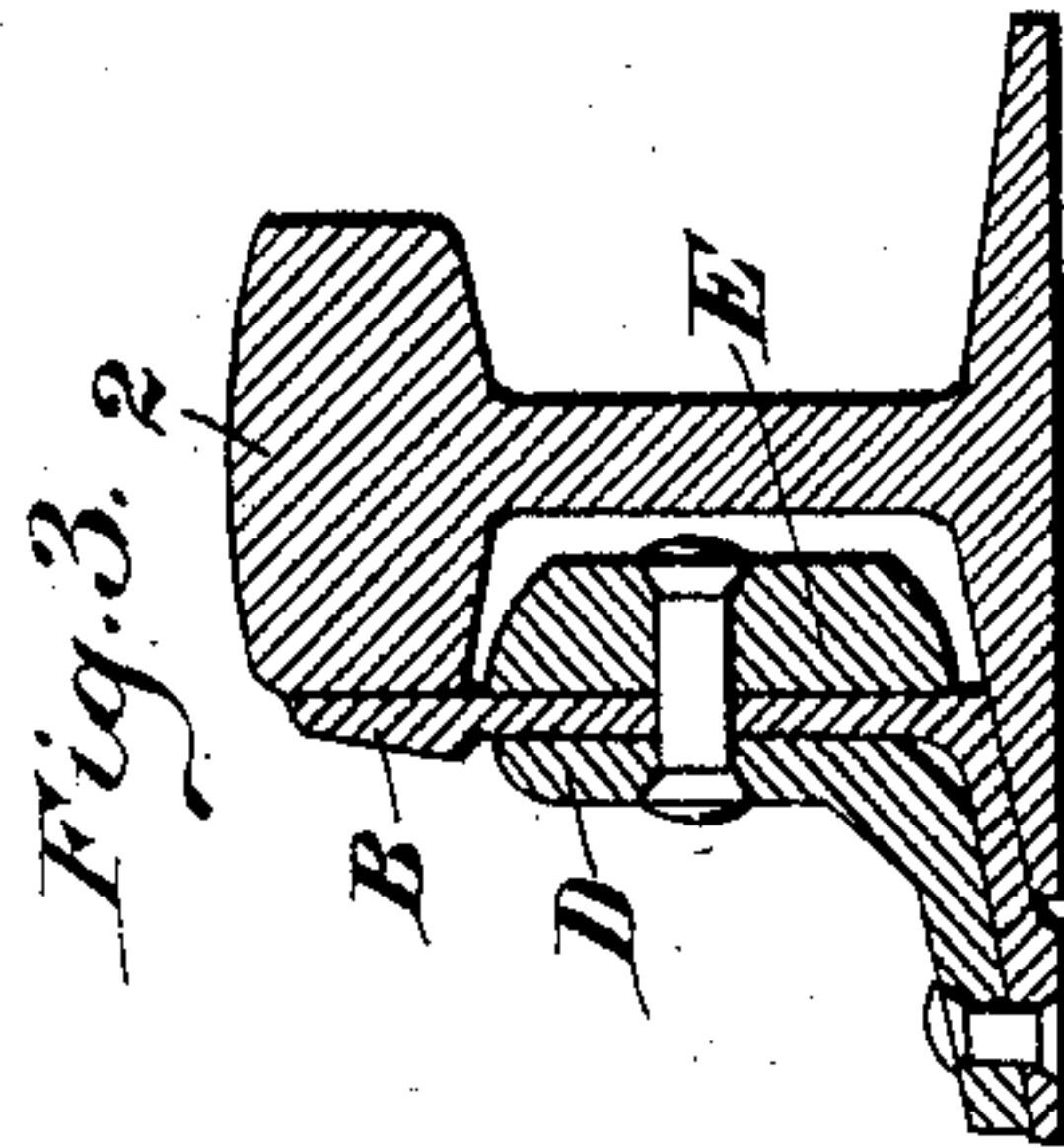


Fig. 3.

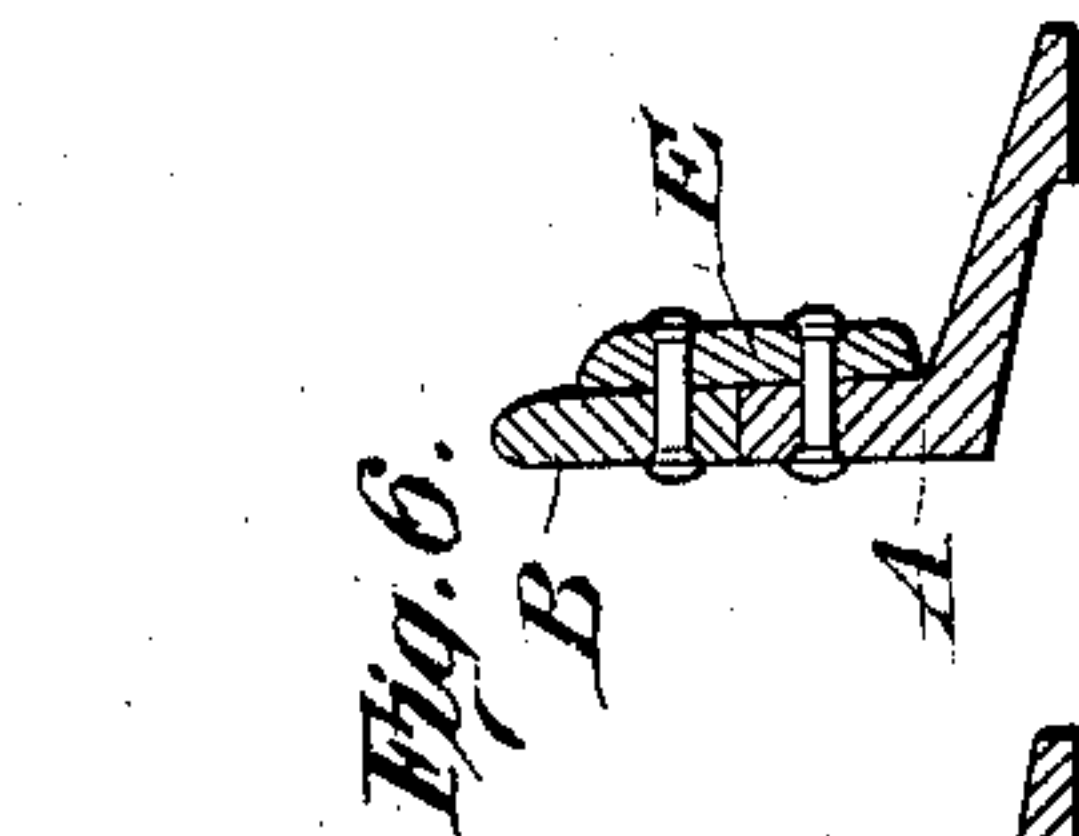


Fig. 6.

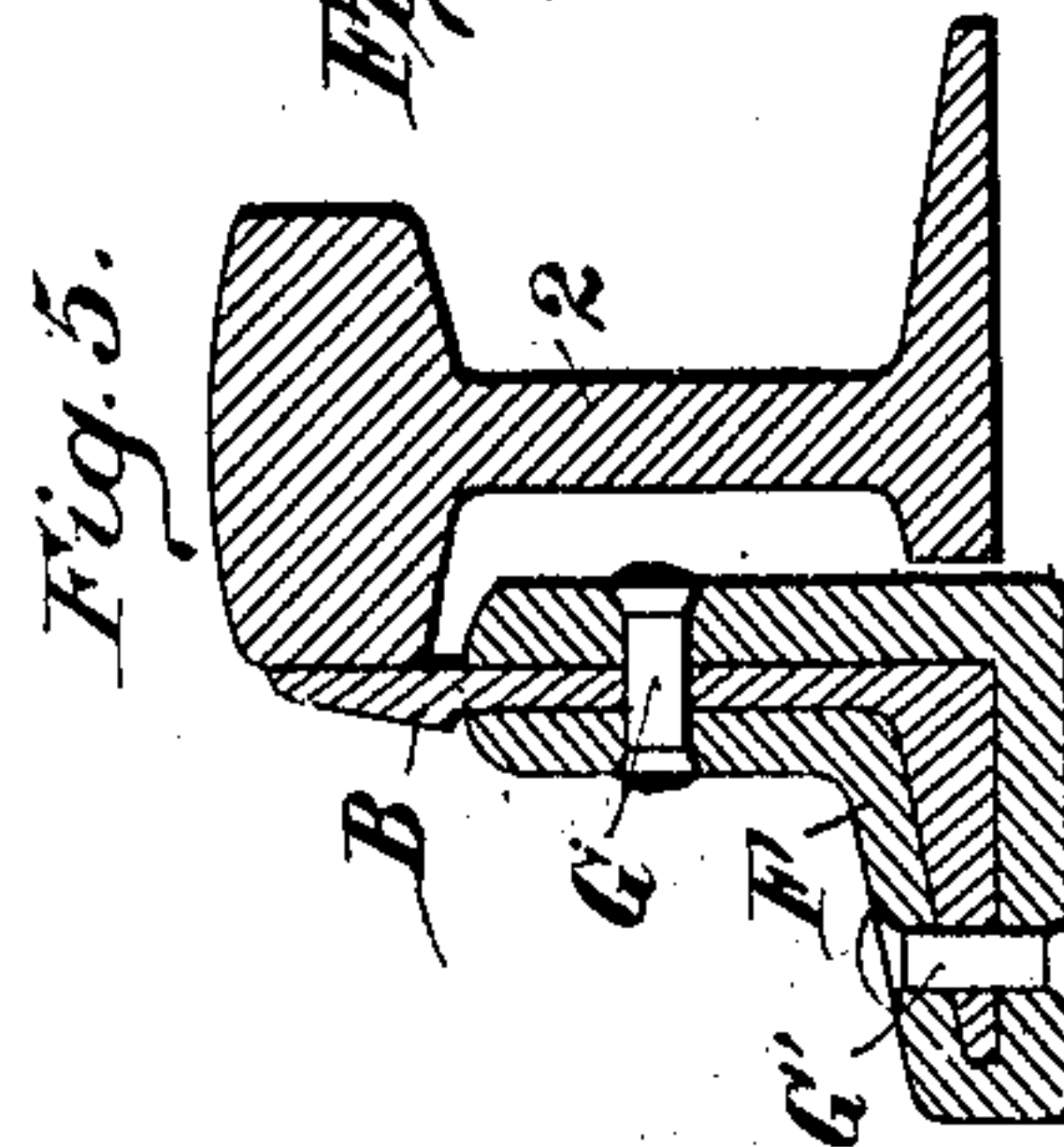


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM M. MITCHELL, OF LOUISVILLE, KENTUCKY.

SWITCH-POINT.

No. 859,404.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed November 14, 1905. Serial No. 287,280½.

To all whom it may concern:

Be it known that I, WILLIAM M. MITCHELL, a citizen of the United States, residing at Louisville, Jefferson county, Kentucky, have invented a certain new, useful, and Improved Switch-Point, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railroad switches and has special reference to improvements in switch rails and more particularly to the points thereof.

The object of my invention is to provide a switch rail with a point which is more durable than those in general use and which may therefore be kept in the best of condition for a fraction of the cost which is commonly connected with their maintenance.

The particular object of my invention is to provide a separable point for switch rails which may be made of more durable material than said switch rail and which may be readily replaced when worn without necessitating replacing the entire switch rail.

The switch rails as now in general use are manufactured from the ordinary stock of rails, such rails being planed off at an angle on both sides until a sharp point or feather edge is formed. It is this tapered or feathered end which bears against the main rail and which receives the wheel blows and the continual wear from the flanges of the wheels. These tapered ends are often worn down and blunted to such an extent as to make the switch absolutely dangerous and frequent and serious accidents have been attributable to such worn condition of the switch point. It is customary to frequently inspect switches and when the switch points are found badly worn to replace the switch rail. This is both expensive and wasteful, for the discarded switch rail is worthless being unfit for further use, even though it is practically unworn except at the extreme point.

A chief purpose of my invention being to largely avoid and to minimize the cost of switch maintenance, I provide a separable switch point for the switch rails which points may be made of a better grade of steel than the switch rail proper, thereby increasing the life of the point; and being made as a separable and detachable piece is readily replaced when worn to such an extent as to become dangerous. To this end I initially blunt or truncate the tapered end of the switch rail and finish it by attaching a point section thereto which section may be replaced or renewed at slight cost.

An incidental purpose of my invention is to utilize old or discarded switch point rails by cutting off the point portion of the tapered ends thereof and providing them with new points which shall preferably be of better quality and capable of withstanding usage for a longer time than the original points.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which

Figure 1, is a plan view of a railway switch illustrating the switch rails provided with my novel separable switch points. Figs. 2, 3, 4, 5, and 6 are cross sectional view of various modifications in which the attaching means are not integral with either the rail or the point section.

Briefly stated my invention consists in a switch point which may be readily attached to the truncated end of a switch rail, and further consists in a new article of manufacture which is constituted by said switch point equipped with means for attaching the same to the body of the switch rail.

Referring to the drawings, 2, represents the straight main rail and 3, the main rail leading to the siding rail, 3'.

4, indicates the main rail parallel with 2 and 5, the siding rail parallel with 3'.

6, is the switch point rail connected to 5, and 7 is the switch point rail connected to the rail, 4. These switch point rails are illustrated as connected by the usual yoke, 8.

A, indicates the truncated end of the switch rail and B, a switch point attached thereto.

It is obvious that my switch point section may partake of the common form of the point portion of a switch rail, and that it is not necessary to form the attaching means integral with the section. When so formed the point may be effectively and safely fastened to the reduced end of the switch rail by means of separate plates. In Fig. 2, I have illustrated a cross section of a sectional point joint structure, wherein the switch point partakes of the general configuration of the ordinary switch point, and is attached to the switch rail by means of an angle bar, D, extending along the outer side of said switch point section and for a distance along the switch rail and securely bolted to the webs of both sections. The joint is further stiffened and rendered more secure by an additional bar, E, similarly bolted to the webs on their inner or rail side. The bar, E, in this construction will occupy the recess between the head and base flange of the main rail when the point is in contact with said rail.

The modification shown in Fig. 3 is similar to that illustrated in Fig. 2, except that the lower flange of the angle bar is deflected and bolted to the flange of both sections. The modification illustrated in Fig. 4 is the same as in Fig. 3, but for the additional security obtained by extending the lower flange of the angle bar and bending it about the foot of the rail and point as indicated at d.

In Fig. 5, I have illustrated a modification in which the switch point is substantially of the same form as in the preceding modifications but instead

of the angle, D, and bar, E, I substitute an irregular channel piece, F, which is adapted to receive the ends of the rail and point sections. When the piece, F, has been placed in position it is secured by two sets of 5 rivets or bolts, G—G'. When this connection is employed it is necessary to cut away the adjacent base flange of the main rail as shown. A distinct saving in the cost of switches may be secured by making the long switch rails in several sections which are separately re- 10 newable and for such cases I provide and employ inverted T shaped channel pieces or joints, H. See Fig. 16. This device snugly embraces top, bottom and sides of the rail base and web. Being secured by three sets of rivets, I, I', I'' it forms a very rigid and secure 15 structure and has great vertical and lateral strength.

It will be noted that, in the modifications which I have shown so far, the point section partakes of the common form of the point portion of the switch rail and is securely fastened to the end of the truncated rail by 20 means of separate plates bolted or riveted to the two members respectively. In Fig. 6 I illustrate a modification wherein the head of the rail is cut away for some distance from the point and is replaced by a detachable

point member which is secured to the rail by means of a strip or bar E and a double row of rivets or bolts. 25

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a railroad switch, the truncated switch point rail and a tapered point section abutting the truncated end of the switch point rail, in combination with an angle bar 30 extending along the web portions of said point and said rail and rigidly secured thereto, substantially as described.
2. In a railroad switch the truncated switch point rail and a tapered point section abutting the truncated end of the switch point rail in combination with an angle bar 35 extending along the web and base portion of said point and rail and rigidly secured thereto, substantially as described.
3. In a railroad switch, the truncated switch point rail and a tapered point section abutting the truncated end of the switch point rail, in combination with an irregular 40 channel piece embracing and rigidly secured to the web and foot portions of the said point and switch point rail, substantially as described.

In testimony whereof, I have hereunto set my hand, this 24th day of November, 1905, in the presence of two 45 subscribing witnesses.

WILLIAM M. MITCHELL.

Witnesses:

W. E. WILLIAMS,
H. O. WIELAND.