

H. B. NICHOLS.

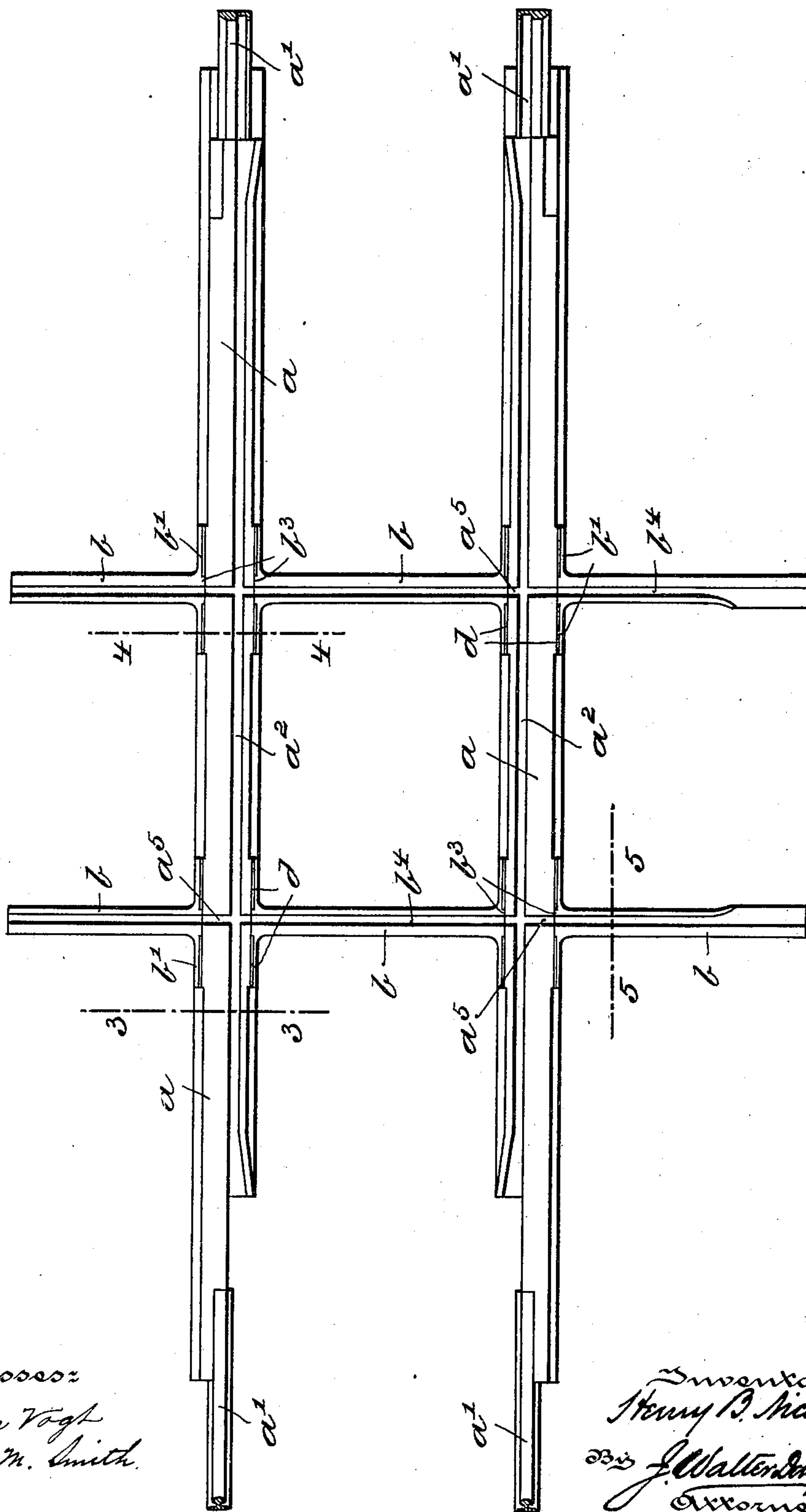
INTERLOCKING RAIL CONNECTION AND CROSSING.

(Application filed Mar. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:

Wilhelm Vogt
Thomas M. Smith.

Inventor:
Henry B. Nichols,
By J. Waller Dugan,
Attorney.

UNITED STATES PATENT OFFICE.

HENRY B. NICHOLS, OF PHILADELPHIA, PENNSYLVANIA.

INTERLOCKING RAIL CONNECTION AND CROSSING.

SPECIFICATION forming part of Letters Patent No. 674,175, dated May 14, 1901.

Application filed March 29, 1901. Serial No. 53,418. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. NICHOLS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Interlocking Rail Connections and Crossings, of which the following is a specification.

My invention has relation to a connection or a crossing formed between meeting or intersecting rails either of a street-railway with a steam-railroad rail or between two street-railway rails; and in such connection it relates more particularly to the construction and arrangement of the connection or crossing.

In connections and crossings of the type to which my invention applies one part of the crossing or connection is formed of main rail-sections continuous from end to end and having the upper face or head grooved or channeled not only for the passage of the flange of the wheel over the rail-section, but also grooved or channeled at an angle to the first groove or channel to permit of the flange of the wheel traveling diagonally or at right angles over the head of the main sections. In conjunction with these main rail-sections additional crossing or meeting sections are used to serve as continuations of the track which is to merge into or cross the main rail-sections. The manner of connecting or interlocking the crossing or meeting rail-sections with the main rail-sections constitutes the invention of the present application.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a railway-crossing embodying main features of my invention. Fig. 2 is a perspective view, enlarged, of the meeting end of a crossing rail-section disconnected from the crossing. Fig. 3 is an enlarged sectional view taken on the line 3 3 of Fig. 1, but with the crossing parts removed. Fig. 4 is an enlarged sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is an enlarged longitudinal sectional view taken on the line 5 5 of Fig. 1; and Fig. 6 is an enlarged top or plan view of one of the

corners of the crossing, with portions broken away to more clearly illustrate the connection.

In the drawings the invention is illustrated as applied to a crossing formed between steam-railroad rails and street-railway rails. It is within the spirit and intention of my invention to use the same in conjunction with crossings and rail connections of all kinds in which one rail approaches or crosses another at an angle.

Referring now to the drawings, *a a* represent the main rail-sections, which in the form shown are continuations of steam-railway rails *a'*. These main rail-sections *a a* have enlarged heads, in which are formed the longitudinally-arranged grooves *a²*, in which the flange of the wheel travels as the wheel travels along the sections *a a*. The heads also have the grooves *a⁵* at an angle to the grooves *a²* and forming continuations for the travel of a wheel from the crossing rail-sections *b* across the head of the rail-sections *a a*. The rail-sections *b* (six in number) have at the end adjacent to the main section *a*, to which it is to be secured, a plate *b'*, extending in the form illustrated in the drawings at right angles to the head, web, and base of the rail *b*. On that face of the plate *b'* which is to rest adjacent to the main rail-section *a* is formed a dovetailed projection or rib *b²*, adapted to slide in a correspondingly-formed recess or channel *a³* in the side of the main rail *a*. The plate *b'* is so formed on the section *b* that when its rib or projection *b²* fits into the channel *a³* of the rail *a* there is a space formed between the parts of the plate *b'* and the adjacent and surrounding parts of the rail *a*, except that at the part *b³* of the plate *b*, in which the groove *b⁴* of the rail *b* extends, the plate *b'* is extended into a block to fit flush against the head of the rail *a* and to serve as a continuation or extension connecting the cross-groove *a⁵* with the groove *b⁴* of the rail *b*, as illustrated in Fig. 6. Into the space which otherwise separates the plate *b'* from the rail *a* a metal of lower melting-point is adapted to be poured, which metal forms a key or bed *d* between the interlocking parts of the rails *a* and *b*. To center the dovetailed projection or rib *b²* in the channel *a³*, there is formed on the projection or rib

b^2 , on either side of the central line of said plate b' , one or more buttons b^5 , which are adapted to rest on the rail a within the channel a^3 . By filing one or the other of these buttons b^5 down true parallelism between the plate b' and the rail a may be secured prior to the pouring in and setting of the metal key or bed d . When the parts of the rails a and b are in operative connection, there is formed between the rails an interlocking connection which does not require the use of bolts traversing the webs or connecting parts. The joint is strong, easily made, and easily separated. The key or filler d when the parts are to be separated can be readily melted without injuriously affecting the adjacent parts of the connecting rails. The key or filler d does not fuse or weld with either the rail a or plate b' . Where frogs, switches, or other angular connections are to be made, the plate b' will extend from the rail b at the required angle, so as to readily enter the channel of the adjacent rail-section a and yet permit the rail b to make the connection with the rail a at the required angle.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an interlocking rail connection or crossing, a main rail having its side longitudinally channeled, a connecting rail, a plate formed on the meeting end of said connecting rail and extending at an angle thereto, and a projection formed on said plate adapted to enter and to interlock with the channeled side of the main rail, substantially as and for the purposes set forth.

2. In an interlocking rail connection or

crossing, a main rail having its side longitudinally channeled and at its head transversely grooved to receive the flange of the crossing wheel, a connecting rail having in its head a groove adapted to form a continuation of the transverse groove of the main rail, a plate formed on the meeting end of said connecting rail and extending at an angle thereto, a grooved block formed on said plate and forming a continuation for the groove of the connecting and main rails, said block adapted to fit flush against the head of the main rail, a projection or rib formed on the plate and adapted to loosely enter and interlock with the channeled side of the main rail, and a metallic key or bed adapted to be inserted in the space between the rib and channel of the main rail, substantially as and for the purposes set forth.

3. In an interlocking rail connection or crossing, a connecting rail, a plate extending at an angle to the connecting rail and formed at the meeting end of said rail, a dovetailed projection formed on said plate, a main rail having its side complementally channeled to receive said projection, and a metal key or bed adapted to interlock the projection on the connecting rail with the channeled side of the main rail, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

HENRY B. NICHOLS.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.