(No Model.)

G. W. SHINDELBOWER.

LOCK RAIL JOINT.

No. 589,757. Patented Sept. 7, 1897.

FIG. 5.

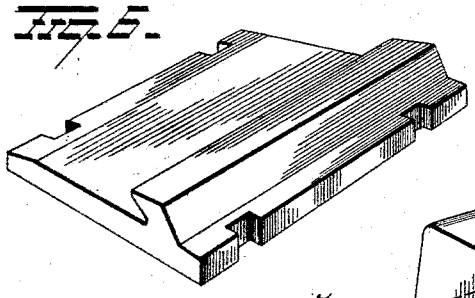


FIG. 1.

FIG. 2.

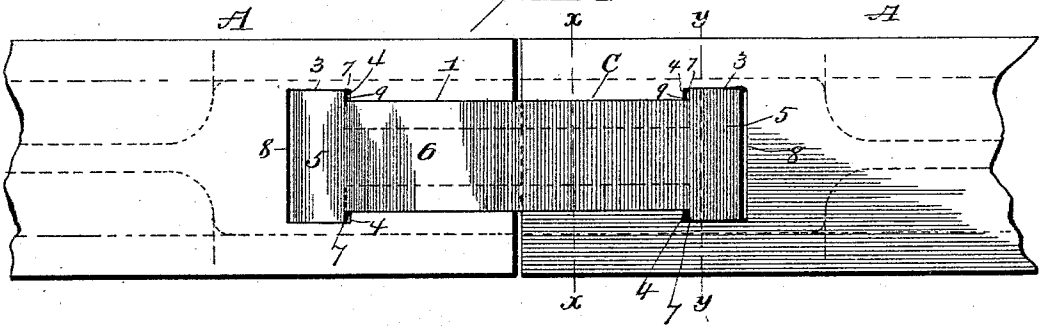


FIG. 3.

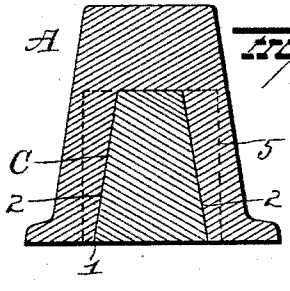


FIG. 4.

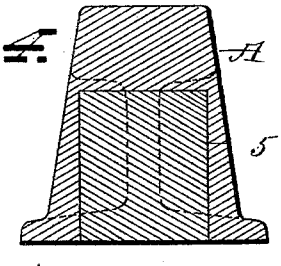
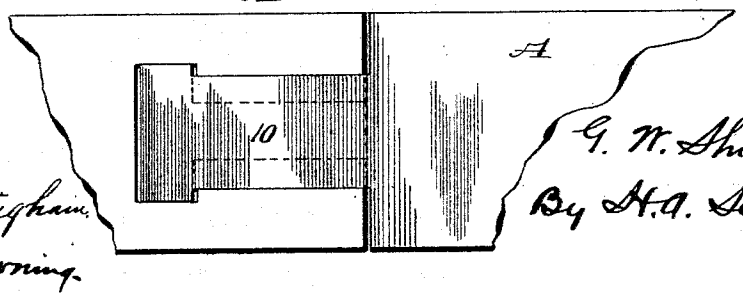


FIG. 5.



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UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON SHINDELBOWER, OF LEXINGTON, KENTUCKY, ASSIGNOR OF ONE-THIRD TO HENRY C. McDOWELL, OF SAME PLACE.

LOCK RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 589,757, dated September 7, 1897.

Application filed May 29, 1897. Serial No. 638,791. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON SHINDELBOWER, of Lexington, in the county of Fayette and State of Kentucky, have invented certain new and useful Improvements in Lock Rail-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in lock rail-joints, the object of the invention being to provide means whereby railroad-rails can be quickly and securely connected together without the use of fish-plates and bolts, and which will not interfere with the expansion and contraction of the rails.

A further object is to provide means for connecting railroad-rails, which shall be simple in construction, cheap to manufacture, quick and easy of application, and which shall be effectual in all respects in the performance of their functions.

A further object is to provide a lock rail-joint which will also serve to electrically connect rail-sections and thus avoid the necessity for the use of separate connecting wires or devices.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view illustrating my invention. Fig. 2 is a horizontal longitudinal sectional view. Fig. 3 is a cross-section on the line *x x* of Fig. 2. Fig. 4 is a cross-section on the line *y y* of Fig. 2. Fig. 5 is a view of a modification. Fig. 6 is a view of a shoe for connecting abutting ends of a new and an old rail.

A A represent two rail-sections, the ends of each of which are enlarged—that is to say, the web of the rail at the end is widened or thickened, so as to be flush with and in effect a continuation of the head or tread portion of the rail.

The enlarged portion of each rail-section is made with a slot or opening 1, having inclined walls 2 2, said slot being open at the bottom of the rail and terminating at its upper end approximately in line with the base of the head or tread portion of the rail. Beyond the tapering slot 1 an angular (preferably square) recess 3 is made in the rail, so as to form tapering shoulders 4 at the inner end of each wall 2 of the slot 1.

A key C for locking the two rail-sections together is provided and adapted to enter the slots and sockets in the abutting ends of two rail-sections and have its bottom face flush with the bottom of the rails, so as to rest on the ties on which the rails are mounted. The key C is provided at each end with a head 5, and the body portion 6 of the key is made somewhat tapering, so as to conform to the shape of the slots or openings 1 in the rail-sections and so as to form tapering shoulders 7 7, which, when the heads 5 enter the angular recesses or sockets 3 in the ends of the rail-sections, will be disposed parallel with the shoulders 4. The length of the key C is somewhat less than the combined length of the openings or slots and recesses or sockets of two abutting rail-sections, so as to leave spaces 8 between the end faces of the heads 5 and the end walls of the sockets or recesses 3, and said heads 5 are made of such thickness as not to completely fill the sockets or recesses 3, but to leave small spaces 9 between the shoulders 4 and 7. Thus it will be seen that the rail-sections can have slight endwise movement independently of the key while the latter remains seated on the ties, so as to allow said rail-sections to expand and contract when subjected to changing temperatures without in any degree straining the key.

From the construction and arrangement of parts above described it will be seen that two rail-sections can be quickly and securely connected together when they are placed in position on the ties, the respective halves of the key entering and interlocking within the sockets in the respective rail-sections.

My improved lock-joint also affords an effectual electrical connection between rail-sections, and thus avoids the necessity for the use of separate connecting devices between the rail-sections in the construction of an electrical railroad.

Instead of employing a separate double-

headed key, as above described, a single-ended key or tongue 10 may be employed and made integral with one rail-section, as shown in Fig. 5, the abutting rail-section being made with the socket and opening for the reception of the headed end of the key or tongue 10, as above explained.

My improvements are simple in construction, cheap to manufacture, and effectual in all respects in the performance of their functions.

Slight changes other than those above mentioned might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a rail-section having a slot in its end under the tread portion of the rail and an angular recess at the inner end of said slot and of greater width than said slot whereby to form shoulders, of a key having a portion to enter the slot in the end of the rail-section, and a head adapted to enter the recess and engage said shoulders, the said slot, recess, key and head being of such shape and size that the key and rail can be united without turning or similarly manipulating either part.

2. The combination with a rail-section having a tapering slot in its end under the tread portion of the rail, the said slot being widest at its base and having an angular recess or socket at the inner end of said slot whereby to form tapering shoulders, of a key having a tapering portion to enter the tapering slot in the rail-section and a head on said key adapted to enter said angular recess or socket in the rail-section and engage the shoulders formed by said recess or socket, the openings in the rail being widest at the bottom whereby the rail can be lowered onto the key and into proper relative position to the next rail without turning or otherwise manipulating the key or rail.

3. The combination with two rail-sections, each having an opening in its end and each having a socket at the inner end of said opening, of a separate key to enter said openings, said key having heads to enter said sockets in such manner as to permit independent movement of the rail-sections to compensate for expansion and contraction without straining the key, the openings in the rail-sections being widest at the bottoms whereby the rails can be lowered onto the keys and into proper relative positions without turning or otherwise manipulating the key or rails, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE WASHINGTON SHINDELBOWER.

Witnesses:
CHARLES SCOTT,
CHARLES HENDRIE.