H. C. LONG.

AUTOMATIC WEDGE BOLT COUPLING.

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1,030,902. Patented July 2, 1912.

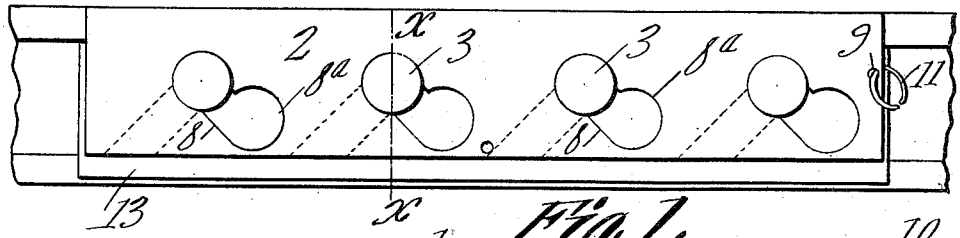

Fig. 1.

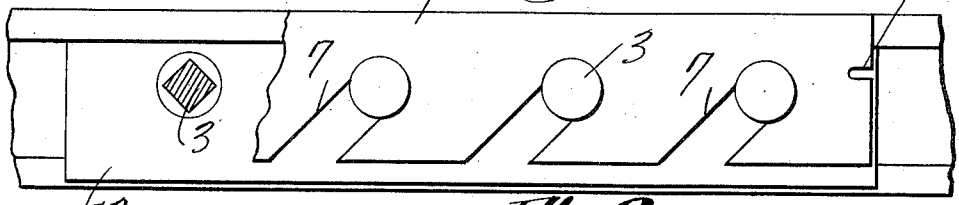

Fig. 2.

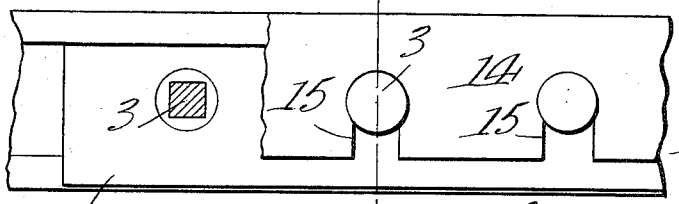

Fig. 5.

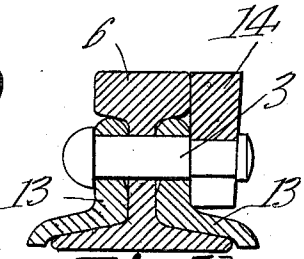

Fig. 5a.

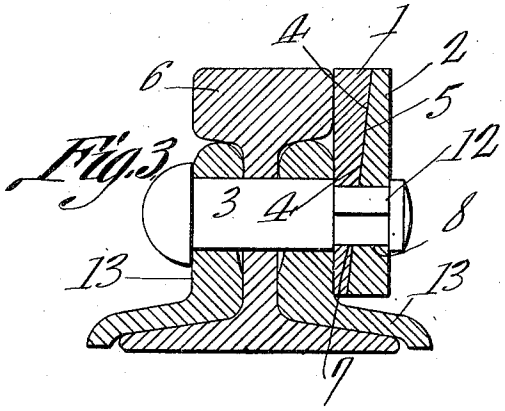

Fig. 3.

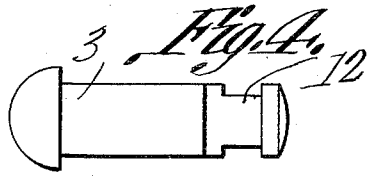

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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AUTOMATIC WEDGE-BOLT COUPLING.

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To all whom it may concern:

Be it known that I, HENRY C. LONG, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented a new and useful Automatic Wedge-Bolt Coupler, of which the following is a specification.

The invention relates to improvements in bolt-locking devices, especially designed for railroads, while it may be applied for other purposes.

The invention has for its object to provide an effective locking action between the parts, as against the possible casual displacement thereof.

A further object is to obviate the use of threaded bolts and nuts in effecting the locking action.

A still further object is to deliver or secure a binding or wedging action in effecting the locking together of the parts.

A still further object is to provide for readily applying the device for use and for removing the same with equal facility.

The invention consists of certain instrumentalities and features, substantially as hereinafter fully disclosed and defined by the claims.

In the accompanying drawing, illustrating the preferred form of my invention, wherein it will be understood that various changes and modifications may be made as relates to the details of the construction and arrangement of the parts without departing from the spirit of the invention: Figure 1 is a side elevation showing the invention as applied for locking railroad rail sections together. Fig. 2 is a like view with one wedge member removed and the locking bolt shown in transverse section, the section being produced through the angular portion or outline of the bolt. Fig. 3 is a vertical or transverse section of Fig. 1 upon the line *x*—*x*. Fig. 4 is a detached side view of one of the locking unthreaded bolts. Fig. 5 is a broken side view of a modification of the invention. Fig. 5[a] is a sectional view taken on the line *y*—*y* of Fig. 5.

In carrying out my invention, I employ two wedge-members 1 and 2, which are rectangular in general outline, and a bolt-member 3, said wedge-members having oppositely sloping or inclined surfaces 4 and 5, respectively, opposed to, or engaging each other as indicated in Fig. 3. The inner wedge-member 1, that disposed next to the rail-section or member 6, has its thicker edge presented upwardly, and, about flush with the corresponding surface of the rail-section or member. The wedge-member 1 has preferably a plurality of inclined slots 7 therein, the general trend of which is about at the angle disclosed in Fig. 2, said slots extending from a point about centrally of the wedge-member, where they receive the locking bolts presently referred to, and opening through the bottom edge thereof. The wedge-member 2 is preferably provided with a plurality of inclined slots 8 likewise extending from about centrally thereof to also receive the locking bolts, which slots, however, may or may not open through the edge of said member, but may terminate at their lower ends in arcuate or circular outline, as at 8[a], which arcuate or circular outlined portions are somewhat enlarged with respect to the opposite end portions of said slots, the function of which will be apparent later. The trend of the inclinations of the two-wedge-members or bars 1 and 2 is in opposite directions or about at right angles, to aid in effecting a locking action as will more fully presently appear, the upper terminals of each two opposed slots of the two sets thus provided intersecting a line extending transversely through the rail-section. The two wedge members 1 and 2 are preferably apertured and slit respectively as at 9 and 10, at opposed ends to receive a retaining, preferably split ring-like contrivance or fastening 11 as shown in Fig. 1 for aiding in securing the two wedge-members against possible displacement. This contrivance or fastening is not considered, however, indispensable, it being used only incidentally or as a contingency in certain cases, as it is apparent that the device is perfect in its locking or retaining action for all purposes to which it may be applied.

The bolt-member 3, in addition to having the usual head as shown, is reduced or notched transversely as at 12 near its unheaded end to receive the edges of the slots 7 and 8, while the reduced portion 12 of the bolt-member is angular in cross-section as clearly disclosed by Figs. 2 and 3. It is not essential that the bolt-member should be notched or reduced just as herein shown, as it may be reduced or notched from any two opposite points of its surface and be applicable for its intended purpose as it is thought is apparent.

It will be seen that with the parts or members 1 and 2 applied as indicated in Fig. 3, for instance, and the bolts 3 inserted through the rail-member 6 and the usual fish-plates 13, the angular portions 12 of said bolts will be received by the slots 7 and 8 at their upper or inner ends, the slots at this end just being of a width to accommodate the reduced portions 12 of the bolts, whereby the edges of the slots will of course, be sunken below the general surface of the body of each bolt, thus providing for holding the parts jam-tight together and against lateral displacement without the use of other fastenings, as nuts, keys and the like. The angular portions of the bolts, it is apparent, will prevent any pivoting or turning movement of the members upon said bolts, thus aiding the mutual binding or wedging action of said members in effecting a locking action therefor.

Of course, it will be observed that the locking bolts are initially inserted through the enlarged terminals 8^a of the slots 8 of the wedge-member 2, after which said member is adjusted downwardly to its final position, the bolts being then received by the reduced portions of said slots; the member 1 now being adjusted to position, astride of the angular portions 12 of said bolts intermediate of the member 2 and the rail-sections. It will be further observed that, with the flared or enlarged edge or portion of the wedge or member 1 presented upwardly adjacent to the rail-section upper surface, the action of the car-wheel thereon will have the effect to more firmly wedge it against the member 2, as against jarring the same loose as would otherwise be the case.

As suggested by the modification embraced in Fig. 5, a single and preferably thicker wedge-member 14 may substitute the use of the duplicate wedge-members in putting my invention into practice. In that case, the member 14 would be provided with slots 15 standing or arranged perpendicular to the axis or longitudinal plane of the wedge-member; in other respects the parts remaining unchanged.

From the foregoing disclosure, taken in connection with the drawing, it is apparent that my invention is characterized for extreme simplicity, involving the employment of few parts, is readily applied for use requiring the employment of no nuts, keys or other like fastenings, while it may with equal facility be removed in repairing parts, or for other purposes, and is inexpensive of manufacture and any of the railroads may be readily equipped therewith.

I claim:

1. A device of the character described, including mutually engaging wedge-members, adapted to be applied to an object requiring securing in place, said wedge-members having therein angularly arranged slots, and a securing bolt insertible through said object and having a transversely reduced angular portion intermediate its ends, adapted to be received by said slots and engage the walls of said slots below the general surface of said bolt.

2. A device of the character described, including mutually engaging wedge-members adapted to be applied to an object requiring securing in place and a securing bolt insertible through said object and having a transversely reduced angular portion, intermediate its ends, said wedge-members having slots therein arranged at angles with respect to each other, said bolt angular portion being received by said slots, said slots having their walls received below the general surface of said bolt.

3. A device of the character described, including mutually engaging wedge-members adapted to be applied to an object requiring securing in place, said wedge-members having an aperture and a slit therein respectively, a split ring-like fastening engaging said aperture and slit, and bolts insertible through said object and each having a reduced angular portion, said wedge-members having slots therein angularly arranged with respect to each other, said slots having their walls engaging said bolt angular portion below the general surface of said bolts.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY C. LONG.

Witnesses:
A. R. CHRONST,
L. O. COLEMAN.