No. 756,423. PATENTED APR. 5, 1904.

J. W. SMITH.

RAIL JOINT.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.

Fig. 1.

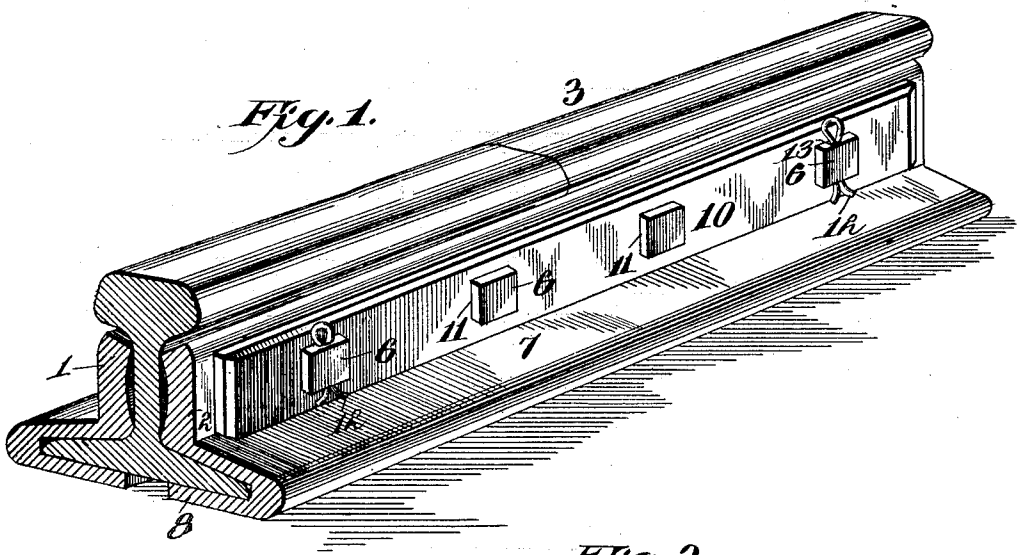


Fig. 2.

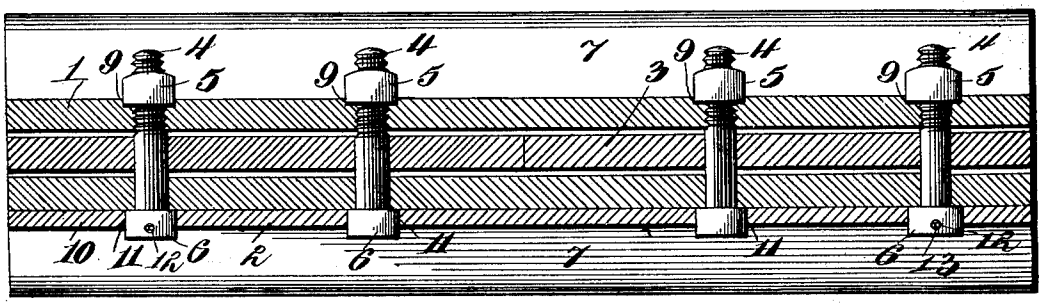
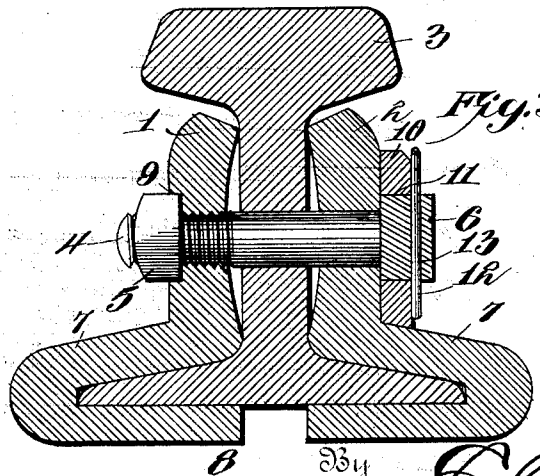


Fig. 3.



Witnesses
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No. 756,423. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

JOHN W. SMITH, OF SHIRLEY, WEST VIRGINIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 756,423, dated April 5, 1904.

Application filed October 22, 1903. Serial No. 178,150. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SMITH, a citizen of the United States, residing at Shirley, in the county of Tyler and State of West Virginia, have invented a new and useful Rail-Joint, of which the following is a specification.

The invention relates to improvements in rail-joints.

The object of the present invention is to improve the construction of rail-joints and to provide a simple, inexpensive, and efficient one of great strength and durability provided with transverse bolts for securing the fish-plates to the rails and having simple and effective means for locking the bolts and nuts against accidental unscrewing.

A further object of the invention is to provide a device of this character which will not necessitate an alteration in the construction of the nut and the threaded portions of the bolt and which will effectually prevent any vibration of the rails accidentally rotating either the bolts or the nuts.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claim may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a rail-joint constructed in accordance with this invention. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a transverse sectional view.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate fish-plates, arranged at opposite sides of rails 3 and provided with perforations registering with corresponding perforations of the webs of the rails and receiving bolts 4. The bolts 4 pass through the fish-plates and the webs of the rails and are provided on their threaded portions with nuts 5 of the ordinary construction. The bolts and polygonal heads 6, which engage one of the fish-plates and the nuts, engage the other fish-plate, as clearly shown in Fig. 2. The fish-plates are preferably provided with bowed upright portions which engage the webs of the rails, and they have outwardly-extending bottom flanges 7 and inwardly-extending bottom portions 8, connected with the bottom flanges at the outer edges thereof and extending beneath the bottom flanges of the rails and forming a chair for the same, as clearly shown in Fig. 3.

The fisb-plate 1 is provided in its outer face adjacent to the bolt-openings with polygonal nut-receiving recesses 9, which conform to the configuration of the nuts and which snugly receive the same, whereby the nuts are effectually locked against rotation when in engagement with the fish-plate 1. The other fish-plate is engaged by the heads of the bolts, which are locked against rotation by a bar 10, fitted against the fish-plate 2, and provided with a series of openings 11, conforming to the configuration of the heads of the bolts, whereby the latter are effectually prevented from accidentally rotating through any jar or vibration of the rails. The locking-bar is maintained in engagement with the heads of the bolts by keys 12, which pass through perforations 13 of the heads of the adjacent bolts. These keys may be of any desired construction, or any other form of fastening device may be employed and substituted for the keys, if desired. The fastening devices are preferably arranged at the ends of the nut-lock, as shown, and they extend above and below the heads of the bolts and engage the locking-bar at the top and bottom thereof. The keys are constructed of spring-wire, which is bent or bowed to form a head or loop at one end of the key, and the terminals of the wire are extended in the opposite direction to prevent the key from being accidentally withdrawn or shaken out of the perforation of the heads of the bolts. The locking-bar is adapted to be readily placed on and removed from the heads of the bolts, and when detached the bolts are adapted to be readily

unscrewed. In screwing or unscrewing the bolts the wrench or other tool is engaged with the heads of the bolts, the nuts being firmly held against rotation by the fish-plate 1, which is provided with the nut-receiving recesses.

It will be seen that the rail-joint is exceedingly simple and inexpensive in construction, that it possesses great strength and durability, and that it is capable of effectually preventing bolts and nuts from being accidentally unscrewed through any vibration or jar of the rails. Also it will be clear that the locking means does not necessitate any alteration in the construction of the bolts and that the perforations for the keys are formed in the heads of the bolts and do not pass through either the nuts or the threaded portions of the bolts. Also it will be apparent that when the locking-bar is detached all of the bolts are free to rotate and may be readily screwed or unscrewed with a wrench,

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

In a device of the class described, the combination with fish-plates designed to be located at opposite sides of the rails and provided with registering perforations, one of the fish-plates being also provided with exterior nut-receiving recesses, a locking-bar fitted against the other plate and provided with polygonal openings, bolts passing through the perforations of the fish-plates and provided with nuts arranged in the recesses of one of the fish-plates, whereby the said nuts are held against rotation, said bolts having their heads engaging the other fish-plate and arranged in the openings of the locking-bar, whereby the bolts are held against rotation, and fastening devices passing through perforations of the heads of the bolts and locking the bar in engagement with the same, substantially as described.

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

JOHN W. SMITH.

Witnesses:
W. W. SMITH,
W. BABS.