D. R. HARDER.

Railroad Rail-Joints.

No. 207,119. Patented Aug. 20, 1878.

Fig. 1

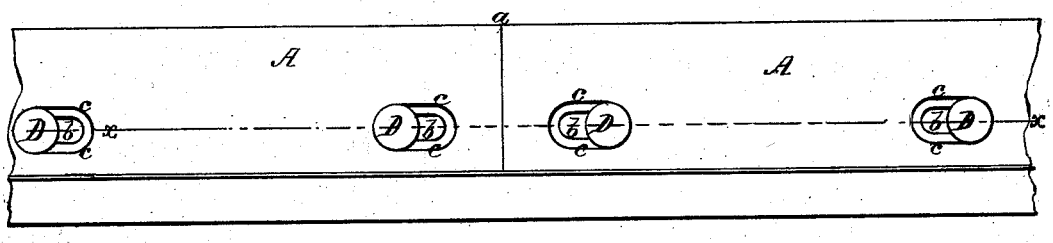


Fig. 2

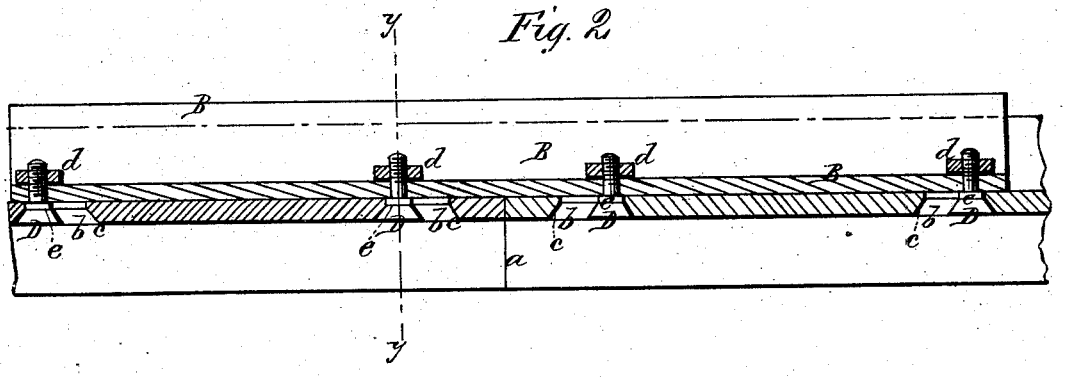
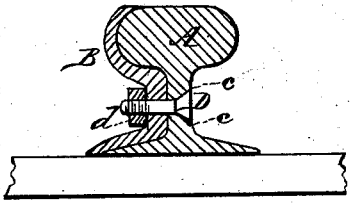


Fig. 3



Witnesses.
James Martin Jr.
J. P. Theodore Laug.

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UNITED STATES PATENT OFFICE.

DENNIS R. HARDER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN RAILROAD-RAIL JOINTS.

Specification forming part of Letters Patent No. **207,119**, dated August 20, 1878; application filed February 15, 1878.

To all whom it may concern:

Be it known that I, DENNIS R. HARDER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fish-Bars for Railroad-Joints, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a railroad-track illustrating the manner of applying my improved rail-coupling. Fig. 2 is a longitudinal section of the same in the line *x x* of Fig. 1; and Fig. 3 a vertical cross-section of the same in the line *y y* of Fig. 2.

The object of my invention is to avoid the use of railroad-chairs, and at the same time to furnish a means for securing the fish-plate couplings to the rails at their meeting ends in such a manner as to leave one side of the web of the rails perfectly plane for the passage of auxiliary supporting-wheels of a car-truck, for purposes hereinafter explained.

The nature of my invention consists of a railroad-rail constructed with oblong parallel bevel-shaped slots through its web at its joint ends, which slots receive countersunk bolt-heads, so as to leave a smooth uninterrupted plane along one of its sides under the head of the rail, in combination with a fish-plate on its opposite side for staying the rails at their joints, as will be hereinafter described.

In the accompanying drawings, A A represent the railroad-rails fastened to the sleepers by means of spikes or in any other suitable manner. The joint *a* of the rails A A is, as usual, placed in the center of a sleeper. A fish-bar, B, is fitted very tightly upon the outer sides of the rails A, having its base precisely flush with the base of the said rails. The rails A are constructed at each of their joint ends with oblong parallel bevel-shaped slots *b*. The said slots *b* are each formed with beveled sides *c*. These slots are formed in the web of each end of the rails beneath and under the heads thereof, as shown in the drawings. The slots *b* are placed at such suitable distances apart so as not to weaken the strength of the rails.

D D are bolts passed through the beveled slots *b* in the rails A and through the fish-bar B. The heads of the bolts D are countersunk in the slots *b*, so as to be on a plane with the web of the rails A, as seen in Fig. 3. The bolts D are provided with extended necks *e* below their heads, and made of an oblong flattened shape, so as to abut against the rail A when the bolts are inserted to their proper position. The said necks *e* of the bolts correspond in size to the base of the slots *b*, and thus the consequent loosening of the bolts by the jarring of the rails is prevented. After the bolts D have been passed through the fish-bar B, nuts *d* are applied for securing the parts tightly together. By making the slots *b* with beveled sides and longer than the heads of the bolts D, expansion of the rails A will take place during the passage of trains.

By having the heads of the bolts D countersunk in the rails A, and dispensing with a supporting fish-bar on one side of the said rail, a perfectly smooth plane is secured, so as to allow of the uninterrupted passage of auxiliary or safety supporting and guiding wheels sometimes used on car-trucks.

The oblong parallel bevel-shaped slots *b* in the web of the rails A are formed at such distances apart that the fish-bar can be secured to the side of the rails in a very permanent manner.

By my improved construction the joints between the rails will be greatly strengthened with but little labor and much less expense than by any plan now in use.

It will be understood that the auxiliary wheel or wheels referred to are used to prevent cars jumping the track, thereby avoiding serious accidents.

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

1. A railroad-rail, A, constructed with oblong bevel-shaped slots *b* through its web at its joint end, substantially in the manner and for the purpose set forth.

2. The bevel-headed bolts D, having oblong flattened necks *e*, in combination with the rail A and fish-bar B, substantially as described.

3. A railroad-rail constructed with oblong bevel-shaped slots *b*, which slots receive countersunk bolt-heads D *e*, so as to leave a smooth uninterrupted plane along one of its sides, in combination with a fish-plate, B, on its opposite side, substantially in the manner and for the purpose described.

Witness my hand, in the matter of my application for a patent for an improved fish-bar for railroad-joints, this 7th day of December, 1876.

DENNIS R. HARDER.

Witnesses:
P. T. HARDER,
JAS. VAN ALLEN, Jr.