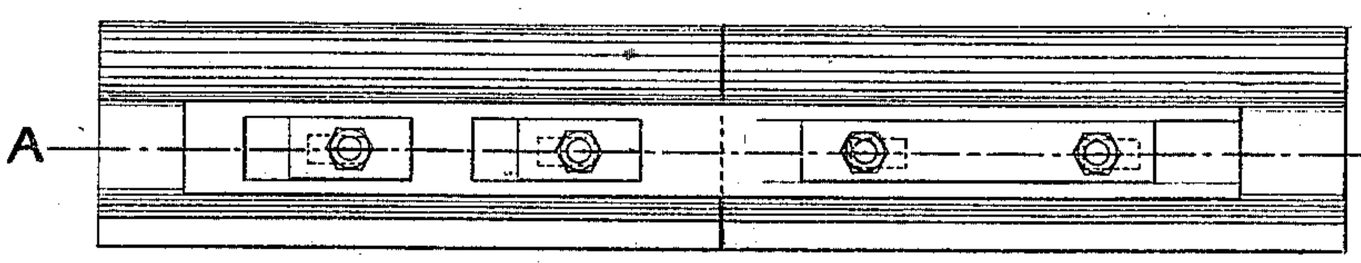
F. OAKLEY.

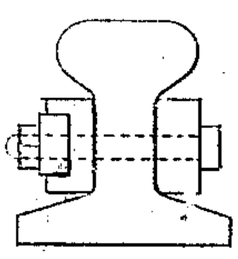
# Improvement in Compensating Railway-Joints.

No. 131,554. Patented Sep. 24, 1872.

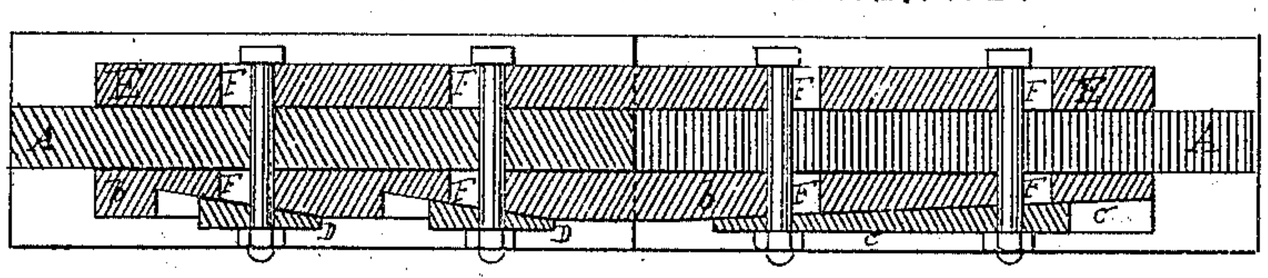
SIDE ELEVATION




END VIEW



SECTIONAL PLAN ON LINE A.B.



*Frederick Oakley* *INVENTOR*

*T. Kenton Morgan.*
*Alfred Cooper* } *WITNESSES*

# UNITED STATES PATENT OFFICE.

FREDERICK OAKLEY, OF TORONTO, CANADA.

## IMPROVEMENT IN COMPENSATING RAILWAY-JOINTS.

Specification forming part of Letters Patent No. **131,554**, dated September 24, 1872; antedated September 19, 1872.

*To all whom it may concern:*

Be it known that I, FREDERICK OAKLEY, of the city of Toronto, in the county of York, Province of Ontario and Dominion of Canada, carpenter, have invented a certain Improvement in Fish-Plates for the joints of the permanent way of railways, called a Compensating Rail-Joint.

My invention relates to a fish-plate either tapered toward both ends or having both ends tapered in two different places from toward the middle of the fish-plate toward either end thereof, which, used in connection with two or more wedges, afford more room for the fish-bolts to contract in extremely cold weather, and in very warm weather increase the thickness of iron between the head of the bolt and its nut, so that the bolt will always be screwed tight.

Figure 1 is a side elevation. Fig. 2 is an end view, showing the improved fish-plate on one side with wedge attached. Fig. 3 is a sectional plan on line A B, showing the ordinary fish-plate E E, with slotted holes F F F, on one side of rail and the improved fish-plate *b* on the other, with one long wedge or inclined plane, C, at one end of fish-plate and two short wedges or inclined planes, D D, at the other end, with the corresponding recessed inclined planes on the fish-plate itself. This figure shows the methods I adopt to get over the difficulties arising from contraction and expansion of the rails.

A shows the rail between the flanges, whereon the fish-plates E *b* are bolted, F F F being the slotted holes in the fish-plates to allow of the bolts moving through the fish-plates in order to alter the relative positions of the inclined plane and wedge. The wedges C and D are made with round holes to correspond with the bolt-holes in the rails, which are to be made round so as to move the wedges. That portion of the fish-plate which is tapered is not tapered on the whole width of its face, but only to the required width of the wedge, the remainder of that part of the fish-plate forming a rib at either edge for strength. The wedges being placed so that the thinner part of the wedges may be in contact with the thicker part of the fish-plate, an improved fish-plate being used on one or both sides of the rail, as may be desired and most suitable, the whole is to be bolted together as usual. When the rails contract by the action of the cold the bolts will be drawn with the rail apart from the point of the junction of the rails, the slotted holes in the fish-plate allowing the motion of the bolts without any displacement of the fish-plates, but the wedges will be moved by the bolts so that the pointed ends of the wedges will be brought nearer to the tapered ends of the fish-plates, and thus the more the rails contract the thinner the body of iron between the heads of the bolts and the nuts becomes, whereby the bolts are offered space to contract. In case of expansion of the rails the action is of course reversed, and the entire space between the heads of the bolts and the nuts is filled and the whole kept tight. The nuts can be kept from shaking off by a thin band of iron, with a hole to correspond to the size of the bolt, being placed on the bolt before the nut is put on, and one end turned down on the raised side of its wedge, the other being turned square to one side of the nut when screwed to its place.

What I claim as my invention, and desire to secure by Letters Patent, is—

The fish-plate, tapered at both ends, with the slotted holes and the ribbed edges, in combination with the wedges, fastened together as described, and operated in the manner and for the purpose above mentioned, and substantially as described.

FREDERICK OAKLEY.

Witnesses:

T. KEARTON MORGAN,

ALFRED EDGSON.