(No Model.)

# M. THIBAULT.

## RAIL JOINT FASTENING.

No. 256,812. Patented Apr. 18, 1882.

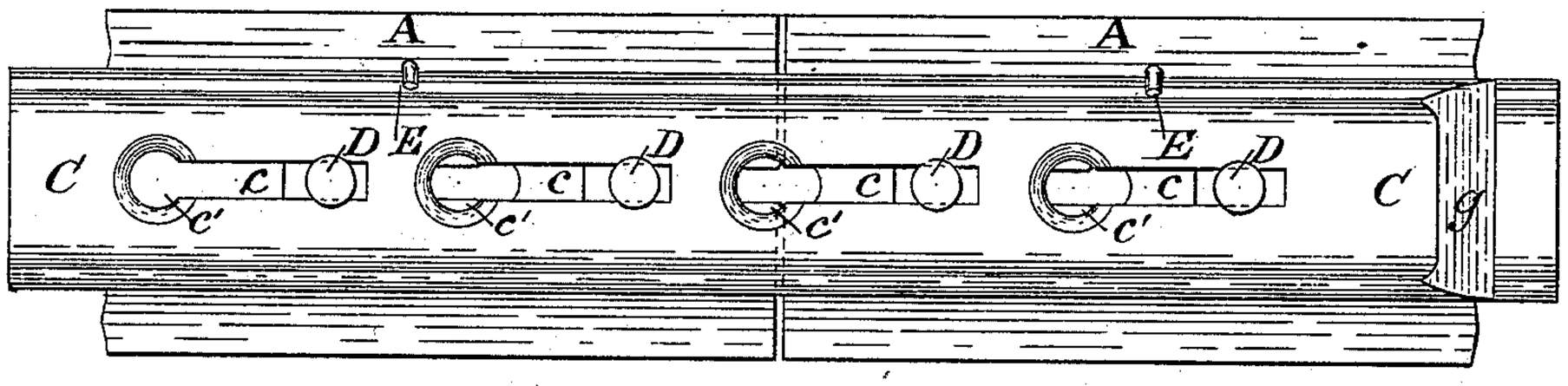


Fig. 1

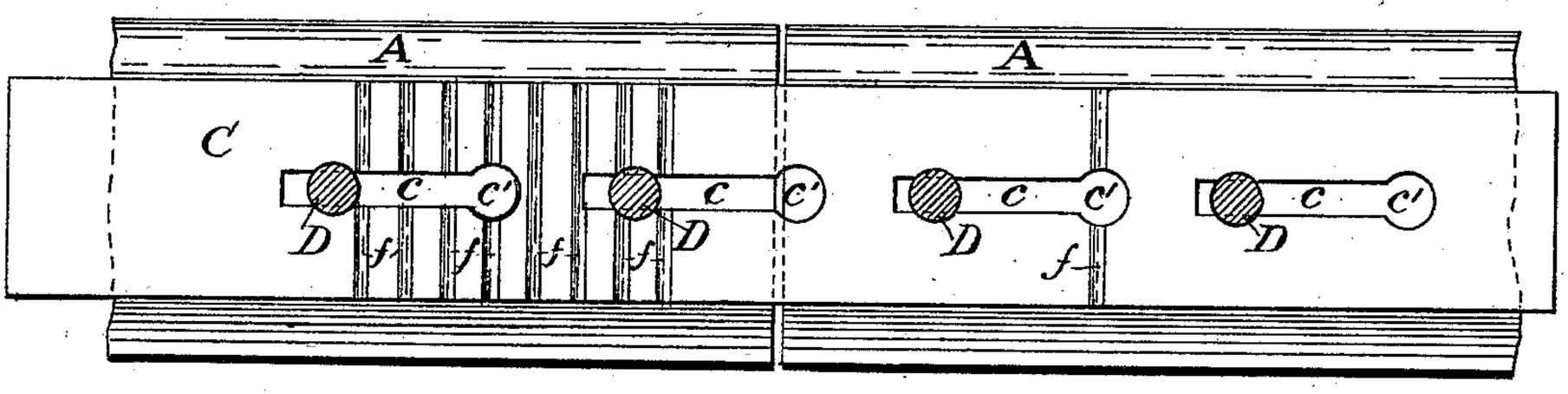


Fig. 2

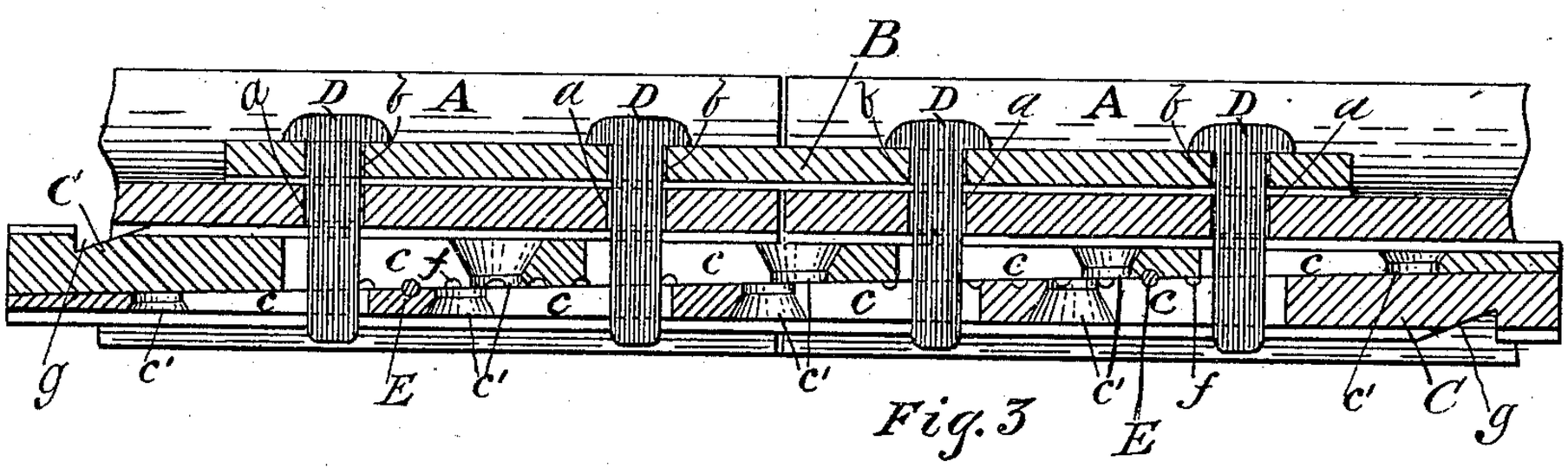


Fig. 3

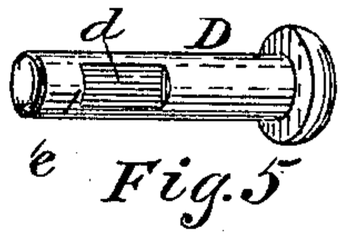


Fig. 5

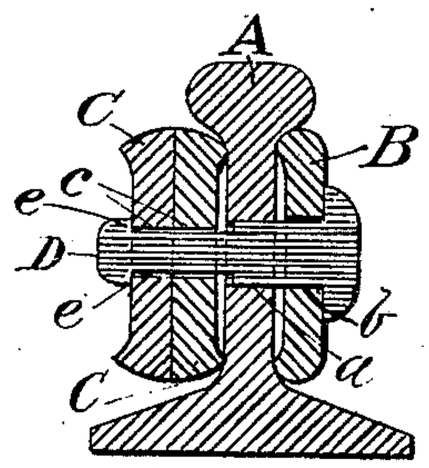


Fig. 4

Witnesses.
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# UNITED STATES PATENT OFFICE.

MAGLOIRE THIBAULT, OF OTTAWA, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO MAXIME BÉLANGER AND JOHN SWEETLAND, BOTH OF SAME PLACE.

## RAIL-JOINT FASTENING.

SPECIFICATION forming part of Letters Patent No. 256,812, dated April 18, 1882.

Application filed December 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, MAGLOIRE THIBAULT, of the city of Ottawa, in the county of Carleton, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Railway-Rail-Joint Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the same.

The object of my invention is to provide a fastener for joining and holding together the ends of the rails of railways that will be less costly and at the same time more secure and reliable than the appliances at present in use for that purpose. By its use the employment of screwed bolts and nuts is entirely dispensed with, and any working loose and getting out of place of the ends of the rails by wear or jarring is rendered absolutely impossible.

I will now proceed to describe as minutely as possible its construction and application, so that others skilled in the department of railway-work to which it belongs may easily comprehend what my invention is.

Reference being had to the annexed drawings, Figure 1 is a face elevation, showing the end portions of two rails joined by my improved rail-fastener. Fig. 2 is also a face elevation, but with the outer part removed so as to show the internal arrangement. Fig. 3 is a horizontal section on line *x x*. Fig. 4 is a transverse section on line *y y*, and Fig. 5 is an enlarged perspective view of the bolt which binds the fish-plate in place.

A A represent the railway-rails, through the webs of which, and at suitable distances from the ends of the rail, are formed the bolt-holes *a*.

B is a fish-plate, having through it the bolt-holes *b*, corresponding in size and distance apart with the bolt-holes *a* in the rails. When in use this fish-plate is placed against the web of the rails, as shown in Figs. 3 and 4, its inner face being slightly recessed longitudinally, as shown in Fig. 4, so that only its upper and lower edges bear against the rail. Its length should be such as will allow it to lap sufficiently onto each rail to cover the number of holding-bolts to be employed in the fastening, and which will be hereinafter fully described.

C C represent two tapered keys or wedge-shaped pieces, made similar in shape. They have formed in them a series of slots, *c*, made lengthwise with the length of the key, and having their ends *c'*, which are toward the thin ends of the keys, enlarged, as shown, the object of which will be hereinafter explained. In use these keys are placed together, back to back, as shown, and the thin end of one key against the thick end of the other. It is obvious from this that as the two keys are driven together endwise the distance between their outer faces will be increased. These keys are placed against the web of the rail on the opposite side from and immediately opposite to the fish-plate B.

D D represent the holding-bolts by which the fastener is held together. A portion of their shanks is made smaller than the remainder, thus forming a kind of a neck, *d*, by recesses formed in their sides, substantially as shown in Fig. 5. This neck may, however, be made square, round, or of any other desirable shape in section that will suit the purpose here intended. The necks thus formed in the shanks of the bolts D are reduced to such a size that they will move easily through the narrow part of the slots *c*, and are so located in the shank that when the bolts are in place the necks will reach through the tapered keys C. That portion of the bolt which extends out past the keys is left the full size of the shank, thus forming the shoulders *e*, under which the outside edges of the slots *c* slide as the keys are driven together. From this it will be seen that after the edges of the slots *c* next to their enlargements *c'* have been entered behind the shoulders *e* of the bolts D the driving of the thicker portions of the keys under said shoulders will have the effect of drawing the bolts through and binding the fish-plate B and tapered keys C tightly against the opposite sides of the rails. The rails A being placed in position, the fish-plate B is applied to the joint and the holding-bolts D pushed through the bolt-holes *b* in the fish-plate and *a* in the rails until the heads of the bolts come against the back of the fish-plate. The keys C are then put in place against the opposite side of the rail. The slots *c* being equal in number and their enlargements *c'* being the same dis-

tance apart as the bolt-holes *a* and *b*, the keys may be placed against the rails so that the shanks of the bolts will extend through these enlargements, which are only of a sufficient size to admit easily the shank of the bolt D.

In the inner face of the keys C are formed a series of grooves or notches, *f*, extending across the width of the key and at a short distance apart. The depth and width of these grooves is slightly greater than one-half of the cross-sectional area of the locking-pins E, so that when the two tapered keys C are driven together in their place until one or more of the grooves in one of the keys come opposite one or more of those in the other key one of the locking-pins E may be dropped into such grooves, and will effectually prevent the withdrawal or working loose of the keys so long as the locking-pin remains in the groove. The accidental or easy removal of these locking-pins from between the keys C may be prevented by simply bending the ends of the pin that protrude past the upper and lower edges of the keys.

In order to permit the ready removal of the tapered plates without mutilation or injury, they are provided, as shown, with notches or recesses *g*, into which a lever or other device may be inserted to effect their removal.

It will be seen that the two tapered plates or keys are exact duplicates of each other. This fact greatly reduces the cost of manufacture and avoids the trouble of keeping them assorted in pairs, as would otherwise be required.

The object of recessing the plates longitudinally in the middle, so that they bear at their edges only upon the rails, is to permit them to spring or yield slightly under the strain of the bolts in order that the wedge-plates may always be driven to a proper position to admit the fastening-pins.

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

1. The joint-fastening consisting of the plate B, necked bolts D, the two tapered slotted plates C, provided with notches *f*, and the pin E, as shown.

2. As a new article of manufacture, a flat tapered plate provided with longitudinal slots enlarged at one end and with transverse grooves in one face.

3. The tapered slotted plate C, provided with the grooves *f* for a fastening-pin and the notch *g* to facilitate their removal.

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Witnesses:
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LS. E. NOËL.