J. SAMPLE, J. GRANTHAM, W. M. WARD.
& M. WADDLE.

Wooden Key for Securing Railway Rails.

No. 201,839. Patented March 26, 1878.

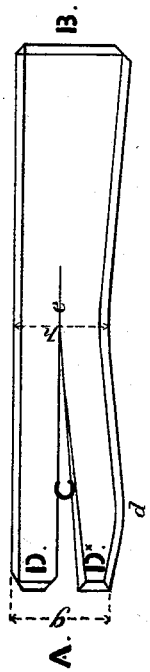

FIGURE 1

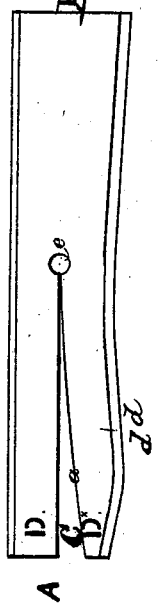

FIGURE 3

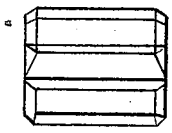

FIGURE 2

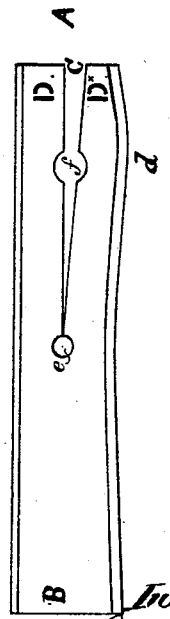

FIGURE 4

Witnesses:—
Johny Bell Shipowner
John H Scrivener Master Mariner

Inventors
James Sample
John Grantham
William Maddison Ward
Matthias Waddle

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UNITED STATES PATENT OFFICE.

JAMES SAMPLE, JOHN GRANTHAM, AND WILLIAM M. WARD, OF BLYTH, AND MATTHEW WADDLE, OF NEWSHAM, NEAR BLYTH, ENGLAND.

IMPROVEMENT IN WOODEN KEYS FOR SECURING RAILWAY-RAILS.

Specification forming part of Letters Patent No. **201,839**, dated March 26, 1878; application filed December 19, 1877; patented in England, March 4, 1876.

To all whom it may concern:

Be it known that we, JAMES SAMPLE, JOHN GRANTHAM, WILLIAM MADISON WARD, all of Blyth, and MATTHEW WADDLE, of Newsham, near Blyth, in the county of Northumberland, England, have invented certain Improvements in Wooden Railway-Keys for Fastening Rails in Railway-Chairs, of which the following is a specification:

The invention is for the same subject-matter as is embraced in English Letters Patent dated March 4, 1876, sealed August 1, 1876, No. 936, granted to the aforesaid James Sample, John Grantham, and Matthew Waddle.

The object of our invention is to prevent the wooden keys or wedges used to secure rails to railway-chairs becoming loose, which is often the case during a hot dry season, thereby endangering the stability and safety of the railway-track.

To gain the desired end we make the keys somewhat larger or thicker than usual, and to get the required taper, in order to insert the key or wedge between the rail and the outer jaw of the chair, we cut from out the tail end of the key or keys a wedge-shaped piece, the apex or point of the gap being toward the head of the key. Consequently, when the key is inserted in its place and driven up tight, the elasticity of the tines or prongs of the key keeps it in its place, and compensates for any shrinkage that may occur from the heat and dryness of the atmosphere.

We will now proceed to describe our invention more fully by the aid of the accompanying drawing, reference being had to the letters and figures marked thereon.

Figure 1 is a plan of our improved key in one of its simplest forms, and Fig. 2 an end view of the same at A. Figs. 3 and 4 are modifications of the same key to meet various contingencies.

In all these figures, A is the tail, and B the head, of the wedge or key. C is the gap cut out to form the two tines or prongs D $D^{\times}$. The prong D is straight, and, when in position, lies close alongside the web of the rail, steadying the same against the inner jaw of the chair.

When the key is driven home into the chair the prong $D^{\times}$ projects beyond the chair, as is usually the case, and performs a double duty. In the first place the natural elasticity of the material of which the key is made exerts a pressure against the outer jaw of the chair, and keeps the key tight against the web of the rail, even in the dryest season, the gap C varying in closeness as the dryness or humidity of the atmosphere shrinks or swells the key. In the second place the broad part *d* of the key, presenting itself to the hind face of the chair, not only offers an impediment to any tendency to withdraw that is likely to arise from the vibration of passing trains, but conduces to the tightening up of the key.

We would remark that the gap C, Fig. 1, may have the saw-cut which forms the straight prong continued a short distance into the body of the key, as shown at *e*, and would add that the distance marked *g* should not exceed the dimension of the key at *h*.

As before stated, Figs. 3 and 4 are modifications of our improved key. In Fig. 3 the prong $D^{\times}$ has the inner line *a* curved, and *e* is a hole bored through the key before the gap is cut out. In Fig. 4 is shown a larger circular hole, *f*, likewise bored out before the gap is cut. When this key is driven home a conical or taper pin or bolt is driven in the hole, and secured by any suitable means. The increasing diameter of the head of the pin or bolt further expands the prongs and increases the security of the rail.

Having now described our invention, we claim as new and desire to secure by Letters Patent—

1. A wooden railway-key provided with the V-shaped slot, substantially as and for the purpose described.

2. A wooden railway-key having one of its sides straight and one curved, substantially as and for the purpose described.

3. A wooden railway-key having one of its sides straight and one curved, provided with the V-shaped slot, substantially as and for the purpose described.

In witness that the above is what we claim as our invention we hereunto subscribe our names in the presence of the two subscribing witnesses.

JAMES SAMPLE.
JOHN GRANTHAM.
WILLIAM MADISON WARD.
MATTHEW WADDLE.

Witnesses:
JOHN BELL, *Ship Owner.*
JOHN H. SCRIVENER, *Master Mariner.*