(No Model.)

E. G. HOLTHAM.

LONGITUDINAL SLEEPER AND FASTENING FOR THE PERMANENT WAY OF RAILWAYS.

No. 303,373. Patented Aug. 12, 1884.

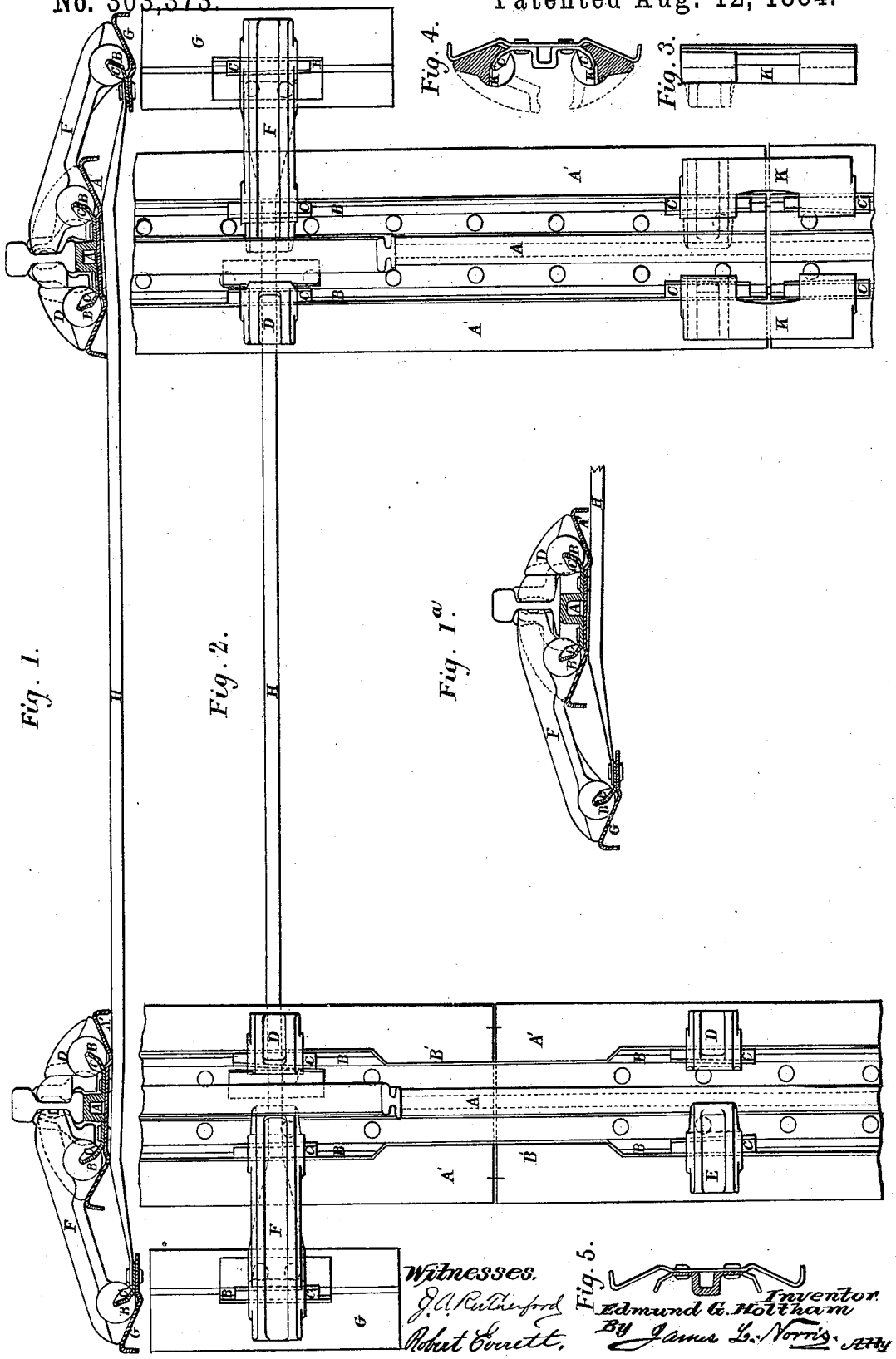

Fig. 1.

Fig. 2.

Fig. 1ª.

Fig. 4.

Fig. 3.

Fig. 5.

Witnesses.
J. A. Rutherford
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Edmund G. Holtham
By James L. Norris. Atty

UNITED STATES PATENT OFFICE.

EDMUND GREGORY HOLTHAM, OF WESTMINSTER, COUNTY OF MIDDLESEX, ENGLAND.

LONGITUDINAL SLEEPER AND FASTENING FOR THE PERMANENT WAY OF RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 303,373, dated August 12, 1884.

Application filed June 12, 1884. (No model.) Patented in England December 22, 1883, No. 5,839.

To all whom it may concern:

Be it known that I, EDMUND GREGORY HOLTHAM, a citizen of England, residing at Westminster, in the county of Middlesex, England, have invented a new and useful Improvement in Longitudinal Sleepers and Fastenings for the Permanent Way of Railways, (for which I have obtained a patent in Great Britain, No. 5,839, dated December 22, 1883,) of which the following is a specification.

This invention has for its object to obviate the chief defects that have been found in practice to attach to systems of permanent way for railways in which the rails are supported by and fastened to longitudinal metallic sleepers, by so constructing the sleepers that they are readily made available for use either on straight or curved portions of the line, and by so attaching the chairs, jaws, or fishes to the sleepers that they can be applied at any part. For these purposes I make and fix the rails as shown in the accompanying drawings.

Figure 1 is a transverse section showing the two rails with their sleepers and tie. Fig. 2 is a plan thereof. Fig. 1ª is a section showing the like construction for flanged rails; Figs. 3, 4, and 5 show details hereinafter referred to.

The sleeper consists of an upper or central part, A, which may form a continuous seat for the rail, and a lower wider part, A′, preferably corrugated, as shown, and having an extended bearing-surface upon the ballast. I make the lower wider part, A′, discontinuous, as shown at I, so as to admit of the sleeper being applied at curves, and the upper or central part, A, may also be made discontinuous, or may be notched to admit of bending.

Fig. 5 is a section taken through the point of discontinuity I, showing by the hatched part the continuous portion of the sleeper, portions of the ribs B being cut away, as indicated at B′ in Fig. 2, in order to give facility of bending the sleeper at curved parts of the line. The upper and lower parts, A A′, may be separate pieces riveted together, or they may be made in one piece of plate rolled or molded in dies. When the upper part, A, is in a separate piece from the lower part, A′, its edges B B are made to project in a sloping direction upward and outward from the center; or when the sleeper is made in one piece it has ribs projecting up from its upper surface, these ribs being preferably bent over in an outward slope, so as to correspond with the ribs B B. When the upper part, A, is made as a separate piece from the lower part, A′, the bent-over ribs B B, instead of being portions of the upper part, may project upward from the lower part. I secure the rail between jaws D E, which rest on the sleeper, and have sloped recesses that embrace the edges or ribs B, and are wide enough to admit also slightly-tapered keys C, which, when driven tight into the recesses, hold the edges or ribs B firmly therein. Thus, as no holes in the substance of the sleeper are required for the attachment of the jaws D E, these may be placed at any convenient points in the length of the sleeper. The upper portions of the jaws D E are formed to receive the rail and the keys or other fastenings by which it is secured.

At suitable intervals I provide tie-bars H to connect the two lines of rail. These extend under both sleepers and some distance beyond them, and where these tie-bars occur I provide the outer jaws, F, of the rails with lengthened tails, which are secured to the outer ends of the tie-bars, preferably in the same way as the jaws D E are secured to the sleepers; and I prefer to provide where the tie-bars occur an additional plate, G, to widen the bearing on the ballast; or I effect such widening of bearing by increasing the breadth of the tie-bars at their outer ends, or of the tails F of the jaws which are secured to them.

In order to connect the sleepers end to end, I employ joint-pieces or fishes K, which are secured to the sleepers in the same manner as the jaws. The fishes may be formed as jaws to support the rail or connect with the tie-bars.

Fig. 3 is an inside view, and Fig. 4 is a transverse section, of the fishes for the sleeper, which may be formed to include jaws, as indicated by the dotted lines.

Having thus described the nature of my invention and the best means I know of carrying the same into practical effect, I claim—

1. A longitudinal railway-sleeper composed of an upper central part on which the rail seats, and a lower wider corrugated part bearing on

the ballast, one of said parts being constructed with inwardly-sloping ribs arranged to enter and to be keyed in recesses formed in chair-jaws, substantially as and for the purposes described.

2. In combination with a longitudinal railway-sleeper having an upper central part on which the rail seats, and a lower wider corrugated part bearing on the ballast, with upwardly-sloping ribs, chair-jaws having recesses receiving the said ribs of the sleeper, and keys securing them therein, substantially as described.

3. In combination with a longitudinal sleeper and chair-jaws extended outward, tie-bars also extended outward, and having widened ends resting on the ballast, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of May, A. D. 1884.

EDMUND GREGORY HOLTHAM.

Witnesses:
OLIVER INNARE,
JNO. P. M. MILLARD.