

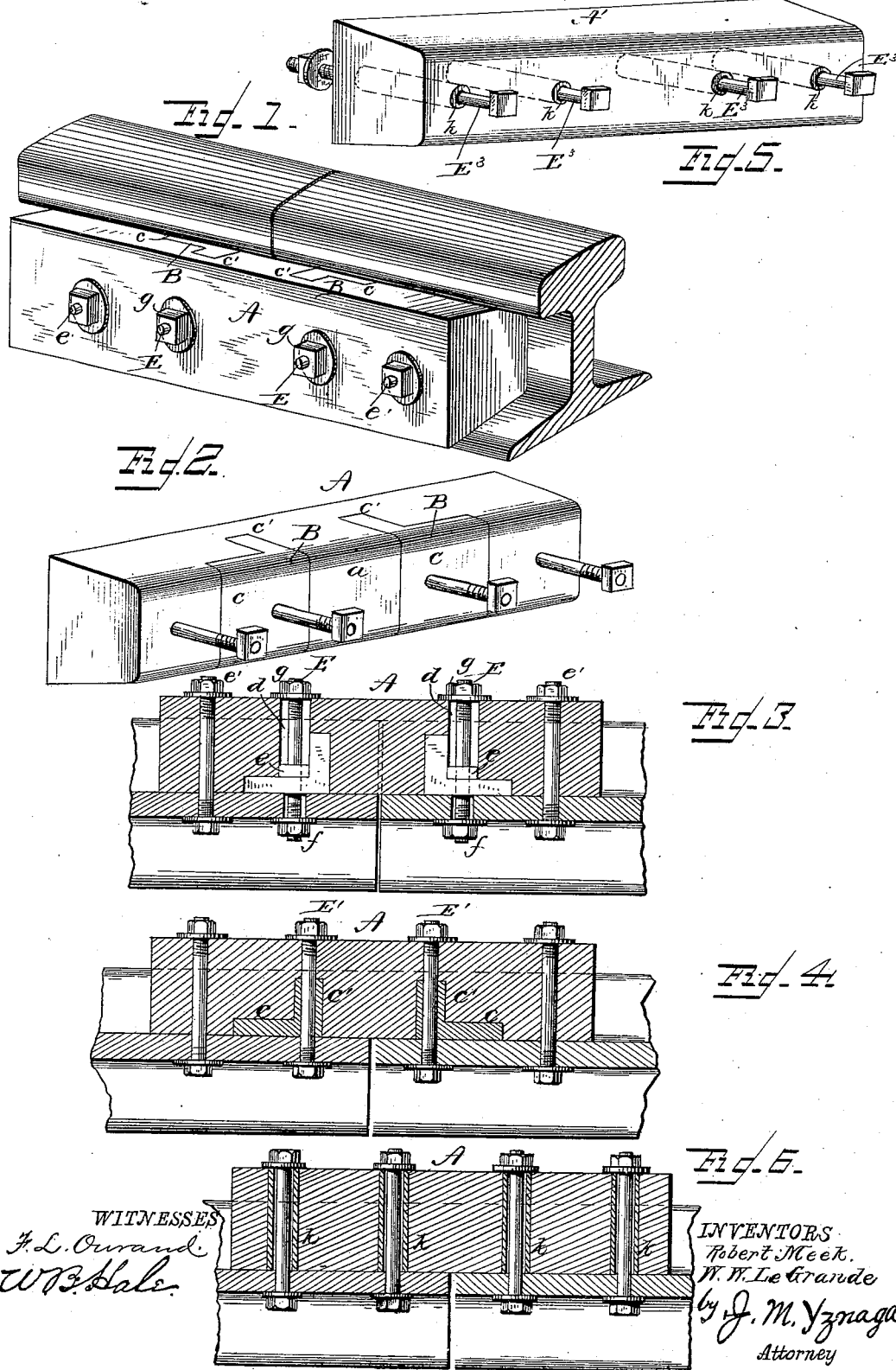
(No Model.)

W. W. LE GRANDE & R. MEEK.

INSULATING BLOCK FOR RAILWAY RAILS.

No. 303,525.

Patented Aug. 12, 1884.



UNITED STATES PATENT OFFICE.

WILLIAM W. LE GRANDE AND ROBERT MEEK, OF LOUISVILLE, KENTUCKY,
ASSIGNORS TO THE NATIONAL ELECTRIC RAILWAY SIGNAL COMPANY,
OF SAME PLACE.

INSULATING-BLOCK FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 303,525, dated August 12, 1884.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM W. LE GRANDE and ROBERT MEEK, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Insulating-Blocks for Railway-Rails, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to means for insulating from each other the adjacent ends of the terminal rails of blocks or lengths of railway in which the rails are connected end to end to form conductors for electric currents used for operating signals.

It has heretofore been customary to interpose a plate or plug of non-conducting material between the adjacent ends of two rails desired to be insulated from each other, and such rails have also been held out of contact with each other by being bolted to a common wooden block on one side, a suitable space being left between the rail ends. In the first case it has been found that the interposed insulating material is soon crushed by the endwise thrust of the rails as they are expanded by heat, or creep under the weight of passing trains, and the rails are thus allowed to come in metallic contact with each other. In the second case the rail ends are allowed to come together by the splitting or crushing of the block by the bolts, which bind the rails thereto, the expansion and creeping of the rails driving the bolts laterally with sufficient force to soon render inefficient a block of the hardest wood unless the same be purposely re-enforced to stand the strain.

It is the object of this improvement to so re-enforce the insulating or holding block that it will be able to withstand the strain upon it by the bolts, and so hold the rails always separated by the space which is left between them when they are first bolted to the block.

To this end the improvement consists in the rail-insulating block of novel construction, and the combination of the same with two adjacent rails in line, as will be hereinafter par-

ticularly described, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of one of our improved insulating-blocks applied for holding two rails apart. Fig. 2 is a perspective view of the block detached. Fig. 3 is a longitudinal section through the block and the vertical webs of both rails. Fig. 4 is a section similar to Fig. 3, but shows a modified arrangement of bolts. Fig. 5 is a perspective view of an insulating-block of modified construction; and Fig. 6 is a longitudinal section of the same and of two rails to which it is applied, the plane of section being through the vertical web of the rails.

Referring now to Figs. 1, 2, and 3, the letter A designates a wooden block having in one edge two recesses, preferably cut entirely through its thickness, into which are let metallic lugs B, each of which has two limbs, *c* and *c'*, at right angles to each other, the longer limbs, *c c*, having their outer surfaces flush with the edge of the block, while the shorter limbs, *c' c'*, extend transversely into the block, and are separated by an intervening portion, *a*, of the wood. The facing surfaces of these two limbs *c' c'* are about as wide as the block is thick, and therefore to force them toward each other would require a force sufficient to crush endwise the intervening portion, *a*, of the wood, as there would obviously be no danger of its splitting under the pressure of the lugs exerted upon its center end surfaces. Through the block are formed suitable bolt-holes, *d d*, for the passage of bolts E E, which pass also through the long limbs *c c* of the lugs. These holes have a diameter sufficient to admit collars *e e*, with which the bolts are provided, and which bear against the back surfaces of the limbs *c c*, in order that the lugs may be drawn snugly to the rails by nuts *f f*, placed on the ends of the bolts which pass through the rail-webs. Upon the ends of the bolts which project beyond the outer edge of the block are placed nuts *g g*, which hold the block in place against the rails and lugs. I also prefer to pass an additional bolt through each end of the block and the rail-webs, as shown at *e' e'*.

Experience has shown that an insulating-block constructed as now described will efficiently hold the ends of the rails separated under all strains to which they are liable to be subjected.

In Fig. 4 a modified arrangement of bolts is shown, the bolts $E' E'$ passing lengthwise through limbs $c' c'$ of the lugs.

In the modified block shown in Figs. 5 and 6 metallic ferrules or bushings $k k k$ are arranged transversely through the block A' , extending from edge to edge of the same, and having the bolts $E^3 E^3 E^3 E^3$ passed through them. The manner of applying this block to the rails is illustrated in Fig. 5, and needs no explicit explanation. The enlarged surfaces of the bushings or ferrules oppose great resistance to the crushing-strain exerted on the wood, and at the same time prevent the bolt-holes from wearing, so as to permit endwise play of the rails and block.

It will be obvious that various modifications of our improvement may be made without departing from its spirit, and we therefore do not limit ourselves to the precise construction shown.

What we claim is—

1. A non-conducting block adapted to be bolted to the sides of two endwise adjacent railway-rails, and having embedded or let into it transversely two or more metallic re-enforc-

ing bodies arranged to sustain the lateral strain of the bolts tending to force said re-enforcing bodies toward each other, substantially as described.

2. The block A , adapted to bridge the joint of two endwise adjacent and slightly separated railway-rails, in combination with the metallic lug $B B$, having limbs $c c$, flush with the edge of the block, and the connected limbs $c' c'$, extending transversely into the same and separated by an inletting portion thereof, and suitable bolts passing through the block and lugs and adapted to bind the same to the rail-webs, substantially as described.

3. The combination, with two endwise adjacent and slightly separated railway-rails, of the block A , bridging the space between said rails, and provided with transversely-arranged re-enforcements let into it on opposite sides of said space, and suitable bolts passing through said block, its re-enforcements, and the rail-webs, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

W. W. LE GRANDE.
ROBERT MEEK.

Witnesses:

I. B. DABNEY,
W. L. LYONS.