M. W. MATTHAEI.

RAILWAY SLEEPER.

APPLICATION FILED MAR. 4, 1911.

1,003,629. Patented Sept. 19, 1911.

Fig. 1

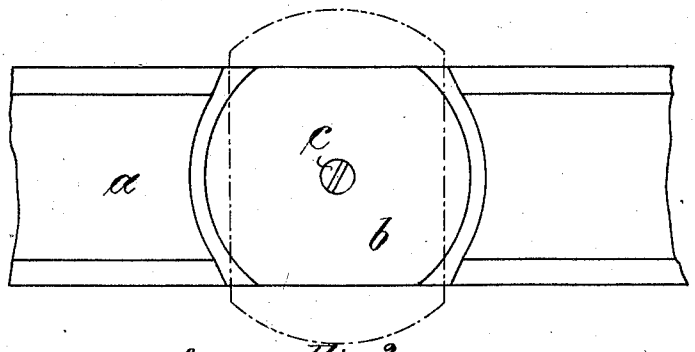


Fig. 2

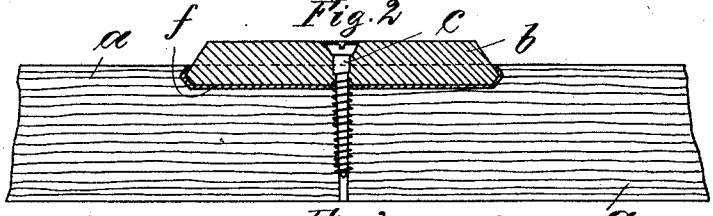


Fig. 3

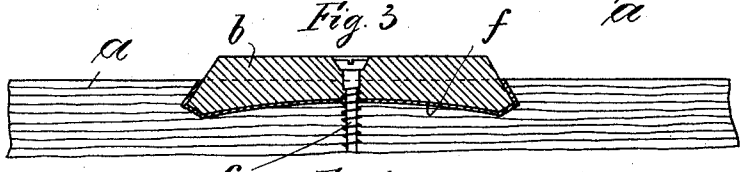


Fig. 4

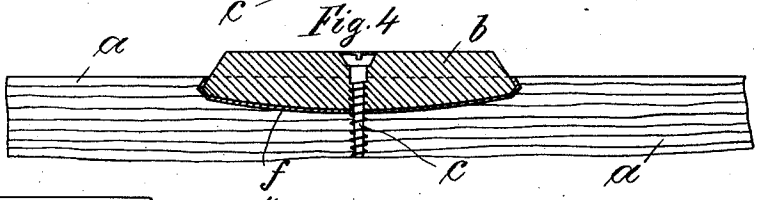


Fig. 5

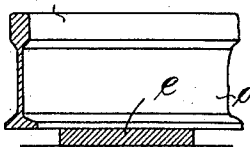


Fig. 6

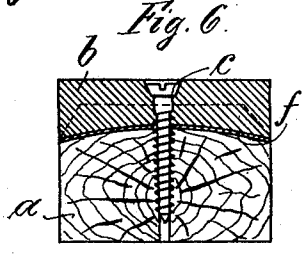
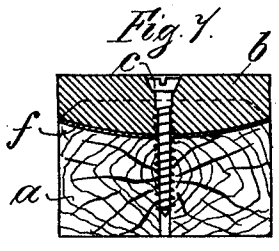
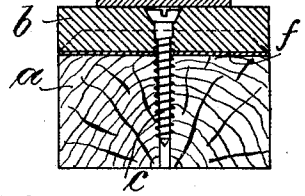


Fig. 7





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MAX WILHELM MATTHAEI, OF GROSS-LICHTERFELDE, NEAR BERLIN, GERMANY.

RAILWAY-SLEEPER.

1,003,629. Specification of Letters Patent. **Patented Sept. 19, 1911.**

Application filed March 4, 1911. Serial No. 612,185.

To all whom it may concern:

Be it known that I, MAX WILHELM MATTHAEI, a subject of the King of Prussia, and a resident of 64 Dahlemerstrasse, Gross-Lichterfelde, near Berlin, Germany, have invented certain new and useful Improvements in Railway-Sleepers, of which the following is a specification.

This invention relates to a hard wooden block insertion for sleepers and other soft wood upon which iron structures are bedded and is more particularly applicable for supporting the rails of rail-roads upon the sleepers and has for its object, to provide a block which is retained firmly in position and cannot therefore be displaced in the direction of the rail.

In order to carry out this invention, the sleeper, beam or the like is provided with a block of hard wood inserted in the sleeper or the like, said block being formed from a circular plate but having two of its sides cut parallel to one another, the block being inserted in a corresponding recess in the sleeper or the like and being adapted to be inserted by rotation of the block. If desired also the underside of the block may be formed convex or concave and the recesses in the sleeper or the like be correspondingly formed.

In order that the invention may be more clearly understood reference is made to the accompanying drawings, whereon are shown various methods of carrying out the invention.

Figure 1 is a plan view of part of a sleeper having a hard wooden block inserted therein and constructed according to the present invention. The dotted lines indicate the position of the block before securing in position. Fig. 2 is a longitudinal section of Fig. 1, Figs. 3 and 4 are similar views to Fig. 2 showing somewhat modified forms of the block, Fig. 5 is a transverse section of a sleeper provided with the hard wooden block and supporting a rail, Figs. 6 and 7 are transverse sections of Figs. 3 and 4 respectively.

The block *b* is formed from a circular plate of hard wood by cutting the plate in two parallel planes so as to form a block having parallel sides and circularly formed ends, as seen at Fig. 1. The under-surface of the block *b* may be either perfectly flat as shown at Fig. 2 or may be concave or hollowed out, as shown at Figs. 3 and 6, or it may be convex, as shown at Figs. 4 and 7. The construction shown in Figs. 3, 4, 6 and 7 enables the block to be more firmly held in position in the sleeper. The upper surface of the block *b* is either horizontal if it is to serve to take a load distributing plate *e*, as shown at Fig. 5, or may be transversely inclined, if the rail *d* or the load carried is to lie directly on the block *b*. The circularly curved edges of the block *b* are beveled or reduced upwardly and the longitudinal or straight edges of the block may be either perfectly vertical or somewhat chamfered or reduced upwardly.

The strength of the block varies of course according to the form of its under surface and according to whether the upper surface of the block projects or not above the upper surface of the wooden beam or sleeper. The width of the block between the parallel edges corresponds approximately to the width of the beam or sleeper *a* and the length of the block varies according to the bed-plate to be fitted thereon or according to the width of the lower flange of the rail or the like to be supported. The grain of the wooden block should generally run at an inclination to its longitudinal direction, in order that the securing screw *c* may more firmly be held in position.

The blocks are cut from circular planks of hard wood and the under surface is hollowed or cut out or otherwise formed according to the desired form. The circular plate is then cut in the manner described and beveled on its circularly curved edges.

The beam or sleeper *a* is provided with a recess cut therein and extending from side to side of the same and formed with curved sides to correspond to the curved sides of the block *b*, the recess being cut away at the curved sides to accommodate the beveled edges of the block. The recess is also of course formed to correspond to the under surface of the block *b*, that is to say, it may be either perfectly flat, convex or concave.

The surfaces of the recess in the beam or sleeper *a* and the block *b* are treated with a suitable material such as tar-oil, tar, pitch or the like in order to protect the wooden parts from rot and in order to connect the parts intimately together when the block *b* is inserted in position by pressing the block *b* downwardly and simultaneously turning the same. The excess of saturating material not used to fill up the small joint between the block *b*

and the beam or sleeper *a* can flow out through the central bore hole.

In order to insert the block *b* in position, it is first laid in the recess transversely to the beam or sleeper *a* as indicated by the dotted lines in Fig. 1 and it is then rotated about an angle of 90° and at the same time pressed downwardly into position. If necessary a central screw *c* may be provided about which the block *b* may be turned and which serves at the same time to relieve the pressure on the undercut sides of the recess. By this means the wooden block *b* and the beam or sleeper *a* are pressed firmly together, while the convex or concave surface of the block *b* engages firmly in position in the corresponding surface of the recess, the block being thus firmly secured in position and immovable in all directions except in the direction of rotation about its center. The rotation of the block is however prevented by the eccentrically positioned screws passing through the same and which hold the iron structure or rail in position.

I claim:

1. In a wooden load support, a hard wood insertion forming the bearing surface for the load and comprising an approximately rectangular hard wooden block having rounded ends, said block being inserted, by rotation, in a corresponding recess cut in and extending over the whole transverse width of said support.

2. In a wooden load support, a hard wood insertion forming the bearing surface for the load and comprising an approximately rectangular hard wooden block having circularly curved ends, said block being cut from a circular hard wooden plate and being inserted by rotation, in a corresponding recess cut in and extending over the whole transverse width of said support.

3. In a wooden load support, a hard wood insertion forming the bearing surface for the load and comprising an approximately rectangular hard wooden block having rounded ends and a curved under surface, said block being inserted, by rotation, in a corresponding recess cut in and extending over the whole transverse width of said support.

4. In a wooden load support, a hard wood insertion forming the bearing surface for the load and comprising an approximately rectangular hard wooden block having rounded ends, beveled over their whole length, said block being inserted, by rotation, in a correspondingly undercut recess cut in and extending over the whole transverse width of said support.

5. In a wooden load support, a hard wood insertion forming the bearing surface for the load and comprising an approximately rectangular hard wooden block having rounded ends, a corresponding recess cut in and extending over the whole transverse width of said support, and a central screw passing through said block into the wooden load support, said block being capable of turning about said screw so as to fit within said recess.

Signed at Berlin, Kingdom of Prussia, Germany, this 15th day of February, 1911.

MAX WILHELM MATTHAEI.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."