

J. MILLHOLLAND.

Railway Rail.

No. 100,917.

Patented March 15, 1870.

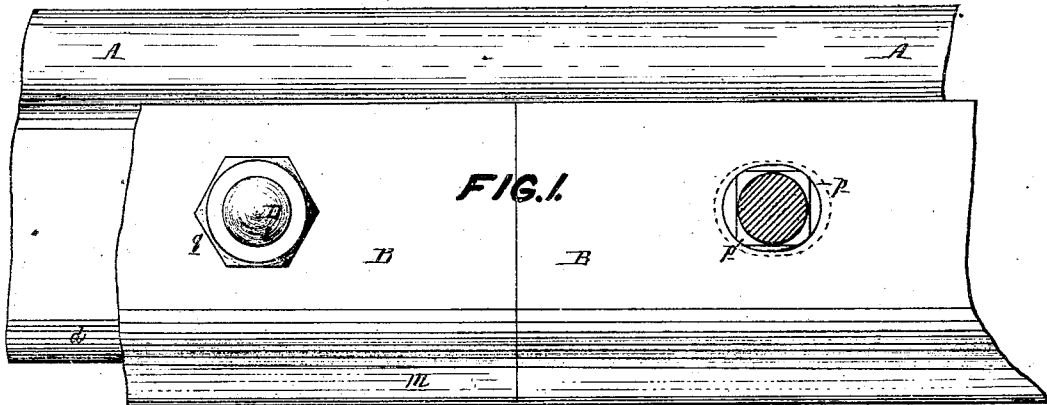


FIG. 2.

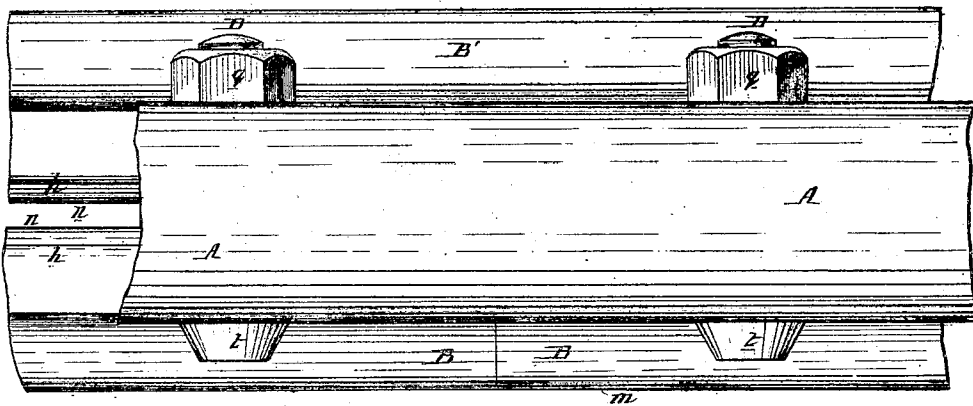


FIG. 3.

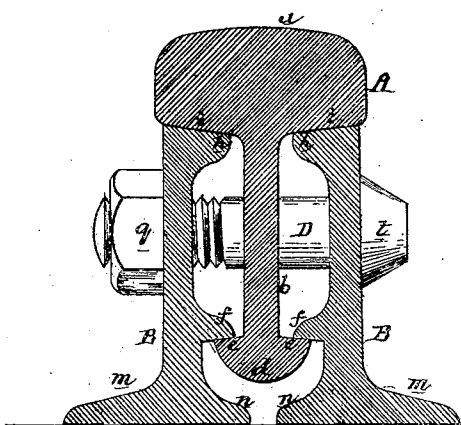
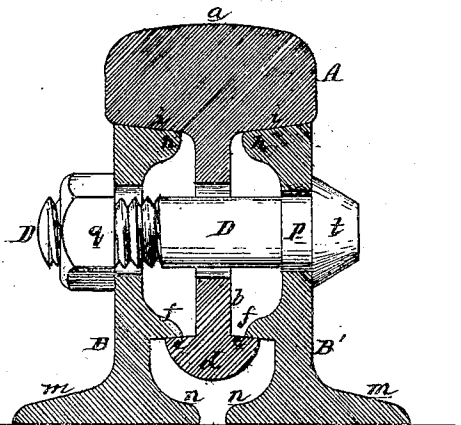


FIG. 4.



WITNESSES { *Wm. A. Steel.*
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by his Attor
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United States Patent Office.

JAMES MILLHOLLAND, OF READING, PENNSYLVANIA.

Letters Patent No. 100,917, dated March 15, 1870.

IMPROVEMENT IN RAILWAY RAILS.

The Schedule referred to in these Letters Patent and making part of the same

I, JAMES MILLHOLLAND, of Reading, county of Berks, State of Pennsylvania, have invented an Improved Continuous Compound Rail, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a continuous compound rail, composed of a central bar or rail, confined by and suspended between two outer bars, substantially in the manner described hereafter, so as to insure strength and solidity, enable me to dispense with all rail splices, and to make a rail with steel head, equal, as regards efficiency, to the more expensive rail of solid steel.

My invention further consists in making the outer bars of the compound rail so thin as to possess a slight elasticity, and thereby cause them to embrace the central bar with a constant grip, and at the same time prevent the nuts from turning.

Description of the Accompanying Drawings.

Figure 1 is a side view of a portion of my improved compound rail;

Figure 2, a plan view; and

Figures 3 and 4, transverse sections.

General Description.

My improved compound rail consists of the central bar A, which may be of steel, confined and suspended between the side bars B and B' of iron.

The bar A consists of the tread *a*, of the usual form, a thin continuous web, *b*, terminating below in a continuous rib, *d*, by which two shoulders, *e e*, are formed, one on each side of the web *b*, these shoulders being slightly beveled or inclined downward from the web, and adapted to the similarly inclined under sides of the ribs *f*, one of which is situated on the inside of each of the bars B and B', and forms a part of the same.

The upper edge of each of these bars is increased in width by an internal flange, *h*, and this upper edge is slightly inclined downward from the outer face of the bar, so as to be adapted to the inclined under side *i* of the head or enlargement of the central bar.

Each of the outer bars B and B' is provided with an external flange, *m*, and internal flange *n*, the flanges of the two bars resting on and being secured to the sleepers with which the central bar or rail is free from contact.

In fitting the bars together care should be taken to so arrange them that the joints of one set of bars shall not coincide with the joints of the adjacent set of bars.

At suitable intervals bolts D, provided with appropriate nuts *g*, pass through both of the outer bars, and through the web of the central bar, a square portion, *p*, of each bolt, inside the head, fitting freely in a square hole in one of the outer bars, but the stem

of the bolt passing through enlarged holes in the opposite outer bar, and in the web of the central bar, as shown by fig. 4, so that all the three bars can expand and contract independently of each other.

When all the bars are thus firmly secured together they form a continuous compound rail, of rigidity equal to that of a solid rail, and of greater stability than the latter.

The solidity and integrity of the compound rail is increased by making the outer bars so thin that they shall possess a slight elasticity, which, after the nuts are tightened, not only insures such a constant pressure or strain against the insides of the said nuts as to prevent them from turning, but induces the outer bars to embrace the central bar with a continuous frictional grip, and to cause the inclined flanges *h* and *f* of the outer bars to be wedged by a continuous pressure between the head and lower rib of the central bar or rail.

One of the important advantages of my invention is the suspension of the intermediate bar by and between the outer bars, greater strength and elasticity being secured by this arrangement than if the central bar extended and was secured to the sleepers.

Another advantage of my invention is the absence of all rail splices, for by a proper arrangement of the joints the central rail becomes the splice for the joints of the outer bars, and the latter the splices for the joints of the central bar.

The most important feature of my invention, however, is the facility which it affords of constructing an economical and efficient steel rail, the central bar only being of steel, and the outer bars of iron, and to these advantages may be added that of readily removing the central bar without any serious disturbance of the outer bars.

Claims.

1. A continuous compound rail, consisting of a central bar, A, having a web, *b*, and a tread, *a*, which rests upon clamps B B', bearing at two points only upon the central bar, when the whole are secured together by bolts passing between said bearing points, and when the lower edge of the web *b* is free from contact with and is above the lower edges of the clamps, substantially as described.

2. The central bar or rail A, having inclined shoulders *i i*, a thin web, *b*, and inclined shoulders *e e*, in combination with the outer bars or rails B and B', with their inclined upper edges inclined ribs *f*, and flanges *m* and *n*.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES MILLHOLLAND.

Witnesses:

H. HOWSON,

LOUIS BOSWELL.