(No Model.)

J. A. HOLLIDAY.

METHOD OF BUILDING THE CAR TRACKS OF RAILWAYS.

No. 438,687. Patented Oct. 21, 1890.

Fig. 1.

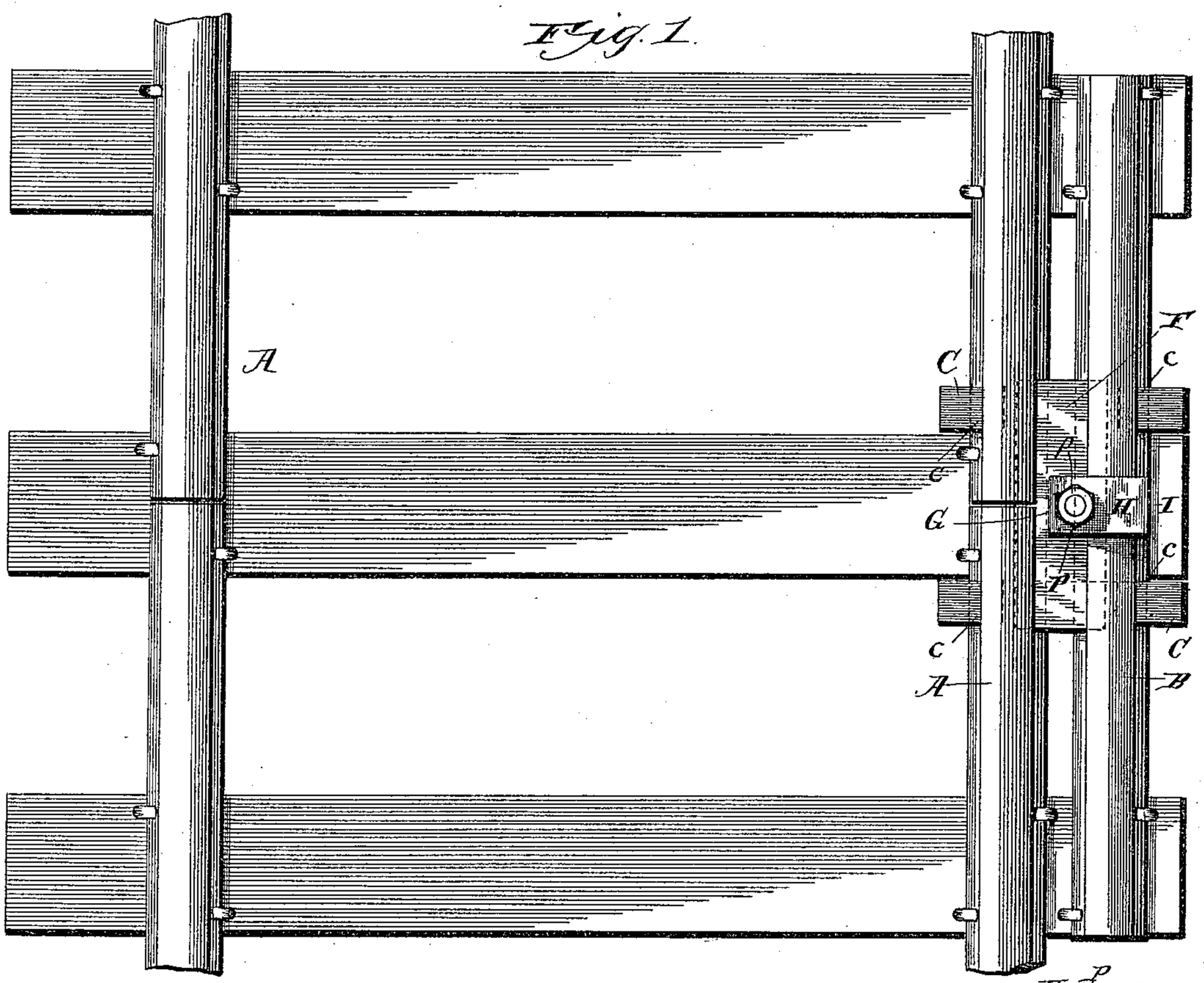


Fig. 2.

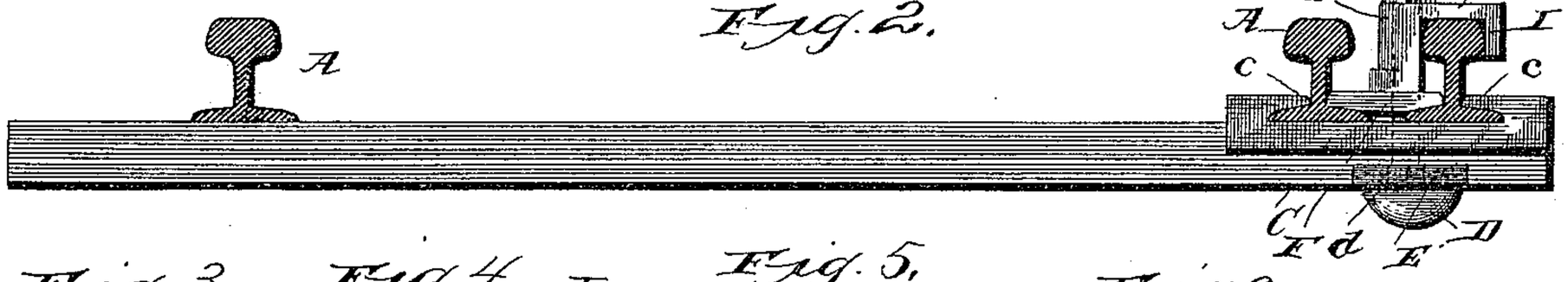


Fig. 3.

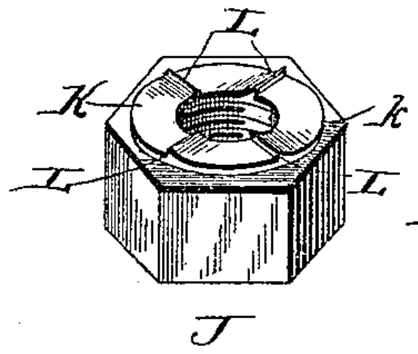


Fig. 4.

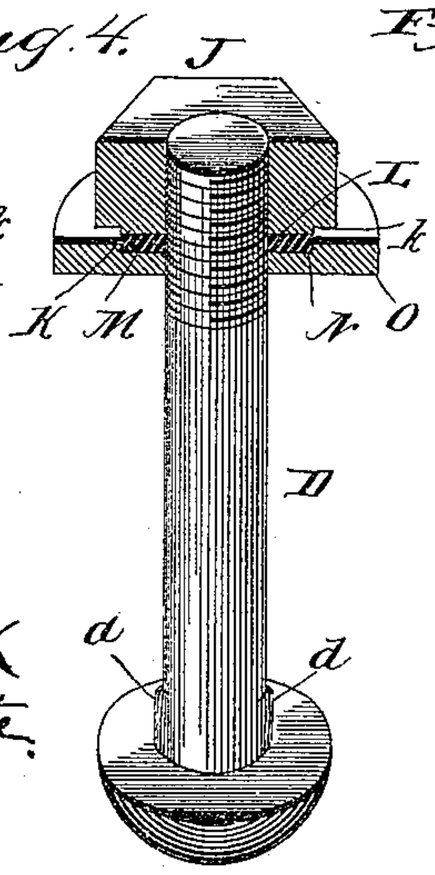


Fig. 5.

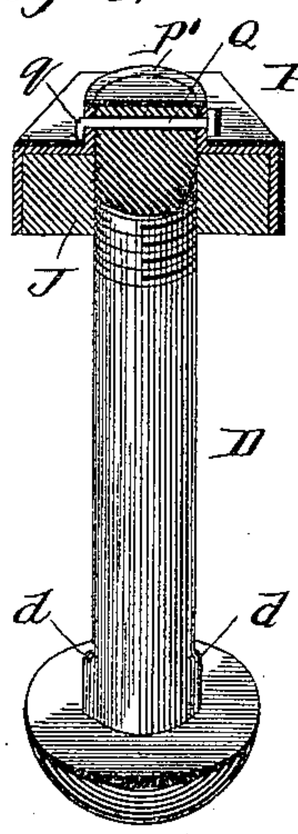
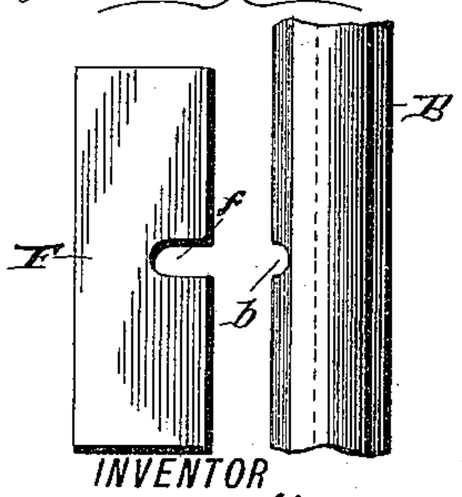


Fig. 6.



WITNESSES:

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JUNIUS A. HOLLIDAY, OF HAMILTON, MISSOURI.

METHOD OF BUILDING THE CAR-TRACKS OF RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 438,687, dated October 21, 1890.

Application filed July 1, 1890. Serial No. 357,393. (No model.)

To all whom it may concern:

Be it known that I, JUNIUS A. HOLLIDAY, of Hamilton, Caldwell county, Missouri, have invented certain new and useful improvements in the present methods of building the car-tracks of railways by adding strength thereto at and near the points where the ends of the rails meet, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in the combination of ties, bolts, securing bars and plates, nuts and their fastenings, &c., for building railway-tracks; and it consists in the novel construction and combination of such devices that will be hereinafter set forth, and particularly pointed out in the claims, reference being had to the drawings, in which—

Figure 1 is a plan view of my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a bolt-nut made in the ordinary way, with the outer portion of the face turned away, leaving a raised surface around the hole on the inner portion of said face. The raised portion is then formed into four or more ratchets or shoulders, which are about one-twentieth of an inch high above the face of nut and lean to the left at an angle of five degrees with a line falling perpendicularly on the face of the nut. From the top of each shoulder to the foot of each shoulder next on the right is an inclined plane. When the nut is forced down on the soft substance or washer M, it makes no resistance. The shoulders or ratchets pass over it like a sled-runner. At the same time it will prevent a backward movement of the nut. The washer M clings to the ratchets if the nut is turned to the left. Fig. 4 is a vertical sectional view of the same, showing the connection of said nut-lock on the bolt, with its locking-surface resting on a soft substance made of rubber, felt, cotton, or paper, placed in a sexagonal recess prepared for it in the upper surface of the iron washer O. It will be observed that when driven home the under face of the nut rests on the upper face of the washer O. In Fig. 5 I have shown another nut-lock. In this view, it will be observed, I use bolts prepared with holes through the small ends and an ordinary nut, a hood, or thimble made of sheet metal or water-proof paper to conform to the shape of the nut and end of the bolt. To bring this nut-lock into practical use, the bolt is placed in position, and the nut is forced down to the desired point. The hood is placed over the end of the bolt and forced down over the nut. I locate the hole in the end of the bolt (now concealed by the hood) by measuring from the end of the bolt downward, the distance being a known quantity, and drive a nail through the hood and the end of the bolt and clinch it. I need both these forms of nut-locks. The last described gives the greatest security, except only at crossings or around depots, where passing wagon-wheels would surely break away the hood. Fig. 6 is a securing-plate and a short section of a railway-rail of sufficient length to reach over three railway-ties, which will be fully described farther on.

The object of my invention is to strengthen the car-track at the weaker points, usually found where the ends of the rails respectively meet.

It will be borne in mind that it necessarily weakens the rails by drilling two or three quarter-inch holes in their stems near the ends, as now done, to secure the joints with fish-plates. My combination makes it impossible for a lateral or a vertical movement of the track at the joint to occur more than elsewhere in the road. To accomplish this object, in the first place, I take my bolt of sufficient strength, which is inserted in the end of the joint-tie from the under side thereof, and extending upward a suitable distance above the top of the rails. I then put two rails in position, with their respective ends, forming a joint, resting over the tie. I then secure them in place with ordinary rail-spikes. I then take a short section of rail of sufficient length to rest over three ties and place it on the outside adjacent to and parallel with the rails proper, with its center opposite the rail-joint. I then take two securing-bars, which are illustrated at Fig. 2, and place them under the rails at each side of the tie over which the joint rests. Said securing-bar is so constructed with its outer portion lapping over on the toe of the

main rail and also the short section of rail. The securing-plate F is then placed in position by turning the section of rail to one side and dropping the plate in between this rail and the joints, with the slot *f* straddling the bolt and the two edges of the plate resting on the inner toes of the rails. I then spike down the short section of rail to the joint-tie. I then place my lug-washer G, which is made of sufficient dimensions for its lower portions to rest on the securing-plate, with its loop portion H and I resting over the short section of rail. I then take the washer, nut, and nut-lock. The nut is forced down firmly on the lug G, the edge of the two rails being inclined by the pressure of the nut to recede outward from under the securing-plate, thereby being forced securely under the overlapping ends of the securing-bars. I have also provided a washer, which is embedded in the under side of the tie. The opening through it for the reception of the bolt is made to conform to the swells *d d*, which prevent the bolt from turning while the nut is being forced to its place.

It will now be observed—

First. That the combination in connection with firmly securing the two ends of rails together instead of one tie under the joint of the rail having to support the heavy passing train, the short section combines the support of three ties. Consequently when the ties are properly tamped by the track-constructers the vertical or up-and-down movement of the rails at the joint is entirely obviated.

Second. That a lateral movement of the rail is impossible unless the end of the joint-tie is forced out or the bolt broken.

Third. That there is ample room to use bolts, plates, securing-bars, &c., as strong as the rail without danger of their interfering with the trucks or other machinery.

Fourth. The bolt cannot escape although the nut comes off. The bolt holds the other fixtures in place to resist lateral pressure.

Fifth. There is no danger of breaking these fastenings by the irresistible force of expansion and contraction of the rails from heat and cold.

Sixth. After the tamping may accidentally be removed from under end of the joint-tie the short section combines with the bolt and shoulder-ties to hold up the joint-tie to a proper level.

A is the main rail; B, a short section of rail; C, securing-bars; *c*, the overlapping portion of the securing-bar; D, the bolt-head under the tie.

E is a washer; F, a securing-plate; G, a lug resting on securing-plate; H and I, overlapping loops; J, the nut.

K is a raised portion of the nut-face forming the ratchet.

k is the shoulder on the nut.

L are the ratchet-teeth.

M is a washer, made of india-rubber or other suitable material, between washer O and nut J, operating in connection with ratchet-teeth L, completing the nut-lock.

N is a recess or receptacle for M.

O is a washer.

P is a hood or covering forming nut-lock; P′, the upper portion of the hood; Q, securing-spike. *q* shows the point of the spike clinched and holding it in position.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a combined railway-rail joint and nut-lock, in combination with securing-bars C C and securing slotted plate F, a short section of rail B, placed adjacent and in a parallel position to the main rail, its center resting over the tie on which the two ends forming the joint of the main rail-rest, substantially as and for the purposes as set forth and described.

2. In a combined railway-rail joint and nut-lock, securing-bars C C, and securing slotted plate F, and a short section of rail B, in combination with the bolt D and nut J, securely holding the parts in position, substantially as and for the purposes set forth and described.

3. In a railway-rail joint, the combination, with lug-washer G, resting on the securing-plate F and having extended loop H and I, resting over the top of short section of rail, of said section of rail held in position by the bolt D, with nut J, as and for the purposes set forth and described.

In testimony whereof I affix my signature in presence of two witnesses.

JUNIUS A. HOLLIDAY.

Witnesses:

CHARLES A. DEADERICK,

OLLIE D. VAN NOTE.