

(No Model.)

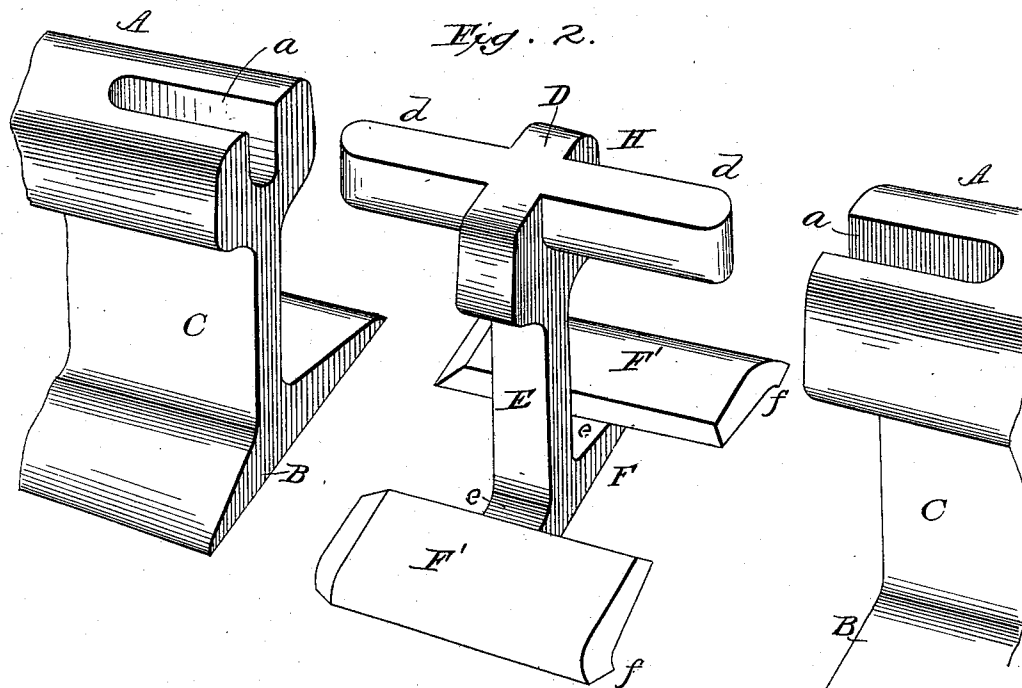
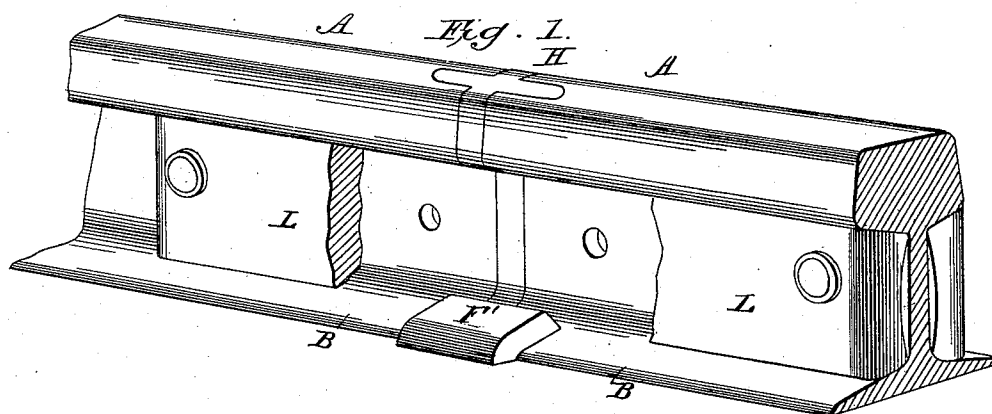
3 Sheets—Sheet 1.

J. RIGBY.

LOCKING DEVICE FOR RAILROAD RAILS.

No. 469,921.

Patented Mar. 1, 1892.



WITNESSES:

A. J. Schwartz
Paul L. Webb

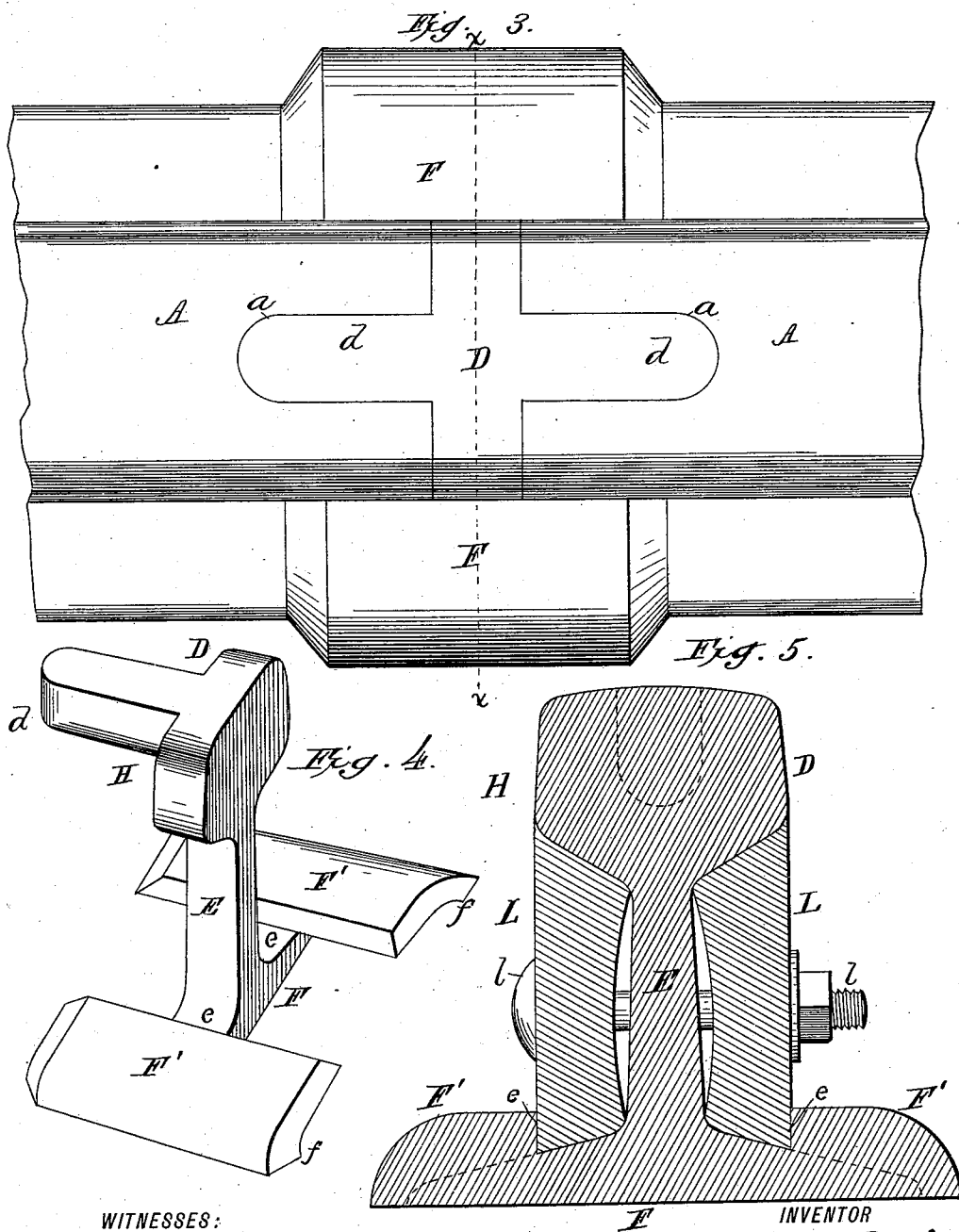
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Fig. 6.

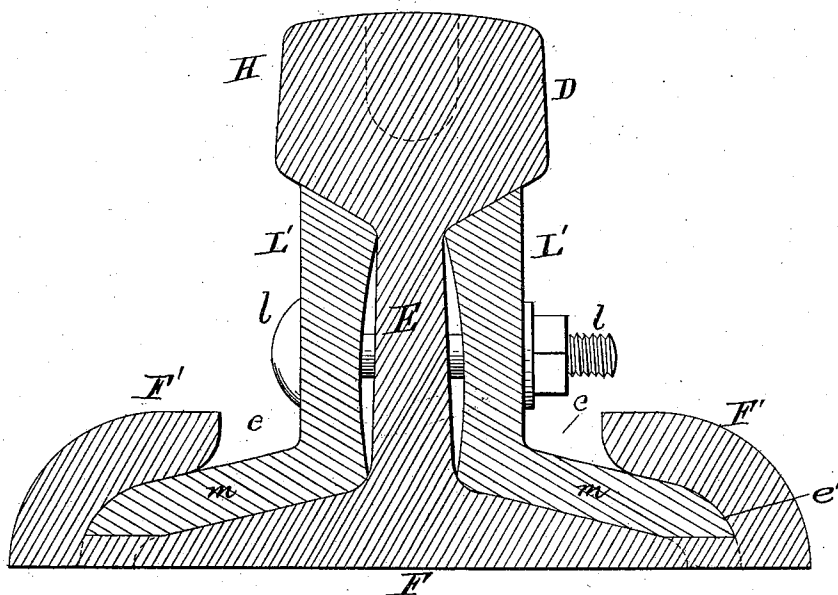
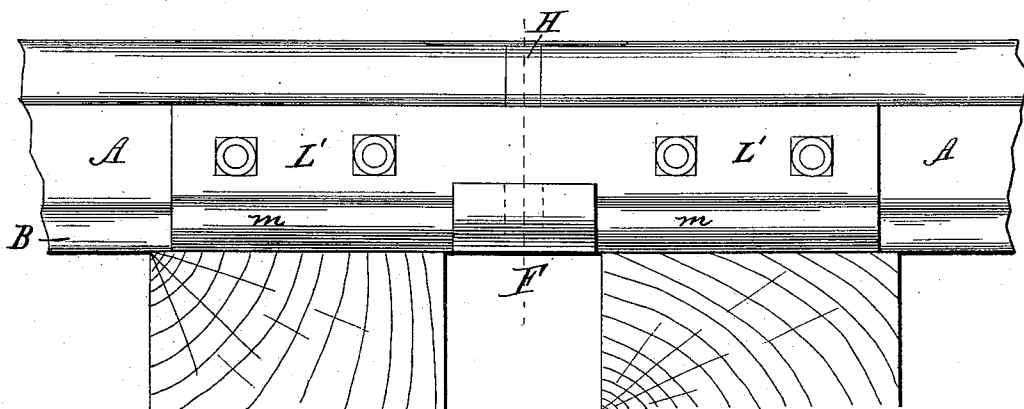


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES RIGBY, OF DETROIT, MICHIGAN.

LOCKING DEVICE FOR RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 469,921, dated March 1, 1892.

Application filed November 28, 1891. Serial No. 413,389. (No model.)

To all whom it may concern:

Be it known that I, JAMES RIGBY, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Locking Devices for Railroad-Rails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a locking device for securing the ends of railroad-rails.

The object of my invention is to provide a locking device which is simple in construction and effective in operation—a device which can be readily applied to the ends of the rails and conveniently detached therefrom when it is desired to remove and replace a rail.

An especial object of my invention is to provide a lock which shall prevent undue wear and vibration at the ends of the rails, which shall securely hold the ends together in perfect alignment and prevent spreading, and also which shall deaden or prevent much of the noise and clatter due to the passage of the wheels over the adjacent ends of the rails.

In laying railroad-rails it is important to provide a lock which will not only securely hold the ends of the rails together, but one which can be quickly placed in position and can be conveniently removed when occasion arises for removing a rail, and by my improved lock I secure these advantageous results.

The matter constituting my invention will be defined in the claims.

I will now describe my invention in detail by reference to the accompanying drawings, in which—

Figure 1 represents a perspective view of the adjacent ends of two railroad-rails connected together by means of my locking device. Fig. 2 represents a similar view of the parts detached and on an enlarged scale for better showing their construction. Fig. 3 represents a top plan view showing the lock and rails in position. Fig. 4 represents a perspective view of the lock, of modified form. Fig. 5 represents a vertical transverse section on the lines $x x$, Fig. 3. Fig. 6 represents a vertical section, and Fig. 7 a side elevation, of modified forms of my invention.

Very little departure from the construction and arrangement of the railway-rails and fish-plates now in use is required in applying my locking device, and therefore little expense is incurred in securing the advantages of my locking device. The ends of the rails A require no work upon them excepting the cutting of a slot or tenon a from the upper face down into the head of the rail, as clearly shown in Fig. 2. This slot may be readily formed by boring and milling out the material in a well-known manner, and is preferably made with a curved end and bottom, as shown.

My locking device H is preferably composed of a head D, corresponding in shape and cross-section to the head of the rail, a stem or web E, corresponding in height and thickness to the web C of the rail, and a foot or base F, corresponding to the foot B of the rail, so that the lock when in position neatly registers with all parts of the rail and makes a neat and substantial joint. The head D is provided with one or two longitudinal lugs or tenons d , extending on a line with the rails and adapted to fit in the slots or mortises a in the heads of the rails and when in position be flush with the top thereof, as shown in Figs. 1 and 3. The foot F of lock H is provided on each side with a locking-flange F', projecting longitudinally on each side of such foot and having downwardly-curved outer edges f , adapted to overlap and embrace the foot B of the adjacent ends of the rails, as shown in Figs. 1, 3, and 5. These locking-flanges F' do not extend up to the stem or web E, but leave recesses e between their inner edges and the vertical walls of such stem E of sufficient width to receive the lower edges of the fish-plates L, as shown in Fig. 5. The locking-flanges F' give additional strength to the locking device and rest upon the foot B of the rails for better holding it in position and also for securely holding the lower or foot portions of the rails in place.

The locking device H is preferably made of cast-steel and may be formed in a single casting. After the casting is removed from the mold it is preferably placed in a die and properly forged to give it strength and durability. Some of the locking devices H may be made with a single projecting lug or tenon d on one side only of the head D, as shown in Fig. 4,

to adapt it for use with the adjacent end of one rail, which is not provided with a mortise or slot *a*. In this case the locking-flanges *F'*, having downwardly-curved outer edges *f*, will still serve to lock the foot-pieces of both rails.

The locking device II is made and used in this form only as a convenience in case of the necessity of using a rail which is not mortised at the end for receiving a tenon *d*. This construction saves the time and expense which would be required to file or saw off one of the tenons *d*.

As shown in the drawings, the ends of the rails are cut off square and straight, so that they may be laid in the well-known manner familiar to workmen, except that they are set a sufficient distance apart to receive the locking device *H*. This is readily dropped into position between the adjacent ends of the rails, so that the tenons *d* fit in the slots *a* and the locking-flanges *F'* overlap the foot-pieces *B*. The fish-plates *L*, of the usual form, are then placed in position on each side of the web *C* and secured by four bolts in the well-known manner. It will thus be seen that the locking device is readily placed in position and that the rails may be laid by unskilled workmen and without material departure from their usual routine of laying the rails.

The locking device when in position securely holds the ends of the rails in perfect alignment and prevents vibration thereof, so that the noise usually arising from the passing wheels is very much deadened and the jar and motion of the train are much reduced. Should it be desired to remove one of the rails, the locking device may be readily lifted out of position by removal of the fish-plates and the new rail may be quickly placed in position and the ends again locked in place by the locking device.

Figs. 6 and 7 illustrate my locking device in a modified form and adapted for use in connection with an angle fish-plate *L'*, one or more of which may be used. In this case the foot *F* of the locking device is extended laterally on one or both sides, so as to embrace the base-flange *m* of fish-plate *L'*, as well as the foot *B* of the rail, as clearly shown in Fig. 6. The locking-flange *F'* in this modification is provided with a recess *e'*, extending between it and the foot *F*, for receiving the base-flange *m* of the fish-plate, and, in addition, has its inner edge cut off comparatively short—that is, quite a distance from the web *E*—so as to form a larger recess *e* than that shown in Fig. 5, in order to permit the base-flange *m* of the angle fish-plate *L'* to be readily slipped into place. For the purpose of more readily adjusting the angle fish-plate *L'* in position the downwardly-turned edge of the base-flange *m* is cut away to a width corresponding to the longitudinal length of the locking-flange *F'*. In practice I may construct the locking device *H* on one side with a recess *e* to accommodate an angle fish-plate

and on the other side without such recess and, as shown in Fig. 5, to accommodate an ordinary straight fish-plate *L*. A more especial object of this modified form of locking device is to adapt it for application on railroads where angle fish-plates are already in use.

In laying a new railroad I preferably employ the locking device and the simple straight fish-plates shown in Fig. 5 as being simpler in construction and quite effective for the purposes indicated. I wish it understood, however, that my locking device can be applied and used in connection with both the single-bar fish-plates and with angle fish-plates and is not confined to either form alone.

Though I have shown in Fig. 6 an angle fish-plate on each side of the rail, I may in practice use an angle fish-plate *L'* on one side and a straight fish-plate *L* on the other side of the rail.

Having described my invention, what I claim; and desire to secure by Letters Patent, is—

1. The combination, with the rails having slots or mortises cut in the heads at their adjacent ends, of the locking device formed with a head, stem, and foot corresponding in dimensions and contour with the head, web, and foot of the rail, the head having one or more longitudinal tenons adapted to fit into the mortises in the heads of the rails, and said stem being freely exposed and unencumbered at its sides, substantially as described.

2. The combination, with the rails having slots or mortises cut in the heads at their adjacent ends, of a locking device having a head, stem, and foot; the head being provided with longitudinal tenons adapted to fit into the mortises in the heads of the rails and the foot having lateral locking-flanges adapted to embrace the foot portions of adjacent rails; substantially as described.

3. The rails having mortises cut in their heads at adjacent ends, in combination with the locking device, the head of which is provided with the tenons *d* and the foot of which is provided with lateral locking-flanges *F'* and having recesses *e* between such flanges and the stem or web *E* for receiving the fish-plates *L*, substantially as described.

4. The combination, with the rails having slots or mortises cut in the heads at their adjacent ends, of a locking device having a head, stem, and foot; the head being provided with longitudinal tenons adapted to fit into the mortises in the heads of the rails and the foot having a lateral locking-flange containing a recess *e'* for receiving the base-flange *m* and an angle fish-plate on one or both sides of the rail, substantially as described.

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

JAMES RIGBY.

Witnesses:

E. B. CLARK,

WM. A. EASTERDAY.