No. 770,504. PATENTED SEPT. 20, 1904.

W. MITTERREITER.

CROSS HEAD FOR LOCOMOTIVES.

APPLICATION FILED JAN. 20, 1904.

NO MODEL.

Fig. 1.

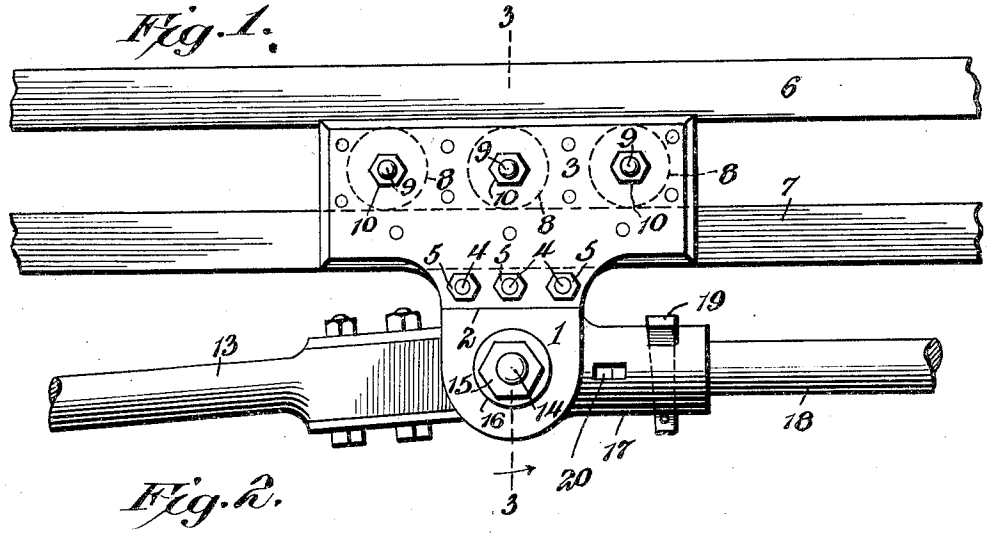


Fig. 2.

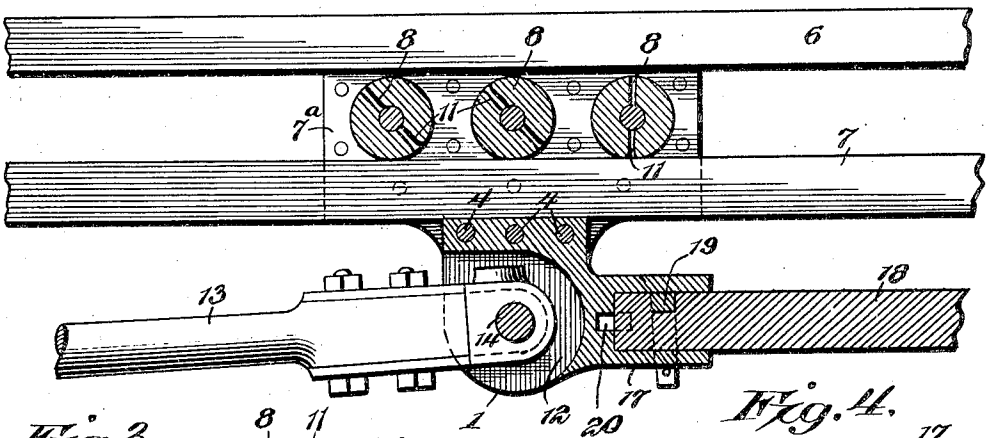


Fig. 3.

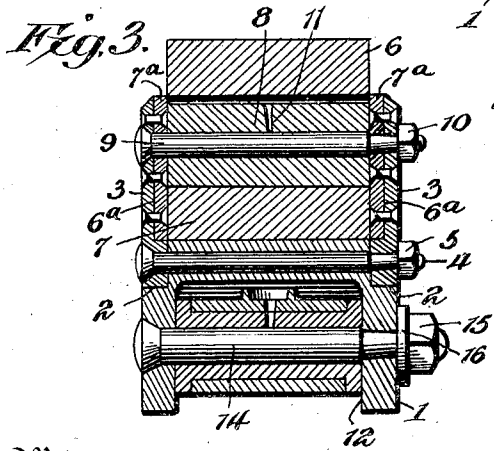
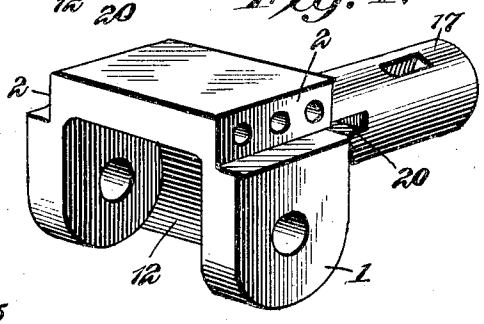


Fig. 4.



Witnesses
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No. 770,504. Patented September 20, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM MITTERREITER, OF WATERVALLEY, MISSISSIPPI.

CROSS-HEAD FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 770,504, dated September 20, 1904.

Application filed January 20, 1904. Serial No. 189,835. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MITTERREITER, a citizen of the United States, residing at Watervalley, in the county of Yalobusha and State of Mississippi, have invented a new and useful Cross-Head for Locomotives, of which the following is a specification.

The invention relates to improvements in cross-heads for locomotives.

The object of the present invention is to improve the construction of cross-heads for locomotives and to dispense with the use of gibs ordinarily employed on such cross-heads and to provide a simple and comparatively inexpensive cross-head of increased strength and durability and adapted to lessen the friction and to save labor and material in constructing and applying cross-heads to locomotives and in removing them therefrom.

A further object of the invention is to provide a cross-head of this character adapted to permit the upper part of that portion which is connected with the guides to be removed wholly or partially without interfering with the connections between the cross-head and the main and piston rods.

Another object of the invention is to enable the piston-rod to be disconnected from the cross-head without taking down the main rod and to permit the main rod, the piston-rod, and the lower portion of the cross-head to be disconnected without interfering with the upper portion, which is mounted on the guides.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a cross-head constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail view of the lower portion or body of the cross-head.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates the lower or body portion of a cross-head which is provided at opposite sides with upper longitudinal recesses 2 for the reception of the lower portions of side or cheek plates 3, which are secured to the body portion of the cross-head by transverse bolts 4. The bolts pierce the cross-head and the lower portions of the plates 3, as clearly shown in Fig. 3, and they have countersunk heads and are engaged by nuts 5. The plates, which form upwardly-extending sides or wings, are arranged at opposite sides of the guides 6 and 7 of a locomotive, the guides consisting of bars and being of the ordinary construction. The intermediate portion of the cross-head lying between the recesses 2 fits directly against the lower guide, as clearly shown in Figs. 2 and 3 of the drawings. The lower attached portions of the side plates are preferably tapered, as shown, and the upper portions are provided at their inner faces with recesses 6^a for the reception of brass linings 7^a, forming inner bearing-faces for abutting against the side edges of the guides and the ends of antifriction-rollers 8. The brass linings are adapted to slide on the guides, and they permit the rollers to run smoothly without heating and at the same time prevent the ends of the rollers from getting rough. The brass linings are riveted or otherwise secured to the inner faces of the sides or wings of the cross-head, and the rollers, which preferably consist of case-hardened steel, may be constructed of any desired material, and they are adapted to take the place of the heavy brass gibs ordinarily employed on locomotives, whereby the weight and friction are materially decreased. The transverse antifriction-rollers are mounted on bolts 9, which pierce the side plates, being provided at one end with tapered heads and having nuts 10 at the other end. At an intermediate point the rollers are

provided with oil-holes 11, which communicate with the central bolt-receiving bore or opening, whereby the rollers are thoroughly lubricated. The rollers may be removed without detaching the sides or wings of the cross-head by simply withdrawing the bolts 9, and the lower or body portion of the cross-head may be detached, as hereinafter explained, without interfering with the rollers or necessitating their removal from the guides.

The body portion of the cross-head is provided with a recess 12 for the reception of the front end of the main rod 13, and the sides of the lower portion are pierced by the cross-head pin 14, which pivots the main rod to the cross-head. The cross-head pin has a countersunk head and is provided with a nut 15 and washers 16, and the main rod is constructed in the ordinary manner and is provided with an oil-cup, located within the recess 12. The recess is located at the rear end or portion of the cross-head, which is provided at its front portion with a socket 17 for the reception of the piston-rod 18, and the latter is drawn up to the proper position by a key 19. The key 19 is wedge-shaped, and when it is removed the cross-head may be separated from the piston-rod by driving a tapering key or wedge into a keyway 20. The keyway 20 consists in a transverse opening intersecting the socket and exposing the rear end of the piston-rod. This will enable the piston-rod to be forced out of the socket without taking down the main rod. By placing a jack or other support under the cross-head the side plates may be detached without interfering with the main rod and the piston-rod.

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

1. In a device of the class described, the combination with guides, and main and piston rods, of a cross-head connected with the said rods and provided with sides or wings receiving the guides, antifriction devices operating in the guides and connected with the sides or wings, and linings carried by the sides or wings and slidable on the guides, substantially as described.

2. In a device of the class described, the combination with guides, of a cross-head provided with sides or wings embracing the guides and provided with linings slidable thereon, and transverse antifriction-rollers carried by the sides or wings and operating between the guides and fitting against the said linings, substantially as described.

3. In a device of the class described, the combination with guides, of a cross-head provided with opposite recesses, sides or wings secured in the recesses and provided at their inner faces with recesses, linings secured within the latter and slidable on the guides, and antifriction devices carried by the sides or wings, substantially as described.

4. In a device of the class described, the combination with guides arranged one above the other, and main and piston rods, of a cross-head connected with the said rods and provided with detachable sides or wings extending upward and receiving the guides, and transverse rollers carried by the sides or wings and operating between the guides and being of a diameter substantially equal to the space separating the guides, substantially as described.

5. In a device of the class described, the combination with upper and lower guides spaced apart, of a cross-head provided at opposite sides with recesses and the intermediate portion of the cross-head between the said recesses fitting against the lower guide, sides or wings secured in the recesses and fitting against the side faces of the lower guide and extending across the space between the guides, and antifriction devices arranged between the guides and carried by the sides or wings, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM MITTERREITER.

Witnesses:

JAS. R. CAHILL,

OSCAR W. JOHNSON.