

W. A. ALEXANDER.
Cross Heads for Locomotives.

No. 155,631.

Patented Oct. 6, 1874.

Fig: 1.

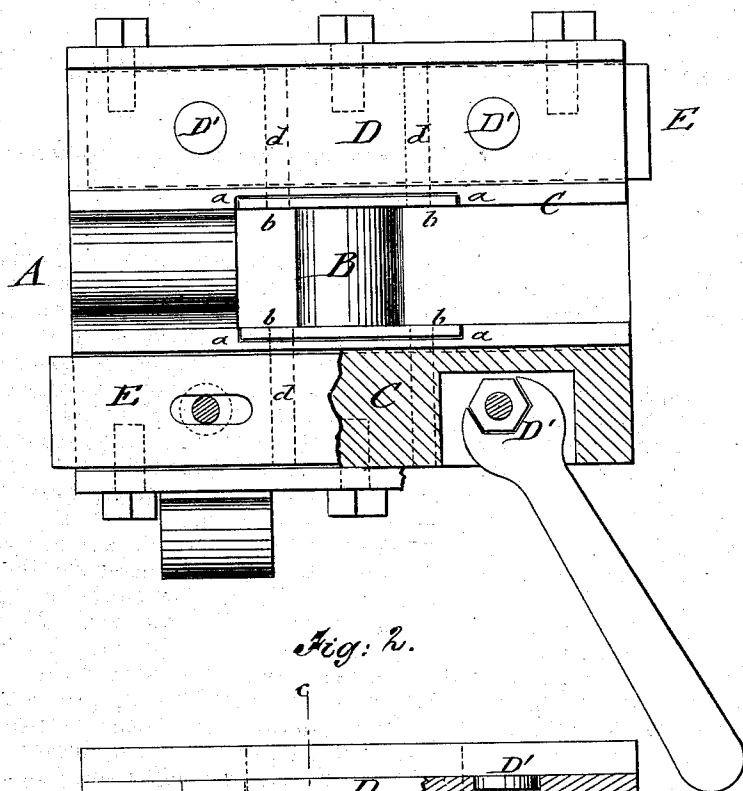


Fig: 2.

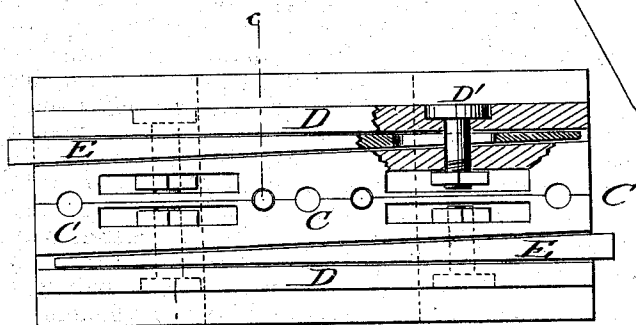
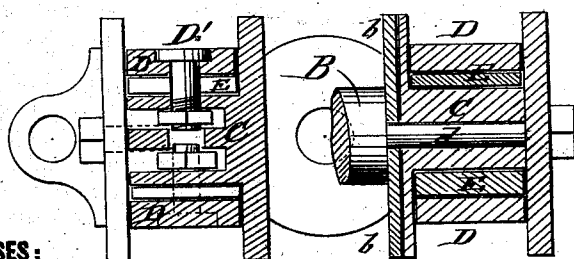


Fig: 3.



WITNESSES:

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WILLIAM A. ALEXANDER, OF MOBILE, ALABAMA.

IMPROVEMENT IN CROSS-HEADS FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. **155,631**, dated October 6, 1874; application filed August 29, 1874.

To all whom it may concern:

Be it known that I, WILLIAM A. ALEXANDER, of Mobile, in the county of Mobile and State of Alabama, have invented a new and Improved Cross-Head for Locomotives, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view of my improved cross-head for locomotives; Fig. 2, a side view of the same, with outer guide-plate attached to show adjustable wedge-pieces; and Fig. 3, a vertical transverse section of the same on line *c c*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of my invention is to construct the cross-heads of locomotives in such a manner that the same hold out for longer time with hardly any repairs, and are readily adjustable when worn at the wrist-pin and jaws, so that a close fit and steady motion in the guides are obtained.

My invention consists in the arrangement of a detachable wrist-pin placed into side recesses of the cross-head, and fastened suitably thereto. It consists, further, in arranging the jaws of the cross-head at a certain angle or inclination to the horizontal axis of the same, and placing thereon adjustable slotted wedge-pieces, for setting the top and bottom plates squarely thereon, and securing them by means of screw-bolts.

In the drawing, A represents the cross-head, which is cast in the usual manner, and provided back of the piston-rod socket with side recesses *a*, for inserting therein the detachable wrist-pin B. The wrist-pin B is made of cast-steel, wrought or cast iron, turned true in the lathe, and fitted into the recesses *a* by side guide-plates *b*, which are secured by pins, bolts, or rivets *d* to the jaws C of the cross-head.

Whenever the wrist-pin B is worn out, it is taken out from the cross-head, placed in the lathe, and trued again on the centers upon which it was originally turned, to be then replaced into the cross-head, being as serviceable as when new.

The jaws C of the cross-head are not planed

square, as heretofore, but at a slight angle or inclination to the horizontal axis of the cross-head, as indicated in Fig. 2. Tapering keys or wedges E are placed on the upper and lower sides of the jaws, but in opposite direction to each other, forming thereby a square base-support for the longitudinal top and bottom steel plates D, which are secured firmly to the cross-heads by countersunk screw-bolts D'. The wedge-pieces E are provided with slots *c* for the passage of bolts D', which are loosened or tightened by a key introduced to the nuts into interior recesses *f* of the jaws C, as shown in Fig. 1. The slotted wedge-pieces E may be driven forward when the top and bottom plates D are worn out, the latter being thereby exactly adjusted to the horizontal axis or center line of the jaw, so as to form a perfectly square cross-head therewith. The piston and pump rods are thereby kept in perfect line, and the piston-rod cannot work out and get loose, as it now does.

The cross-head guides need no liners when once set true, and remain so, being not exposed to wear. Should it be necessary, however, to true them, they are merely planed off along their entire length, and then replaced, working as effectively as when new, and requiring no relining with the cylinders.

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

1. In cross-heads for locomotives, the combination, with the recessed jaws C, of the detachable wrist-pin B, secured thereto, substantially as and for the purpose set forth.

2. The combination, with the jaws C of a cross-head, the same being arranged at an angle to the horizontal axis of the same, of slotted intermediate wedge-pieces E and outer plates D, secured by screw-bolts D', for the purpose of adjusting the cross-head to the guides when worn, substantially as shown and specified.

WILLIAM A. ALEXANDER.

Witnesses:

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J. F. HOGAN.