

J. D. LEWIS.
CROSS HEAD FOR LOCOMOTIVES.
APPLICATION FILED JUNE 1, 1912.

1,040,220.

Patented Oct. 1, 1912.

Fig. 1.

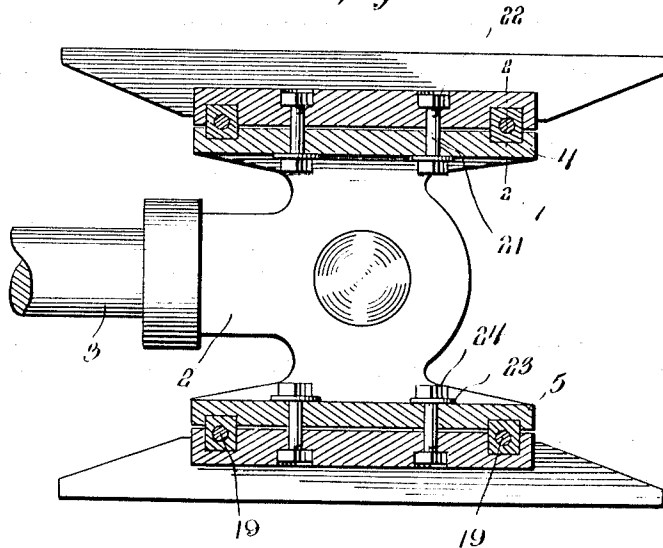


Fig. 2.

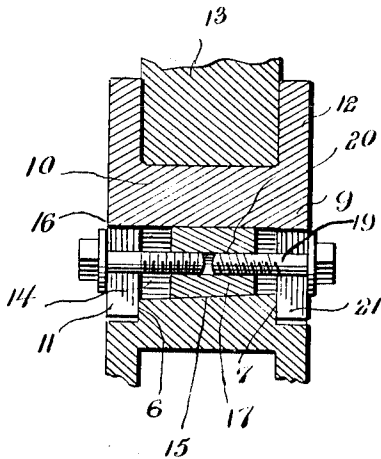
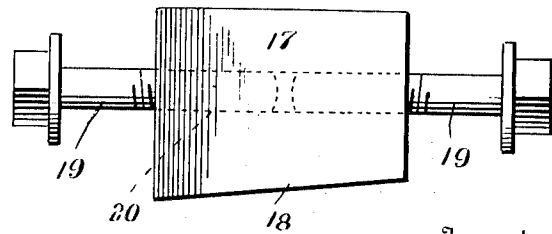


Fig. 3.



Inventor

John D. Lewis.

Witnesses
William Smith

Wm. North

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

JOHN D. LEWIS, OF HARRISBURG, PENNSYLVANIA.

CROSS-HEAD FOR LOCOMOTIVES.

1,040,220:

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed June 1, 1912. Serial No. 700,978.

To all whom it may concern:

Be it known that I, JOHN D. LEWIS, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented new and useful Improvements in Cross-Heads for Locomotives, of which the following is a specification.

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

In carrying out my invention it is my purpose to provide a construction of cross heads for locomotives which may be removed and replaced in position upon the guides without disturbing the guides.

I also aim to provide a novel and simple construction of cross heads having means whereby the cross head shoe may be easily and quickly adjusted with relation to the cross head and with relation to the guides for the cross heads.

With the above recited objects in view, and others of a similar nature, the invention resides in the construction, combination and operative arrangement of parts set forth in the following description and falling within the scope of the appended claim.

In the drawing, Figure 1 is a vertical longitudinal sectional view, with parts in elevation, of a locomotive cross head embodying my invention. Fig. 2 is an enlarged detail sectional view taken upon the line 2—2 of Fig. 1. Fig. 3 is a side elevation of the adjusting means.

With cross heads constructed as now in general use on locomotives it is impossible to remove a cross head from its guides without dismantling the guides, and should the cross head for any reason require removal from the guides when the locomotive is out on the road it is necessary to return the engine to the shops to enable this to be accomplished.

With my improved construction of cross heads for locomotives, the cross heads can be removed from or replaced in position between the guides without disturbing the guides regardless of where the engine may be, the structure embodying but few parts which are easily operated but which, when in position, provide a strong and effective connection between the cross head and the shoe that will effectively withstand the violent vibrations to which they are subjected.

Referring now to the drawings in detail

the numeral 1 designates the cross head, the central portion of which is bifurcated or provided with the usual opening for the reception of the trunnioned socket 2 of the piston rod 3.

The numerals 4 and 5 designate the longitudinally extending faces of the cross head, the same in the usual construction of cross heads being adapted to bear against the guide. In the present instance however, each of the faces is recessed or grooved adjacent its upper longitudinal edges and upon its opposite sides as designated by the numerals 6 and 7.

The numeral 9 designates the shoes for the faces of the cross heads. Each of these shoes is of a similar construction and comprises a central webbing 10, which really forms the body of the shoe. The sides of the shoe are flanged in both directions from the webbing 10. The lower flanges which are designated by the numeral 11 are adapted to contact with the vertical walls provided by the longitudinally extending grooves or depressions 6 and 7 formed in the faces of the cross head, while the upwardly extending flanges, designated by the numeral 12 are adapted to engage with the opposite faces of the guides 13, the said guides also engaging with the upper faces of the webs 10 of the said shoes. The face members 4 and 5 of the cross head are provided adjacent their transverse edges with substantially rectangular openings 14, the upper walls 15 provided thereby being inclined or beveled. The body portions 10 of the shoes are also provided with depressed portions 16 which register with the depressed or cutaway portions 14 of the faces of the shoe and the said registering depressions forming pockets for the reception of sliding blocks 17. Each of the blocks 17 has one of its faces or edges beveled as at 18, the said beveled or inclined face adapted to rest upon the inclined walls 15, and the numeral 19 designates oppositely threaded bolts which engage oppositely arranged threads provided in a longitudinally extending bore 20 formed in the blocks 17. The recess 16 communicates with openings 21 provided in the sides of the body of the shoe as well as by the flanges 11, and the bolts 19 and 20 pass through the said openings within the pocket and to their

engagement with the threads provided in the bores 20 of the blocks 17, while the heads of the said bolts abut against the opposite faces of the shoe adjacent the cut portions 21 thereof. By this arrangement it will be noted that by manipulating the bolts 19 and 20 the blocks 17 also slide upon the inclined walls 15 to adjust the shoes with relation to the cross head and be sustained in their adjusted position.

The portions of the cross head referred to as the faces thereof, as well as the body 10 of the shoes are provided with registering openings, the said openings being arranged vertically and adapted to receive the bolts 20. The body 10 is provided with enlarged openings which communicate with the small openings just referred to. The said enlarged openings, designated by the numeral 22 having their walls angularly arranged to receive and to retain against movement nuts 23 and which engage with the threaded portions of the bolts 20. The threads of the bolts contact with the inner walls of the portions 4 and 5 of the cross heads, and by this arrangement it will be noted that by unscrewing the bolts 20 from the nuts 23 and withdrawing the blocks 17 through the openings 21 provided in the lower flanges 11 the shoes may be removed from the guides without interfering with the guides.

Having thus described the invention, what I claim is:—

A cross head having a hollow body portion and having its upper and lower faces reduced, the said faces being provided with transverse depressions having their lower walls inclined, wedge blocks within the depressions, cross head shoes having depending walls adapted to engage with the reduced faces of the cross head, the sides of the said shoes being provided with transversely arranged depressions which register with the transverse depressions in the faces of the cross head, adjusting means contacting with the opposite faces of the cross head shoes and connected with the wedge blocks, the shoes as well as the face portions of the cross heads being provided with vertical openings, the shoes being provided with angular enlargements which communicate with the said openings, butts within the enlargements and engaging the walls provided thereby, and headed threaded elements passing through the openings and engaging with the said nuts all substantially as and for the purpose set forth.

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

JOHN D. LEWIS.

Witnesses:

HARRY S. SWARTZ,
WILLIAM D. EBERT.