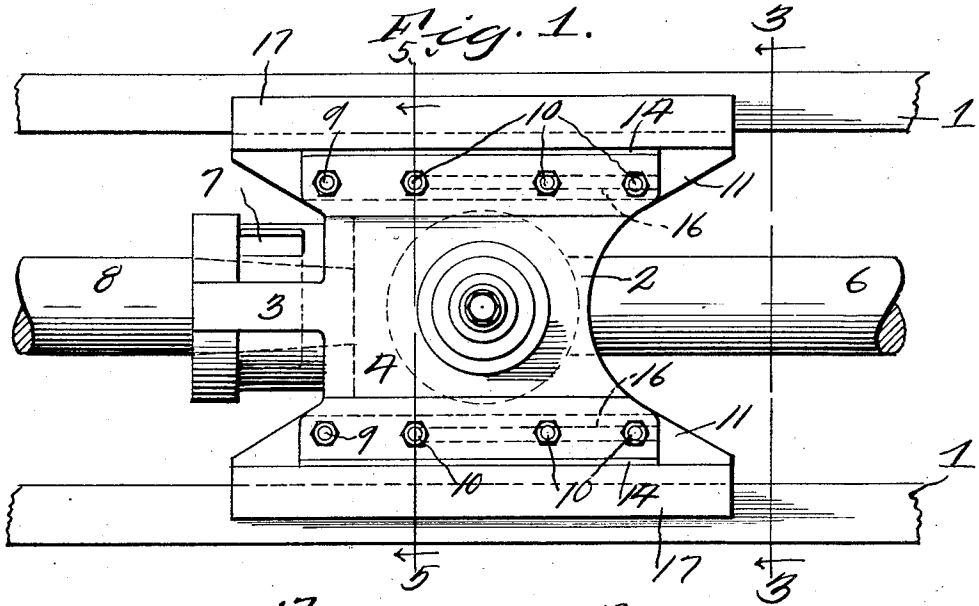
Dec. 23, 1930. J. O. McARTHUR 1,786,121

CROSSHEAD

Original Filed Feb. 9, 1927 2 Sheets-Sheet 1

Fig. 1.



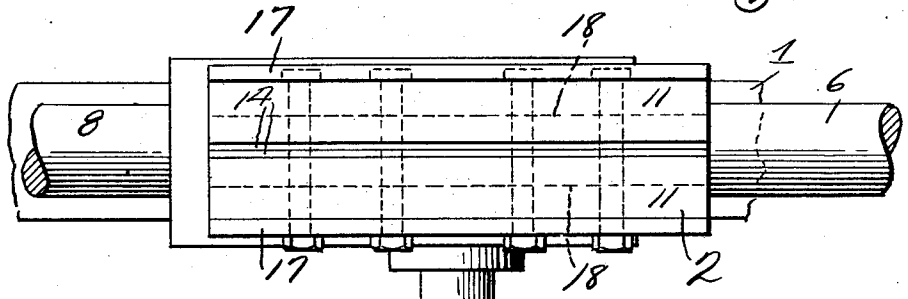


Fig. 2.

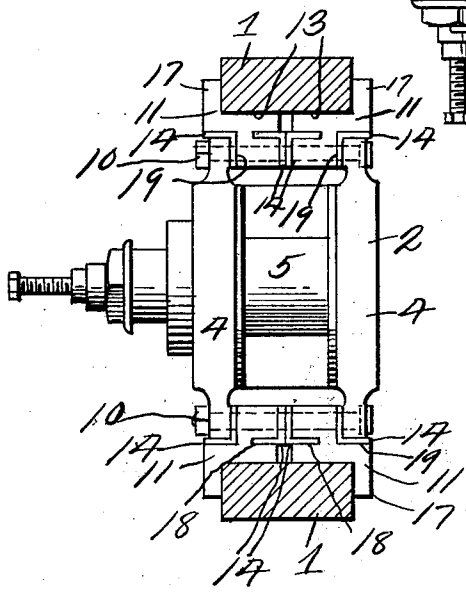


Fig. 3.

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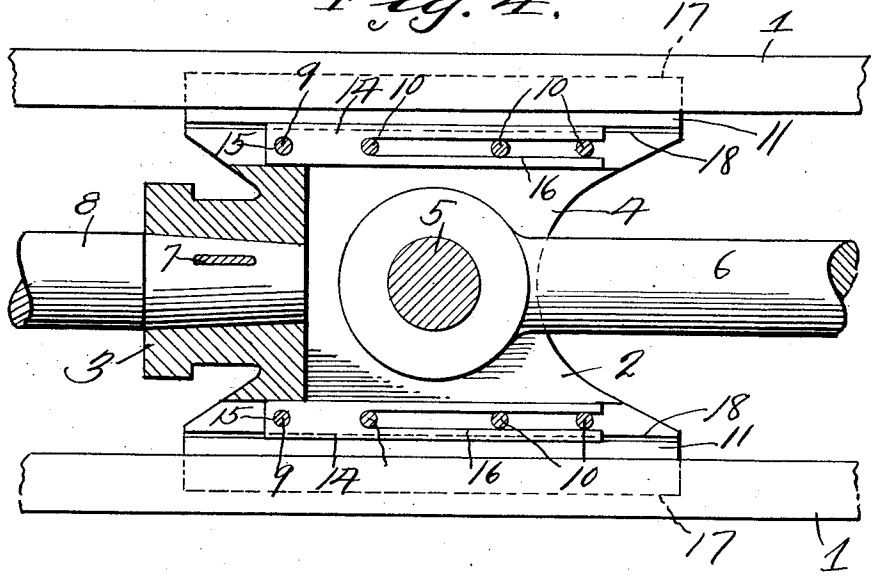
Attorney

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CROSSHEAD

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Fig. 4.



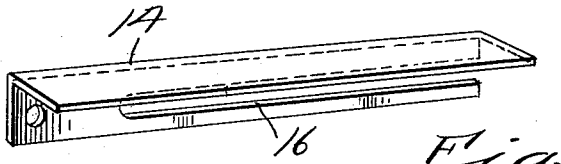


Fig. 6.

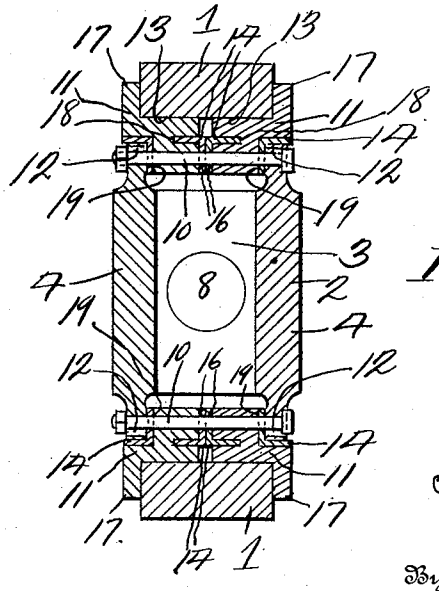


Fig. 5.

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UNITED STATES PATENT OFFICE

JOHN O. McARTHUR, OF CASPER, WYOMING

CROSSHEAD

Application filed February 9, 1927, Serial No. 166,886. Renewed May 13, 1930.

The invention relates to crossheads, and has for its object to provide a device of this character wherein removable liners are used between the crosshead shoe sections, which liners are angularly shaped in vertical transverse cross section and may be easily and quickly removed from between the sections and placed in the angular channels in the outer sides of the crosshead shoe sections inside of the side plates of the crosshead whereby said shoe sections may be moved inwardly towards each other and upwardly for taking up the wear on the shoes incident to the reciprocation of the crosshead in the crosshead guides.

A further object is to provide angularly shaped liners between the shoe sections having one of their flanges horizontally disposed and extending into registering channels in the inner faces of the shoe sections and to provide means whereby said angularly shaped liners may be removed from their positions between the sections and interposed between the crosshead plates and the outer sides of the shoe sections without disassembling the crosshead.

A further object is to provide a crosshead mounted in crosshead guides and having shoes formed from sections, angularly shaped liners interposed between the sections, which liners may be removed and interposed between the crosshead plates and the sections without modifying their angular shape.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:

Figure 1 is a view in elevation of the crosshead.

Figure 2 is a top plan view of the crosshead.

Figure 3 is a vertical transverse sectional view through the crosshead.

Figure 4 is a vertical longitudinal sectional view through the crosshead.

Fig. 5 is a vertical transverse sectional view through the crosshead taken on line 5—5 of Figure 1.

Figure 6 is a perspective view of one of the liners.

Referring to the drawing the numeral 1 designates spaced crosshead guides in parallel relation, for instance the guides of a locomotive. Slidably mounted on the guides 1 is a crosshead 2, which crosshead comprises a member 3 having formed therewith side plates 4 in parallel relation. The device hereinafter set forth is an improvement on my prior patents particularly patent issued to me February 5, 1924, No. 1,482,938. Plates 4 are connected together by a wrist pin 5 on which a connecting rod 6 is pivotally mounted, and connected to the member 3 by means of a key 7 is a piston rod 8, all of which operate in the usual manner.

Secured to the upper and lower sides of the side plates 2 by means of transversely disposed bolts 9 and 10 are crosshead shoe sections 11, through which the bolts 9 and 10 extend, however the bolts 9 and 10 extend through vertically elongated apertures 12 in the plates 2 whereby in the manipulation of the liners hereinafter set forth, said shoe sections 11 may be moved upwardly and downwardly for adjusting the same for taking up the vertical movement incident to the wear on the inner sides 13 of the crosshead guides 1. Disposed between the crosshead shoe sections 11 are angularly shaped liners 14, which liners have one of their flanges provided with an aperture 15 for the reception of the bolts 9 and elongated slots 16 extending entirely to the end of the flange and through which slots the bolts 10 extend and by removing the bolts 9 and longitudinally removing the liners 14, it is obvious that said liners may be removed from between the shoe sections for taking up the lateral wear on the inner sides of the flanges 17 of the shoe sections and for any wear which may take place on the opposite sides of the guides 1. It will be noted that when a liner 14 is removed from between the shoe sections 11, the shoe sections may

move inwardly towards each other and then the liner is placed on the outer sides of the sections 11 as shown in Figures 3 and 5, and after which the bolts 9 and 10 are replaced and tightened, and the lateral wear is consequently taken up, as well as the vertical wear, and at the same time the side plates of the crosshead, which are at a fixed distance from each other, remain at said fixed distance. It will be noted that the liners are angularly shaped in cross section and when between the shoe sections 11, one of their flanges is received in the registering channels 18 in the inner faces of the shoe sections, consequently their angular shape is maintained and the liners are shaped whereby when removed from between the sections 11, their form will not have to be modified before placing them between the plates 4 and the outer sides of the shoe sections 11 in the channels 19, consequently longitudinal bending of the liners to angular shape as set forth in the above mentioned patent or use of a differently shaped liner is obviated.

From the above it will be seen that angularly shaped crosshead liners are provided between the shoe sections and which liners may be easily and quickly removed and placed in position on the outer sides of the sections for taking up vertical and lateral wear.

The invention having been set forth what is claimed as new and useful is—

1. A crosshead comprising spaced crosshead plates, spaced crosshead shoes carried by said plates and having crosshead guide channels, said crosshead shoes having portions disposed between the crosshead plates and portions overlying the edges of the crosshead plates, bolts extending through the crosshead shoes and the crosshead plates, removable liners angular in vertical transverse cross section disposed between the shoes and the plates and having portions overlying the ends of the plates, said shoes being formed from sections, said shoe sections having registering channels, said channels forming means whereby the liners may be disposed between the shoe sections and held firmly in said shoe sections.

2. The combination with a crosshead having shoes slidably mounted on crosshead guides, said shoes being formed in sections, crosshead plates connected to the outersides of said shoe sections, of removable liners between the shoe sections, one of the flanges of said liners angular in vertical transverse cross section being disposed in channels in the shoe sections and means whereby the liners between the shoe sections may be received and held between the crosshead plates and the outer sides of the shoe sections and held firmly in said shoe sections.

3. The combination with an adjustable crosshead having shoes formed from sections slidably mounted on crosshead guides, said shoe sections being detachably connected to crosshead plates, said crosshead plates being disposed in angularly shaped channels in the outer sides of the shoe sections, of liners disposed between the shoe sections, said liners being angularly shaped in vertical transverse cross section and having one of their flanges disposed in channels in registering the inner sides of the shoe sections, said angularly shaped liners being receivable in the angularly shaped channels in the outer sides of the shoe sections and held firmly in said shoe sections.

In testimony whereof I hereunto affix my signature.

JOHN O. McARTHUR.