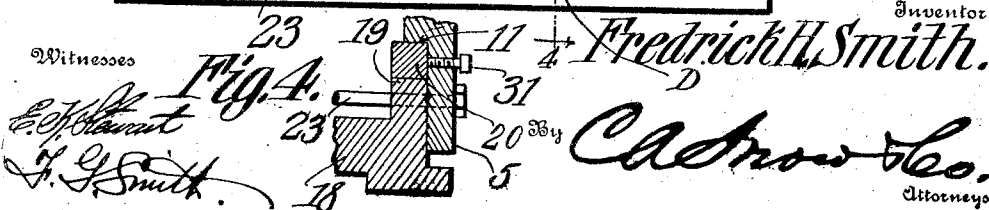
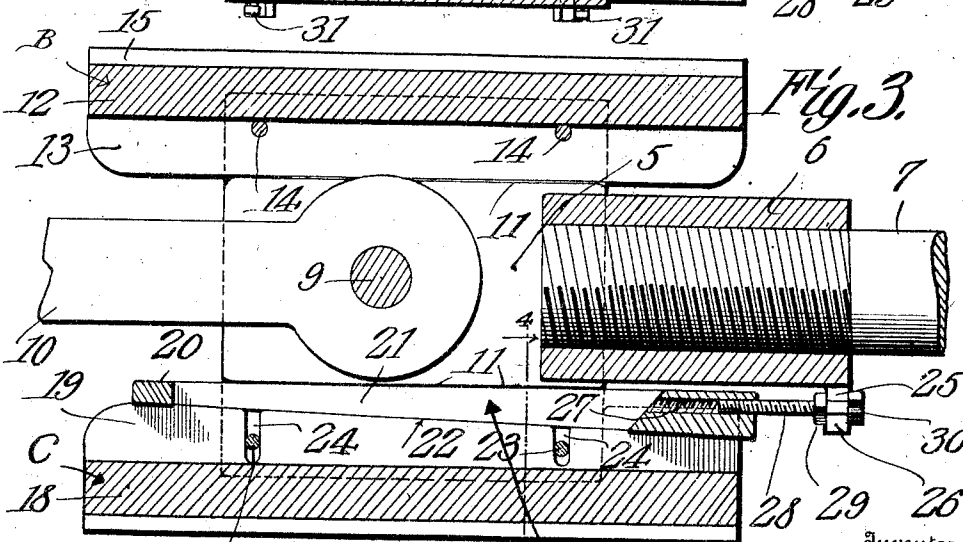
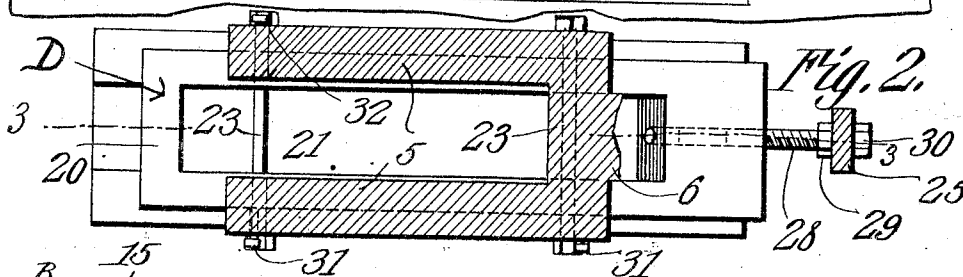
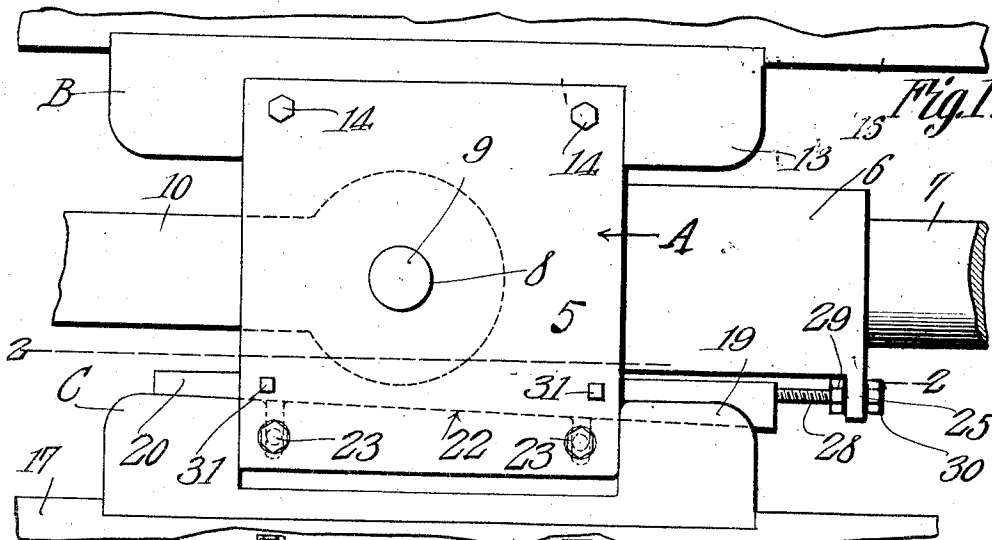


972,133.

Patented Oct. 4, 1910.



Inventor

Fredrick H. Smith.

Attorneys

Cadnow & Co.

UNITED STATES PATENT OFFICE.

FREDRICK H. SMITH, OF PITTSBURG, KANSAS, ASSIGNOR OF ONE-HALF TO CLARENCE R. WIDBY, OF PITTSBURG, KANSAS.

CROSS-HEAD.

972,133.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed November 13, 1908. Serial No. 462,525.

To all whom it may concern:

Be it known that I, FREDRICK H. SMITH, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented a new and useful Cross-Head, of which the following is a specification.

It is the primary object of the present invention to provide a novel construction of cross head embodying means whereby it may be adjusted to take up the wear due to its reciprocation in the slide of the engine in connection with which it is used, and further to provide means for locking the adjusting means after adjustment has been secured.

The invention aims further to so construct the adjusting means for the cross head that the same may be readily brought into alignment with the axis of the engine piston so that "hammering" of the head in the slide will be obviated.

In the accompanying drawings, Figure 1 is a view in side elevation of the cross head embodying the present invention. Fig. 2 is a horizontal sectional view therethrough on the line 2—2 of Fig. 1. Fig. 3 is a vertical longitudinal sectional view through the cross head on the line 3—3 of Fig. 2. Fig. 4 is a detail vertical sectional view on the line 4—4 of Fig. 3.

In the drawings the cross head is illustrated as embodying a head block A so constructed as to consist of spaced side portions 5 which are connected at one end by a sleeve extension 6 into which is fitted the end of a piston rod 7. The head block is formed in its side portions 5 with bearing openings 8 to receive a pin 9 which connects the connecting rod 10 with the cross head. The inner opposed faces of the side portions of the head block are rabbeted to afford shoulders 11 extending parallel with the upper and lower longitudinal edges of the said side portions of the head block and fitted between the rabbeted upper edges of the side portions of the head block is a cheek block B consisting of a web 12 and flanges 13, one of which flanges is formed at each side or longitudinal edge of the said web, and these flanges project below the under surface of the web and rest at their lower longitudinal edges upon the upper shoulder 11. Bolts 14 are passed through the upper portions of the sides 5 of the head block and through the

flanges 13 of the cheek block directly beneath the web 12 thereof, and these bolts serve to hold the cheek block in place upon the head block.

The web of the cheek block is grooved in its upper face, as at 15, to receive the upper one of the slides between which the cross head reciprocates, this slide being clearly shown in Fig. 1 of the drawings and indicated by the numeral 16. A second cheek block, indicated in general by the reference character C is fitted between the rabbeted lower edges of the side portions of the head block and has its under face grooved to fit upon the lower one of the slides, indicated by the numeral 17. This last mentioned cheek block C consists of a web portion 18 and upstanding flanges 19 which correspond in location and function to the flanges 13 of the cheek block B. The upper edges of the flanges of the cheek block C, however, do not rest against the lower shoulders 11 and there is interposed between these edges of the said flanges and the said shoulders, an adjustable gib D. The gib just mentioned is preferably in the form of a wedge-shaped plate 20 which is formed with a longitudinal slot 21 preferably of a width equal to the width of the space between the flanges 19 of the cheek block C. These said flanges are cut away or inclined at their upper edges as at 22 upon which edges the side portions of the gib rest, the lower shoulders 11 of the head block resting upon the said side portions of the gib. Bolts 23 are passed through the lower portions of the sides 5 of the head block and through slots 24 formed in the flanges 19, it being understood that the head block may be adjusted vertically with respect to the lower cheek block C without disturbing the connection between the head block and the said cheek block through the medium of the bolts 23.

The sleeve extension 6 is formed upon its under side with an ear 25 formed with a notch 26 which opens downwardly, and forward into a bore 27 formed in the major end of the gib D and adjusting screw 28 upon which is formed an integral collar 29 and a squared head 30, the notched ear 25 being confined between the said collar and the head. By rotating the screw in one direction, the gib will be adjusted toward the said ear whereby to lower the head block with respect to the lower cheek block and

by rotating the screw in the other direction, the gib will be adjusted in a direction away from the said ear, resulting in the head block being elevated with respect to the said lower cheek block. Inasmuch as it is the lower cheek block C which receives the maximum wear, the adjustment of the head block with respect to the said lower cheek block will effectually compensate for the wear of the two cheek blocks and will also serve to bring the head block into axial alinement with the engine piston.

In order to hold the gib D in adjusted position, a pair of set screws 31 are engaged through the lower portion of one of the sides 5 of the head block and bear against the corresponding edge of the gib and a single set screw 32 is engaged through the corresponding portion of the other side of the head block and bears against the other longitudinal edge of the gib.

What is claimed is:—

1. In a cross head, a head block having an extension, a cheek block fixedly secured at the upper side of the head block, a cheek block disposed at the lower side of the head block, a gib disposed between the under side of the head block and the upper face of the last mentioned cheek block, a notched ear upon the head block extension, and an adjusting screw threaded into one end of the gib and formed with a collar and a head between which the said ear is confined.

2. In a cross head, a head block having an extension, a cheek block fixedly secured at the upper side of the head block, a cheek block disposed at the lower side of the head block, a gib disposed between the under side of the head block and the upper face of the last mentioned cheek block, said gib being formed with a longitudinally extending slot, a notched ear upon the head block extension, and an adjusting screw threaded into the end of the gib and formed with a collar and a head between which the said ear is confined.

3. In a cross head, a head block having an extension, a cheek block fixedly secured at the upper side of the head block, a cheek block disposed at the lower side of the head block, a gib disposed between the under side of the head block and the upper face of the last mentioned cheek block, the said last mentioned cheek block being formed in its sides with bolt receiving slots, and being formed also in its side faces with recesses, the head block being formed with portions seating in the recesses, bolts engageable with said portions of the head block and extending through the slots in the said cheek block, a notched ear upon the head block extension, and an adjusting screw threaded into one end of the gib and formed with a collar and a head between which the said ear is confined.

4. In a cross head, a head block having an extension, a cheek block fixedly secured at the upper side of the head block, a cheek block disposed at the lower side of the head block, said cheek block being formed with bolt receiving slots, the head block being formed with portions fitting against the side faces of the cheek block, bolts passed through the said portions of the head block and the slots in the side portions of the cheek block, a gib disposed between the under side of the head block and the upper face of the last mentioned cheek block, set screws threaded through the side portions of the head block and bearing against the side edges of the cheek block, a notched ear upon the head block extension, and an adjusting screw threaded into one end of the gib and formed with a collar and a head between which the said ear is confined.

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

FREDRICK H. SMITH.

Witnesses:

WM. H. VOETH,
W. I. STURDEVANT.