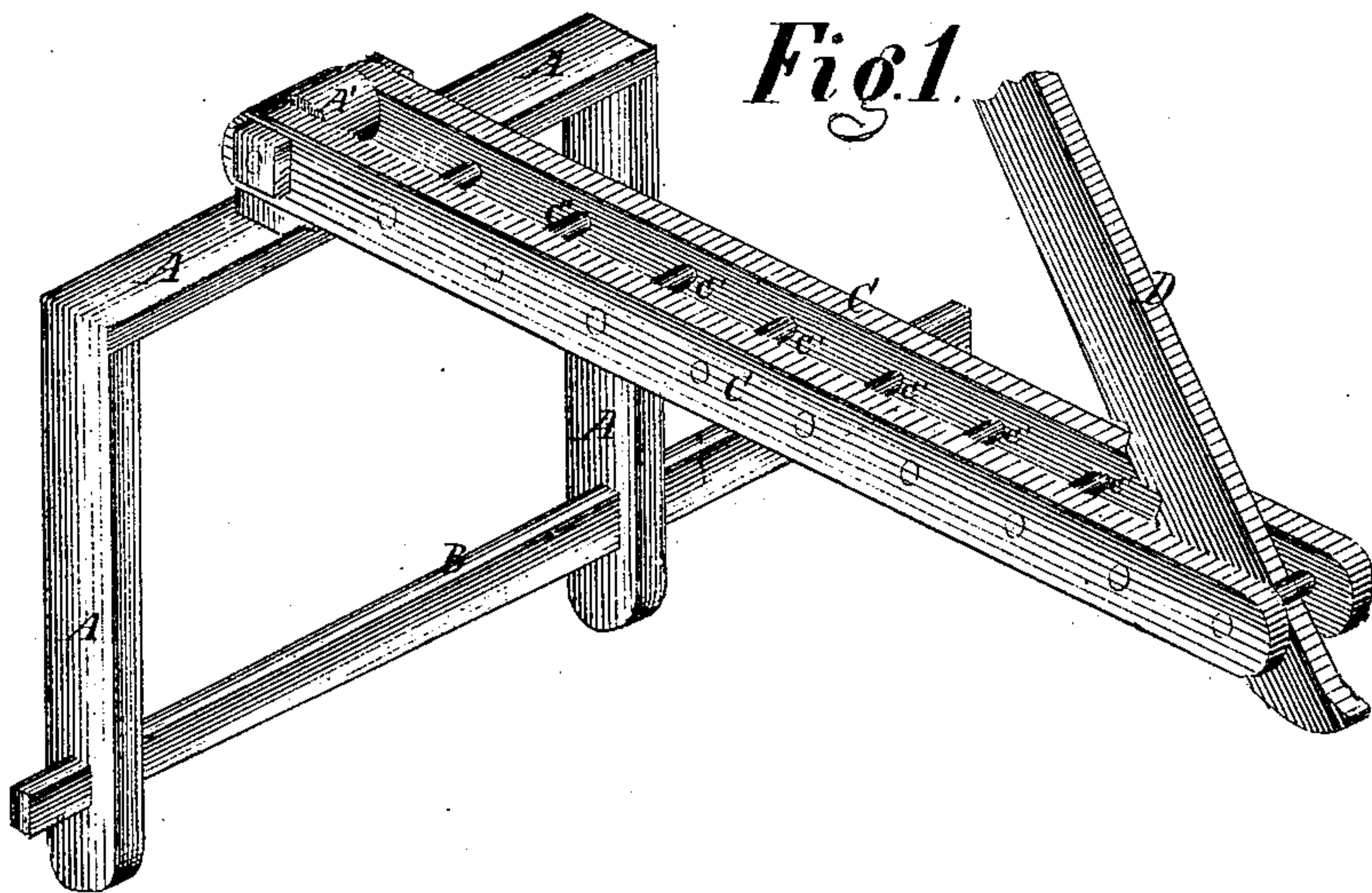


*Akley & English,*

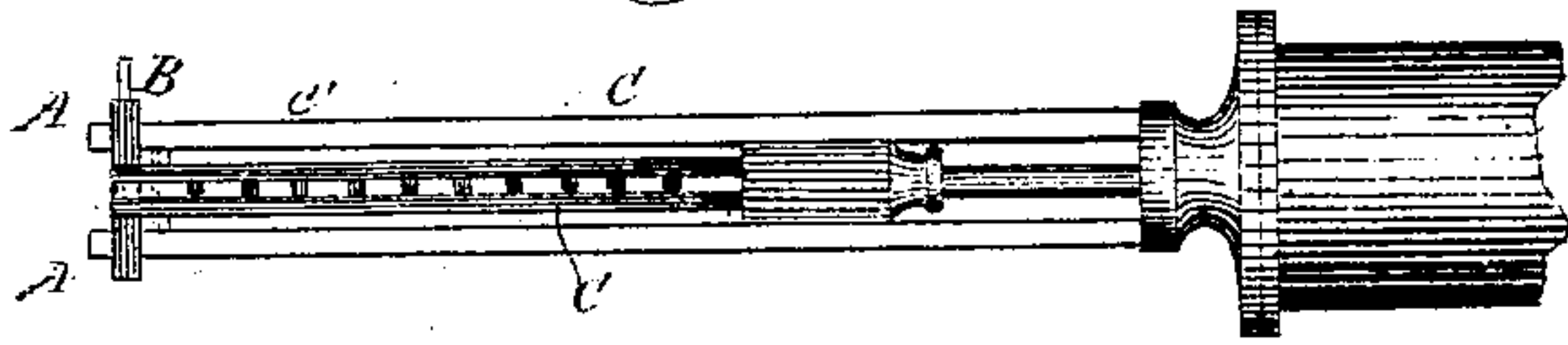
*Adjusting Locomotive Cross Heads.*

*No 103407.*

*Patented May 24, 1870.*



**Fig. 2**



*Attest*  
*Edw. Sprague*  
*C. T. Clausen*

*Inventors*  
*J. D. Akley & R. English*  
*per Edson Bros*  
*Atty*

# United States Patent Office.

JAMES D. AKLEY AND RICHARD ENGLISH, OF OIL CITY, PENNSYLVANIA.

Letters Patent No. 103,407, dated May 24, 1870.

## DEVICE FOR ADJUSTING CROSS-HEADS OF LOCOMOTIVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES D. AKLEY and RICHARD ENGLISH, of Oil City, in the county of Venango and State of Pennsylvania, have invented an Improvement in Devices for Adjusting the Cross-Heads of Locomotives; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

### Drawing.

Figure 1 is a perspective view of our improved device, showing the yoke for attaching it to the guides, the bars which extend along such guides, and the lever with which to move the cross-head.

Figure 2 is an elevation of a portion of an engine, showing how our device may be applied thereto.

Corresponding letters refer to corresponding parts in both of the figures.

This invention relates to a device for adjusting or moving the cross-heads of locomotives and other engines; and

It consists of a device to be clamped to the guides, or to the block which holds such guides, and a bar or bars, which extend along by the side of the guides, such bar or bars being provided with means for holding the lever at different points, so that the cross-head may be adjusted in any position throughout the entire range of its movement, as will be more fully described hereinafter.

It is well known that, when it becomes necessary to disconnect the connecting-rod from the cross-head of an engine, for the purpose of refitting the brasses or boxes, or for setting out the packing in the cylinders properly, or for any other purpose, it is a very difficult matter to adjust the cross-head to the desired position, as there are no means of applying a lever or other means for such a purpose, the usual method being to place blocks of wood between the guides, and then use a short lever for the purpose. But this is a tedious operation, as blocks of different lengths have to be provided for every position in which the cross-head may be placed. Our object in the present invention is to provide a cheap and convenient device for this purpose.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A refers to a yoke, which may be of cast or wrought metal, and of such dimensions as to enable it to embrace the guides of the engine upon which it is to be used, its form being clearly shown in fig. 1 of the drawing.

Upon the upper or horizontal bar of this yoke there is formed a projection, A', to which the bars C C are pivoted.

B refers to a key, which passes through slots formed in the vertical portions of the yoke A, so that, when it has been placed upon the guides, as shown in fig. 2, it may be driven into such slots, and thus, in consequence of the tapering form of said key, confine the yoke to the guides at any desired point.

C C refer to two bars of metal, or of any other material, which bars are pivoted to the projection A' upon the yoke A by means of a bolt, which passes through them, and is secured in position by a nut.

These bars may be of any desired length, and are to be provided with pins or bolts C', which extend through both, and are so arranged, by means of shoulders or a collar placed thereon, as to keep the bars at a proper distance from each other, as shown in fig. 1.

D refers to a lever, which may be used for adjusting the cross-head, by placing it in contact with any one of the pins or bolts C', and bringing its lower or inner end in contact with the cross-head.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

1. An apparatus for adjusting the cross-heads of steam-engines, constructed substantially as shown and described, and for the purpose set forth.

2. The combination of the within-described cross-head adjuster and the guides for the cross-head of a steam-engine, substantially as and for the purpose specified.

3. The combination of the yoke A, key B, bars C C, and lever D, substantially as and for the purpose set forth.

In testimony whereof we have hereunto subscribed our names to this specification in the presence of two attesting witnesses.

JAMES D. AKLEY.  
RICHARD ENGLISH.

Witnesses:

W. F. GROVES,  
J. O. BARTLETT.