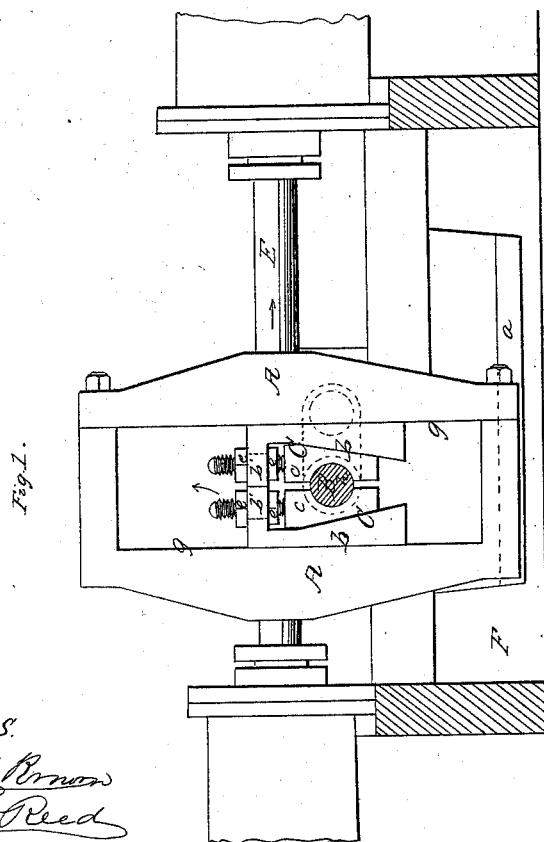
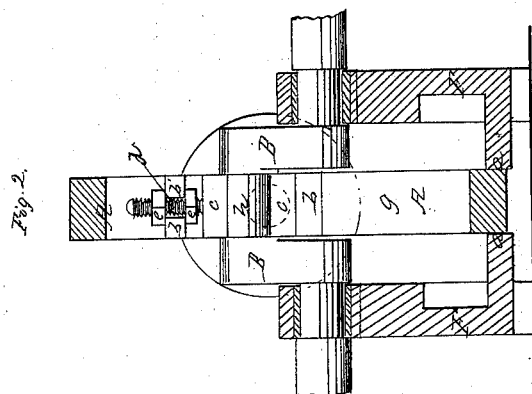


*J. Clayton,*

*Journal Connection for Steam Engines.*

*N<sup>o</sup> 47,522.*

*Patented May 2, 1865*



*Witnesses,*

*Henry T. Brown*  
*George H. Reed*

*Inventor,*  
*James Clayton*

# UNITED STATES PATENT OFFICE.

JAMES CLAYTON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN CRANK-WRIST CONNECTIONS.

Specification forming part of Letters Patent No. 47,522, dated May 2, 1865.

*To all whom it may concern:*

Be it known that I, JAMES CLAYTON, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Crank or other Wrist Connections for Steam-Engines and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a portion of a direct action steam-pump with my improvement applied, partly in section. Fig. 2 is a transverse vertical section of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to making the connection of a crank or other wrist with a piston rod or other reciprocating piece, from which it receives, or to which it transmits, rotary motion by means of a slotted cross-head without a pitman.

It consists, first, in a certain construction of the box which receives the crank-wrist, whereby facility is afforded for tightening it, both upon the crank-pin and within the slot of the cross-head, when it has become loose by wear.

It also consists in so providing or applying a guide for the cross-head as to dispense with flanges on the aforesaid box.

To enable others skilled in the art to construct my invention, I will proceed to describe it with reference to the drawings.

A is the slotted cross head, rigidly attached to the piston-rod E. C is the box connecting the wrist *h* of the crank B with the cross-head. This box consists of two wedge shaped side pieces, *b b*, and two lining-pieces, *c c*. The outer sides of the lining-pieces *c c* are made of sloping form, corresponding with the inner sides of the side pieces *b b*, and the inner sides are hollowed out to form the bearing for the crank-wrist.

The side pieces *c c* have slotted lugs *b' b'* provided on their upper ends to project over the tops of the lining-pieces, and the said lugs are connected with the lining-pieces by means of screws *d d*, which are secured firmly in the lining-pieces, and which pass through

the slots in the lugs *b' b'* thereof, and nuts *e e*, which are fitted to the said screws above and below the lugs. By properly adjusting the screws *d d* by means of the nuts *e e* the side pieces are caused, by their wedge-like action, to set the lining-pieces as tight as required upon the crank-wrist, and the lining-pieces are caused to set out the side pieces as tight as required between the sides of the parallel slot *g* of the cross-head.

Whenever any wear has taken place between the crank-wrist and the bearing in the lining-pieces, or between the side pieces and the sides of the slot in the cross-head, which requires the tightening of the box, the tightening can be effected by screwing up the nuts on the screws. Each side-piece can be separately adjusted when necessary.

The lining-pieces *c c* are of such width as to fit between the shoulders of the crank-wrist, and the side pieces *b b* are of corresponding width. The thickness of the cross-head also corresponds.

To prevent any twisting of the yoke, guides *a a* are provided in the bed-plate F, between which the lower part of the cross-head fits snugly, but easily. These guides obviate the necessity of flanges on the side pieces of the box.

I do not claim, broadly, making the outer sides of the lining-pieces and of their box taper and drawing them together by a wedge-like action produced by the operation of a screw; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the lining-pieces *c c*, having their exterior sides of sloping form, the independent wedge-shaped side pieces *b b*, the screws *d d*, and the nuts *e e*, substantially as and for the purpose herein set forth.

2. In combination with the said lining-pieces, side pieces, screws, and nuts, applied within a cross-head, the guides *a a*, provided for the cross-head, substantially as and for the purpose herein described.

JAMES CLAYTON.

Witnesses:

HENRY T. BROWN,  
J. W. COOMBS.