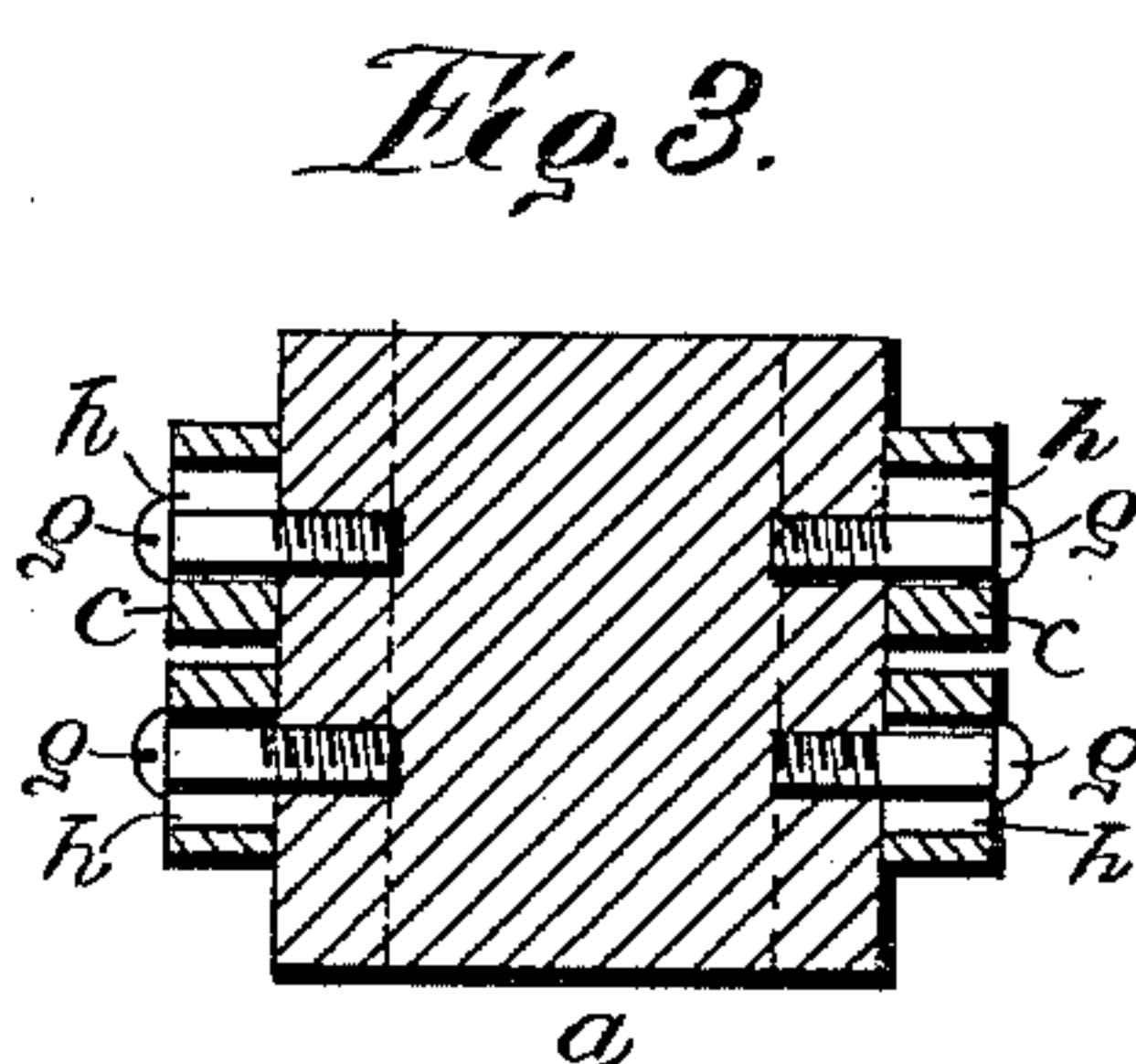
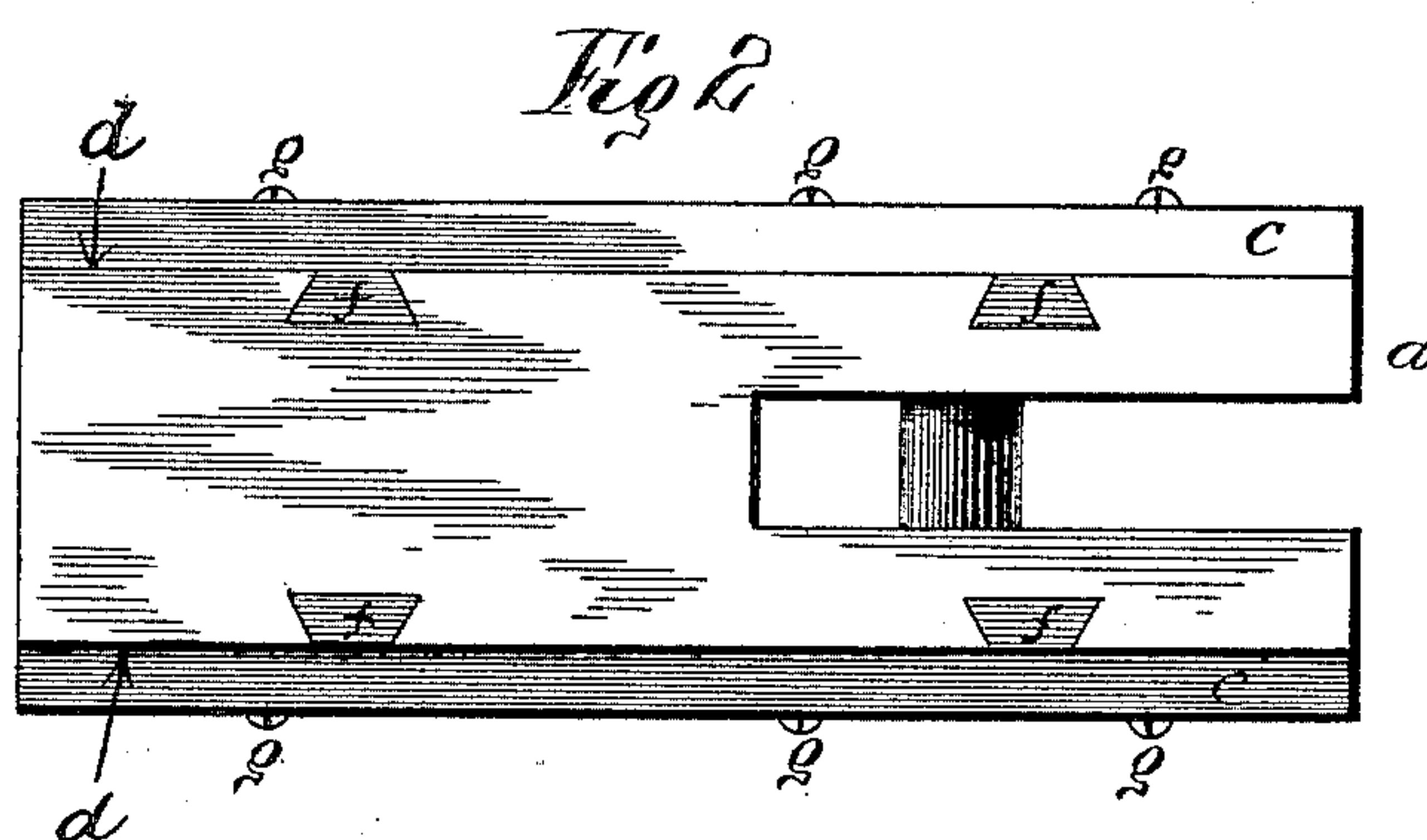


F. ROBB.
CROSS HEAD.

Patented Dec. 9, 1890.



Witness
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UNITED STATES PATENT OFFICE.

FRANK ROBB, OF ST. JOHN'S, MICHIGAN.

CROSS-HEAD.

SPECIFICATION forming part of Letters Patent No. 442,137, dated December 9, 1890.

Application filed September 2, 1890. Serial No. 363,765. (No model.)

To all whom it may concern:

Be it known that I, FRANK ROBB, a citizen of the United States, residing at St. John's, in the county of Clinton and State of Michigan, have invented certain new and useful Improvements in Cross-Heads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to devices for taking up the wear of a piston-rod cross-head.

Heretofore it has been the custom to provide removable gibs or braces, or to make the guide-bars adjustable toward each other, for the purpose of taking up the wear incident to the friction of the reciprocating cross-head.

The object of my invention is to dispense with all such mechanism and provide the cross-head with means whereby its wearing-surfaces can be brought up closely against the guide-bars to make a true joint in a much more simple and convenient manner; and with this end in view my invention consists in the peculiar features and combinations of parts more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side view of my device as applied to the cross-head of a locomotive piston-rod; Fig. 2, a top view of the same, and Fig. 3 a section through $x x$ of Fig. 1.

The reference-letter a denotes a cross-head which travels between guide-bars b and is provided upon its opposite sides with integral runners c . These runners are movable toward and away from each other, and are retained upon the vertical faces d of the cross-head and held in true rectangular adjustment by means of guides or dovetails f , rigidly secured to their under surfaces. These dovetails fit closely within corresponding grooves made in the sides of the cross-head. The runners are provided with locking-screws g , which pass through elongated slots h and enter the draw-head, whereby the runners may be moved toward and from the guide-bars and held in rigid adjustment.

As an additional means for locking the runners in adjustment, I provide set-screws i , having heads j and nuts k , located within recesses l . The nuts k bear against one wall of the recess and the heads j against the opposite wall and form a secure fastening device. Now when the top and bottom surfaces of the runners become worn and the cross-head loose, then all that need be done is to loosen the screws g and tighten the nuts k with a wrench and then afterward tighten the screws again. Hence it will be easily seen that any required amount of wear can be evenly and perfectly taken up, so that the engine will work smoothly and truly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a cross-head and runners, means for securing the runners to the cross-head, consisting of transverse grooves in one member, transverse guides on the other member received by said grooves, and set-screws whereby the parts are held in true rectangular adjustment and locked in place, substantially as set forth.

2. In combination with a cross-head and transversely-slotted runners, means for securing the runners to the cross-head, consisting of transverse dovetail guides on one member, transverse corresponding grooves in the other member, and set-screws passing through the slots of the runners and taking into the cross-head, substantially as set forth.

3. The combination of a cross-head provided upon its opposite sides with pairs of parallel adjustable runners, guides for keeping the runners in rectangular adjustment, said runners being provided with transverse oblong slots, locking-screws passing through the latter, and set-screws adapted to hold the runners apart, in the manner and for the purpose substantially as described.

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

FRANK ROBB.

Witnesses:

CHARLES M. MERRILL,
FRANK CONN.