

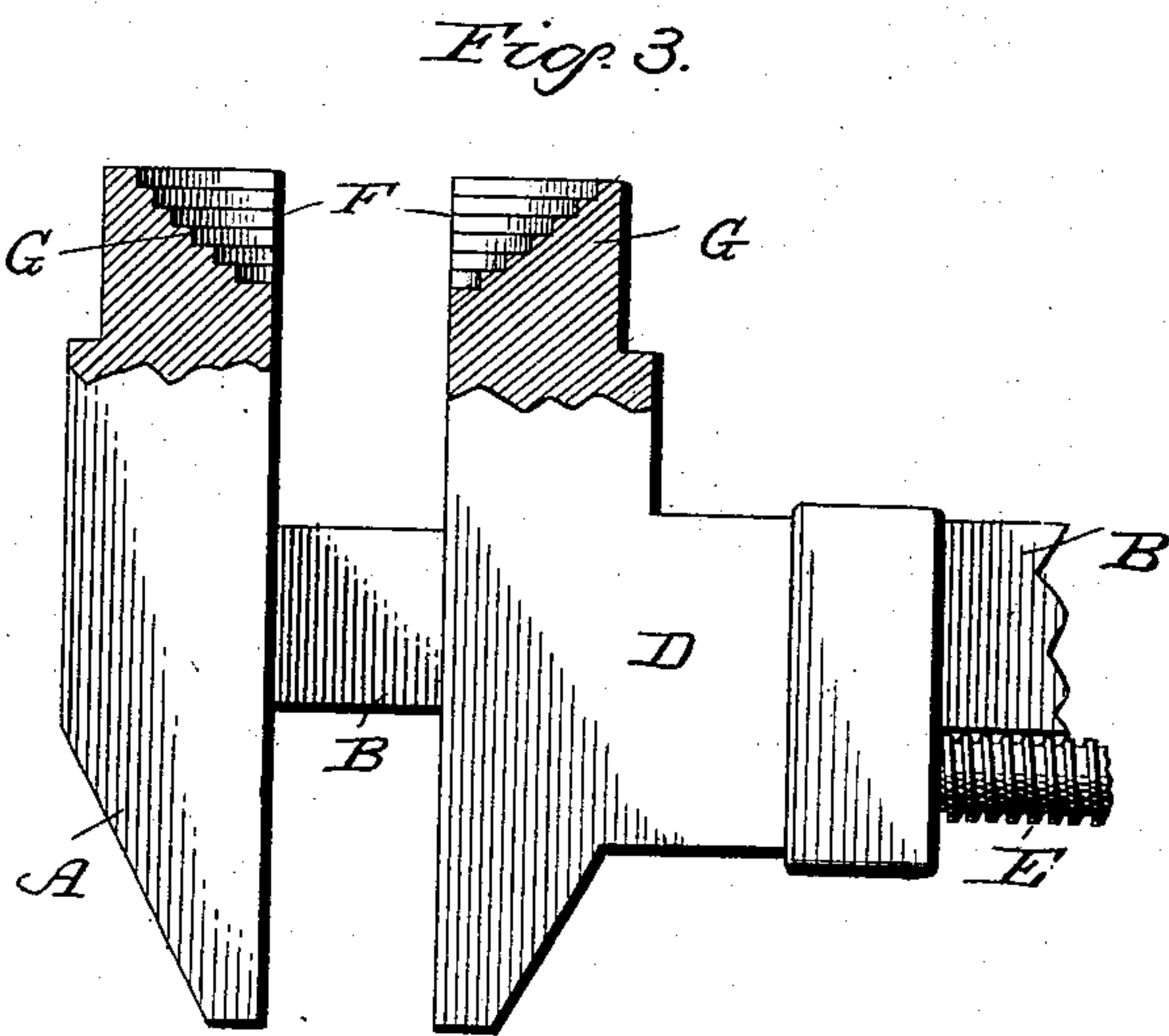
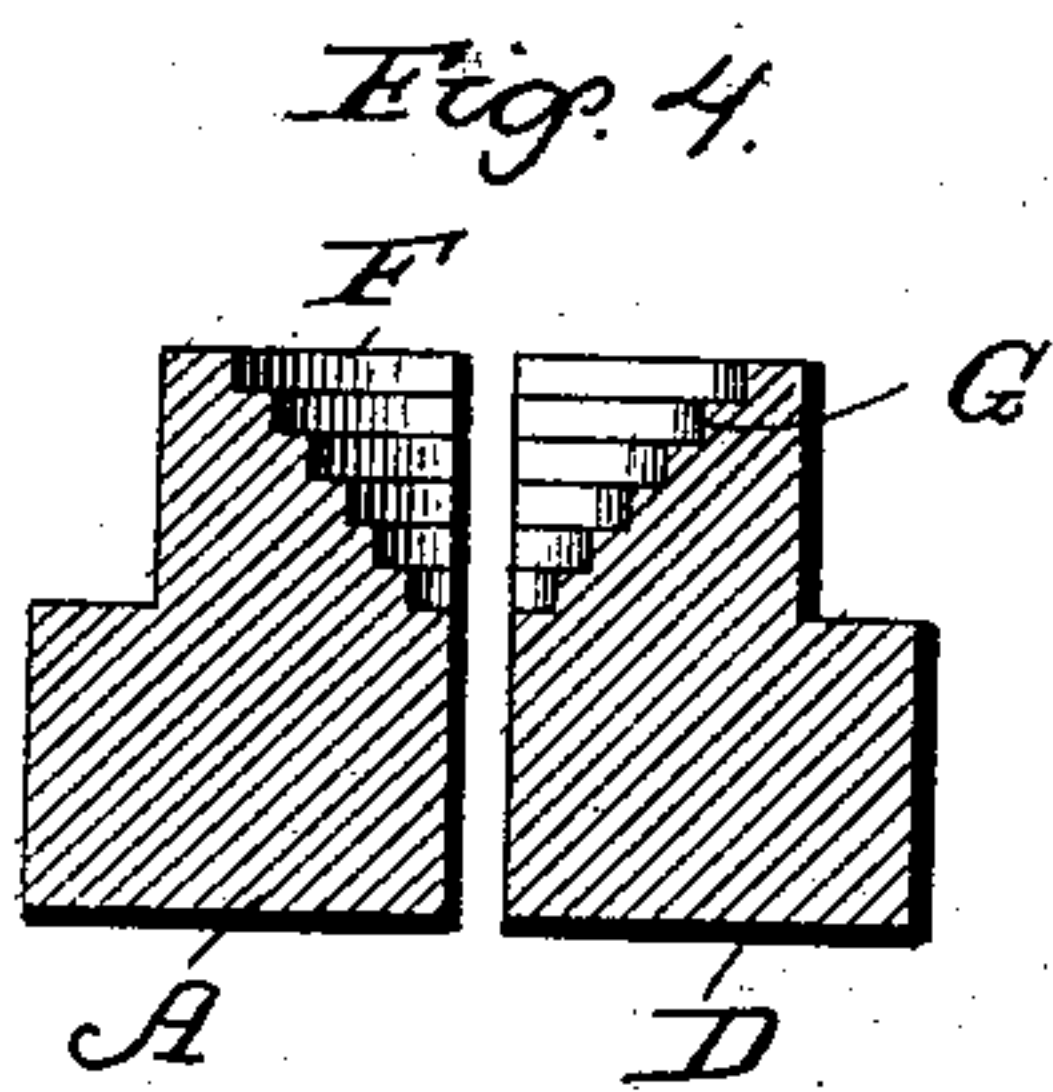
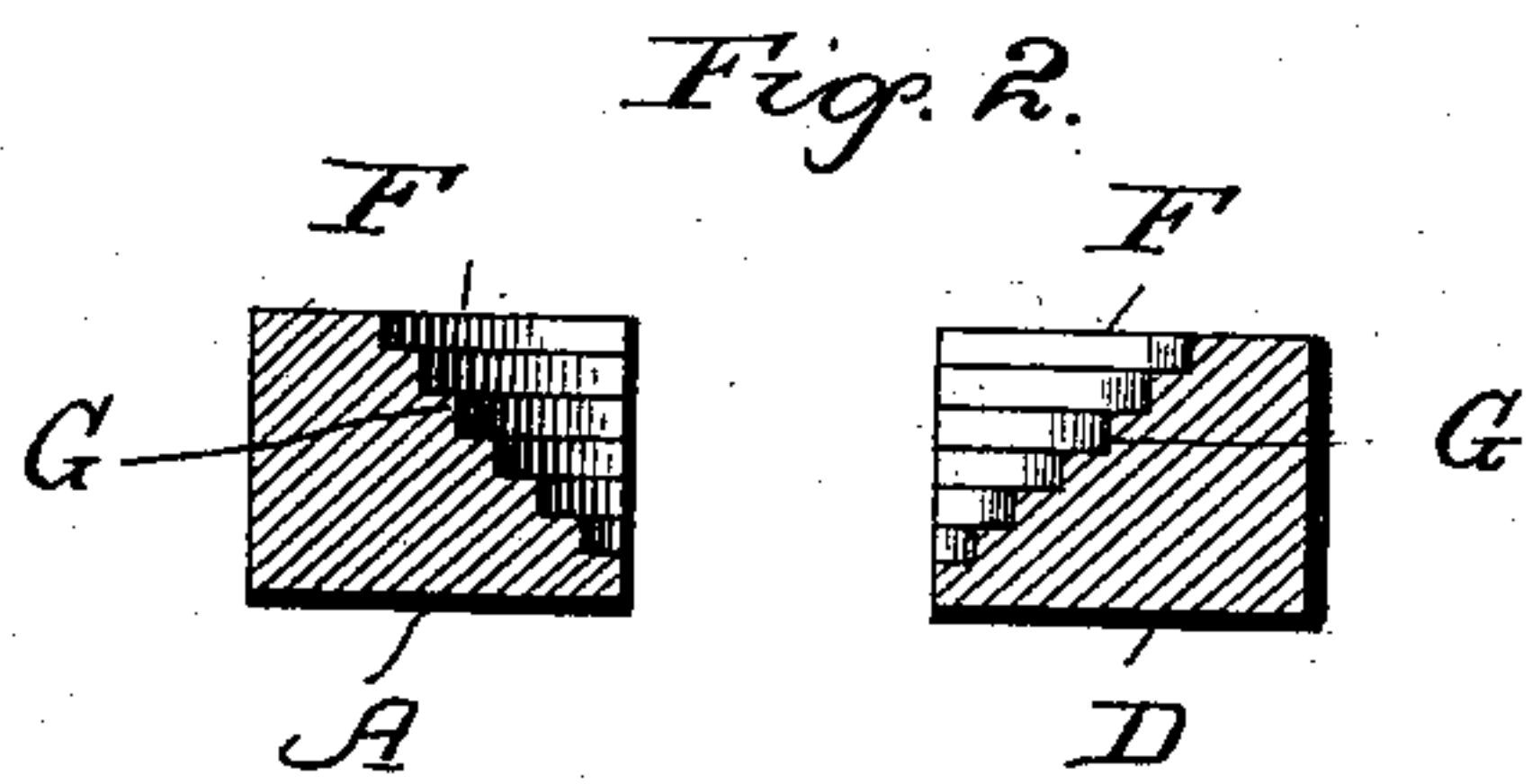
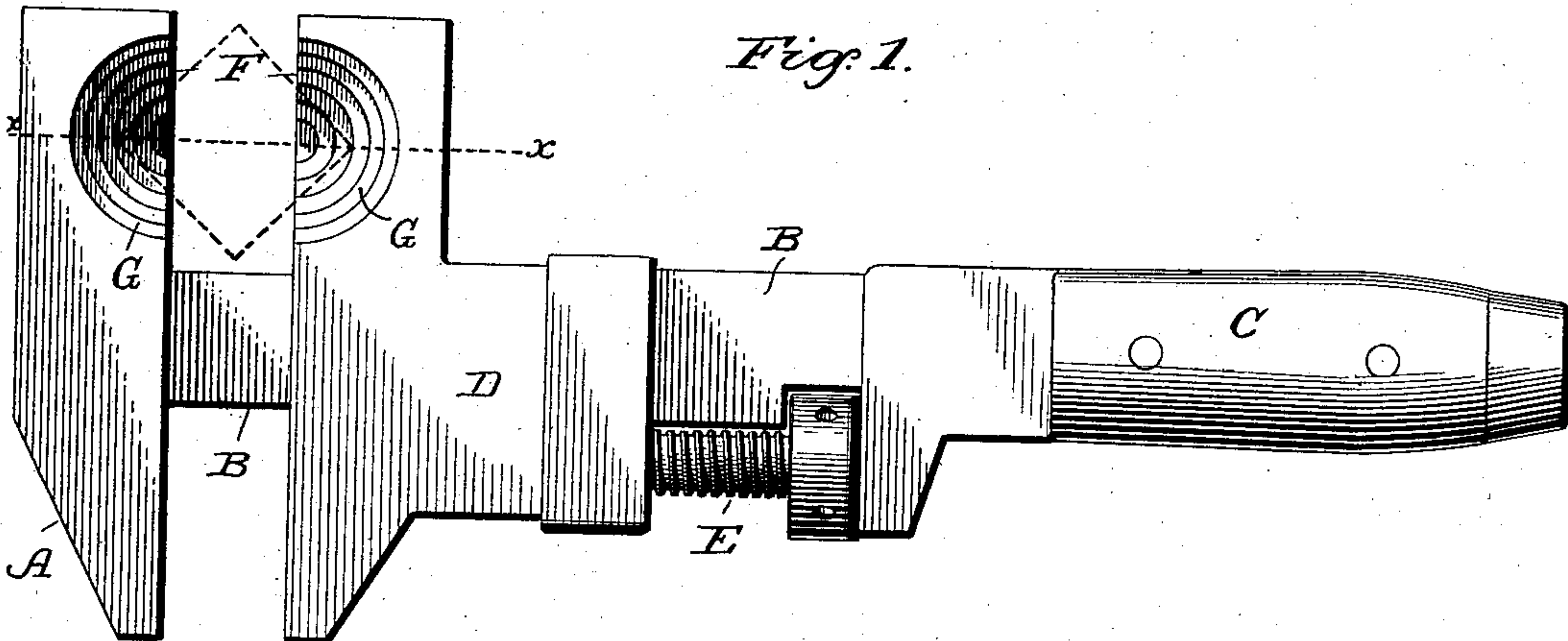
No. 637,268.

Patented Nov. 21, 1899.

D. LINEBAUGH.  
WRENCH.

(Application filed Mar. 27, 1899.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

DAVID LINEBAUGH, OF AURORA, MISSOURI.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 637,268, dated November 21, 1899.

Application filed March 27, 1899. Serial No. 710,658. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID LINEBAUGH, a citizen of the United States, residing at Aurora, in the county of Lawrence and State of Missouri, have invented certain new and useful Improvements in Wrenches; 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 an improvement in wrenches; and the object thereof is to provide a nut-wrench of the usual or any suitable construction with auxiliary or supplemental gripping-faces, which shall be so formed as to accommodate themselves to various-sized nuts without the necessity for careful adjustment of the jaws.

A further object of the invention is to provide gripping-faces which, in addition to their ready adjustment to nuts without the necessity of accurate or frequent sliding of the jaw, may be used to perfect or recut threads on old and battered bolts.

Therefore my invention consists in a tapering or conical stepped socket formed in the jaws of the wrench, preferably on one side thereof and partly in both jaws, so that the separation of the jaws will divide the socket, adapting it to operate upon a nut or bolt-head and also enlarge its gripping compass.

The invention further consists in certain novel features in the construction and arrangement of the socket, all as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, in which my invention is illustrated, Figure I is a side view of a wrench of the usual construction having my invention applied thereto. Fig. II is a vertical sectional view taken on the line  $x x$  of Fig. I. Fig. III is a side view of a wrench, showing a modified form of the invention, in which the nut-socket is formed in the rear ends of the jaws; and Fig. IV is a vertical sectional view showing another modification of the invention, the nut-socket being shown in this view as formed in a raised portion or projection on one side of the jaws.

Referring to the drawings, the wrench shown comprises a fixed jaw A, stock B, han-

dle C, sliding jaw D, carried on the stock, and an adjusting-screw E. The jaws A and D are recessed to form when brought together a tapering socket F, which is preferably in circular form and has its interior formed in a series of steps or angular projections G, which follow the curve of the socket and permit the nut or bolt to be operated upon to enter the socket until engagement is made with a step, which will resist its further entrance, when the vertical face or riser of the step above will resist the turning of the nut or bolt. By means of this series of steps in a tapering or conical socket the jaws accommodate various sizes of nuts or bolts without often the need of adjusting the jaws, or at the most but slight adjustment thereof. It is also the function of the stepped socket to form a handy device by which badly worn or battered bolts may be perfected in its screw-threaded portion by the use of the edges of the series of steps as cutters.

As before stated, this invention of the stepped tapering socket is designed to supplement the ordinary working of the jaws, which when they fail to take hold at their forward end, which is of the usual form, resort can be had to the socket. For this reason the socket is preferably located in the side of the jaws and near the rear ends thereof, as in this location the rear ends may still be used for hammering; but if found desirable the socket may be formed in the hammering ends, as shown in Fig. III.

In Fig. IV the jaws are shown with a raised portion formed on corresponding sides, in which the socket is made and by which raising of the socket it is the more readily applied to nuts and bolts in places difficult of access to the flat side of the jaw.

The form of the socket is elongated by the separation of the jaws and practically becomes an ellipse, so that it becomes impossible for the nut (shown in dotted lines) to turn without becoming more firmly wedged in the socket.

Having thus fully described my invention, I claim and desire to secure by Letters Patent—

1. A wrench having each jaw provided with



a stepped, tapering recess of semicircular or curved form, adapted to register when said jaws are brought together, and form a tapering stepped socket, as and for the purpose set forth.

2. A wrench having formed in the corresponding sides of the jaws registering, stepped, tapering recesses, adapted when brought to-

gether to form a conical stepped socket, as and for the purpose set forth.

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

DAVID LINEBAUGH.

Witnesses:

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