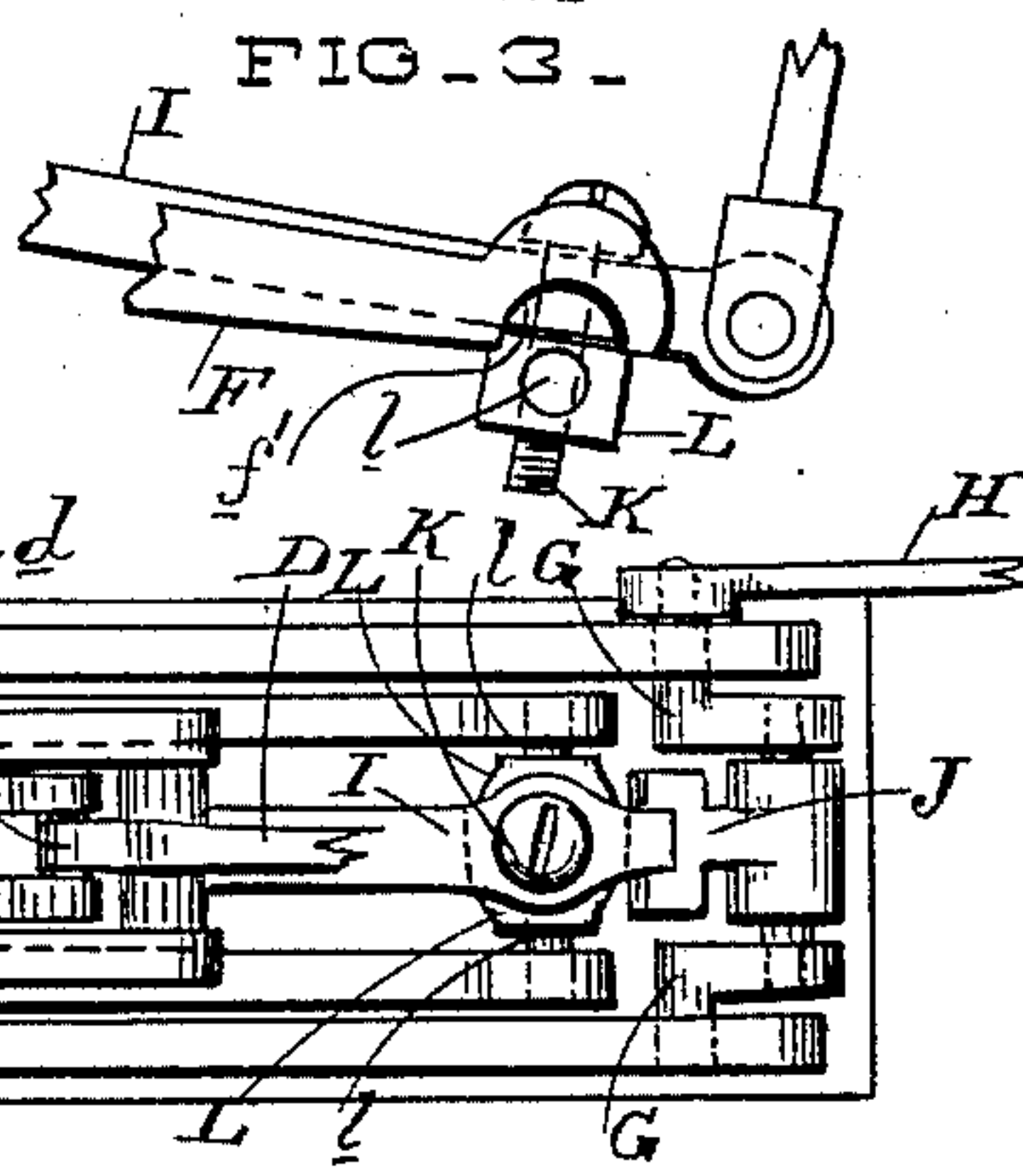
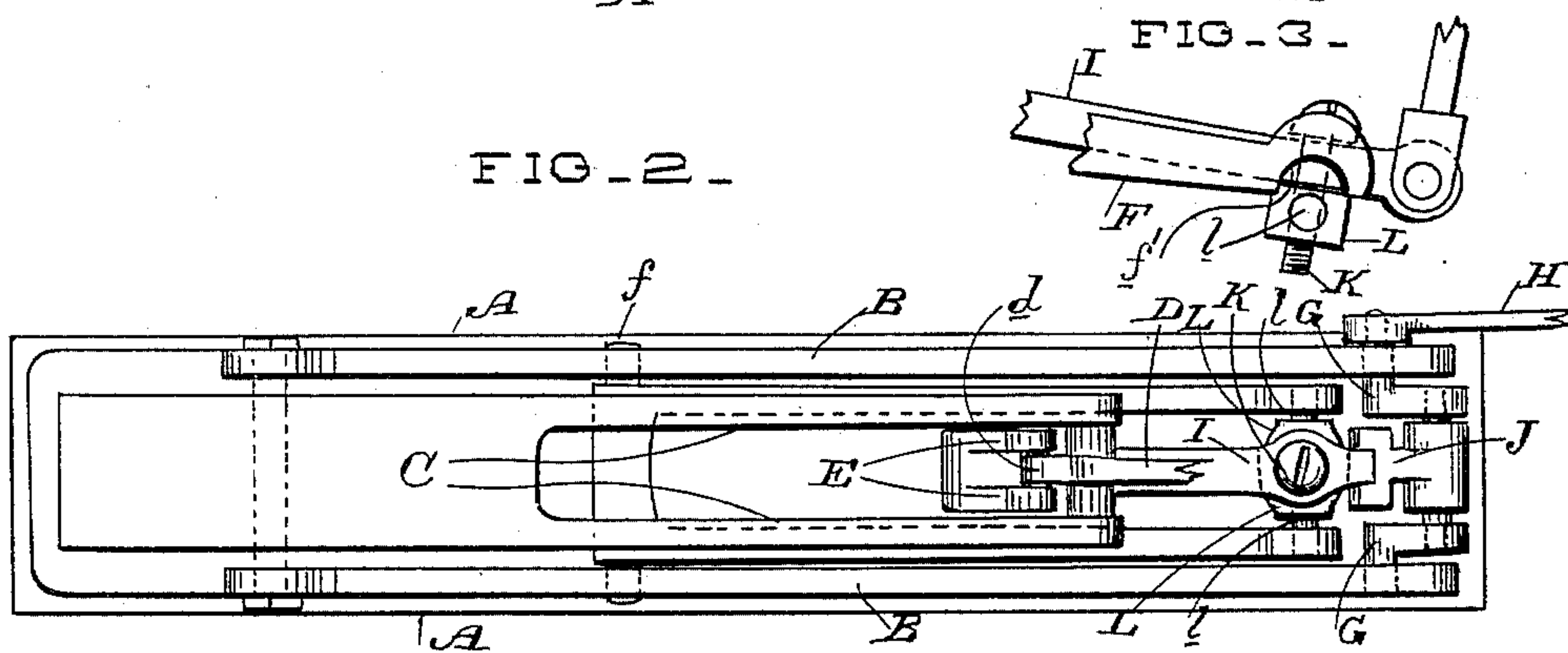
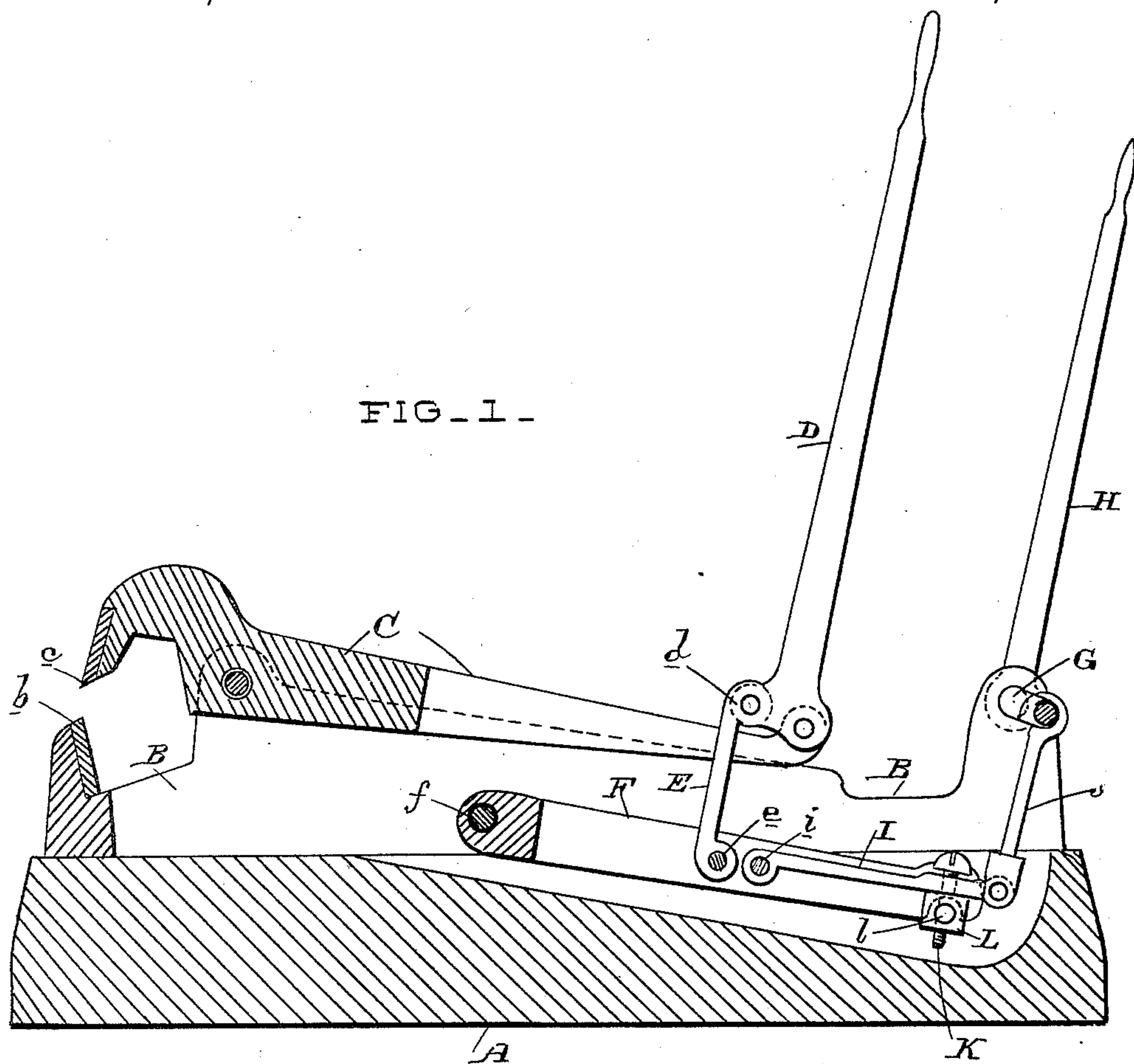


(No Model.)

J. KERWIN.  
LEVER POWER MECHANISM.

No. 462,490.

Patented Nov. 3, 1891.



Witnesses,  
J. A. Bayless

Inventor,  
John Kerwin  
By Dewey & Co.  
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# UNITED STATES PATENT OFFICE.

JOHN KERWIN, OF BECKWITH, CALIFORNIA.

## LEVER-POWER MECHANISM.

SPECIFICATION forming part of Letters Patent No. 462,490, dated November 3, 1891.

Application filed January 28, 1891. Serial No. 379,436. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KERWIN, a citizen of the United States, residing at Beckwith, Plumas county, State of California, have invented an Improvement in Lever-Power Mechanisms; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the general class of lever mechanisms, applicable especially to machines having a movable part or jaw adapted to be forced upon the work.

The object of my invention is to provide a simple but powerful mechanism for such machines as toe-calk machines, shears, punches, tire-upsetters, &c., in which the material to be operated upon is placed between opposing parts and is acted upon by said parts.

Though my invention is equally applicable to all machines of this character, I have for the sake of clearness illustrated it in connection with a cutting-machine having a fixed and a movable jaw.

My invention consists in the novel construction and arrangement of parts hereinafter fully described, and specifically pointed out in the claims.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a longitudinal section and side elevation. Fig. 2 is a plan. Fig. 3 is a detail.

A is a block or bed-piece, upon which is firmly fixed the stationary frame B, having at its forward end the cutter *b*. Pivoted between the sides of this frame is the swinging body-piece C, carrying at its forward end the upper cutter *c*. In the rear end of the piece C is pivoted the main lever D, having a short foot-crank *d* at right angles, to which is pivoted a link E, the lower end of which has a pivotal or swinging connection *e* below. The effect of this construction is to swing the cutter *c* up or down. By throwing the main lever backwardly it forces the end of the piece C downwardly, turning about its pivotal connection with the link E as a fulcrum, thereby raising the swinging cutter, and then by throwing the lever forwardly it raises the rear end of the piece C and depresses its cutter. The length of the lever and the shortness and po-

sition of its crank-arm give great power and ease of working.

In many machines—as, for example, in a punching-machine—it is well to provide for setting the movable tool upon the work before operating it by the main lever, so that the latter lever will not have to move the tool through any great distance. This I accomplish by the addition of the following mechanism: Pivoted at *f* in the stationary frame B of the machine are swinging arms F, between which, at *e*, the lower end of the link E, heretofore mentioned, is pivoted. Mounted in the rear end of the frame B is a crank-shaft G, on one end of which is the back lever H. Pivoted between the arms F, at the point *i*, is an arm I, which is connected at its rear end with the crank-shaft G by a link J. Through this arm passes a screw K, which carries on its lower end a nut L, provided with side pins *l*, which are adapted to fit up under notches *f'* in the rear ends of the arms F. Now it will be seen that when the back lever is thrown forwardly to raise the crank of the shaft G the arm I will be raised, and the pins of the nut L will be thereby lifted up under the arms F, whereby said arms are raised. The raising of these arms will raise the link E and lift the rear end of the piece C, thereby depressing its forward end, so that the tool at that end, whether cutter, punch, or of other character, is first brought down and set upon the work. Then by throwing forwardly the main lever the tool is forced into or through the work. When this is complete, the back lever is thrown back, whereby the arms F will drop and pull down, through the link E, the rear end of the piece C, thereby raising the tool at the forward end, and then upon throwing back the main lever the rest of its movement is accomplished. This connection also enables me to throw the back lever into and out of operation whenever desired by depressing the pins of the nut L from their engagement with the arms F and turning said pins lengthwise by turning the screw, so that the movement of the back lever will not affect the arms.

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



1. The combination of the fixed frame B and swinging piece C, pivoted thereto, said frame and piece carrying the opposing tools, the lever D, pivoted in the rear end of piece C and having a foot-crank, the arms F, pivoted to the fixed frame, and the link E, pivoted below to said arms and pivotally connected at its upper end with the foot-crank, substantially as herein described.

2. The lever mechanism for the swinging tool-carrying piece or bar, consisting of the lever D, pivoted in the rear end of the piece or bar and having the foot-crank, the link E, connected with said foot-crank, the swinging arms F, with which the lower end of the link is connected, and means for raising and lowering said arms, substantially as herein described.

3. The lever mechanism for operating the swinging piece or bar, consisting of the main lever pivoted in the rear end of the piece or bar and having the foot-crank, the link connected with said crank, the swinging arms with which the lower end of the link is connected, a back lever, and connections between said back lever and the arms for raising and lowering them, substantially as herein described.

4. The lever mechanism for operating the swinging piece or bar, consisting of the main lever pivoted in the rear end of the piece or bar and having the foot-crank, the link E, con-

nected with said crank, the swinging arms F, with which the lower end of the link is connected, the back lever, the crank-shaft with which said lever is connected, the swinging arm I, pivoted in the arms F, the link connecting said arm with the crank-shaft, and a connection between said arm I and the arms F, by which the latter are raised and dropped, substantially as herein described.

5. The lever mechanism for operating the swinging piece or bar, consisting of the main lever pivoted in the rear end of the piece or bar and having the foot-crank, the link E, connected with said crank, the swinging arms F, with which the lower end of the link is connected, the back lever, the crank-shaft with which said lever is connected, the swinging arm I, pivoted in the arms F, the link connecting said arm with the crank-shaft, and a connection between said arm I and the arms F, by which the latter are raised and dropped, consisting of the screw in the arm I and the nut on the screw having the side pins engaging the ends of the arm F, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN KERWIN.

Witnesses:

W. R. JOHNSON,  
THOMAS BLACK.