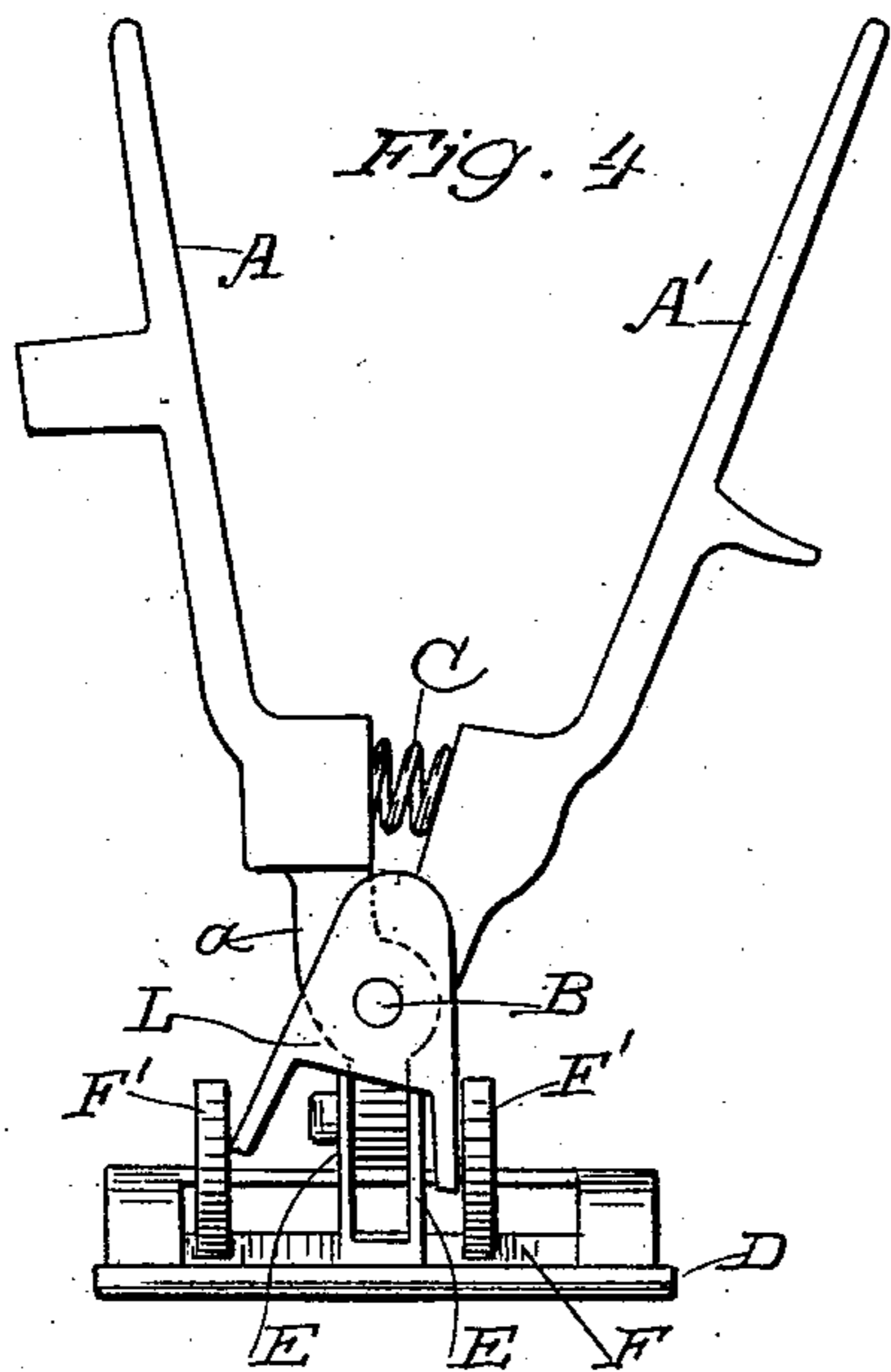
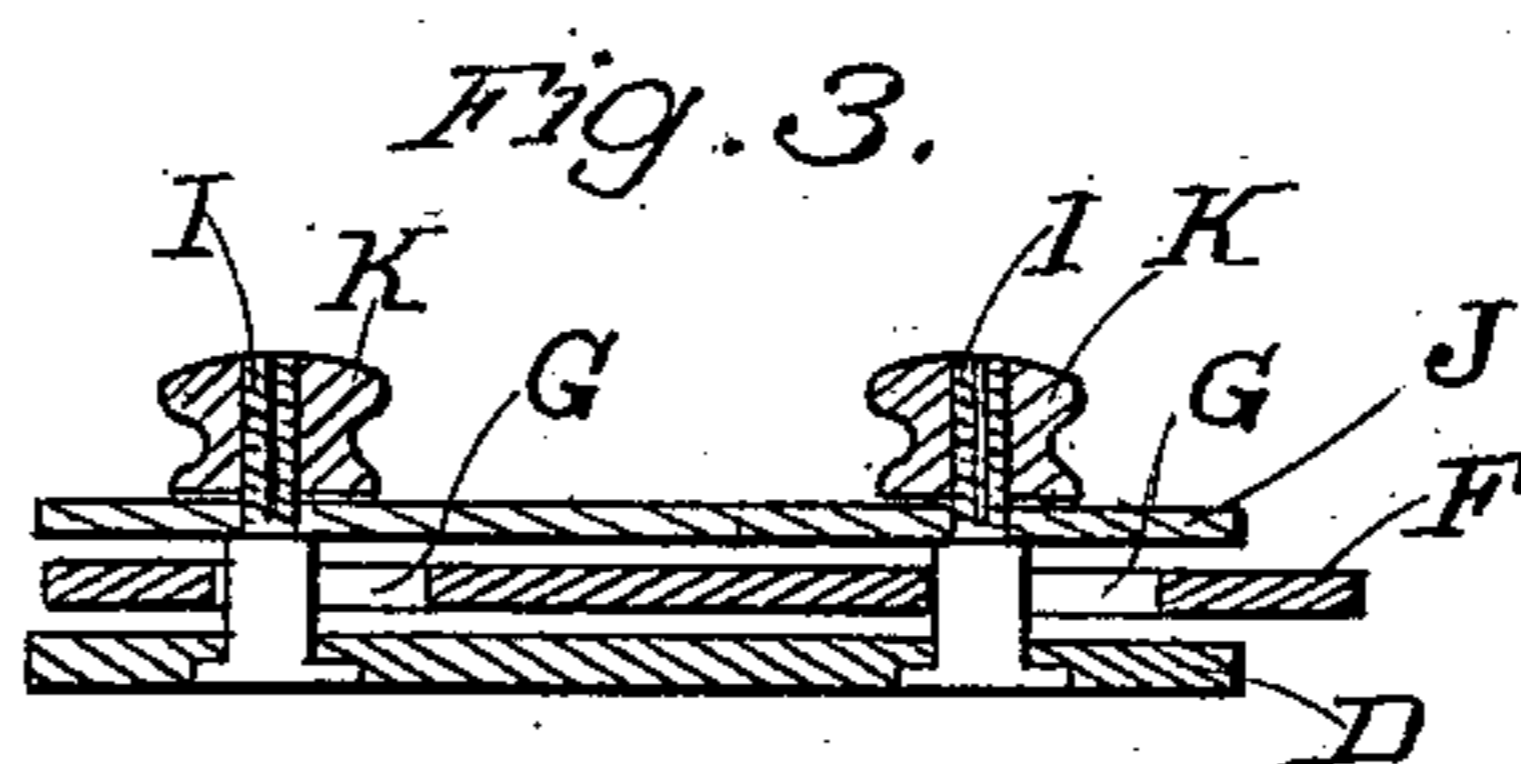
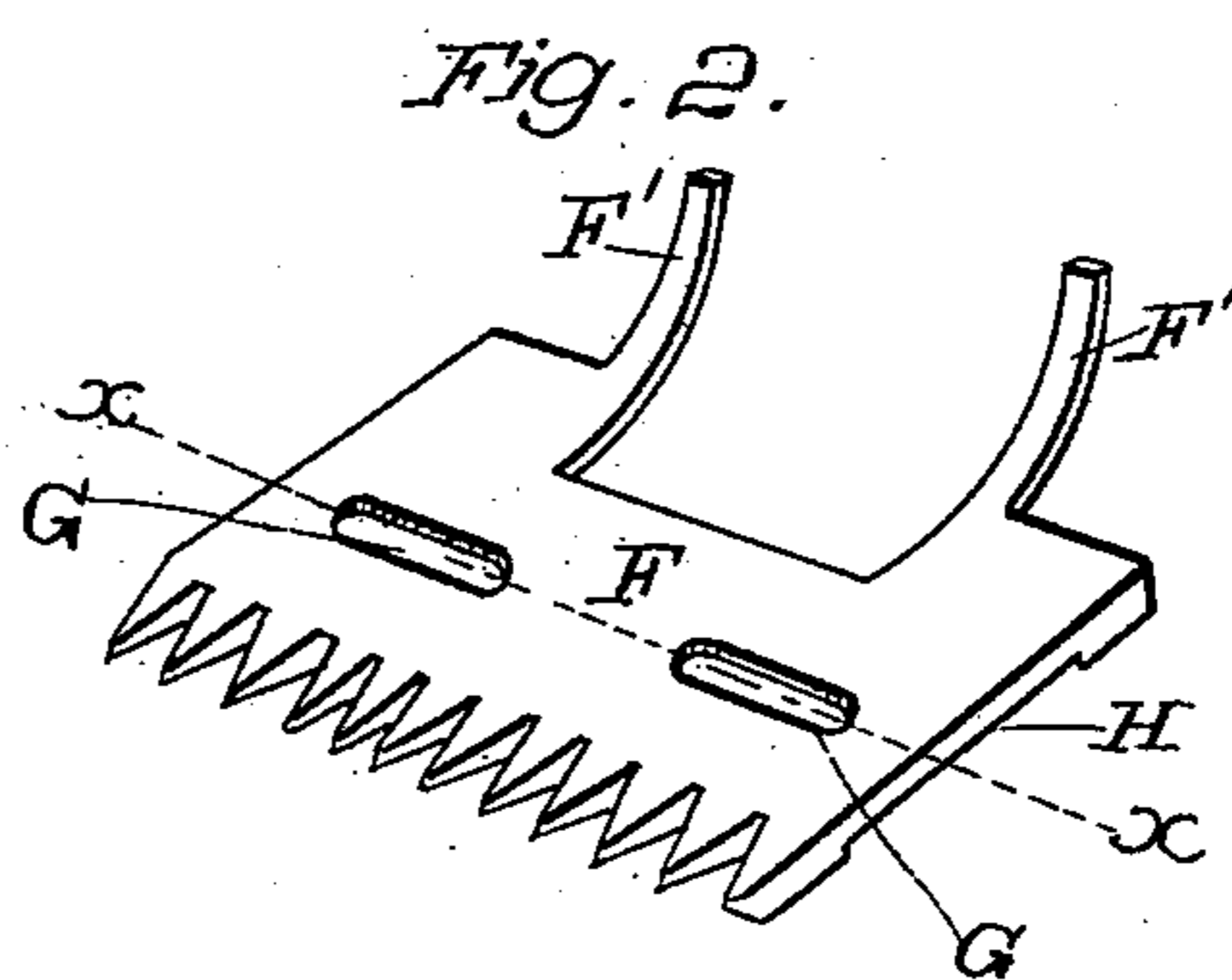
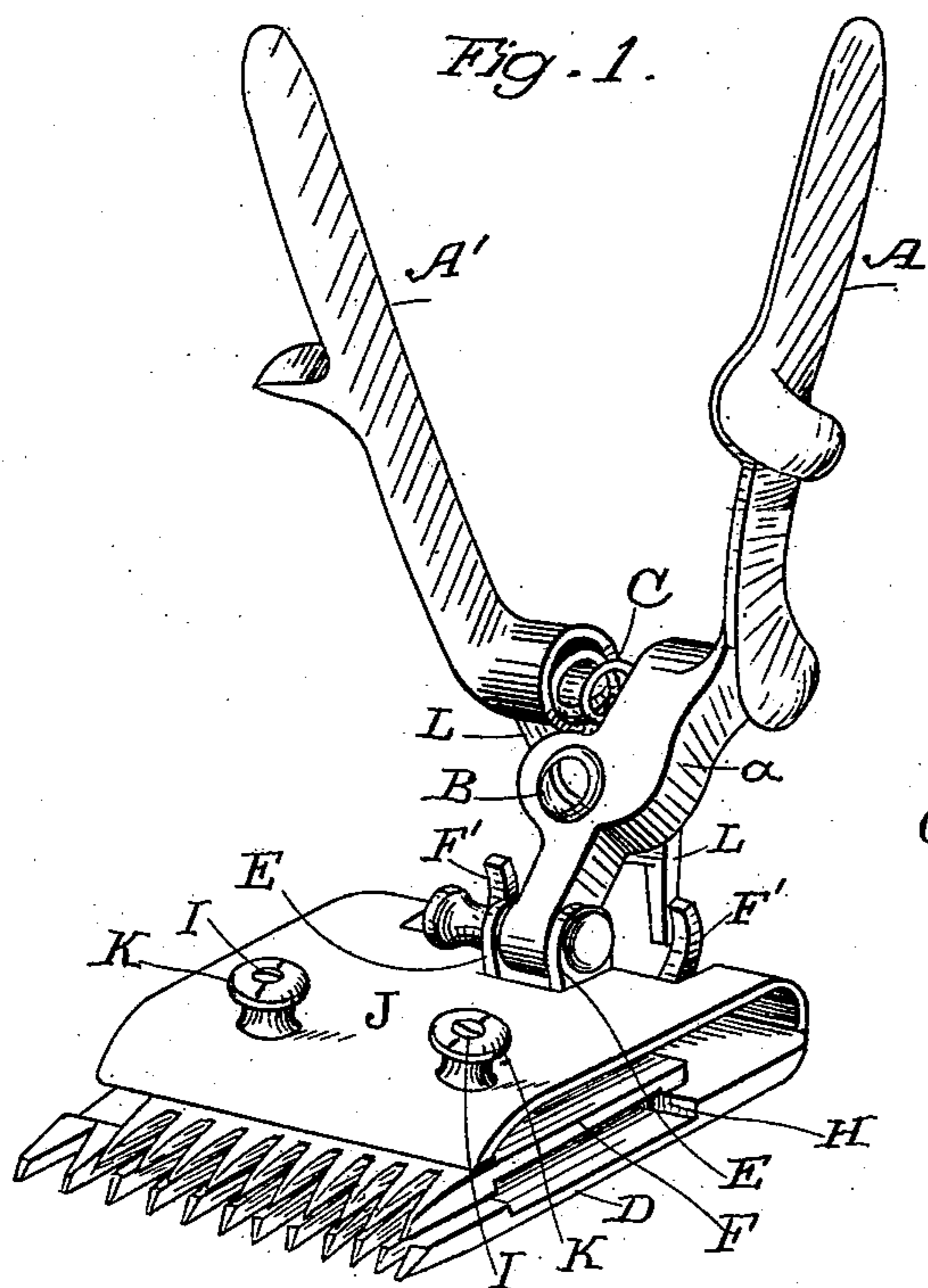


(No Model.)

F. BANGERTER.
HAIR CLIPPER.

No. 543,668.

Patented July 30, 1895.



Witnesses,
J. H. Hourse
J. A. Bayless.

Inventor,
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attys.

UNITED STATES PATENT OFFICE.

FRED BANGERTER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHARLES H. GREENE, OF SAME PLACE.

HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 543,668, dated July 30, 1895.

Application filed July 21, 1894. Renewed July 2, 1895. Serial No. 554,715. (No model.)

To all whom it may concern:

Be it known that I, FRED BANGERTER, a citizen of Switzerland, residing in the city and county of San Francisco, State of California, have invented an Improvement in Hair-Clippers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in machines for clipping hair.

It consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the device.

Fig. 2 is a separate view of the top reciprocating plate of the cutter. Fig. 3 is a vertical section taken through the line *xx* of Fig. 2. Fig. 4 is a rear view with the top guard-plate removed.

The object of my invention is to provide a hair-clipping machine having a hinge connection between the cutter-head and the handles and a mechanism whereby the cutter may be actuated from the handles in whatever position it may stand with relation to them.

A A' are handles pivoted together at B and suitably constructed to be grasped by the hands of the operator, so that they may be closed by compression and opened again by the action of a spring C, which in the present case is shown as a spiral spring, fitting into correspondingly-shaped chambers formed in each of the handles just behind the hinge-point.

The handle A has an extension *a* in front of the hinge, to which the bottom plate or comb D of the clipping device is connected by one or more standards E, fixed in the bottom-plate and pivoted to the handle extension. By this connection the cutter is made turnable about the pivot-pin with relation to the handles.

The pivot is preferably a screw-pin with a nut fitting upon one end, so that by means of the nut the joint can always be maintained in close working order.

The upper movable plate F of the cutter rests upon the bottom plate D and has guide-slots G made in it parallel with the teeth, so that when the two plates are in position the

upper plate is allowed to reciprocate over the lower one, as will be hereinafter described.

Both the lower and the upper plates have depressions H, extending from one side to the other and coinciding with each other when the plates are in position, so as to leave an open space between the two to reduce the bearing-surface and prevent their being clogged by any foreign substances getting between them, as would be the case if the bearing-surfaces were more extensive.

By this construction and by reason of the channels H being of considerable width, there is a comparatively small bearing of the upper cutter-plate upon the lower plate or comb at the front and at the rear.

J is a cap-plate, which covers the rear portion of the cutter. The front edge of this plate is curved downwardly to rest upon the plate F just behind the teeth, and the rear edge rests upon the rear of the lower plate D.

Screw-bolts I extend up through the bottom plate D through the slots G in the plate F and through the cap-plate J and are secured by thumb-nuts K, by which the adjustment of the cutter-plates is also effected. The bolts I serve as guides for the plate F in its reciprocations.

The cutter-plate F has curved arms F' extending upwardly and backwardly from its rear edge. (Shown in Fig. 2.)

The handle A' has a projection L extending forwardly from the fulcrum-pin B and adapted to engage the movable plate F, so that the opening and closing of the handles will reciprocate the cutter. The plate F has an open channel at the rear formed by arms F', with which the projection L of the handle A' engages, and these arms are shown in the present case curved, so that whatever position the cutter-plates may occupy with relation to the handles the arm L will always form contact with the arms F'.

The operation of the device will then be as follows: Whenever the handles A A' are compressed together, the lower plate or comb being connected by the pivot-pin with the extension *a* of the handle A, will be retained rigidly with relation to that handle as to transverse movement. The other handle A' being

moved toward A the arm L will press the cutter-plate F and thus force it to one side, so that its teeth reciprocate across those of the comb. As soon as the pressure upon the handles is released the spring acts to separate them, and the arm L acting against the cutter-plate F will reciprocate said plate back again, the plates sliding upon and being guided by the standards or posts I previously described.

It will be seen, as before described, that whatever position the comb and cutter plate may be turned into about the pivot which unites them to the handles, the end of the arm L will always lie in position between the upturned curved arms F', so as to engage them and operate the cutter-plate.

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

1. In a hair clipper, the combination, of the stationary and movable plates, a pair of pivoted handles, one of said handles being hinged or connected with one of said plates so that the device may be turned to different angles, an opposing plate having its rear portion recessed and provided with rearwardly and upwardly extending curved arms, and the other handle having arms adapted to enter the re-

cess of said plate and engage the curved arms thereof in whatever position the device is turned.

2. In a hair clipper, the combination, of a stationary comb plate having the upwardly extending standards E, a movable cutter plate having a recessed rear end with outwardly extending arms, a cap plate, the front edge of which curves downwardly to rest upon the movable plate, screw bolts from the stationary plate extending through the movable plate and cap plate, thumb nuts engaging the screws, a pair of pivoted handles each having extensions below its pivotal connection, one of said extensions being pivotally mounted upon a horizontal axis between the standards from the stationary plate, and the other extension being located between the rear extending arms of the movable plate said rear arms being curved upwardly whereby the engaging handle extension will always be in position between the upturned curved arms in whatever position the device is turned.

In witness whereof I have hereunto set my hand.

FRED BANGERTER.

Witnesses:

S. H. NOURSE,
H. F. ASCHECK.