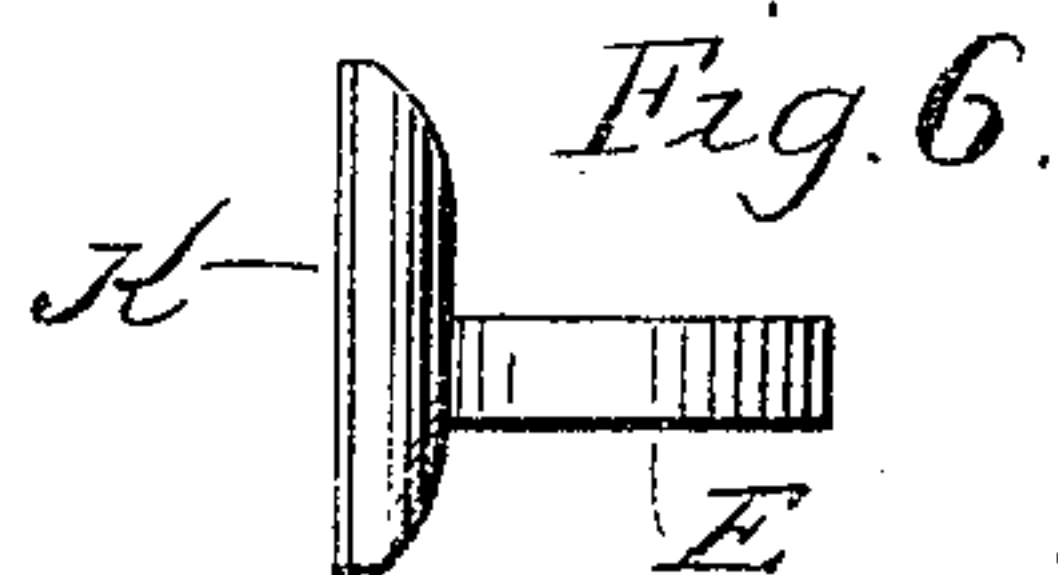
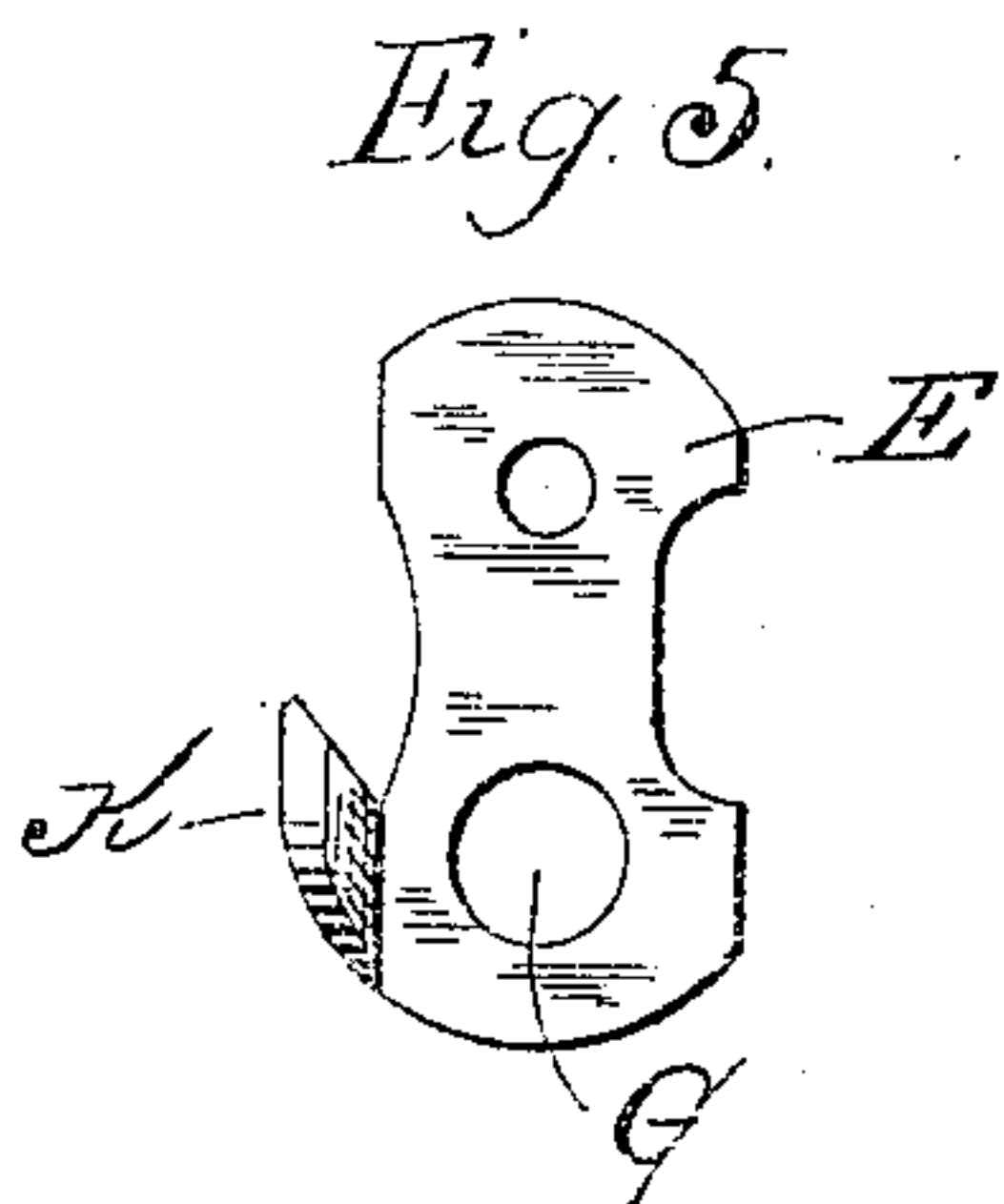
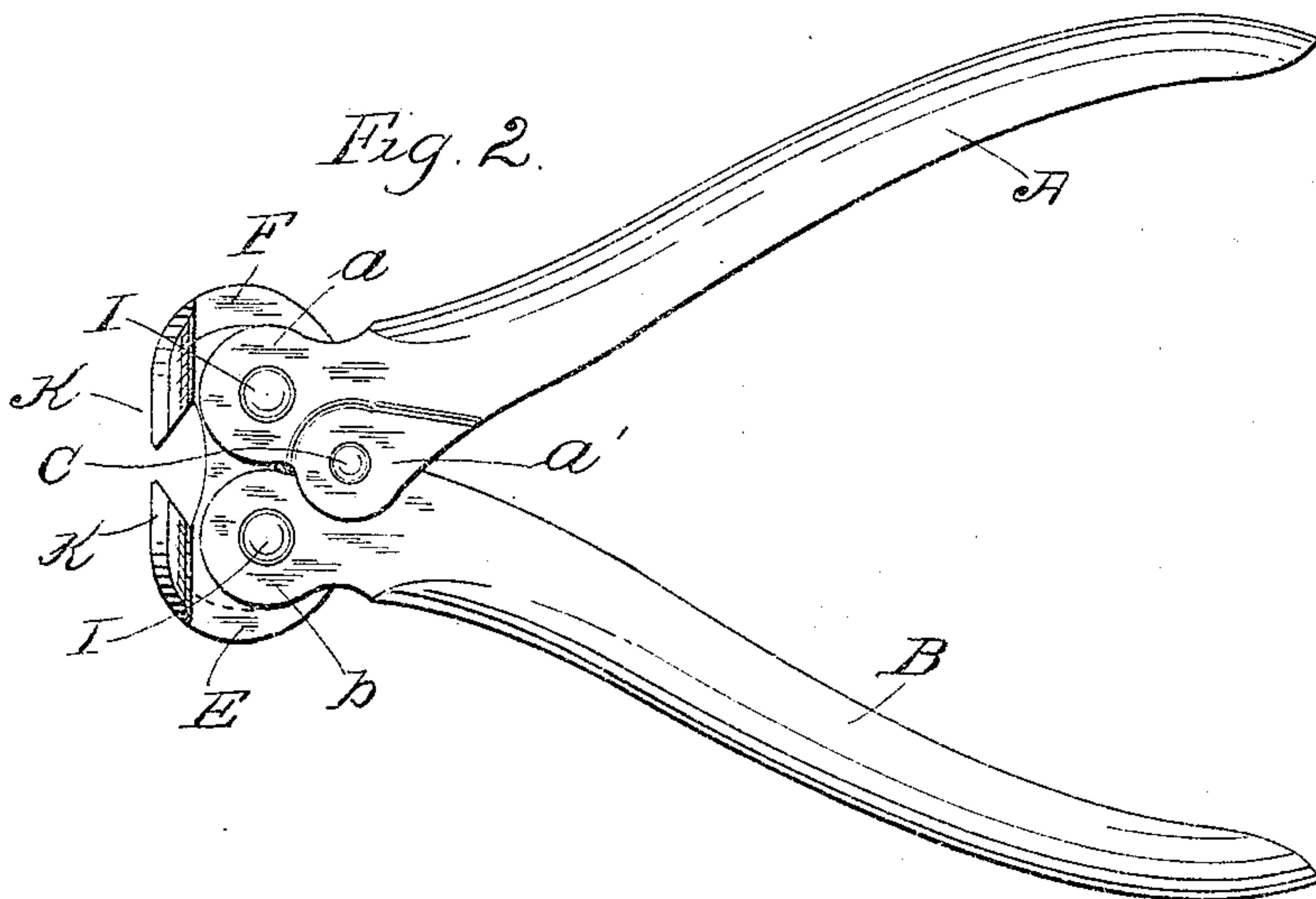
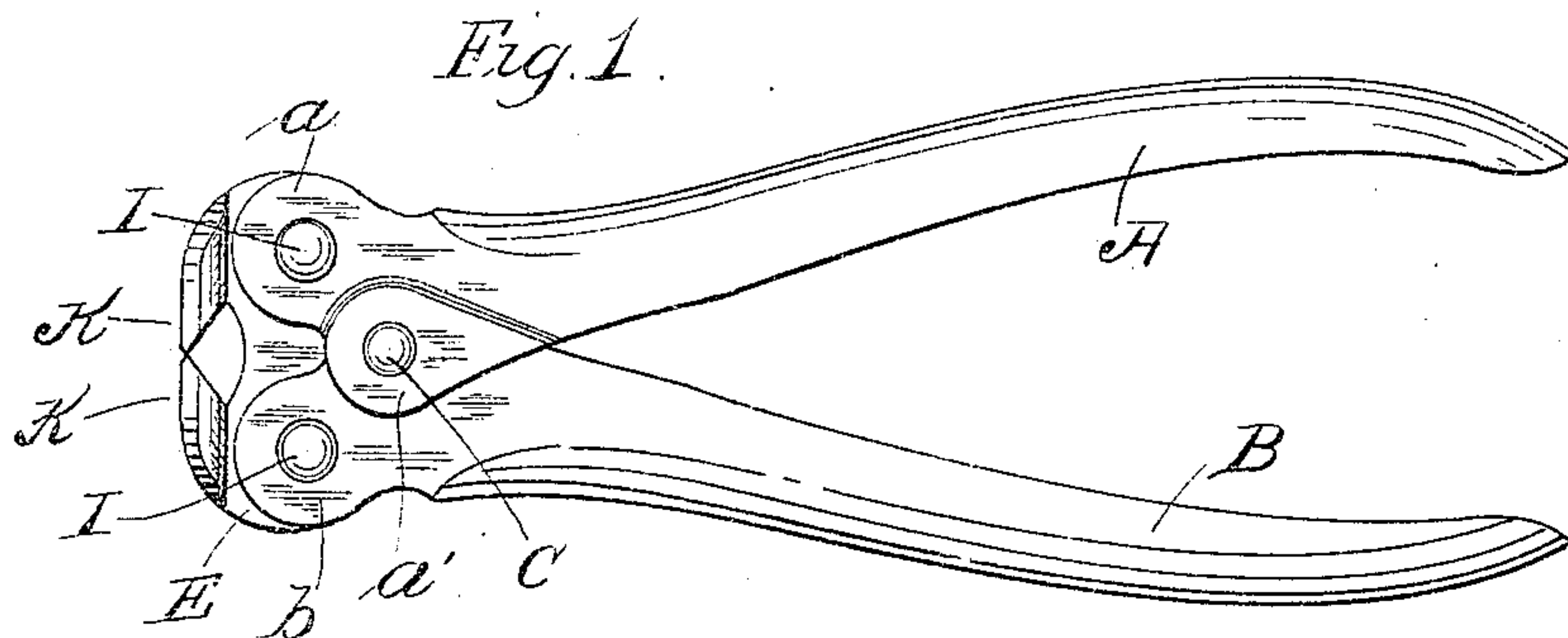


W. A. BERNARD.
PLIERS, NIPPERS, AND SIMILAR TOOL.
APPLICATION FILED OCT. 30, 1908.

962,414.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
J. S. Coleman
M. Oline Williams

INVENTOR.
William A. Bernard
BY
Beach & Fitch
ATTORNEYS.

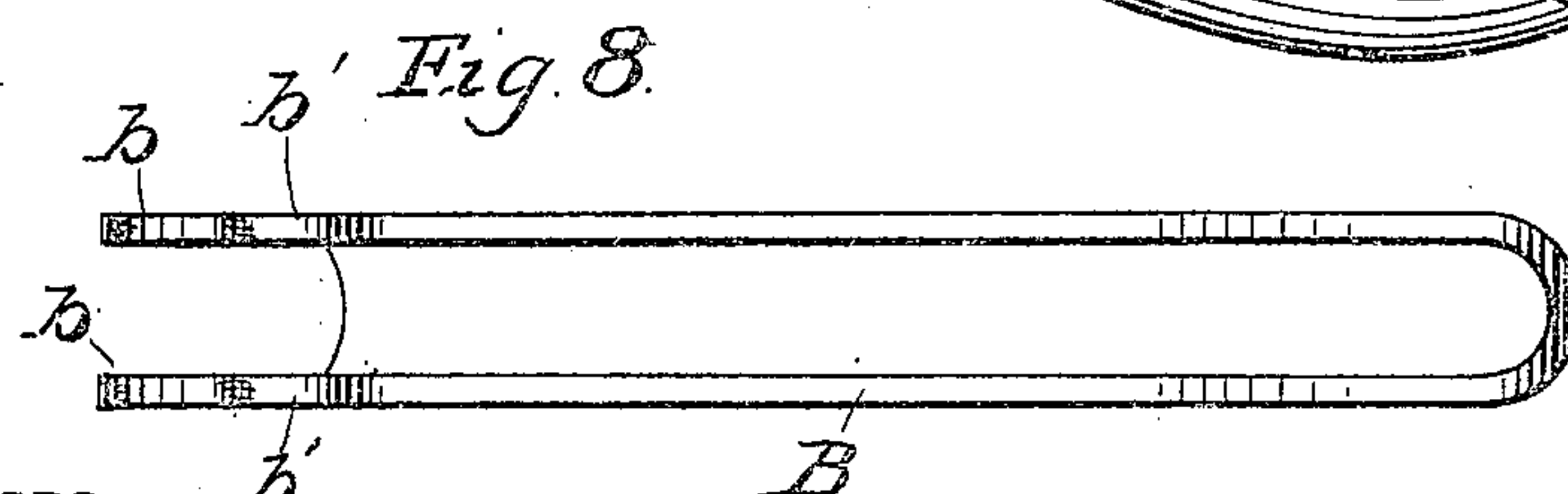
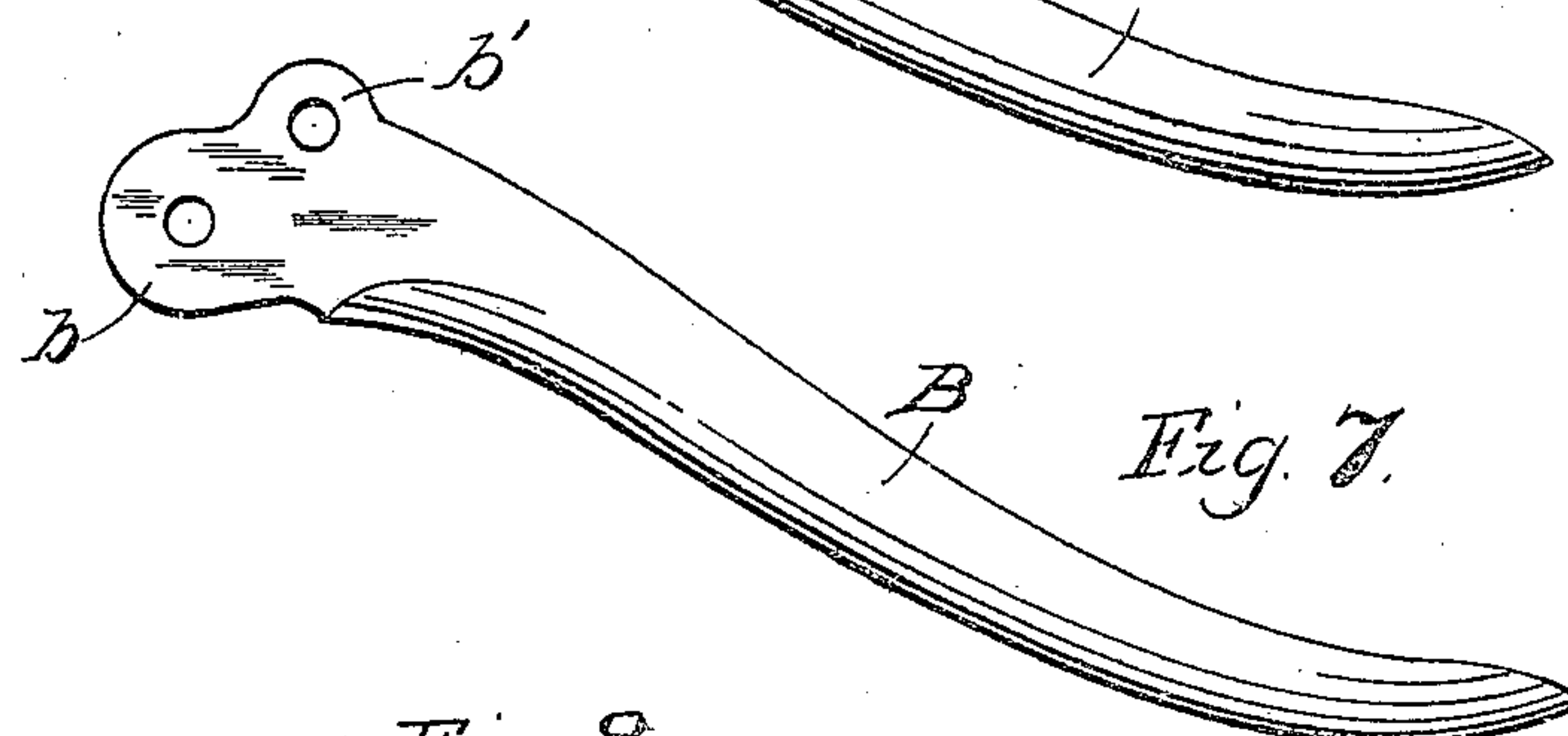
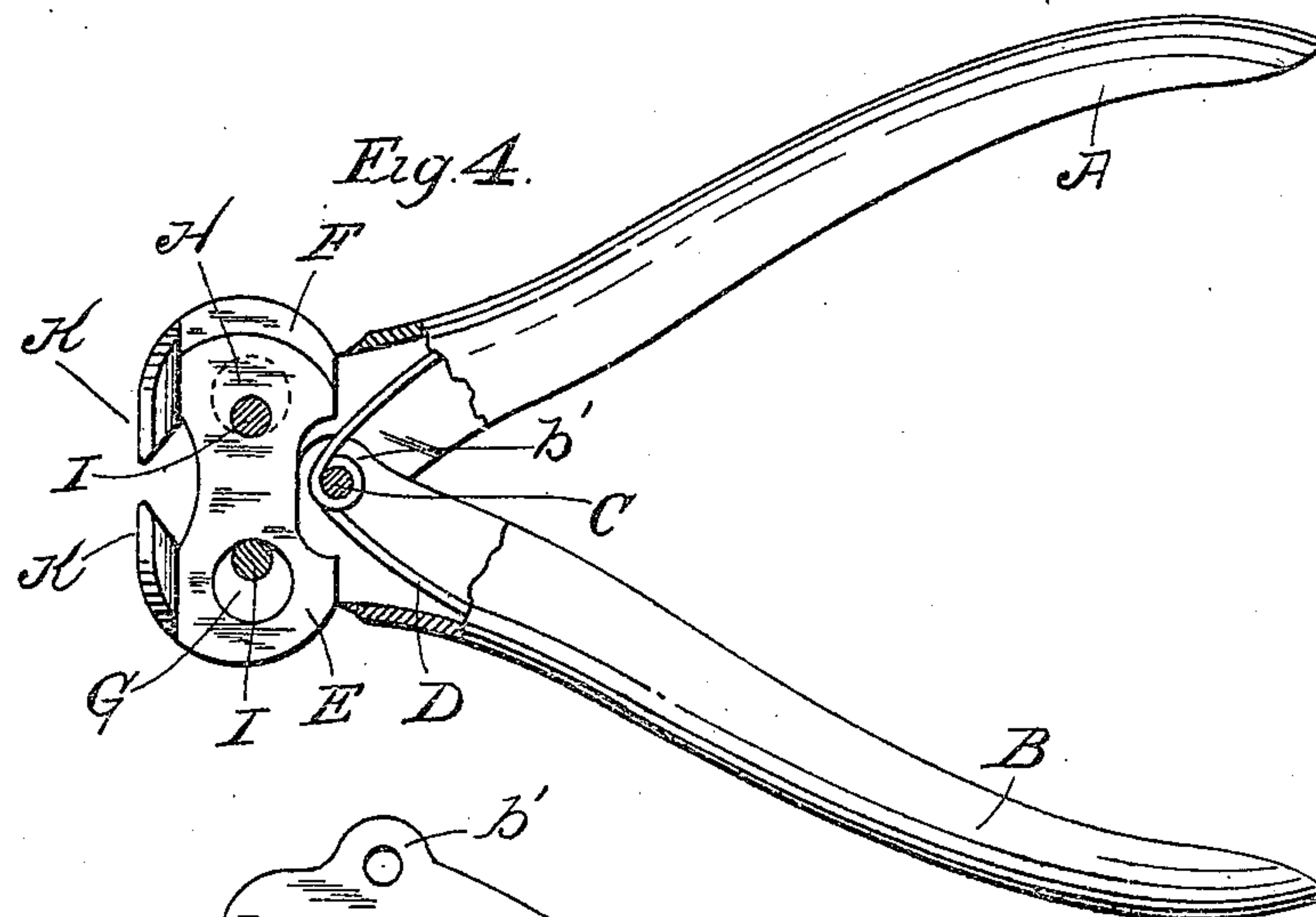
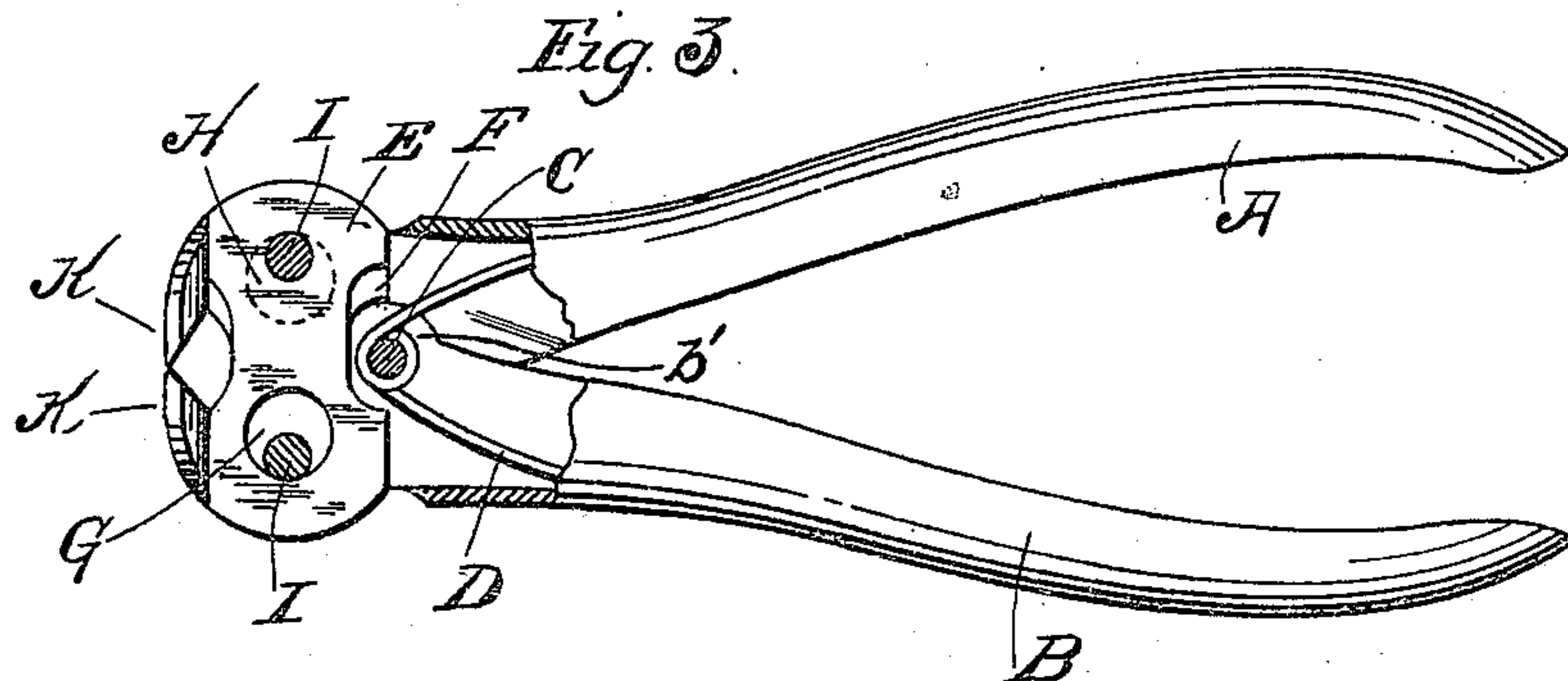
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2 SHEETS—SHEET 2.



WITNESSES:

J. S. Coleman
M. Olive Williams

INVENTOR.

INVENTOR.
William G. Bernard

BY

Breach & Tilden.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM A. BERNARD, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WILLIAM SCHOLLHORN COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PLIERS, NIPPERS, AND SIMILAR TOOL.

962,414.

Specification of Letters Patent. Patented June 28, 1910.

Application filed October 30, 1908. Serial No. 460,315.

To all whom it may concern:

Be it known that I, WILLIAM A. BERNARD, of the city and county of New Haven and State of Connecticut, have invented new and
5 useful Improvements in Pliers, Nippers, and Similar Tools, of which the following is a full, clear, and exact description when taken in connection with the accompanying drawings, which form a part hereof.

10 This invention relates to nippers, pliers and similar tools, and more particularly to that class in which the jaws or operating members move parallel to each other at right angles to the longitudinal axis of the tool.

15 The object of the invention is the production of a tool in which the jaws have this motion, which will be efficient in operation, simple in construction, few in the number of the parts, and readily assembled.

20 To these and other ends the invention consists in the improvements and combinations of parts set forth and claimed hereinafter.

Referring to the drawings, Figure 1 represents a side elevation of nippers (with the
25 jaws closed) embodying the invention. Fig. 2, a similar view with the jaws open, Fig. 3, a view similar to Fig. 1, the forward end of the tool being broken away, and partly shown in longitudinal vertical section, Fig. 4,
30 a similar view of the tool in the position shown in Fig. 2, Figs. 5 and 6, side and edge views, respectively, in detail, of one of the jaws or operating members, and Figs. 7 and
35 8, side and edge views, respectively, in detail, of one of the lever handles.

In all figures, similar letters of reference represent like parts.

In the drawings, the parts designated by the letters A and B represent hollow sheet
40 metal lever handles of well known construction. Each of the handles at its forward end is forked, and is provided with forwardly projecting tines or parallel attaching plates *a* and *b*, respectively. The lever
45 handles A and B do not cross each other, but their attaching plates *a* and *b* are provided with inwardly projecting extensions *a'* and *b'* through which passes the fulcrum or pivot pin C.

50 Around the pin C a spring D may be coiled, its outer ends projecting into the hollow interior of the handles A and B, and normally tending to force them apart to the position shown in Figs. 2 and 4.

55 Between the attaching plates *a* and *b* are

adapted to fit two actuating members shown herein as flat plates E and F, having a sliding relation with each other. Each of the actuating members is pivoted to the attaching plates of one of the lever handles, 60 the member E being pivoted to the attaching plates *a*, and the member F being pivoted to the attaching plates *b*, and each member is prolonged to a point beyond the axis of the tool. Each of the members E 65 and F is also provided with an enlarged circular perforation G or H (the perforation H being indicated in dotted lines Figs. 3 and 4) for the movement of the pivot pin I of the other actuating member so that as shown 70 more particularly in Figs. 3 and 4 when the jaws are open the pivot pin I of one member will move in the perforation G or H of the other member.

To the forward end of each member is 75 shown rigidly secured or forming a part thereof a cutting jaw K. As the handle levers A and B are not crossed, when the rear ends are closed, the forward ends separate from each other, and this movement 80 brings the farther ends of the actuating members which lie on the other side of the axis of the tool with their corresponding jaw toward the center or axis of the tool and, therefore, closes the jaws. 85

By having the actuating members located between the parallel attaching plates the tool is strengthened against a twisting or lateral strain.

Having now described my invention, what 90 I claim and desire to secure by Letters Patent, is:—

1. In pliers, punches and similar tools, the combination with operating levers fulcrumed together; of actuating members 95 having a sliding relation with each other and each pivotally connected to a lever on the side of the axis of the tool on which the power is applied to the lever, substantially as described. 100

2. In pliers, punches and similar tools, the combination with operating levers fulcrumed together; of actuating members having a sliding relation with each other and each pivotally connected to one lever; and a 105 jaw carried by each member on the opposite side of the axis of the tool from the pivot thereof, substantially as described.

3. In pliers, punches and similar tools, the combination with operating levers ful- 110

crumed together, the forward ends carrying parallel plates on the same side of the axis of the tool as the rear ends project; and actuating members having a sliding relation with each other and each pivotally connected to the plates of one lever, substantially as described.

4. In pliers, punches and similar tools, the combination with operating levers fulcrumed together; of actuating members each pivotally connected to a lever and each having a slot for the pivot pin of the other actuating member, substantially as described.

5. In pliers, punches and similar tools, the combination with operating levers fulcrumed together having forward ends projecting on the same side of the longitudinal axis of the tool as the rear ends project; of actuating members each pivotally connected

to one lever and having a sliding connection with the other lever, substantially as described.

6. In pliers, punches and similar tools, the combination with operating levers fulcrumed together having forward ends projecting on the same side of the longitudinal axis of the tool as the rear ends project; of parallel moving jaws; and actuating members supporting said jaws and each pivotally connected to the one of said levers on the opposite side of the fulcrum from the jaw it supports, substantially as described.

In witness whereof, I have hereunto set my hand on the 27th day of October, 1908.

WILLIAM A. BERNARD. [L. s.]

Witnesses:

SAMUEL H. FISHER,
M. OLIVE WILLIAMS.