

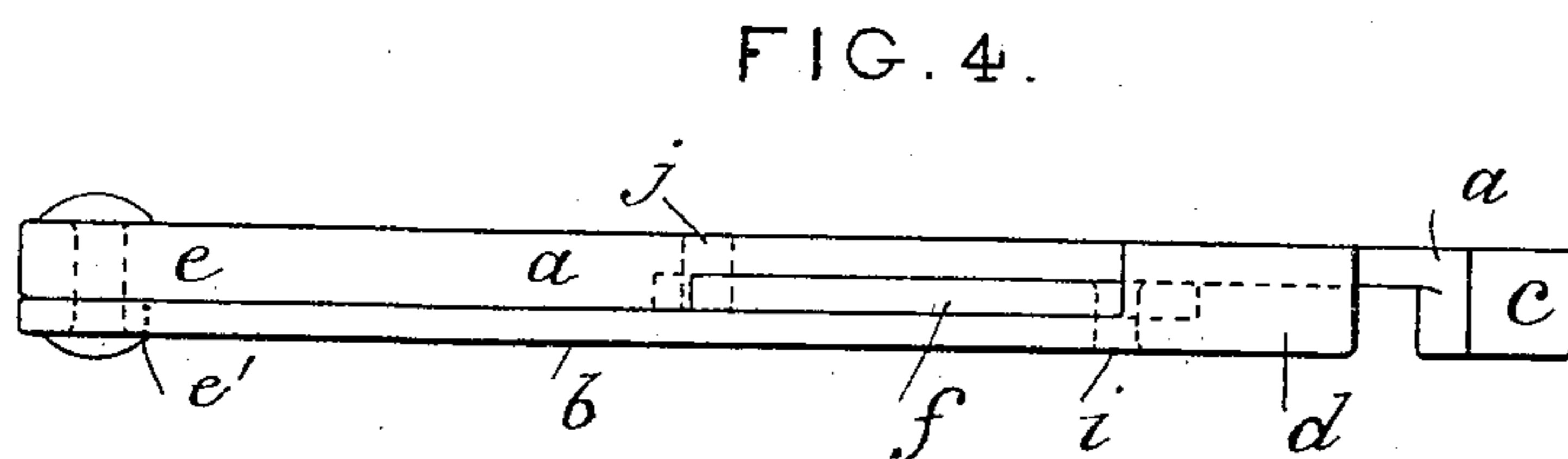
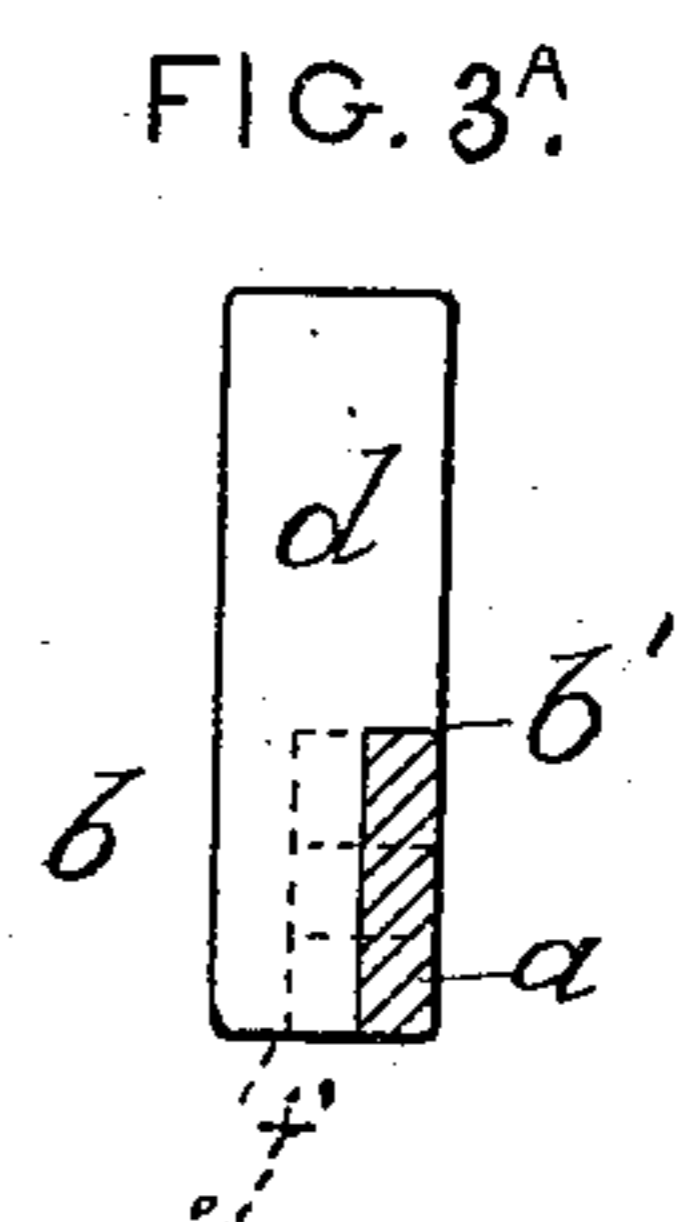
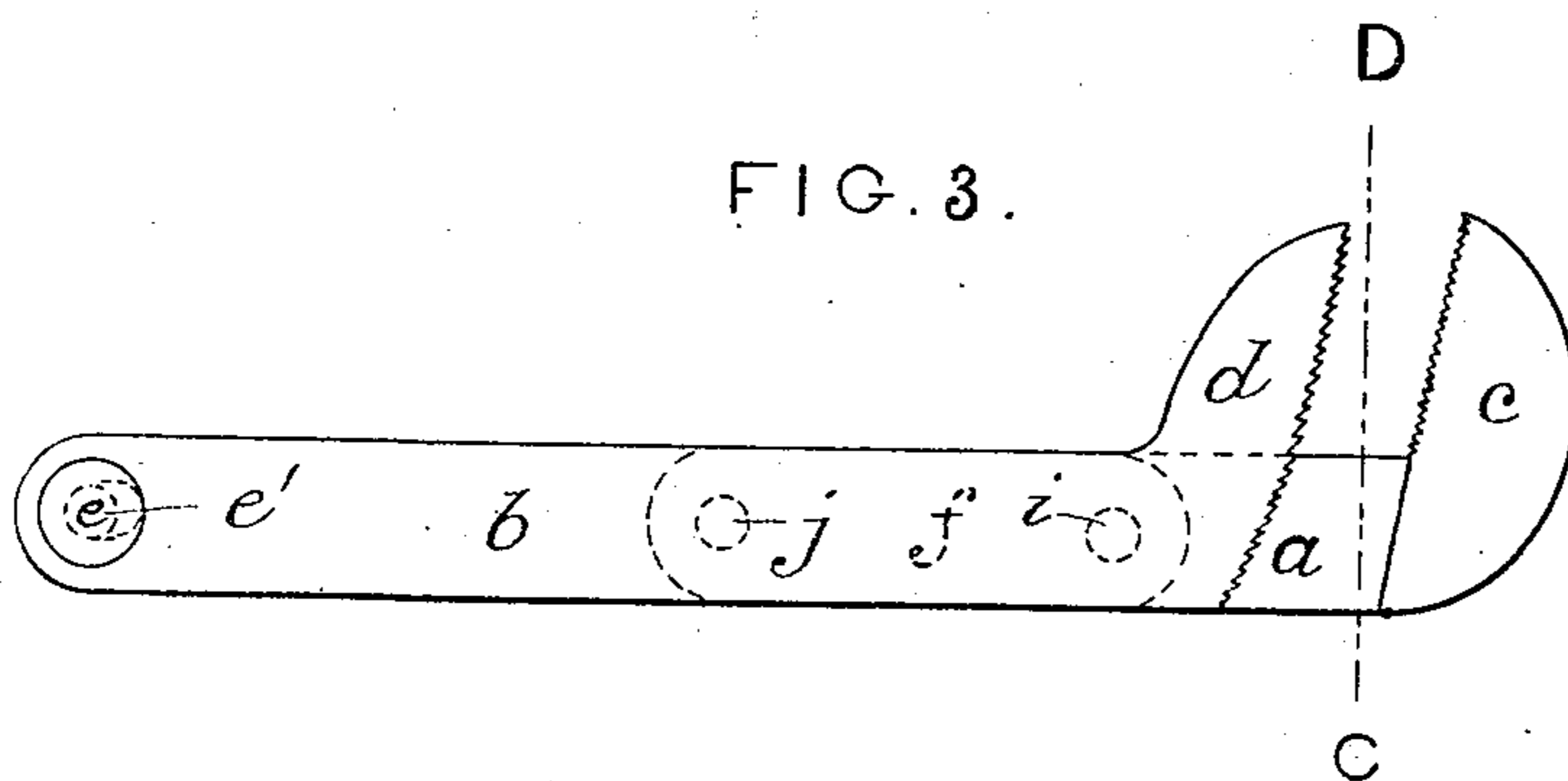
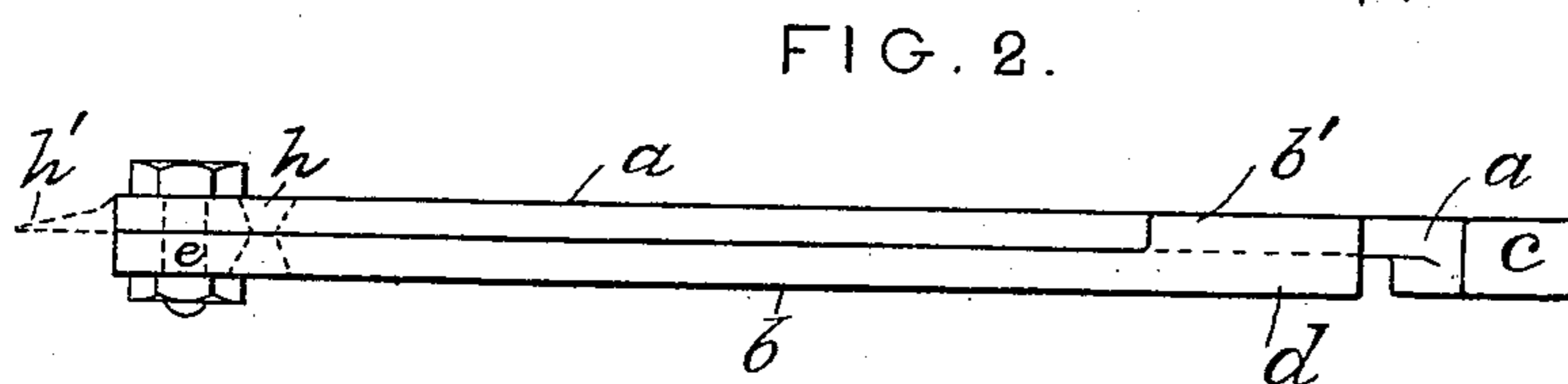
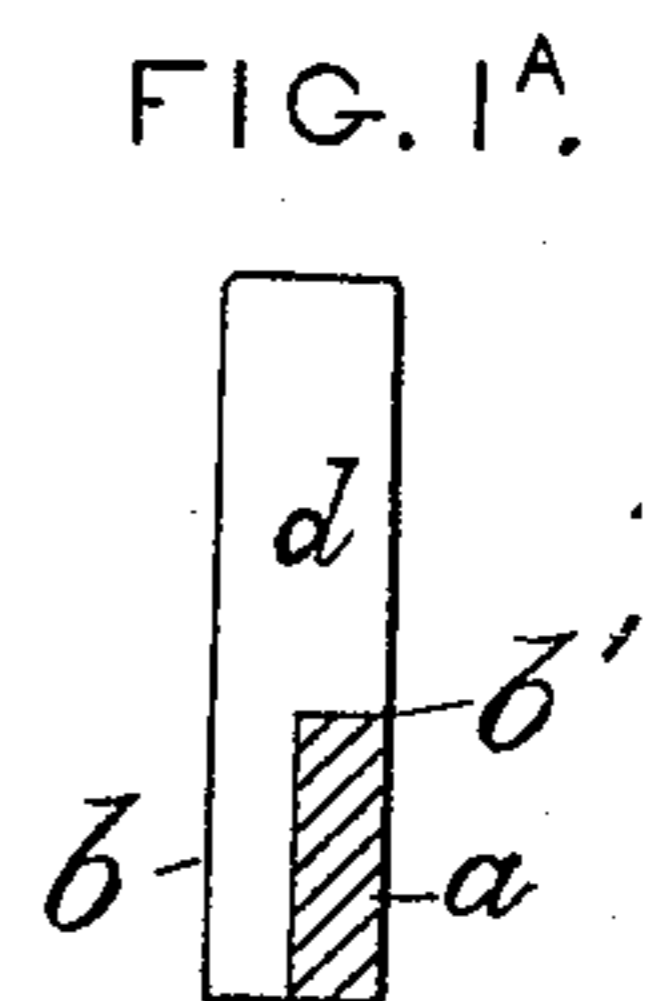
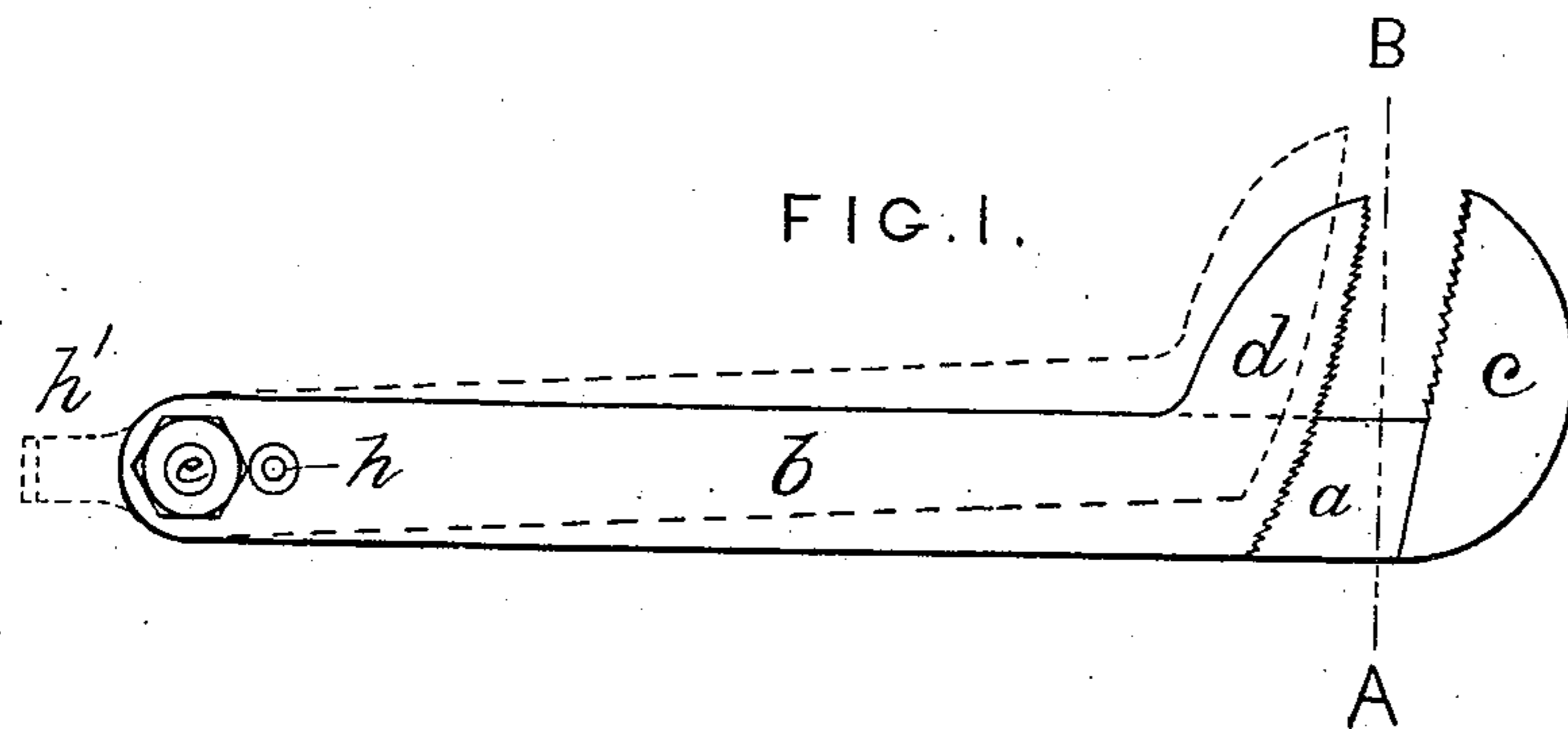
(No Model.)

J. C. BAUER.

SPANNER.

No. 313,571.

Patented Mar. 10, 1885.



Witnesses:

Percy White.
Daniel Scott.

Inventor:

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By John F. Kallstedt for
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UNITED STATES PATENT OFFICE.

JOHN C. BAUER, OF LONDON, ENGLAND.

SPANNER.

SPECIFICATION forming part of Letters Patent No. 313,571, dated March 10, 1885.

Application filed November 1, 1883. (No model.) Patented in England June 14, 1883, No. 2,968; in Germany October 21, 1883, No. 27,623; in France October 26, 1883, No. 158,235, and in Belgium October 27, 1883, No. 63,011.

To all whom it may concern:

Be it known that I, JOHN CHARLES BAUER, a subject of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Spanners, the improvements being also applicable for other purposes, (for which I have obtained a patent in Great Britain, No. 2,968, dated June 14, 1883; in Germany, No. 27,623, dated October 21, 1883; in France, No. 158,235, dated October 26, 1883, and in Belgium, No. 63,011, dated October 27, 1883,) of which the following is a specification.

This invention relates to improvements chiefly applicable to spanners or wrenches, but also applicable to certain other tools—such as nippers, punches, and drill-braces—the object of the improvements being to render such tools more efficient and simple in their action.

In constructing a spanner or wrench according to my invention I form the spanner in two parts, one part carrying the upper jaw and the other part the lower jaw, and I connect the two parts together by a pivot or by means of a link arrangement in such a manner that when the spanner is grasped in the hand the jaws are closed against the screw-nut or other article to be operated on without necessitating any adjustment of the spanner as has hitherto been necessary, my pivot or link arrangement making the spanner self-adjusting. It will be obvious that my link arrangement is also applicable to other tools—such as nippers, punches, and drill-braces—and that two or more tools can be so combined as to be operated by one link arrangement.

In order to enable my invention to be fully understood, I will proceed to describe the same by reference to the accompanying drawings, which represent views of wrenches or spanners constructed according to several modifications of my invention.

Similar letters in all the figures represent similar parts.

Figures 1 and 2 represent in plan and in edge view the simplest form of my improved spanner, and Fig. 1^A a cross-section in the line A B of Fig. 1. Figs. 3, 4, and 3^A are similar views of a similar construction, but with a link placed between the parts:

In Figs. 1 and 2 *a* and *b* are the two parts of the spanner or wrench, the part *a* carrying the upper jaw, *c*, which is about twice as thick as the shank part *a*, and the part *b* carrying the lower jaw, *d*, having a shoulder, *b'*, on one side to give a thickness or breadth to the jaw *d* equal to that of the jaw *c*, and also serving as a stop to prevent the jaws passing or crossing each other, the jaws *c* and *d* each having, as shown, a thickness about equal to the combined thicknesses of the two levers or parts *a* and *b*, and these levers are connected together at the lower end by a bolt, stud, or rivet at *e*, so that the two parts of the spanner or wrench can move on the said pivot in order to open or close the jaws *c* and *d* from or toward one another.

Figs. 1 and 2 show the spanner or wrench in its closed position, (the dotted lines, Fig. 1, showing the spanner or wrench partly opened.)

h are openings provided with cutting-edges to allow of the spanner being used for cutting or nipping wire, or the pivot may be placed in these openings instead of at *e*. From this construction it will be obvious that if it be desired to screw up or unscrew a nut or other article or to perform a like operation, it will be merely necessary to partly open the spanner into the position shown by the dotted lines, Fig. 1, and that by then grasping the spanner in the hand the jaws *c* and *d* will be closed against the nut or other article to be operated upon without necessitating any adjustment of the spanner, as has hitherto been necessary, the improved spanner being self-adjusting. Further, in turning, screwing home, or unscrewing a nut or other article the grip thereon is increased in proportion to the force required to move it, and on the return motion of the spanner for a fresh grip the jaws release their hold and pass freely over the corners of the nut or other article, thereby avoiding the necessity of alternately raising and replacing the spanner as hitherto.

Fig. 1^A is a section on line A B of Fig. 1.

In the arrangement shown in Figs. 3 and 4 the two parts *a* and *b* of the spanner are connected together at *e* by a rivet, the part *b* having an elongated hole at *e* to allow of a slight

play on the said rivet. The two parts *a* and *b* are also provided with an additional link, *f*, which link *f* is pivoted at one of its ends to the part *a*, and at its other end to the part *b*, as shown at *i* and *j*, and serves, whenever it may be desirable, to limit the extent of opening of the two parts of the spanner from one another.

In Fig. 4, which is a front edge view of Fig. 3, the link *f* is also shown in edge view and occupying a position between the parts *a* and *b* in a space adapted to receive it and permit its proper movement when these parts are moved.

Fig. 3^A is a section on line C D of Fig. 3. The operation is substantially the same as that of the spanner shown in Figs. 1 and 2. Either of the spanners hereinbefore described may be provided with suitable cutting holes or edges, *h*, so as to serve as nippers, and they may also be provided with a screw-driver, as shown at *h'*, Figs. 1 and 2, and when made as in Figs. 3 and 4, the slot for the pivot *e* may be elongated, as shown at *e'*. When made as shown in Figs. 5 and 6, the open space in the part *a* into which the part *b* is lodged may have a small piece, *m*, of metal inserted between the ends of part *a* and fastened by rivets *n n*.

Spanners constructed as hereinbefore described and represented in the drawings may be advantageously used as drill-braces and as pipe-wrenches.

Having thus described my said invention and the manner of performing the same, what I claim is—

1. A spanner in two parts or bars connected or held together at their extremities as swinging bars or levers, and having at their other extremities jaws at or approximately at right angles to such levers, as shown and described.

2. The improved spanner described and represented in Figs. 1, 1^A, and 2 of the drawings, consisting of the lever *a*, provided with a grasping-jaw, *c*, projecting at or approximately at a right angle thereto, combined with the lever *b*, provided with a grasping-jaw, *d*, and shoulder *b'* at or approximately at right angles to such lever, and a pivot connecting these two levers at one end and serving as their common center of motion.

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