

J. LINDSAY.
Gripping and Cutting Tools.

No. 146,829.

Patented Jan. 27, 1874.

Fig. 1.

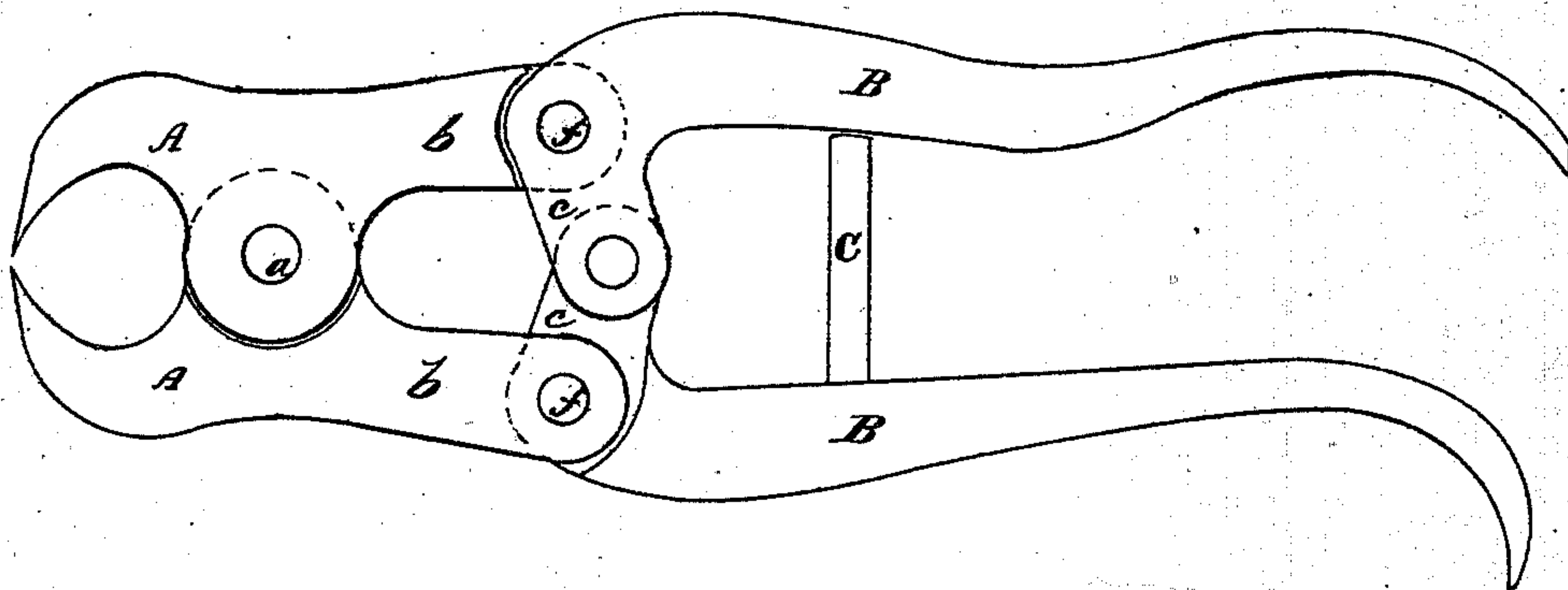
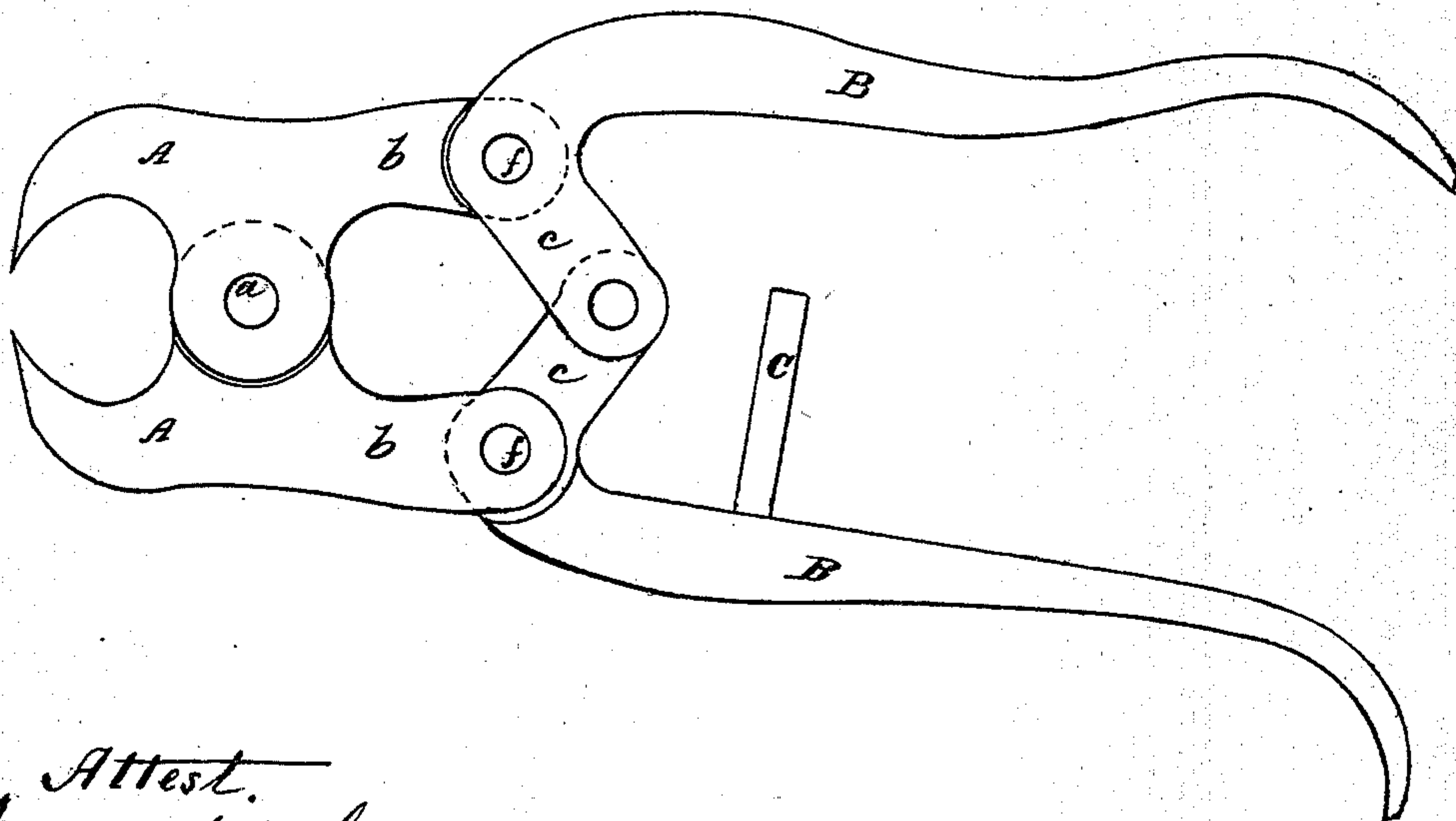


Fig. 2.



Attest.
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Fig. 3.

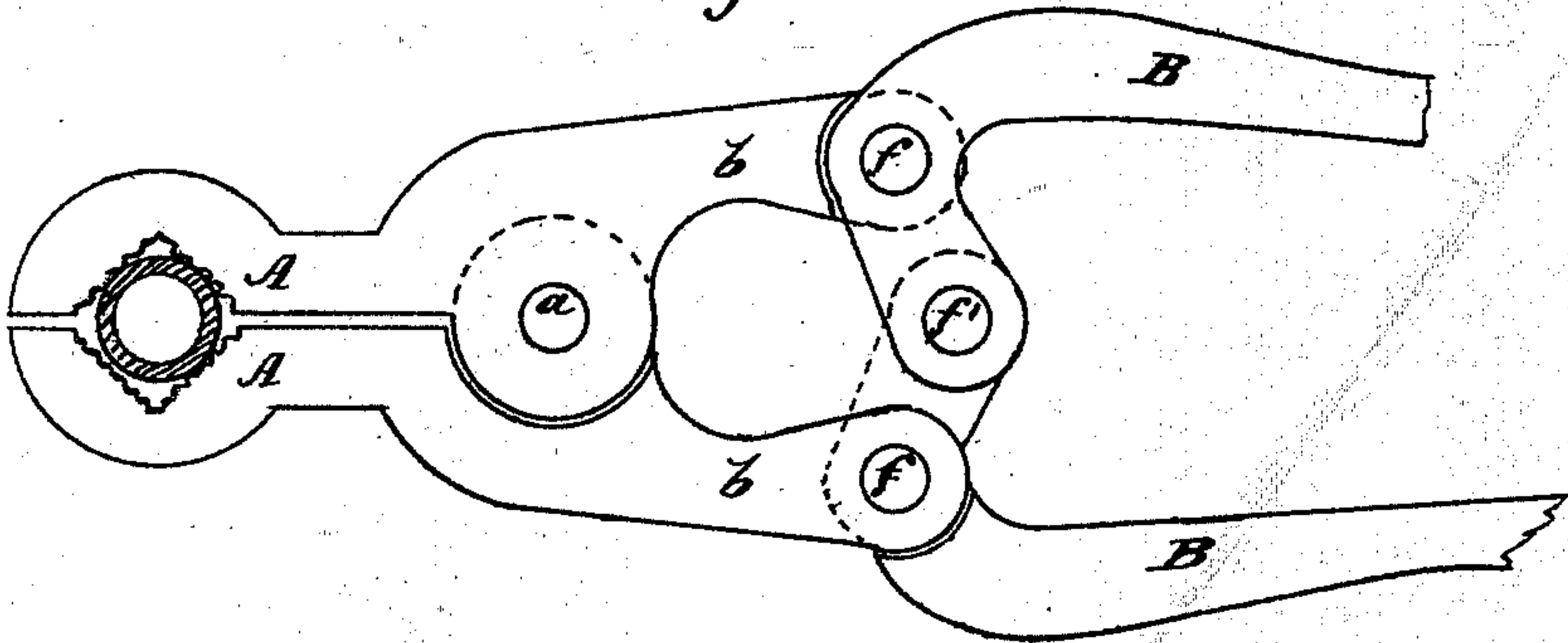


Fig. 4.

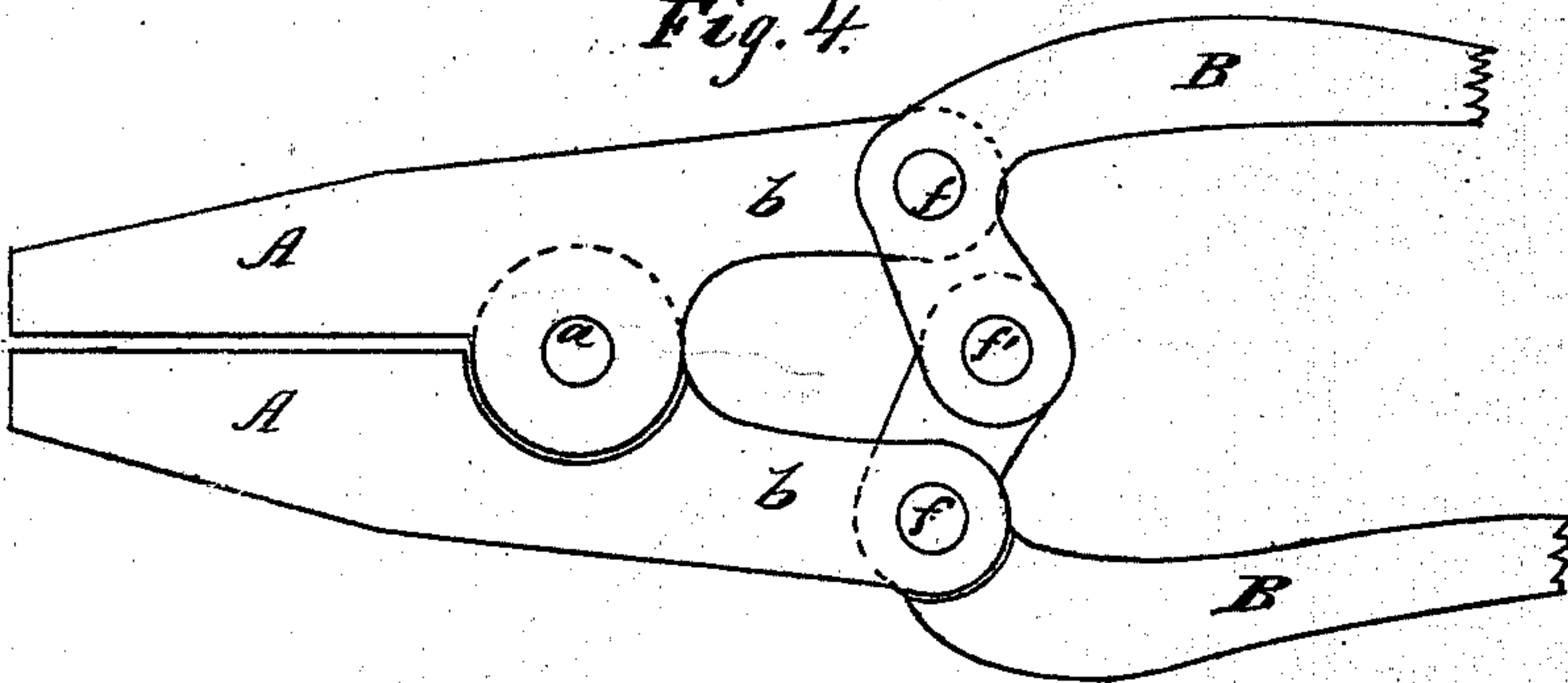
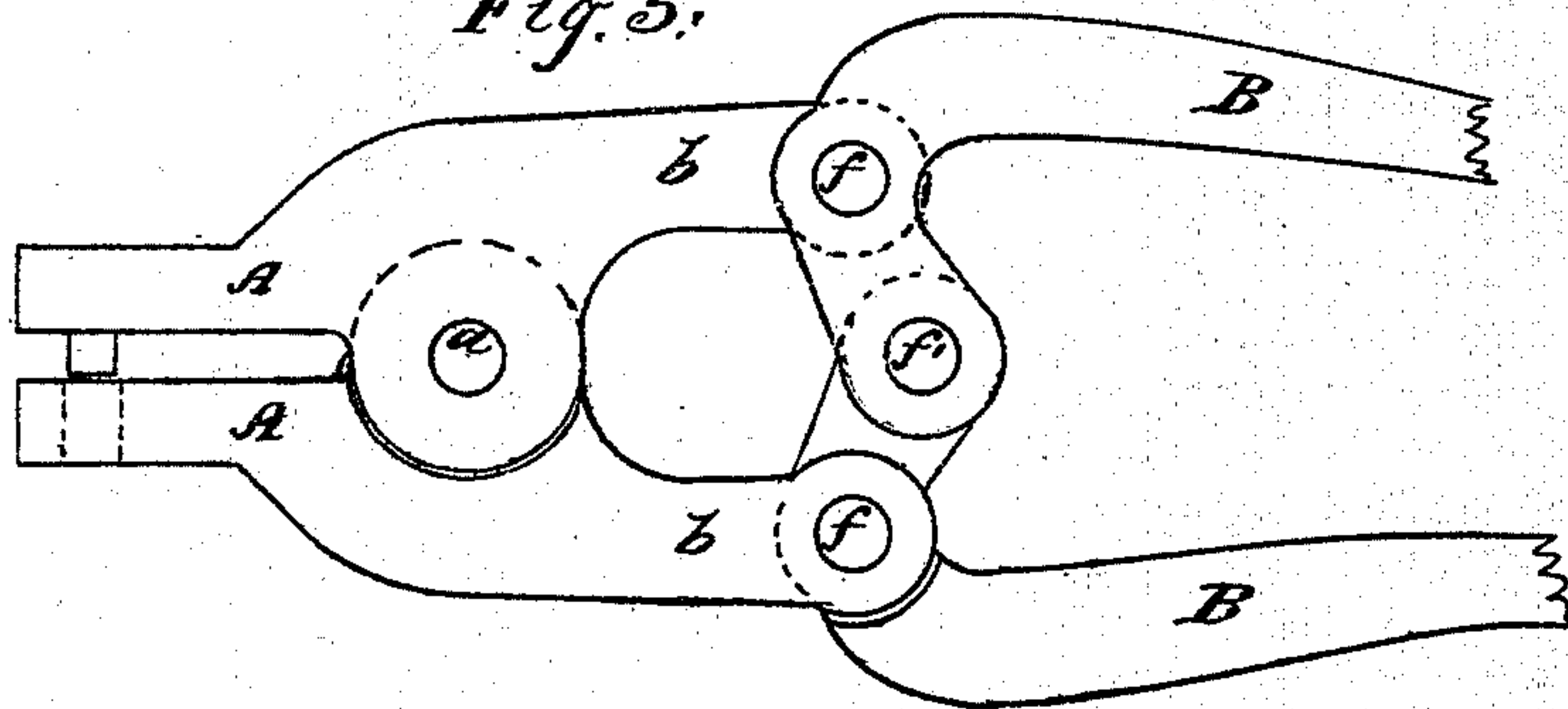


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES LINDSAY, OF NEW YORK, N. Y.

IMPROVEMENT IN GRIPING AND CUTTING TOOLS.

Specification forming part of Letters Patent No. **146,829**, dated January 27, 1874; application filed August 5, 1873.

To all whom it may concern:

Be it known that I, JAMES LINDSAY, of the city, county, and State of New York, have invented a new and useful Improvement in Pliers, Pinchers, &c., of which the following is a specification:

This invention relates to that class of implements provided with movable jaws, constructed for cutting, griping, punching, and similar purposes. It is designed to furnish a tool in which the jaws may be operated with much greater force than has hitherto been found practicable with such devices.

The invention consists in a novel combination, with the shanks of suitably-provided jaws, of elbow-levers, so constructed and arranged as to enable a powerful leverage to be exerted upon the jaws when in operation, thereby securing the desired and hereinbefore-specified result.

Figure 1 represents a cutting-pliers made according to my invention, with its jaws closed; and Fig. 2 shows the same with the jaws opened or spread. Figs. 3, 4, and 5 are views, respectively, of a pipe-wrench, a griping-pliers, and a belt or sheet-metal punch, constructed according to my invention.

A A are the jaws of the implement, capable of movement to and from each other, being pivoted together at *a*, and each provided with a backwardly-extending shank, *b*. The said jaws are of any required shape, according to the purpose to which the tool is to be applied—for instance, formed with cutting-edges, as in Figs. 1 and 2, with angular or roughened recesses for griping cylindrical bodies, as in Fig. 3, with plane griping-surfaces, as in Fig. 4, or with punch and die, as in Fig. 5. B B are levers, the main lengths of which constitute the handles of the implement, but which, at their inner portions, are bent inwardly to an elbow, forming an acute angle, as shown at *c*. At or about the curve of its elbow each of the said elbow-levers is pivoted to the extremity of one

of the shanks *b* by pivots *f*, and the inner extremities of the two elbow-levers are joined by a pivot, *f'*. Therefore, by moving the handles apart, or from each other, the pivoted ends of the shanks *b* are brought inward by the toggle-joint action of the aforesaid levers to spread the jaws, and, by bringing the said handles toward each other, the reversed action of the toggle-jointed ends *b* of the elbow-levers force the shanks *b* apart to bring the jaws together, the power increasing with this last-named movement of the parts as the elbow or inner portions *c* of the levers are brought nearer in line with each other.

It will be noticed that, as represented in the drawings, the parts are so arranged that, when the jaws are brought together, or to the limit of their movement toward each other, the elbow or inner portions *c* of the levers B are brought, with the pivots *f* and *f'*, not quite in line with each other. This insures the efficient operation of the implement, even when the cutting-edges, when such are used, are ground away, as in repeated sharpening, or when, from wear or other cause, an increased outward movement of the shanks *b* is necessary to close the jaws to the required extent, the additional inward movement permitted to the jointed ends *c*, in such event, before bringing the pivots *f f'* in line, compensating for the motion lost from the causes just hereinbefore specified.

C is a stop to prevent the cutting-edges in Figs. 1 and 2 from striking together.

What I claim as my invention is—

The combination of the shanks A of cutting or griping jaws, joined by the pivot *a*, with the acute-angled elbow-levers B, pivoted together at *f'*, and to the aforesaid shanks at *f*, substantially as and for the purpose specified.

JAMES LINDSAY.

Witnesses:

JAMES A. WHITNEY,
CHAS. E. QUETIL.