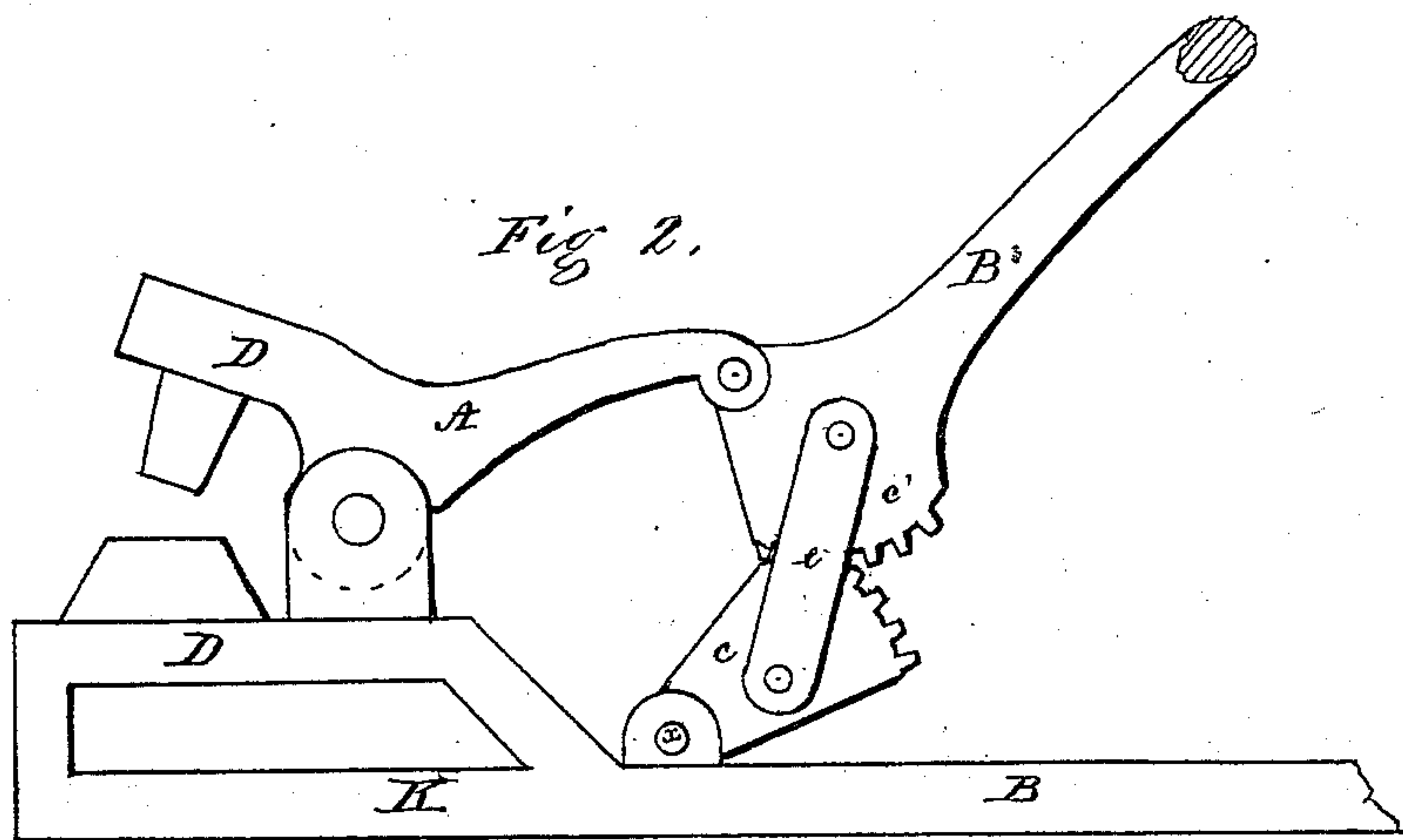
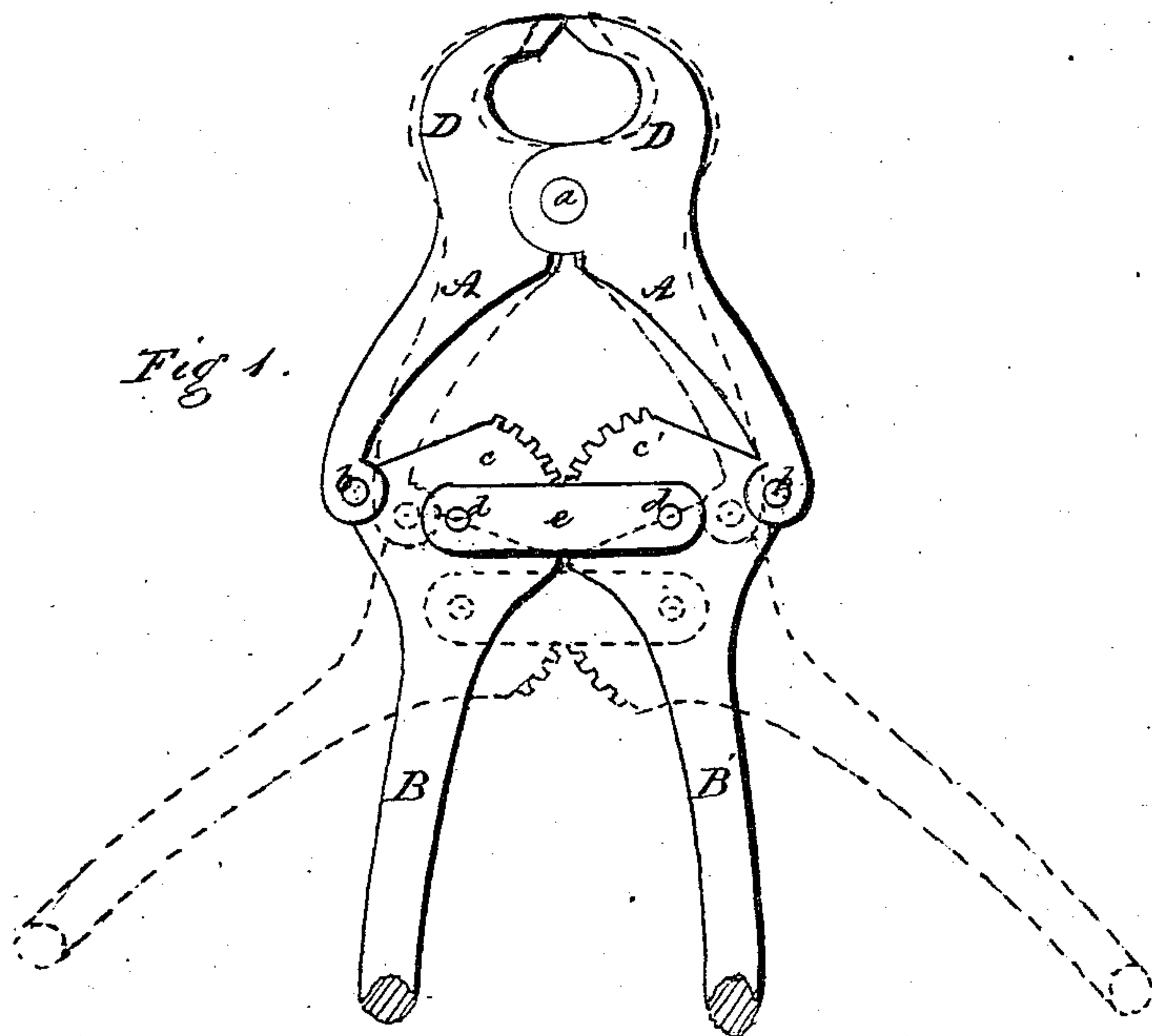


De L. KENNEDY.
Gripping and Cutting Tools.

No. 148,566.

Patented March 17, 1874.



Witnesses.

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UNITED STATES PATENT OFFICE.

DE LANCY KENNEDY, OF NEW YORK, N. Y.

IMPROVEMENT IN GRIPING AND CUTTING TOOLS.

Specification forming part of Letters Patent No. 148,566, dated March 17, 1874; application filed November 4, 1873.

To all whom it may concern:

Be it known that I, DE LANCY KENNEDY, of the city, county, and State of New York, have invented an Improved Construction of Gripping Tools, Punches, Shears, &c., of which the following is a specification:

This invention relates to a novel means of applying, and gradually increasing, power in such implements as are used for cutting, shearing, or punching, either by hand or otherwise; and it consists in the application to the levers of such instruments of two rolling cams, whereby the deviation of the bearing or contact point of said cams from the straight line between the points of resistance is gradually reduced, and a solid bearing, as contradistinguished from pivotal bearings, is obtained, thus rendering the instrument easier of operation, more powerful, and less liable to wear or fracture.

I will now proceed to describe my invention by reference to the accompanying drawings, which form part of this specification, and in which—

Figure 1 represents a side view of a pair of hand-cutting pliers or nippers closed; and, in dotted lines, in the open position of the jaws. Fig. 2 represents a similarly-constructed apparatus, adapted to have one of its limbs secured to a bench, or in the jaws of a vise, for shearing, punching, or other use requiring more power than the gripe of the hand will afford.

In Fig. 1, A A represent the cutting-levers, which are pivoted together in the usual manner at *a*, and to the rearward ends of these levers are pivoted, at *b*, the hand-levers B B', which are provided with inwardly-arranged eccentric-cams *c c'*, which, by the motion of the levers B B' are caused to move around their pivots *b*, to which their peripheries are eccentric, and whereby they have a gradually-in-

creasing leverage on the cutting-levers A A, and, being toothed on their peripheries, gear together, and are thus prevented from slipping. The axes *d* of the peripheries of these cams are connected by a link, *e*, on either side, by which their contact is preserved while the levers B B' are being separated to open the jaws of the nippers.

In Fig. 2 is represented an instrument, one jaw, K, of which is designed to be secured to a bench, or in the jaws of a vise, or to rest its whole length on a table, the one lever, B, only being movable.

This instrument is practically the same as that before described, except that, owing to the lower lever B being stationary, the lower cam *c* is pivoted to it at *x*. Its action, then, in combination with the cam *c* and links *e*, will be precisely the same as that before described and represented in Fig. 1.

By this construction, the bearing point or contact of the cams is more nearly in, and more gradually approximating to, a straight line between their fulcrums or connecting-points with the levers A A of the cutters than can be obtained with the ordinary toggle-levers, and the resistance is borne by the peripheries of the cams instead of by pins or pivotal connections, which are weak, liable to wear, and consequently imperfect in action.

What I claim as new, and desire to secure by Letters Patent, is—

The jaws D, having a common fulcrum, *a*, and levers A, in combination with the cam-levers B B', linked together in the manner described, and pivoted, upon their sides, to the ends of the levers A, whereby an increased leverage is obtained, substantially as set forth.

DE LANCY KENNEDY.

Witnesses:

WILLIAM E. CARPENTER,
GERSHOM VAN ALLEN.