

No. 818,343.

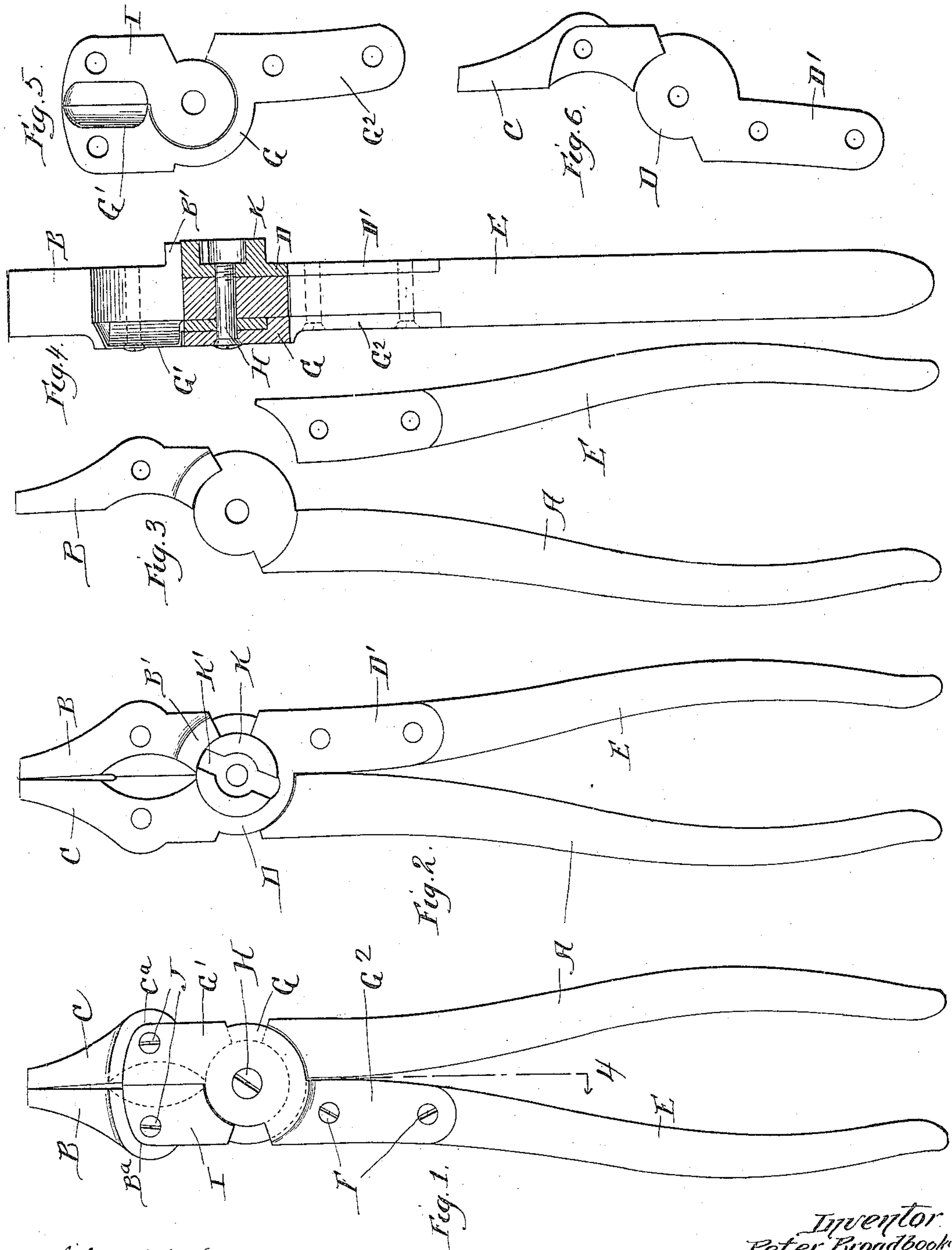
PATENTED APR. 17, 1906.

P. BROADBOOKS.

PLIERS.

APPLICATION FILED JUNE 22, 1904.

2 SHEETS—SHEET 1.



Witnesses:
H. B. Hallock.
L. A. Morrison

Inventor.
Peter Broadbooks

By *Wm. H. Williams* atty.

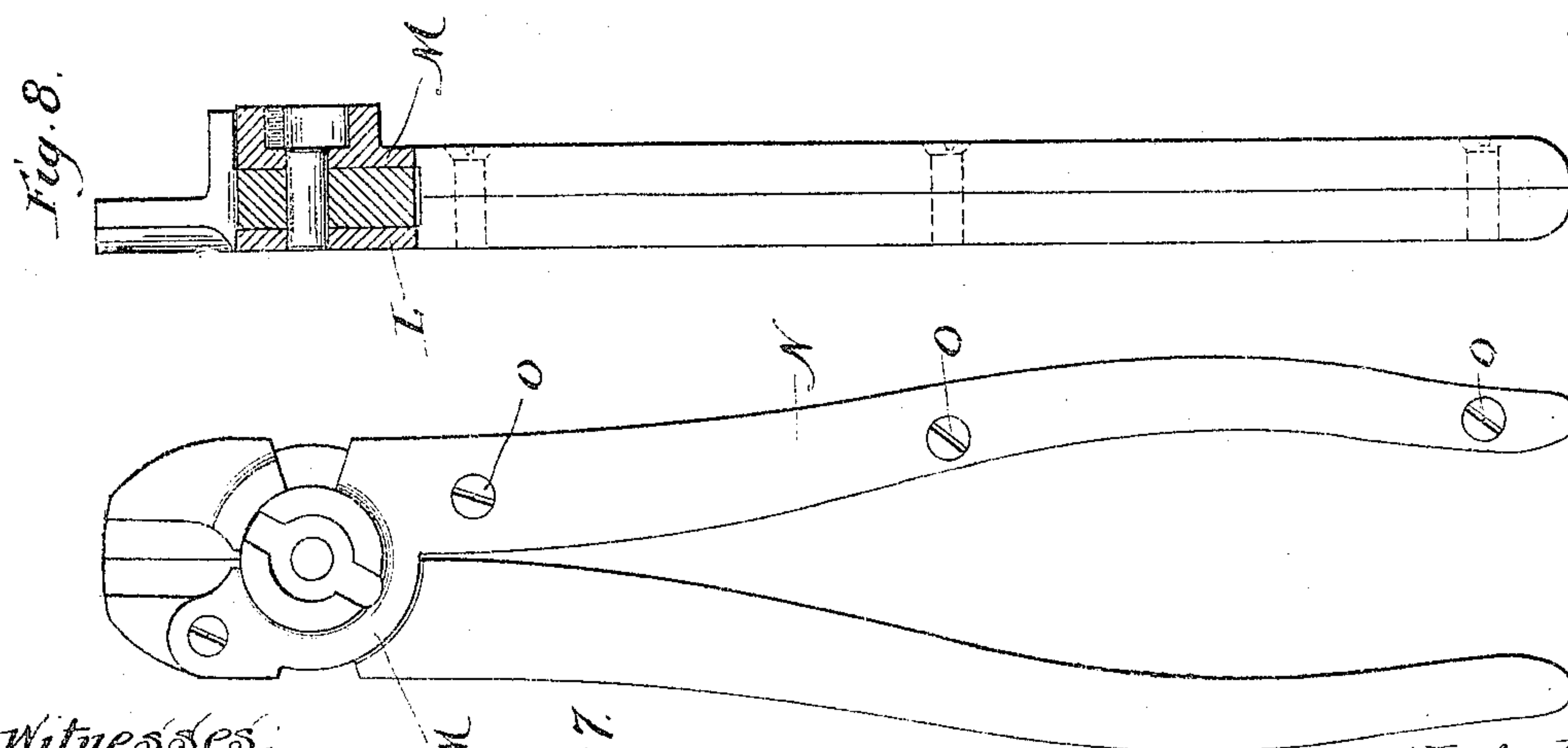
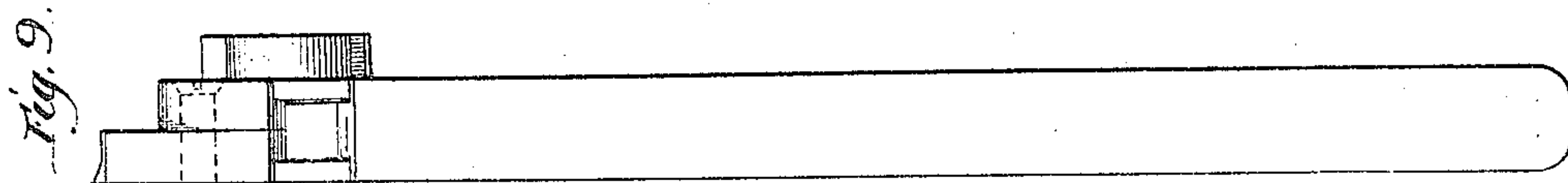
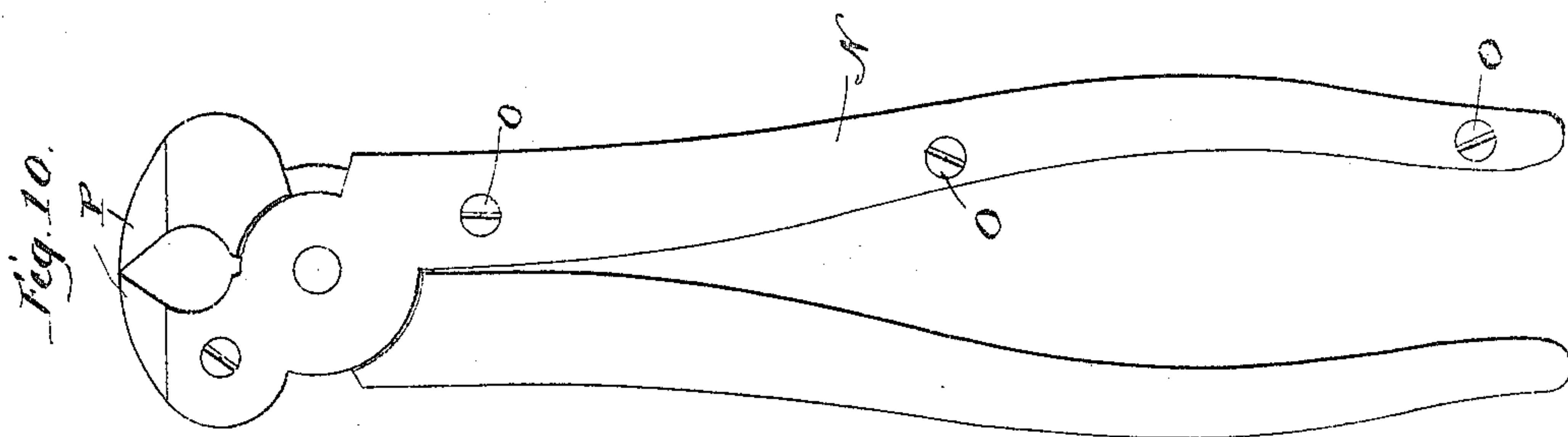
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Fig. 7.

Inventor:
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By

W. F. Johnson
Att'y.

UNITED STATES PATENT OFFICE.

PETER BROADBOOKS, OF BATAVIA, NEW YORK, ASSIGNOR TO UTICA
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PLIERS.

No. 818,343.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed June 22, 1904. Serial No. 213,587.

To all whom it may concern.

Be it known that I, PETER BROADBOOKS, a citizen of the United States, residing at Batavia, county of Genesee, and State of New York, have invented a certain new and useful Improvement in Pliers, of which the following is a specification.

My invention relates to a new and useful improvement in cutting-pliers, and has for its object to gain more power by bringing the cutting edges of the jaws nearer the fulcrum of the pliers and adding strength to the pliers where the greatest amount of strength is required in a tool of this description; and a further object is to hinge one jaw to one side plate in such a manner that it shall form a box-joint thereon.

A further object of my invention is that by hinging one lever between the side plates secured to the other lever it shall also form a box-joint between both side plates thereof.

A still further object of my invention consists in having a cutter formed with one side plate on one side of the pliers and a wire-cutter and guard formed with the other side plate upon the opposite side of the pliers, and as that portion of the levers where they are pivoted together is formed circular in two different diameters, the smaller circle being upon the jaw side and the larger circle upon the lever side, admits the wire being cut close to the fulcrum, thereby gaining power and by reason of the larger circle gaining strength where strength is most desired.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved pliers; Fig. 2, a side elevation from the opposite side; Fig. 3, a side elevation of my pliers with the two side plates and the parts connected therewith removed; Fig. 4, a section taken on the line 4 of Fig. 1; Fig. 5, a side elevation of the two cutting-jaws; Fig. 6, a side

elevation of one of the side plates with which one of the jaws of the pliers is formed; Fig. 7, a side elevation of a pair of cutting-pliers, showing a modified form of construction; Fig. 8, a vertical section through the cutting-pliers shown in Fig. 7; Fig. 9, an edge elevation of the cutting-pliers shown in Figs. 7 and 8; Fig. 10, a side elevation of a pair of nippers constructed upon the same principle as the other forms before described.

Referring to Figs. 1 to 6, inclusive, A represents one of the levers, which has formed therewith the plier-jaw B. C represents the other plier-jaw. Both plier-jaws B and C are formed with V-shaped pockets B^a and C^a, respectively, for the reception of the outer ends of the side cutting-jaws, which being V shape are held rigid in said pockets. Said plier-jaw C is formed with the side plate D, said side plate having an extension D', which extends downward and is adapted to fit within a recess formed in one side of the lever E and may be secured to said lever by means of the screws or rivets F. G represents the side plate adapted to fit upon the opposite side of the lever A, and formed with this side plate is one jaw of the side cutters G'. This side plate G has an extension G², extending downward therefrom, which is adapted to fit in a recess formed in the opposite side of the lever E and be secured to said lever by means of the screws or rivets F. The side plates D and G are pivoted to the lever A at the point where said plates cross said lever. That portion of the side plates and of the lever A where said side plates cross said lever is formed circular, said circular portion being of two different diameters, the smaller diameter being upon the jaw side and the larger diameter being upon the lever side. Said side plates and lever A are pivoted together upon the screw, bolt, or rivet H. I is the other side cutting-jaw, which is pivoted upon the pivot H, a recess being formed in the side plate G to allow for the reception of the circular portion of the cutting-jaw I, so that said pivotal point of the cutting-jaw I is confined between the side plates G and the lever A, so as to form a box-joint. It will thus be seen that the pivotal portion of the lever A is confined between two side plates secured to the lever E, thus forming a box-

joint, and as the smallest periphery of the circular pivotal portions is that next the jaws greater power may be exerted in cutting on account of being able to more nearly approach the fulcrum-point, and the circular pivotal portions being of the greatest diameter upon the lever side gives to the pliers strength where it is most needed. The cutting-jaws G' and I are secured to the plier-jaws B and C by means of the screws or rivets J. Upon the outside of the side plate D is formed the cylindrical boss K concentric with the pivotal point H. This boss is slotted diametrically across the same, as indicated at K', in which a wire or rod may be inserted for cutting. Extending outward from the outside of the jaw B is a cutter B', which is adapted to travel around the periphery of the boss K, and thus shear off any wire or rod held within the slot K' of said boss, forming a wire-cutter in which wire may be cut parallel with the pliers with a shearing cut.

In Figs. 7, 8, and 9 I have shown a modified form of construction whereby instead of using two side plates secured to a separate lever I form said side plates so as to extend downward and form a lever when the two are brought together, as shown in said figures, in which L and M represent the side plates which extend downward to form the lever N, the two side plates being secured together at the lever end by the screws, rivets, or bolts O. These two side plates L and M coming together confine the pivotal portion of the lever A therebetween, so as to form a box-joint, the same as the box-plates before described. In this construction I have also shown the pliers formed without the plier-jaws, showing simply the side cutters in which the wire may be cut at right angles to the pliers and the cutter for cutting wire parallel with the pliers.

In Fig. 10 I have shown the same principle applied to nippers, it simply being necessary to form with the levers and side plates the nipper-jaws P instead of the side cutters shown in Fig. 7.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a pair of pliers of the character described, a lever, a plier-jaw formed integral with said lever, a second lever, a separate side plate secured upon each side of said second lever and crossing the first-named lever, the first-named lever being pivoted to the side plates at the point of crossing, the other plier-jaw being formed with one of the side plates, a side cutting-jaw formed with the other side plate, a second separate side cutting-jaw pivoted upon the same pivot as the levers and plates, the ends of said side cutting-jaws being held rigidly secured in the pockets formed to the plier-jaws, as and for the purpose specified.

2. In a pair of pliers of the character described, a lever, a plier-jaw formed integral with said lever, a side plate arranged upon each side and crossing said lever and pivoted to the lever at the point of crossing, extensions extending downward from said side plates, a second lever secured between said extensions, the pivotal portion of the side plates and lever being formed circular and of two different diameters, the smaller diameter being upon the jaw side and the larger diameter being upon the lever side, two side cutters, one formed integral with one side plate, the other side cutter being pivoted upon the same pivot as the side plates and confined between one side plate and the lever, the other plier-jaw formed with the other side plate, one side cutter secured to each plier-jaw, a circular boss extending outward from the side plate in which the parallel jaw is made integral, said boss being slotted diametrically, a cutter carried by the opposite parallel jaw adapted to travel around the periphery of said boss and cross said slot to form a cutter, as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

PETER BROADBOOKS.

Witnesses:

GEORGE A. KAPPELL,
C. H. BERGMAN.