No. 753,224. PATENTED MAR. 1, 1904.

W. A. BERNARD.

PLIERS.

APPLICATION FILED AUG. 6, 1903.

NO MODEL.

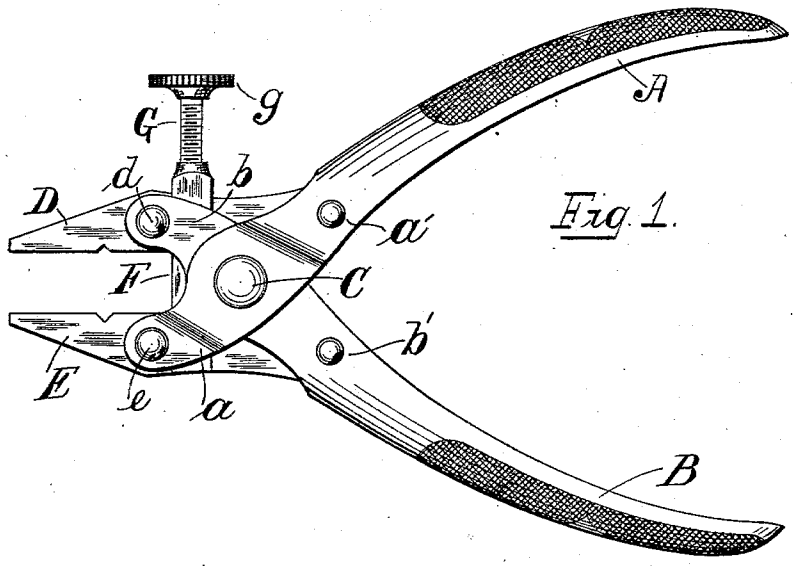

Fig. 1.

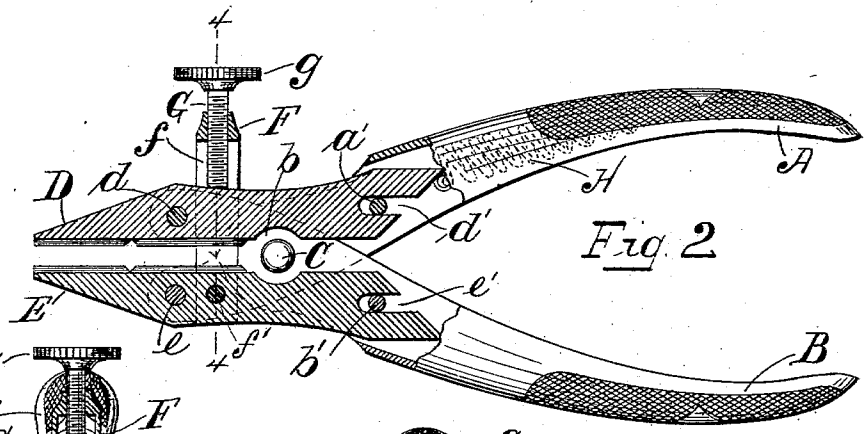

Fig. 2

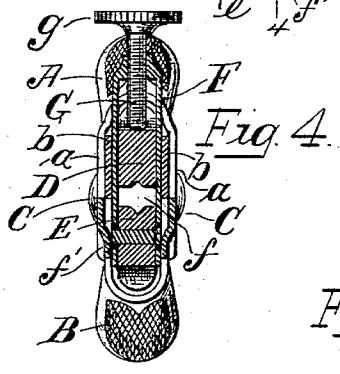

Fig. 4.

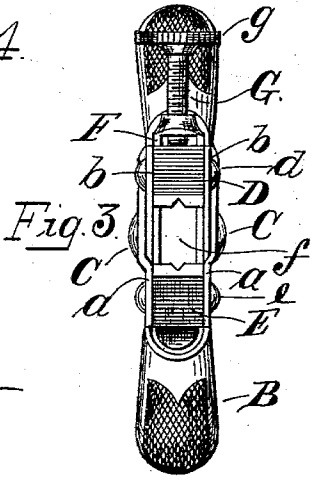

Fig. 3.

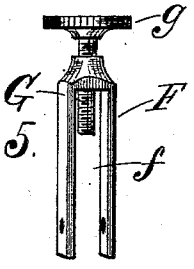

Fig. 5.

WITNESSES:

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No. 753,224. Patented March 1, 1904.

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.

SPECIFICATION forming part of Letters Patent No. 753,224, dated March 1, 1904.

Application filed August 6, 1903. Serial No. 168,487. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BERNARD, of the city and county of New Haven, State of Connecticut, have invented a new and useful Improvement in Pliers 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 thereof, and in which—

Figure 1 represents a side elevation of pliers embodying my invention, (the jaws being shown open;) Fig. 2, a similar view broken away somewhat, showing the jaws closed and in longitudinal vertical section; Fig. 3, an end view of the pliers as shown in Fig. 1; Fig. 4, a transverse vertical section on line 4 4 of Fig. 2, and Fig. 5 a detail perspective view of the vise attachment.

In all figures similar letters of reference represent like parts.

This invention relates to pliers, and has for its object the production of novel means for clamping the jaws of the pliers without interfering with the so-called "open throat" or passage between the jaws, which is useful in gripping long wires or similar articles.

The pliers herein shown are of the type illustrated in a former patent granted to me May 6, 1890, and numbered 427,220, and consists of two handles A and B, forked at their forward ends to form two sets of substantially parallel plates *a* and *b*, fulcrumed together at C and having jaws D and E connected therewith and to which the movement of the handles A and B imparts a parallel motion in opening or closing. The particular construction by which this parallel movement is imparted consists of pivots *d* and *e*, connecting the forward ends of the plates *a* and *b* to the jaws and pins *a'* and *b'*, and slots *d'* and *e'*, giving the heels of the jaws a sliding connection within the hollow interior of the handles; but it is obvious that other suitable means may be employed for the same purpose. The fulcrum C, as shown more particularly in Figs. 2, 3, and 4, is in two parts, pivoting together each set of plates *a* and *b*, so that between the jaws D and E and connecting-plates *a* and *b* there is formed an opening or passage through which a wire or similar article may be projected.

F is a slotted U-shaped clamp, one end of which is secured by rivet *f'* or otherwise to the jaw E, as shown, so that the jaw D projects through and moves within the slot *f* of the clamp.

G is a set-screw engaging in the head of the clamp F and extending into the slot *f*, where it may engage against the upper side of the jaw D, as more particularly shown in Figs. 2, 3, and 4. The screw G may be provided with a knurled head *g* for convenience in turning.

H is a spring connecting one of the handles, as A, with the end of one of the jaws, as D.

By means of the spring H the jaws are normally held in their open position. Upon the movement of the handles the jaws are closed parallel to each other, as shown in Fig. 2, to grip any article inserted between them. The turning of the set-screw G, so that the lower end bears upon the upper side of the jaw D when gripping the desired article, clamps the jaws in this position against the tension of the spring H.

In order to release the jaws, it is only necessary to unscrew the set-screw G, when the spring H will tend to draw the jaws apart.

As the clamp F is shown extending on the outer side of the jaws, any article, such as a long wire, inserted into the passage between the jaws and plates of the handles may pass through the slot *f* of the clamp, so that the clamp may be used without detracting from the advantage of the "open-throat" feature of the pliers.

Having now described my invention, which may obviously vary in its details without departing from the spirit thereof, what I claim, and desire to secure by Letters Patent, is—

1. In pliers, or similar tools, the combination with cross-levers, one end of each forming a handle for the tool, and the other end bifurcated to form parallel plates; of parallel-moving jaws connected to said levers within said bifurcations, and forming with said plates an opening or passage within the tool; and a slot-

ted clamp secured to the outside of one of said jaws and adapted to limit the movement of the other jaw, said clamp being within said parallel plates, substantially as described.

2. In pliers, or similar tools, the combination with cross-levers, each of which is bifurcated at one end to form parallel plates, which plates are fulcrumed together; of parallel-moving jaws, each of which has a connection with one of said cross-levers, at a point in front of said fulcrum, and with the other cross-lever at a point behind said fulcrum; a clamp secured to one of said jaws between its connections with said cross-levers, and having a slot in which the other jaw is adapted to slide; and a screw in said clamp adapted to bear on the outside of the sliding jaw at a point between its connections with said cross-levers, substantially as described.

In witness whereof I have hereunto set my hand this 31st day of July, 1903.

WILLIAM A. BERNARD.

Witnesses:
WILLIAM R. PITKIN,
SAMUEL H. FISHER.