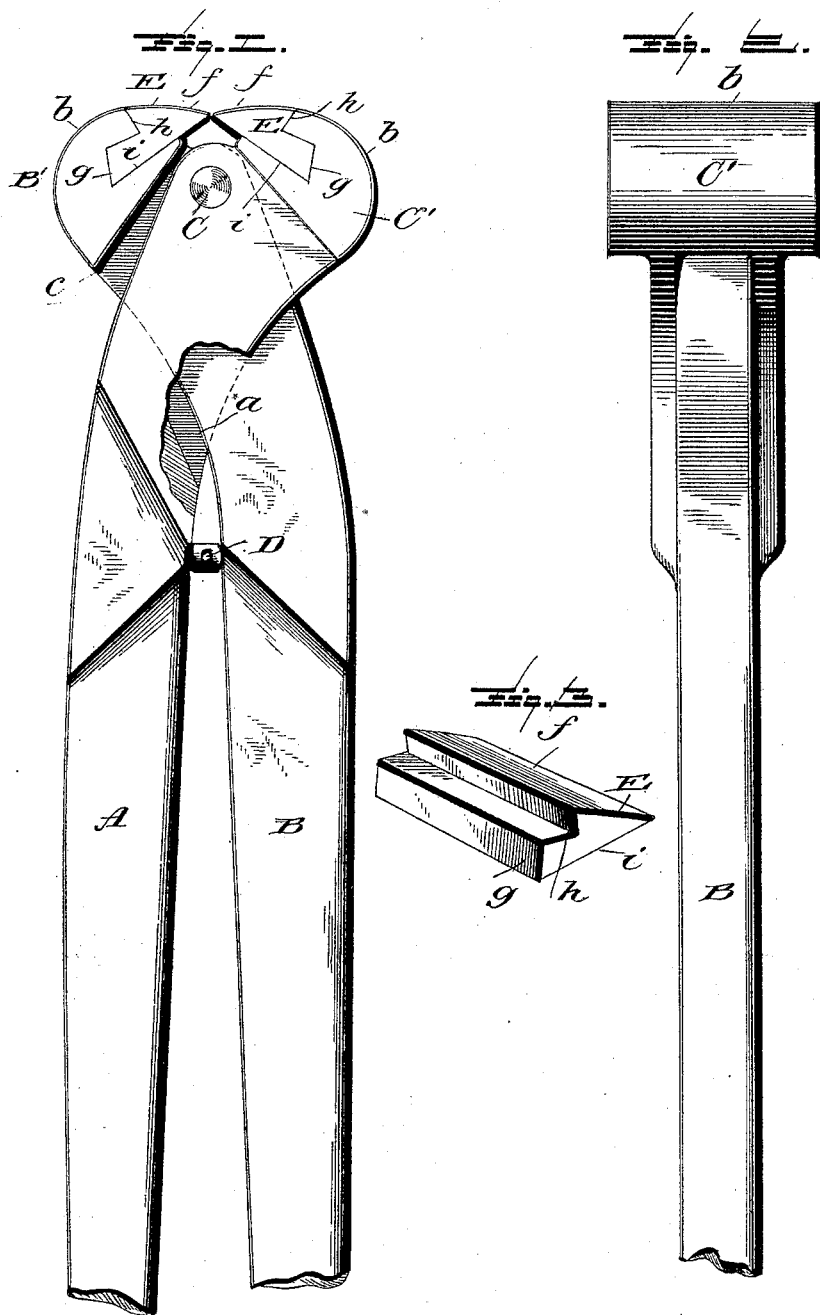


(No Model.)

S. O. ROOT.  
CUTTING NIPPERS.

No. 458,860.

Patented Sept. 1, 1891.



Witnesses

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# UNITED STATES PATENT OFFICE.

SANFORD O. ROOT, OF LODI, NEW YORK.

## CUTTING-NIPPERS.

SPECIFICATION forming part of Letters Patent No. 458,860, dated September 1, 1891.

Application filed April 21, 1891. Serial No. 389,833. (No model.)

*To all whom it may concern:*

Be it known that I, SANFORD O. ROOT, a citizen of the United States, residing at Lodi, in the county of Seneca, State of New York, have invented certain new and useful Improvements in Cutting-Nippers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in cutting-nippers of that class designed to cut heavy or light wire and of that class which have the jaws provided with detachable cutting-blocks.

The object of the present invention is to provide simple, cheap, and durable cutting-nippers wherein is combined great strength with ease of manipulation, the minimum power being required to cut the wire.

I arrange the pivot of the jaws in close proximity to the point where the cut is made, the said pivot being preferably substantially on a line through the outer edges of the detachable cutters. The cutters are so formed as to embody great strength, having two shoulders and a long bearing in the jaws. One of the levers or arms is recessed or chambered for the reception of the other, the pivot being held in the walls of the recess and passed through the lever working in said recess or chamber.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side view of my improved cutting-nippers, with a portion of one of the levers broken away. Fig. 2 is an edge view thereof. Fig. 3 is a perspective view of one of the cutters detached.

Like letters of reference indicate like parts in the several views where they occur.

Referring now to the details of the drawings by letter, A designates one of the levers, which may be of either cast or wrought metal, and near its jaw end is formed with a recess *a*, through which the other lever B is passed, the two being pivotally connected together by means of the transverse pivot or pin C,

which is passed through the walls of the said recess and through an opening in the lever B, the said pivot being located in close proximity to the cutting-jaws, as shown in Fig. 1. The jaws B' and C' of the levers are rounded, as seen at *b*, and the lever B is formed with shoulders *c*, which impinge against the edge of the lever A and limit the outward movement or separation of the jaws. An adjustable stop D is provided in one of the jaws, which is designed to limit the approach of the cutters, as will be readily understood from Fig. 1. The jaws are each formed with a transverse recess or groove to receive the detachable cutters E, one of which is shown in detail in Fig. 3. The outer portion *f* of the cutter is formed to conform to the contour of the outer face of the jaw, as seen in Fig. 2, and is also formed with two shoulders *g* and *h*, which conform to corresponding portions in the recess of the jaw, as shown in Fig. 1, there being a long inclined bearing, as shown at *i*, and a substantially right-angled bearing, as shown at *j*. Thus I provide for the resistance of strain in both directions, as will be understood from Fig. 1. The pivot is arranged relatively to the cutters, so that the line drawn from the outer lower points of the cutters will intersect the pivot, as seen by the dotted line in Fig. 1. By this arrangement I obtain the maximum of strength with ease of operation, very little power being required to cut easily the stoutest wire. The pivot is also arranged beyond the center of the jaw toward the cutting end, giving me great leverage and throwing the preponderance of weight upon the other side of the pivot which aids in the cutting operation, the tendency of the levers being to hug each other normally. The cutters are inserted and removed by moving them endwise into and from their grooves in the jaws.

By my peculiar form of cutter and recess therefor in the jaw I not only avoid the necessity of screws to retain the cutter in place, but strengthen the same by thickening the rear end of the cutter at the shoulder *g* and fit the cutter to resist the great pressure exerted at its edge. The differing angles at *g* and *h* diffuse the pressure on the jaw, so that it is not excessively strained at any one point.

What I claim as new is—

1. The combination, with one lever formed with a recess, of a second lever passed through the said recess and pivoted therein with a single pivot located in close proximity to the  
5 acting edges of the cutters carried by the jaws of the levers, substantially as specified.

2. The combination, with the levers pivoted together, with the pivot in close proximity to the acting edges of the cutters, of detachable  
10 cutters having shoulders *g* and *h* of differing lengths and angles and their outer points in line with the pivot, substantially as specified.

3. The combination, with the pivoted le-

vers, the jaws of which are provided with dovetailed recesses, of detachable cutters fitted to said recesses and having two shoulders of differing angles and lengths and a long bearing upon the under face and a shorter bearing in a different plane upon its upper face, substantially as shown and described. 20

In testimony whereof I affix my signature in presence of two witnesses.

SANFORD O. ROOT.

Witnesses:

GILBERT TOWNSEND,

PARKER E. HOUGHTON.