

(No Model.)

J. T. SMITH.
PLIERS.

No. 582,001.

Patented May 4, 1897.

Fig. 1

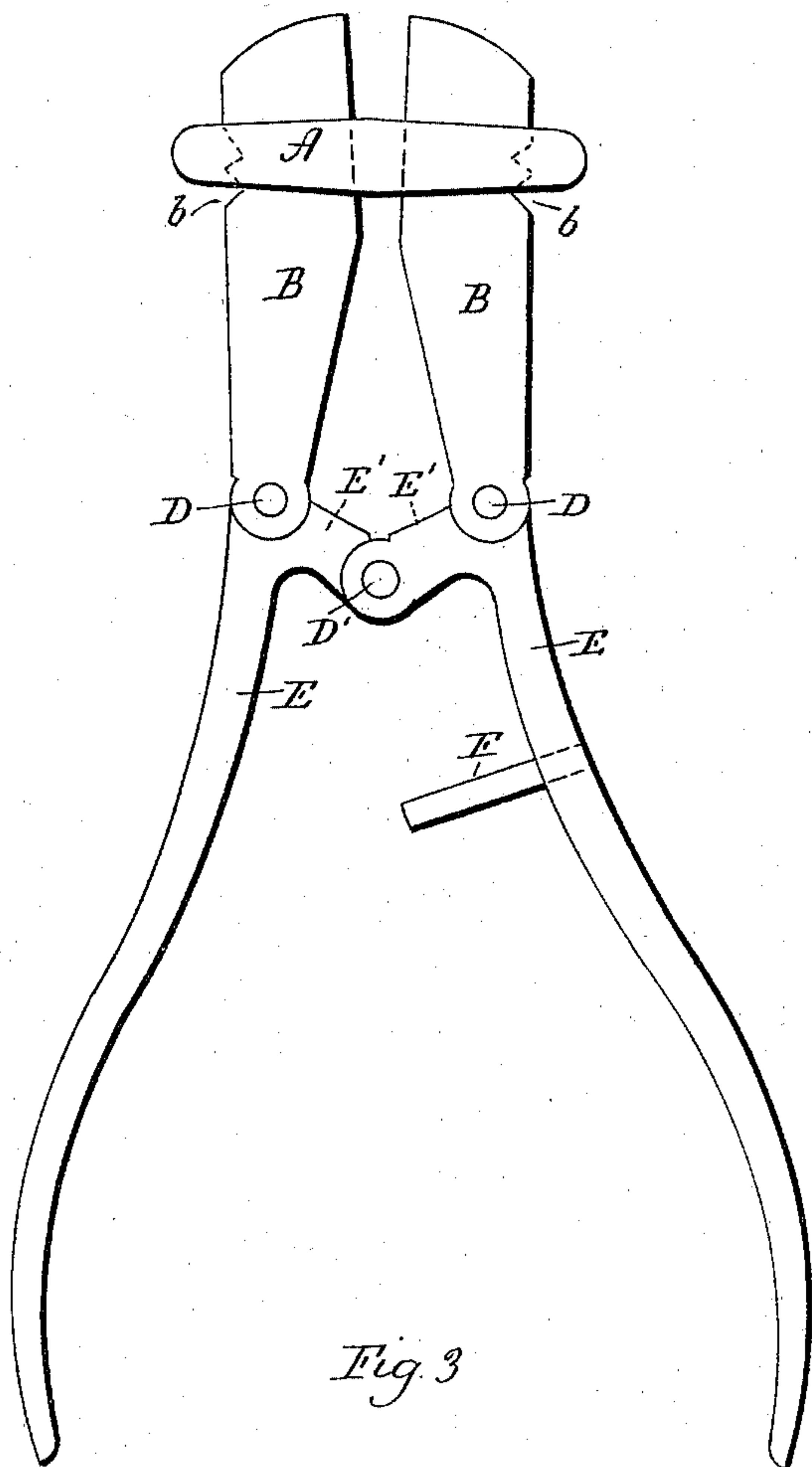


Fig. 2

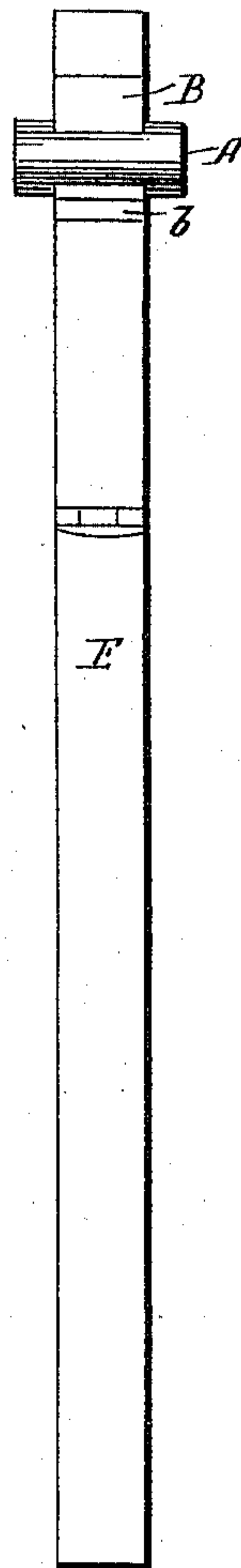


Fig. 3

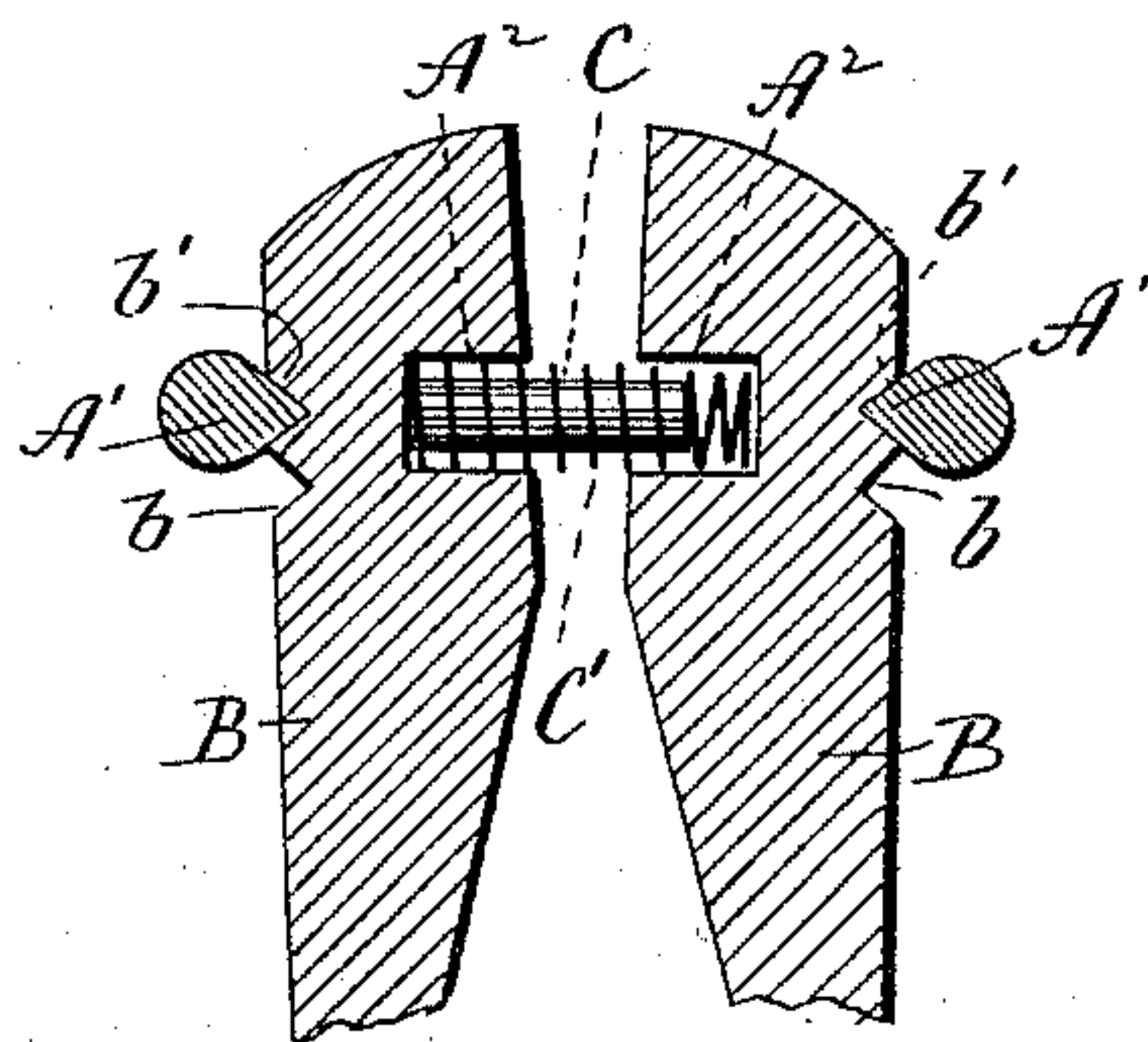
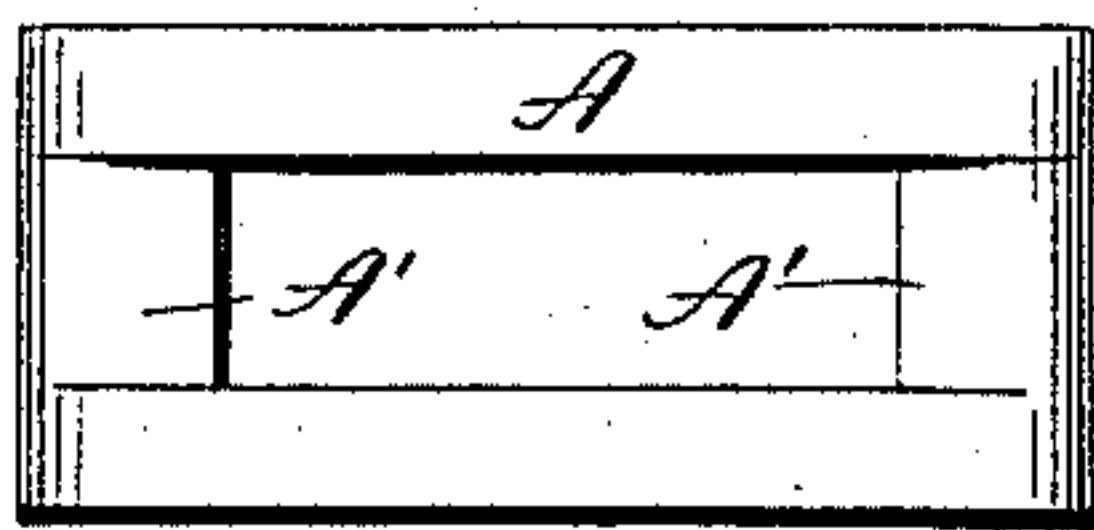


Fig. 4



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JOHN T. SMITH, OF ROCK FALL, CONNECTICUT.

PLIERS.

SPECIFICATION forming part of Letters Patent No. 582,001, dated May 4, 1897.

Application filed August 3, 1896. Renewed April 2, 1897. Serial No. 630,461. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SMITH, of Rock Fall, in the county of Middlesex and State of Connecticut, have invented a new Improvement in Pliers; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which
10 said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of one form which a tool constructed in accordance with my invention may assume; Fig. 2, a view thereof in
15 side elevation; Fig. 3, a broken sectional view of the jaws and yoke; Fig. 4, a detached plan view of the yoke.

My invention relates to an improvement in pliers, the object being to produce a simple
20 and convenient tool composed of few parts and constructed with particular reference to securing great power in the operation of the jaws, whereby the pliers become particularly well adapted for closing car-seals, in splicing
25 telegraph and telephone wires, and for use in other kindred situations where great power is required.

With these ends in view my invention consists in pliers having certain details of construction and combinations of parts, as will
30 be hereinafter described, and pointed out in the claims.

In carrying out my invention as herein shown I employ an oblong rectangular yoke
35 A, which on account of its function in the tool I shall hereinafter speak of as the "fulcrum-yoke." This yoke passes over and embraces the outer ends of the jaws B B of the tool, the outer edge of each jaw being formed with two
40 transverse notches *b b'* for the reception of the blade-like inner edges *A' A'* of the ends of the yoke. When the said edges *A' A'* are engaged with the notches *b' b'*, the leverage available for the operation of the jaws B B
45 is greater than when the said jaws are engaged with the notches *b b*, the yoke being shifted from the outer to the inner notches, and vice versa, according to the conditions under which the tool is used. For holding the yoke in
50 place I employ a spiral spring C, arranged in line with the yoke between the jaws and at its ends entered into sockets *A² A²*, formed in

the inner faces thereof, the spring being prevented from buckling and getting out of place by means of a short rod *C'* passing
55 through it and also entering the said sockets. It will be understood that the jaws project sufficiently beyond the yoke to permit them to do their work, whether the same be the closing of a car-seal, the splicing of an elec-
60 tric wire, or otherwise. The inner ends of the jaws are secured by pivots *D D* to the outer ends of the handle-levers *E E*, the outer end of each of which is formed with an inwardly-projecting lever-arm *E'*, which are
65 connected together by means of a pivot *D'*, located in the central plane of the tool, the arms *E' E'* being constructed at their pivoted ends to form an ordinary knuckle-joint. A stop-pin *F*, extending inwardly from one of
70 the handle-levers *E*, engages with the other lever to limit their closing action.

It will be readily understood that under the above-described construction the jaws will be forced together with enormous power, re-
75 sulting from the multiplying leverage obtained from the fulcrum-yoke and the lever-arms of the handle-levers.

It is of course apparent that if desired the jaws may be cutting-jaws instead of gripping
80 or pressure jaws, the particular shape of the jaws being dependent upon the use to which the tool is to be put. I would therefore have it understood that I do not limit my inven-
85 tion to the particular construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what
90 I claim as new, and desire to secure by Letters Patent, is—

1. The combination with two handle-levers having inwardly-extending lever-arms which are pivoted together, of two jaws pivotally
95 attached to the outer ends of the handle-levers, and a fulcrum-yoke applied to the outer ends of the jaws which it embraces.

2. The combination with two handle-levers having inwardly-extending lever-arms which
100 are pivoted together, of two jaws pivotally attached to the outer ends of the said handle-levers, a fulcrum-yoke embracing and connecting the outer ends of the jaws, and a

spring interposed between the jaws and exerting an effort to keep them engaged with the ends of the yoke.

3. The combination with two handle-levers
5 having inwardly-extending lever-arms which are pivoted together, of two jaws pivotally attached to the outer ends of the said handle-levers, and a fulcrum-yoke embracing the outer ends of the jaws and adjustable there-
10 upon for varying their leverage.

4. The combination with two handle-levers, having inwardly-extending lever-arms which are pivoted together, of two jaws pivotally attached to the outer ends of the handle-le-

vers and having transverse coupling-notches 15 formed in their outer edges, and a fulcrum-yoke embracing the outer ends of the jaws, and having its ends adapted to enter the said notches through which it is adjustable upon the jaws. 20

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN T. SMITH.

Witnesses:

E. H. HATHAWAY,
HARRIS WARNER.