

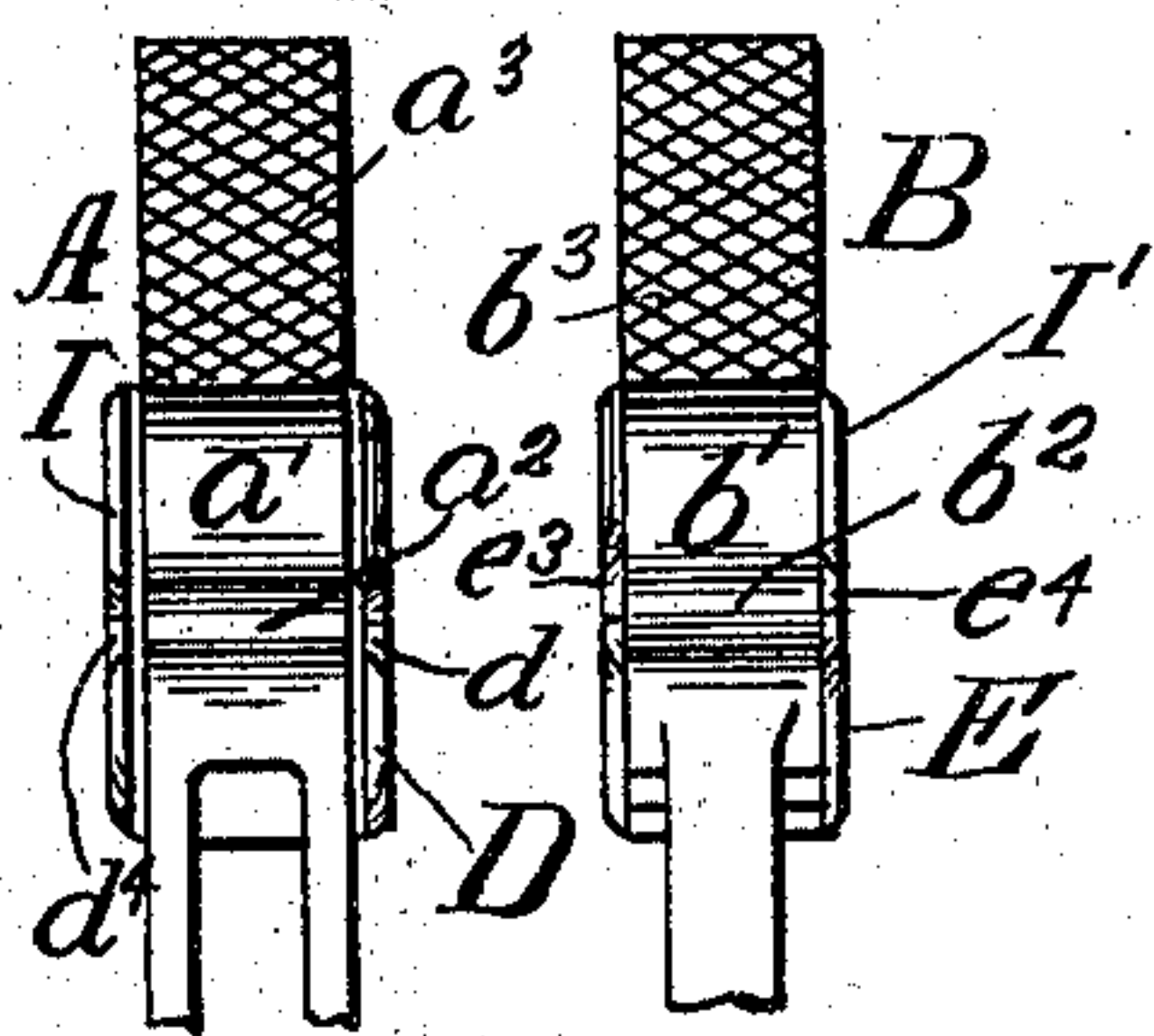
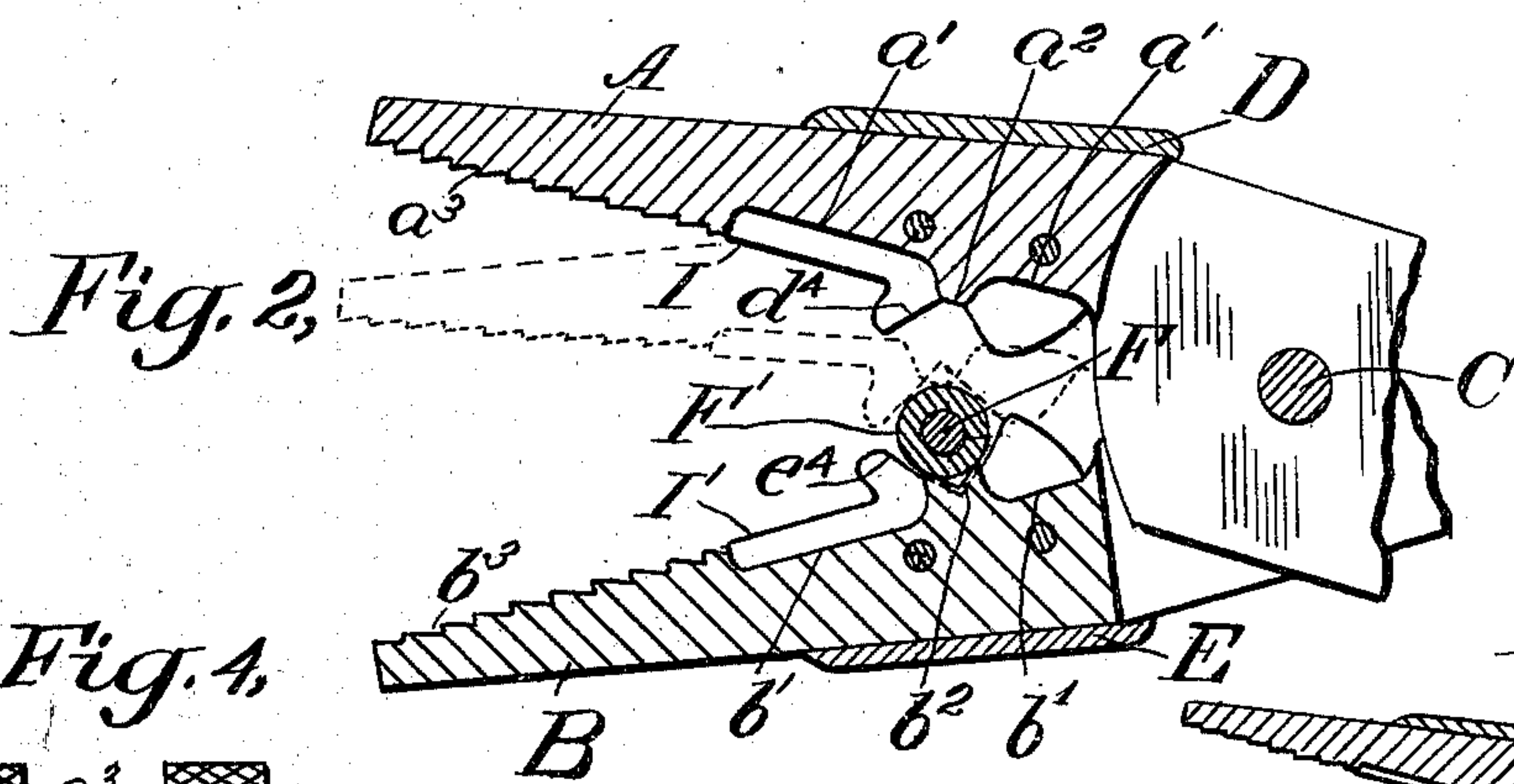
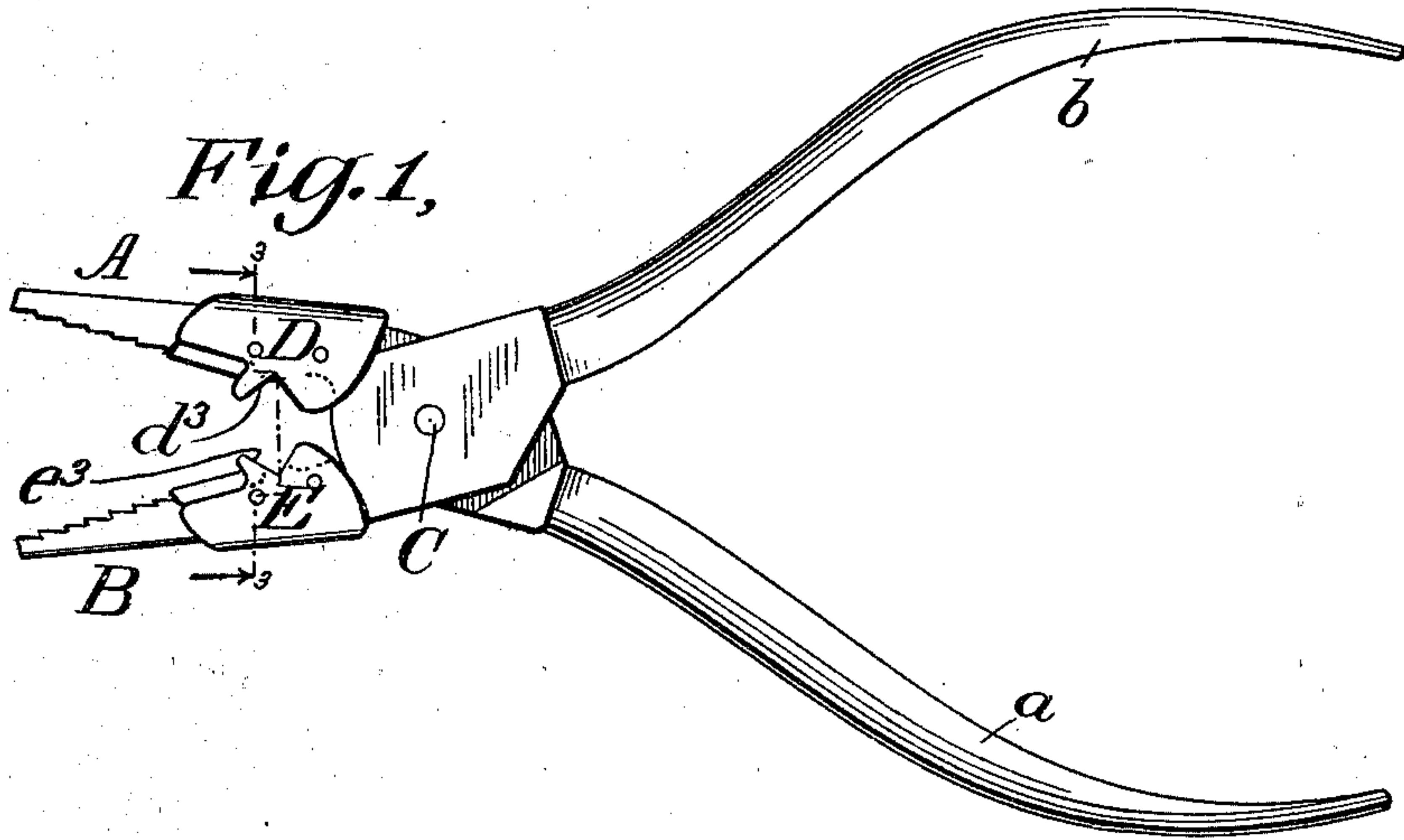
No. 731,688.

PATENTED JUNE 23, 1903.

E. E. KLEINSCHMIDT.  
PLIERS.

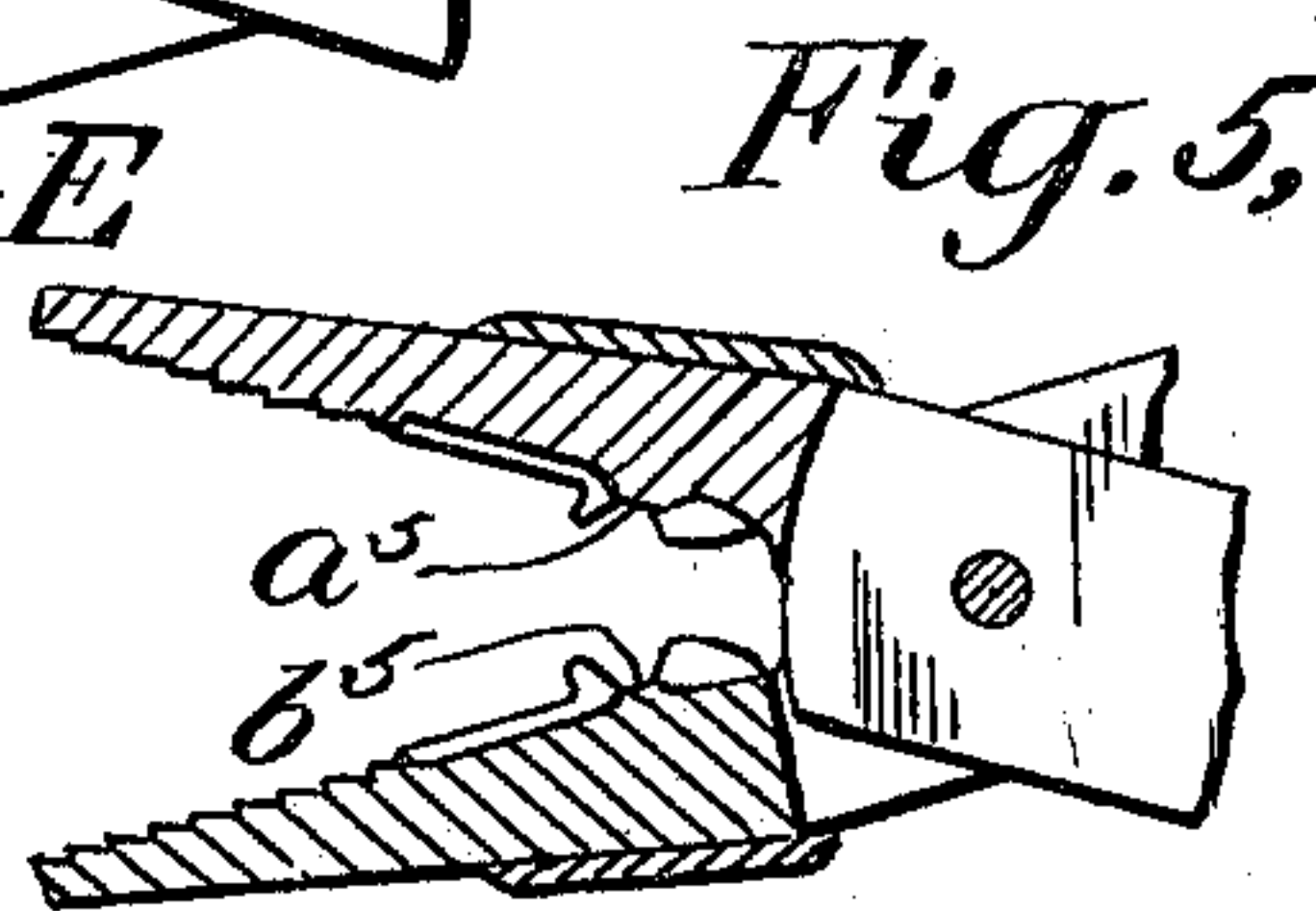
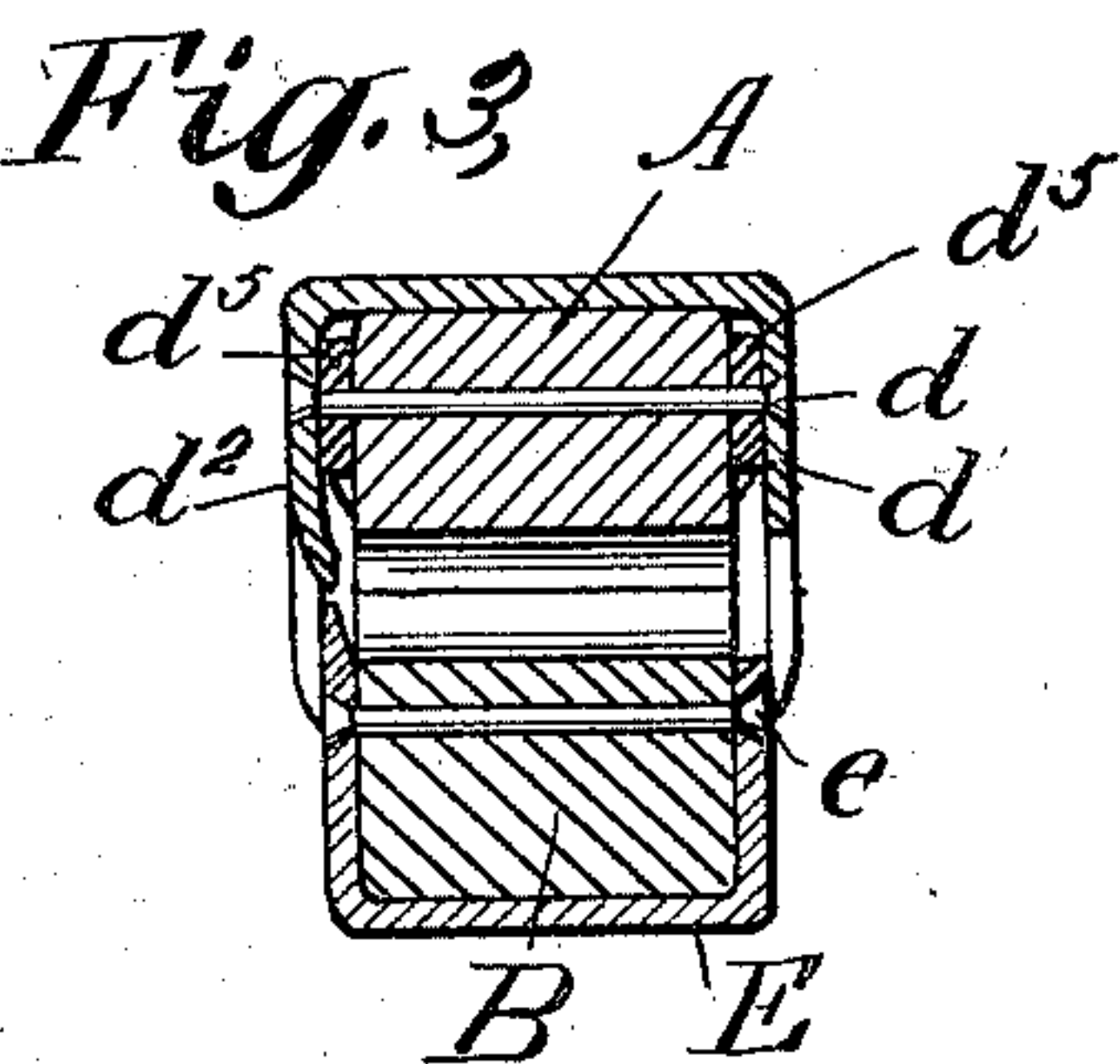
APPLICATION FILED APR. 14, 1902.

NO MODEL.



WITNESSES:

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## UNITED STATES PATENT OFFICE.

EDWARD E. KLEINSCHMIDT, OF NEW YORK, N. Y.

## PLIERS.

SPECIFICATION forming part of Letters Patent No. 731,688, dated June 23, 1903.

Application filed April 14, 1902. Serial No. 102,805. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD E. KLEINSCHMIDT, a citizen of the United States, and a resident of the borough of Manhattan, in the county of New York and State of New York, (and whose post-office address is No. 122 Fulton street, in the city of New York, N. Y.,) have invented an Improvement in Pliers, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to pliers, and has for its object the production of pliers provided with a cutting attachment and with compressing or crushing surfaces for use more particularly for the removal of the insulation on electrical or other wiring.

I will describe a construction embodying my invention and point out the novel features thereof in the claims.

In the accompanying drawings, Figure 1 is a side view of a pair of pliers embodying my invention, the jaws being shown open. Fig. 2 is a longitudinal section of the same, on an enlarged scale, the handles being broken off. Fig. 3 is a transverse sectional view on the plane of the line 3 3 of Fig. 1. Fig. 4 shows to the right a plan view of the lower jaw and to the left an inverted plan of the upper jaw, and Fig. 5 is a central longitudinal section of a slightly-modified form of construction.

Similar letters of reference in the several views indicate similar parts.

Referring to the drawings, the two members of the pliers are pivoted in the usual manner on pin C. A designates the upper member or jaw, and B the lower member or jaw. The device is provided with the usual or any suitable form of handles *a* and *b*. The jaws are provided with nipping-surfaces *a*<sup>3</sup> and *b*<sup>3</sup>, respectively, scored or roughened, so that the pliers may be used for the ordinary purposes for which such devices are employed. Extending transversely of the jaw A is a projecting surface *a*<sup>2</sup>, and extending transversely of the jaw B is a complementary surface *b*<sup>2</sup>. These surfaces are formed by cutting away the inner walls of the jaws at *a'* and *b'* both in front and in the rear of said surfaces. The surfaces *a*<sup>2</sup> and *b*<sup>2</sup> lie substantially in the plane of the gripping or nipping surfaces *a*<sup>3</sup> and *b*<sup>3</sup> of the two jaws and constitute the members

of an anvil adapted to receive and compress or crush the insulation when the pliers are closed. The surfaces of the two parts of the anvil may be plain or roughened. The form which in practice will be found preferable is that in which one of the surfaces, as *b*<sup>2</sup>, is provided with a groove, which may be V-shaped in section, as shown in Fig. 2. The other surface may be formed with a rib made more or less sharp, or it may be rounded along its edge, as shown in Fig. 2. The purpose or function of the anvil is to compress or crush the insulation, and a better grip may be obtained on the insulation and slipping or turning prevented by making the surfaces of the anvil members rough or of such form as to provide a seat for the wire. The anvil members are preferably integral with their respective jaws and formed by cutting out the jaws in the manner indicated.

Coöperating with the anvil members to accomplish the desired result I provide both jaws with cutting-blades, so that a determinate length of the insulation may be cut and the crushing confined between the cut lines. In order to cut the insulation, I provide the jaw A with a blade D, shaped to fit the jaw and which is secured thereto in any suitable way, as by rivets *d*. The said blade, as shown in the drawings, is made in one piece, with the side portions *d*<sup>1</sup> and *d*<sup>2</sup> extending over and embracing the sides of the jaw A. The depending portions of the blade D are preferably made with rounded or V-shaped openings *d*<sup>3</sup> and *d*<sup>4</sup>, respectively. These openings are beveled or sharpened to provide suitable cutting edges.

Coacting with the blade D is a similar blade E, secured to jaw B by a rivet *e*. The blade E is provided with the cutting edges *e*<sup>3</sup> and *e*<sup>4</sup> on opposite sides of the jaw. To enable the cutter to perform its work, one of the blades, as D, is wider than the other and is held from the jaw A by spacing-blocks *d*<sup>5</sup>. This permits the blade D in closing to clear the edges of the blade E and to allow the cutting edges to pass through the insulation. The cutting-blades are so arranged relatively to the anvil members that the latter extend transversely of the jaws substantially central of the cutting edges of the blades. The anvil members, if continued or projected,



would lie slightly above the meeting-points of the inclined edges of the blades of the cutter. This prevents the blades from cutting through the metallic core of the wire, as the core prevents the closing of the jaws beyond what is necessary to cut and crush the insulation.

Obviously the blades need not be made in a single piece. Instead of the form shown each jaw may be provided with a set of two cutting-blades, one blade of each pair secured to the sides of the jaw in any suitable and well-known manner.

In Fig. 5 I have shown the two members of the anvil provided with flat surfaces  $a^5$  and  $b^5$ , respectively; otherwise the construction is the same as hereinbefore described.

In Fig. 2 I have shown a piece of insulated wire in position to be operated upon, with the upper jaw in dotted lines resting upon the insulation. The closing movement of the jaws will cut the insulation transversely, the cut extending to but not into the metallic core of the wire. At the same time the insulation will be compressed or crushed longitudinally between the cut surfaces. The wire may then be removed and the crushed portion of the insulation readily removed by the nipping-surfaces  $a^3$  and  $b^3$ . It will be seen that my invention provides a means for readily removing a portion of the insulation at any part of the wire.

Upon one side of the jaws I provide cutting-blades  $I I'$ , whose edges meet when the jaws are closed. These blades are for the purpose of cutting entirely through the wire when such is desirable or necessary.

It is obvious that the cutting-blades may be made integral with the two parts constituting the pliers or with the upper and lower jaws of the pliers instead of being made separate and riveted thereto, as above described.

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

1. A stripping-tool consisting of a pair of pliers having cutting means on both sides of the members whereby a section of the insulation may be cut transversely and on one of

the members a seat or rest for the object to be cut and on the other member a cooperating projection whereby the said insulation may be crushed, substantially as described.

2. A stripping-tool consisting of a pair of pliers having cutting means on both sides of the members whereby a section of the insulation may be cut transversely and between such cutting means a seat or rest for the object to be cut, and a cooperating projection whereby the said insulation may be crushed, substantially as described.

3. A stripping-tool consisting of a pair of pliers having cutting means on both sides of the members whereby a section of the insulation may be cut transversely and on one of the members a V-shaped seat or rest for the object to be cut, and on the other member a cooperating projection whereby said insulation may be crushed, substantially as described.

4. A stripping-tool consisting of a pair of pliers having cutting means on both sides of the members whereby a section of the insulation may be cut transversely, and on one of the members a V-shaped seat or rest for the object to be cut, and on the other member a cooperating wedge-shaped projection whereby the said insulation may be crushed between the faces of said seat.

5. A stripping-tool consisting of a pair of pliers, both members of which are provided with cooperating V-shaped cutting-blades, and compressing, crushing or splitting seats extending transversely of said members between said cutting-blades, said seats extending above the meeting-point of the blades of each cutter whereby upon closure of the pliers the insulation of the wire only will be acted upon.

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

EDWARD E. KLEINSCHMIDT.

Witnesses:

M. S. AVERY,

H. G. HUGHES.