W. J. BAKER.

PLIERS FOR CLAMPING CLIPS ON WIRES.

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INVENTOR

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ATTORNEYS.
To all whom it may concern:

Be it known that I, WILLIAM J. BAKER, residing at Southgate, in the county of Campbell and State of Kentucky, have invented a new and improved Pliers for Clamping Clips on Wires, of which the following is a specification.

My invention seeks to provide a simple and easily-operated pliers for locking clips or clips around wire strands, and more particularly for acting on that form of clip or wire clamp disclosed in my pending application filed March 18, 1903, Serial No. 95,885.

My invention in its generic nature comprises a pair of plier-jaws linked together and having inwardly-extending opposing teeth or projections and a movable bed for supporting the clamp or clip member and moving it up into a desired position relatively to the projections of the jaws as they close against the said clip-tongue.

In its more complete nature my invention embodies a peculiar co-operative arrangement of the plier-jaws, link-bars for joining them, an anvil or bed-plate movable vertically and automatically as the jaws close, and a pair of opposing clip-tongue-turning plates connected one to each jaw, and means forming a part of said plates for engaging the anvil or bed-plate to move it toward the opposing intermeshing faces and the turning-plates as they close on each other, and in its still more subordinate features my invention consists of certain details of construction and peculiar combination of parts, all of which will hereinafter be fully described and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved pliers, the jaws being shown in their closed position. Fig. 2 is a side view, the jaws being open and the clamp member or clip and the wires being shown supported thereon. Fig. 3 is a vertical longitudinal section of the same, the jaws being closed and the clip member closed over the wire strands. Fig. 4 is a detail view of the jaws detached. Fig. 5 is a detail view of the vertically-movable anvil or bed-plate. Fig. 6 is a plan view of the same, the jaws being open. Fig. 7 is a detail view of one of the clip members. Fig. 8 shows a clip member clamped upon the wire strands.

In the practical construction of my appliance the plier-jaws A and B include opposing heads a and b integrally formed with the handle portions and which cross each other in the usual manner, and the heads a and b have shoulders a' b' to limit the spread movement of the jaws.

To the inner or clamping face of the head a is fixedly mounted a die-plate C, bifurcated at the lower end to form inwardly-projecting ears c c and provided at the upper edge at the opposite ends with inwardly-extending projections or teeth c' c', disposed approximately at right angles to the body portion c'.

To the head b is secured a die D, which opposes the die C, and the said die D has a centrally-disposed lug d', adapted to extend between the ears c of the plate D when the jaw-heads are closed together, and the said lug has its upper edge beveled, as at d', to form a cam member, the purpose of which will presently appear.

At the upper edge the die D has a single central projection or tooth d', adapted to extend between the projections c' c' in the opposing die C when the heads are closed, the said projections c' c' and d' being arranged to interlap, as clearly shown in the drawings.

E E designate a pair of horizontally-disposed links that straddle the cross portions of the jaws, one of said links being on each side of the jaws and pivotally connected with the jaw-heads, as at e e, and each link is also formed with a vertical groove e on the inner face at a point midway the ends.

Now comes an essential feature of my invention, being that of the anvil or bed-plate, which moves automatically upward in a direction against the projections c' c' and d', whereby to rigidly hold the clip and the wires in place as the opposing dies D and C close against and turn the tongues of the clips from the wire strand or strands.

The anvil or bed-plate F consists of a flat horizontally-disposed member having a length equal the width of the jaws and integrally formed with a pair of oppositely-disposed legs ff, which are guided by the links E and move vertically in the grooves e thereof, and
the lower ends of the legs \( f \) have outwardly-projecting heel portions \( f^1 \), that limit the upward thrust of the member \( F \) and prevent its becoming detached or dropping out when the jaws are wide open.

The particular form of clip or clamp member hereinafter referred to and illustrated in Fig. 7 essentially comprises a base portion 1, a central portion 2, bent up at one side, and a pair of end tongues 3, bent up at the opposite ends of the other side, and it may also have centrally-disposed short bent-up tongues 4 in transverse alignment with the tongues 3, which are intended to project between the wire strands; but the tongues 4 may be omitted without affecting the desired purposes of my invention.

In operation the clip \( G \) is placed on the anvil \( F \), as shown in Fig. 2, with its central tongue against the central tooth or projection \( d^1 \) on the die \( D \) and with its end projections 3 against the end teeth or projections \( c^1 \) and \( c^2 \) on the die \( C \), after which the two wire strands \( e^1 \) and \( e^2 \), which are straight or curved, are seated in a horizontal plane on the clip \( G \), as clearly shown in the aforesaid Fig. 2. Now by closing the jaws the member \( d^1 \) will press against the clip-tongue 2, while the projections \( c \) and \( c^1 \) similarly engage the clip-tongues 3. As the two jaws close the cam-lug \( d \) on the member \( D \) engages the under side of the member \( F \) of the anvil and forces the said anvil upward toward the interlapping projections \( c^1 \) and \( d^1 \) simultaneously with the inward or closing movement of the jaws, and thereby firmly compresses the clip-bottom with the wires against the under side of the said projections \( c^1 \) and \( d^1 \) and firmly holds the clip-wires in a desired rigid condition to permit of an effective and close bending of the tongues 3 and 4 over the wires to firmly clamp them together in the manner clearly shown in Fig. 8.

While I have shown my appliance as particularly adapted to clamp upon the wires the special construction of clip shown, it is manifest the correlative positions of the interlapping projections on their two opposing dies may be varied or modified to suit clips having a different arrangement of vertical projections or tongues without departing from the scope of the appended claims.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is:

1. A pliers for clamping clips on wires, comprising a pair of jaws linked together, said jaws being provided with projections adapted to interlap when they are closed, and an anvil or bed-plate loosely supported on the jaws under the interlapping projections, for the purposes stated.

2. A pliers for clamping clips onto wires, comprising a pair of jaws linked together and provided with projections adapted to interlap when the jaws are closed, an anvil or bed-plate loosely supported on the jaws under the interlapping portions and automatically movable toward the said projections when the jaws are closed, as set forth.

3. A pliers for clamping clips on wires, comprising a pair of jaws linked together, said jaws being provided with projections adapted to interlap when the jaws are closed, an anvil or bed-plate loosely supported on the jaws under the interlapping projections, and means for automatically moving the said anvil or bed-plate toward the said projections when the jaws are closed, as set forth.

4. An appliance for the purposes described, comprising a pair of opposing plier-jaws, the links pivotally connected at their opposite ends to said jaws, a die-plate on each jaw, and the die-plates having projections adapted to interlap with each other when the jaws are closed, one of the said die-plates having a cam portion, a bed member for supporting the clip and the wires as they are actuated on, and having movement vertically between the jaws and adapted to be engaged by the aforesaid cam portion and moved upward as the jaws are closed, for the purposes specified.

5. An appliance as described, the combination with the opposing jaws having projections adapted to interlap when the jaws are closed, link members, one on each side of the jaws pivotally connected at their ends to the said jaws, each of said link members having a vertical groove on its inner side; of the anvil or bed-plate \( F \) comprising a horizontal member adapted to support the clip and the wires, and pendent legs slidably mounted in the grooves of the links, said legs having outwardly-turned stop members at their lower end and means carried on one of the jaws for engaging the said die or bed plate to move it in the direction of the clamping-faces of the jaws when the said jaws are closed together, all being arranged substantially as shown and for the purposes described.

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Witnesses:

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