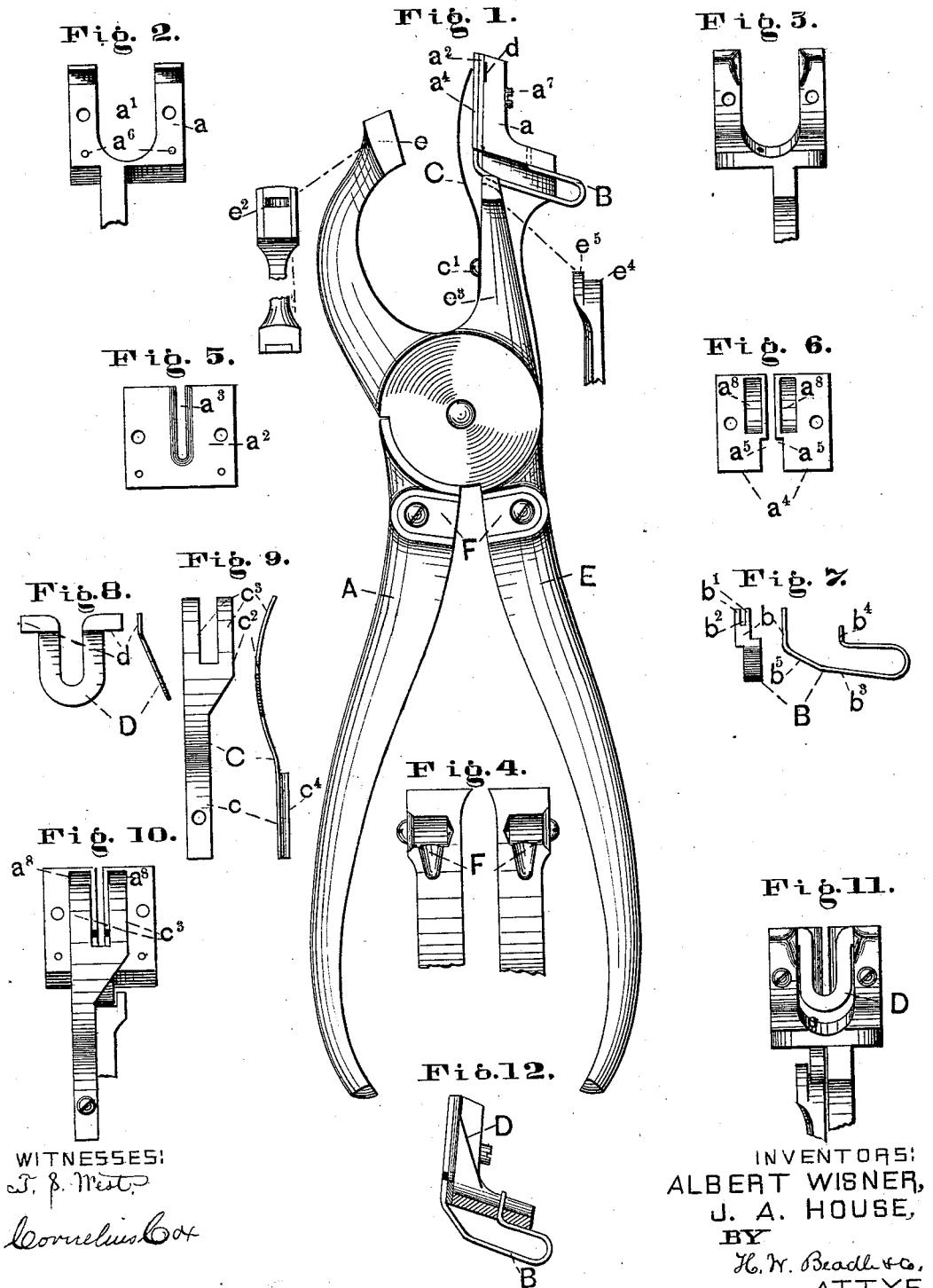


A. WISNER & J. A. HOUSE.
 Tool for Fastening Buttons to Boots and Shoes.

No. 206,288.

Patented July 23, 1878.



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UNITED STATES PATENT OFFICE.

ALBERT WISNER AND JAMES A. HOUSE, OF BRIDGEPORT, CONNECTICUT;
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IMPROVEMENT IN TOOLS FOR FASTENING BUTTONS TO BOOTS AND SHOES.

Specification forming part of Letters Patent No. 206,288, dated July 23, 1878; application filed
June 18, 1878.

To all whom it may concern:

Be it known that we, ALBERT WISNER and J. A. HOUSE, of Bridgeport, of the county of Fairfield and State of Connecticut, have invented a new and useful Tool for Fastening Buttons to Shoes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention is an improvement upon the tool patented by Albert Wisner March 26, 1878, No. 201,858; and consists mainly, first, in the combination, with a toe or projection attached to one of the halves of a pair of clinching-pinchers, of a spring clamping-piece attached to the other half, the construction being such that by the proper movement of the pinchers the toe upon one is caused to actuate the spring upon the other, by means of which action the staple is clamped and securely held while being clinched; and, second, in the combination of a slotted pincher-jaw with a yielding spring-plate for guiding the staple, when inserted in the tool, in its movement back to the clinching-point.

It consists, further, in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawings, Figure 1 represents a side elevation of our improved tool; Figs. 2 and 3, elevations of the jaw *a*, taken from opposite sides; Fig. 4, an edge view of the cutters; Fig. 5, a plan view of the plate *a*²; Fig. 6, plan views of the plates *a*⁴; Fig. 7, views of the clamping-spring B; Fig. 8, views of the spring D; Fig. 9, views of the spring C; Fig. 10, a face view of the jaw *a*, with the spring C in position; Fig. 11, a rear view of the jaw *a* with the spring D in position, and Fig. 12 a side elevation of the jaw *a* with the clamping-spring in position.

To enable others skilled in the art to make and use our improved tool, we will now proceed to describe fully its construction and manner of operation.

A and E, Fig. 1, represent the two main parts of the pinchers, which may be constructed generally in any proper manner. *a*, Figs. 1 and 2, represents the head or jaw of the part A, consisting of a block of any proper form, having a central opening, *a*¹, as shown. *a*²,

Fig. 5, represents a plate having a central recess, *a*³, which is attached to the face of the jaw by any proper means, in such position that its central recess will be in line over the central opening of the jaw, as shown. The edges of this recess may be beveled upon their lower side, if desired, for the purpose of facilitating the passage of the button to place.

*a*⁴ represent plates adapted in size and shape to cover the plate *a*² upon each side of the central recess, as shown, each of which is provided upon its inner edge, at the rear end, with a recess, *a*⁵, as shown, the two uniting to form a square opening for the reception of the staple and the clamping-piece, by means of which latter the former is securely held during the clinching operation. *a*⁶, Fig. 2, represent studs rising from the jaw, and *a*⁷, Fig. 1, fasteningscrews, which, in connection with proper openings, may be employed, if desired, to unite the plates *a*² *a*⁴ to the jaw. *a*⁸, Fig. 6, represents a curved recess in the face of each plate *a*⁴, the purpose of which will be hereinafter described. B, Figs. 1 and 7, represents a metal piece, which serves as a clamping-spring for holding the staple securely while the same is being clinched. *b* represents a horizontal portion of the same when the tool is held in a horizontal plane, constituting the clamping-plate proper, which is adapted to move in a longitudinal direction in the recess between the plates *a*⁴, and is provided at its front end with the fingers *b*¹ *b*¹, adapted to bear against the legs of the staple, and the consequent recess *b*², adapted to receive the eye of the button. *b*³ represents a vertical portion, which is united below to one side of the horizontal portion *b*, forming the clamping-plate proper, and is bent above upon itself to form a spring portion, as shown. *b*⁴ represents a tongue or stud at the extreme end of the spring portion, which, when in place, extends into a proper recess in the jaw, for the purpose of holding the piece properly in place. *b*⁵ represents an inclined face upon the vertical portion of the piece, the purpose of which will be explained hereinafter. C, Figs. 1 and 9, represents a spring-plate, consisting of a shank portion, *c*, at the rear end, which is secured to the arm of the jaw by means of a screw, *c*¹, Fig. 1, or any other proper means, and a vibrating portion, *c*², at the front end,

which is provided with fingers e^2 , located on the sides of the opening, as shown.

The ends of the fingers, it will be observed, rest in the recesses a^2 of the plates a^1 , as shown in Fig. 10. The front end of the spring also, it will be observed, is bent in such manner as to stand out from the face of the jaw, as shown in Fig. 1, the purpose of which will be explained hereinafter.

e^4 , Fig. 9, represents a right-angled flange upon the shank portion, by means of which the plate is held from movement in a lateral direction.

D, Figs. 8 and 11, represents a U-shaped spring-plate, having arms d d , extending outward on each side in a lateral direction, by means of which it is securely held between the face of the jaw and the plate a^2 , as shown in Figs. 1 and 11. The rear end of the plate is bent in an upward direction, as shown in Fig. 12, for the purpose of holding the button properly, as will be hereinafter explained.

e represents the head or jaw of the part E, which is preferably provided with an inserted piece of hard metal, having the clinching-recess e^2 , as shown. e^3 represents a toe or projecting piece attached to this part, and forming a rigid portion of the same, which is provided at its front end with a cam-surface, e^4 , and a guard-flange, e^5 , as shown. When the parts of the tool are united and the jaws are open, this cam-surface e^4 of the toe, it will be observed, is in line opposite the inclined face of the clamping-piece B, as shown in dotted lines, Fig. 1, but not in close contact therewith. As the jaws are brought together, however, this cam-surface is caused to bear upon the inclined face of the clamping-piece and move the same forward to clamp the staple. The guard-flange e^5 , it will be observed, assists in holding the clamping-piece B in its proper position.

F F, Figs. 1 and 4, represent cutters of any proper construction, which are located upon the parts A E in rear of the pivot-point, as shown.

The operation of the tool is substantially as follows: The staple having been placed in the eye of the button, the two are inserted in the central recess of the tool, and carried backward in the same to the clinching-point at the rear end of the recess, the button being upon one side of the plate a^2 and the staple upon the other. The spring D, it will be understood, is pressed inward, in order to permit the movement of the button and staple; but when the clinching-point has been reached and the spring has been released, the same, by its reaction, draws on the button and pulls the bend of the staple down into the recess, for the purpose of properly holding the same.

The spring-plate e^1 serves to guide the staple properly in its movement, and also to sus-

tain the same at the end of the recess in its proper clinching position until the jaws come together. The free ends of the spring-plate are held from lateral movement by the curved recesses a^3 , in which they rest, so that they cannot be crowded to either side by the tendency of the staple to roll or incline to either side. The spring also, being elastic, readily yields under the pressure of the jaws when the same are brought together, for the purpose of avoiding interference with the clinching action of the same.

As the jaws come together, also, the toe-piece of the part E is brought in contact with the piece B, and the horizontal portion of the latter is consequently pressed forward against the action of its spring portion, for the purpose of clamping the staple securely before the points of the same enter the leather or other material.

The cutters are employed in the usual manner for cutting the fasteners, when desired, for the purpose of removing the buttons from the shoes. The construction is such, it will be observed, that the buttons, when severed from the shoe, are caught and held in a recess until released by the operator.

Some of the advantages of the described construction are as follows: The tool is simple in its construction and effective in its operation; it can be manufactured at a reasonable cost, and those parts liable to injury from use may be readily replaced at a trifling expense. The tool also is adapted for the double purpose of applying the fasteners to the shoes and removing the same therefrom.

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

1. The combination of the clamping-piece B upon one part of the pinchers with the toe e^3 upon the other part, substantially as described.

2. In combination with the jaw A, the spring clamping-piece, substantially as described.

3. In combination with the spring C, the jaw a , having the curved recesses a^3 , as described.

4. In combination with the clamping-piece B, the toe-piece e^3 , having the cam-surface e^4 and guard-flange e^5 , as described.

5. The spring-plate C, having its shank e , provided with a right-angled flange, e^4 , as and for the purpose described.

This specification signed and witnessed this 10th day of June, 1878.

ALBERT WISNER.

JAMES ALFORD HOUSE.

Witnesses:

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