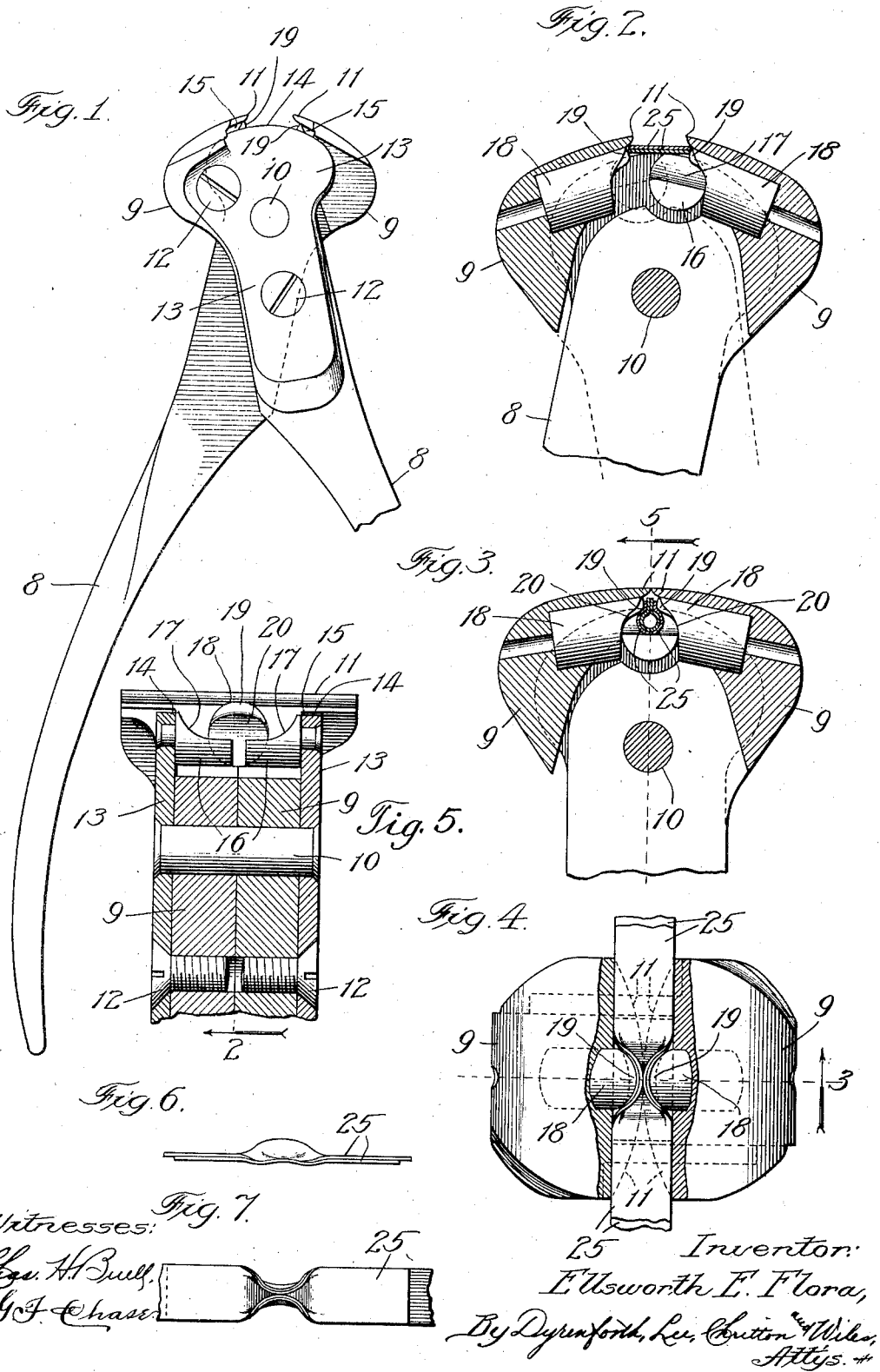


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 TOOL FOR USE IN FASTENING METAL STRIPS.  
 APPLICATION FILED JULY 1, 1911.

1,038,109.

Patented Sept. 10, 1912.



# UNITED STATES PATENT OFFICE.

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TOOL FOR USE IN FASTENING METAL STRIPS.

1,038,109.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed July 1, 1911. Serial No. 636,520.

*To all whom it may concern:*

Be it known that I, ELLSWORTH E. FLORA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tools for Use in Fastening Metal Strips, of which the following is a specification.

My object is to provide a handy tool of novel and improved construction adapting it for fastening metal strips together, in a simple, peculiar, and effective manner.

The peculiar form of fastening which my tool is designed to produce, is shown and described in a separate concurrent application for Letters Patent, filed by me April 6, 1911, Serial No. 619,338, and entitled "Improvement in the art of joining metal-strap ends."

In the accompanying drawings which illustrate my improved tool in one desirable form—Figure 1 is a side elevation with a part of one handle broken away; Fig. 2, an enlarged broken section of the head of the tool, the section being taken on line 2 in Fig. 5, showing the jaws in initial position; Fig. 3, a view similar to Fig. 2, taken on line 3 in Fig. 4 and showing the position of the parts at the completion of an operation; Fig. 4, a plan view of the head, with the jaws closed as represented in Fig. 3, parts of the jaws being broken away to display the work; Fig. 5, a section on line 5 in Fig. 3, and Figs. 6 and 7, broken edge and face views showing strap-ends joined together by the interlocking crimps produced by the tool.

The tool, as I prefer to provide it, is of the general form of a pair of pliers, with handles 8 and cooperating jaws 9, the parts being held together by a pivot-pin 10. Each jaw is provided with a widened and extended wedge-shaped lip or terminal 11, curved as indicated by dotted lines in Fig. 4, the terminals meeting at their centers when the jaws are closed. Fastened to each jaw by screws 12 and pin 10 is a side-plate 13, having an end bearing-surface 14 in approximately the arc of a circle of which the pin 10 is the center. The bearing-surfaces 14 and wedge-shaped terminals 11, are in arcs a distance apart slightly exceeding the thickness of the pair of strips or strap-ends 25 to be crimped, to present, in effect, transversely extending strip-edge receiving grooves 15.

Carried by or integral with each side-

plate 13, is an inwardly projecting lug 16 having a concave bearing-face 17. The lugs are moved into alinement with each other as the jaws are closed and their faces 17, together, form a transverse bearing shoulder for the strips during the crimping operation. At the center of each jaw, beneath the terminal 11, is a crimping projection 18, presenting a shallow, rounded strap-edge engaging shoulder 19, at the base of the beveled edge of the terminal, and a retracted surface 20. The shoulder 19 projects part way over the adjacent lug 16.

In practice, the strips or strap-ends are caused one to overlies the other in close contact, and are grasped by the tool in the manner shown in Fig. 2. As the tool grasps the strips, its wedge-shaped terminals 11 press the strips against the bearing-surfaces 14, causing opposite edges of the strips to enter the grooves 15 and be engaged by the blunt crimping shoulders 19. These shoulders flare relatively in the outward direction, as indicated, so that when initial pressure is exerted upon handles 8 to close the jaws 9, the crimping shoulders curl the strip edges outwardly, due to the fact that the shoulders 19 engage under the edges of the strips and moving in the arc of a circle force the edges in an outward direction. Further pressure upon the handles bends and cups the strips between their edge portions against the transverse bearing shoulder formed by the concave surfaces 17, so that in the final movement of the jaws, which causes the terminals 11 to close together, the shoulders 19 force the outwardly curled edge portions of the strips against each other, as indicated in Fig. 3. The shoulders 19 and 17 cooperate to shape the crimped portion of the strips into the form shown in Figs. 6 and 7, whereby the strips are firmly interlocked one with the other.

The foregoing description is intended to convey a clear understanding of my improved tool in what I now believe to be the best form of its embodiment, and no undue limitation should be understood therefrom. It is my intention to claim all that is novel in my invention, and that the claims shall be construed as broadly as the prior state of the art may warrant.

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

1. A tool for fastening metal strips, hav-

ing cooperating jaws provided with extended terminals, bearing-surfaces for the strips toward opposite ends of the terminals and forming therewith transverse strip-edge receiving grooves, a strip-edge engaging and crimping shoulder on each jaw extending across said groove, and a transverse bearing-shoulder for the strip beneath the crimping-shoulder, for the purpose set forth.

2. A tool for fastening metal strips, having cooperating jaws provided with extended terminals, bearing-surfaces for the

strips toward opposite ends of the terminals and forming therewith transverse strip-edge receiving grooves, a rounded strip-edge engaging and crimping shoulder on each jaw extending across said groove, and a concave transverse bearing-shoulder for the strip beneath the crimping-shoulder, for the purpose set forth.

ELLSWORTH E. FLORA.

In the presence of—

J. G. ANDERSON,

R. A. SCHAEFER.