

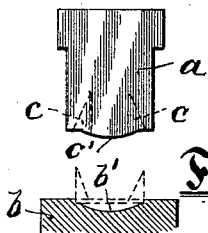
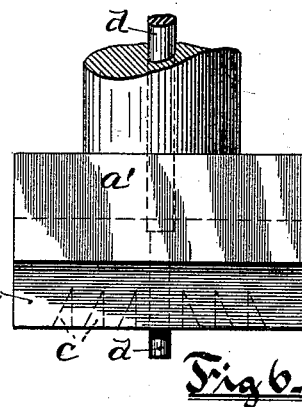
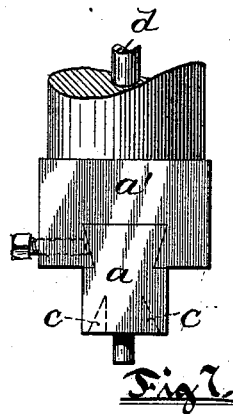
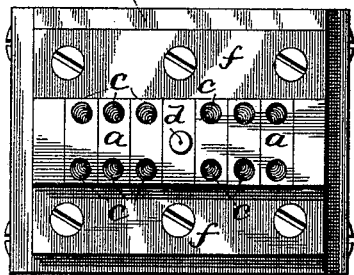
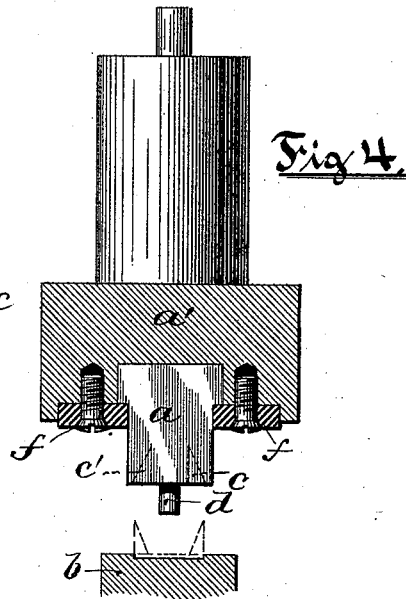
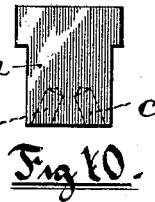
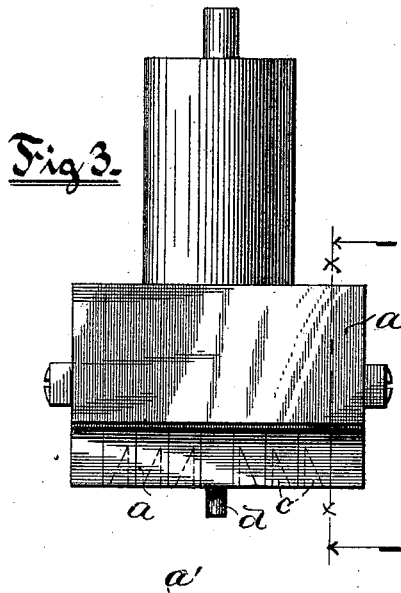
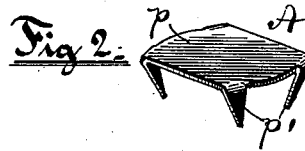
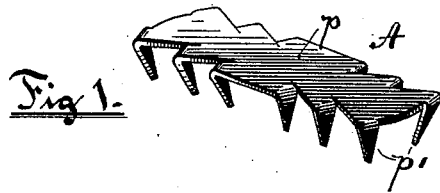
(No Model.)

W. O. TALCOTT.

DIE FOR BENDING TEETH OF SHEET METAL BELT FASTENERS.

No. 525,124.

Patented Aug. 28, 1894.



Witnesses

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# UNITED STATES PATENT OFFICE.

WALTER O. TALCOTT, OF PROVIDENCE, RHODE ISLAND.

## DIE FOR BENDING TEETH OF SHEET-METAL BELT-FASTENERS.

SPECIFICATION forming part of Letters Patent No. 525,124, dated August 28, 1894.

Application filed April 9, 1894. Serial No. 506,821. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER O. TALCOTT, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Dies for Bending the Teeth of Sheet-Metal Belt-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In United States Patent No. 431,103, granted to E. L. Budlong July 1, 1890, is described a novel belt-fastener; the same being made of sheet-metal and having the teeth or prongs thereof arranged along the edges of the plate and obliquely to its axes, the teeth being bent downwardly and past the plane of the perpendicular.

The object I have in view in my present invention is to provide means for deflecting or setting the prongs of sheet metal belt-fasteners, such for example as the patented fastener just referred to.

To that end my invention consists essentially of a die having a series of oblique or inclined holes formed in its working face, said holes being so located and arranged that the teeth of the fastener upon being pressed therein are simultaneously bent or deflected from the plane of a perpendicular, thereby imparting to them a hooked form; it further consists in the combination with a fixed die having a concave face, of a movable die having a convex face in which is formed a series of oblique or inclined holes, all as will be more fully hereinafter set forth and claimed. By means of my improved die the teeth of the fastener may be bent more uniformly and rapidly. Moreover, the die itself is comparatively inexpensive; it is easily set and adjusted and is both strong and durable and not liable to become broken in use, since the bending cavities present no angular surfaces. Another advantage is that the flat base of the fastener may be converted into a slightly curved or convex shape simultaneously with

the act of deflecting the prongs past the plane of the perpendicular.

In another patent granted to the said Budlong, No. 503,035, is described a die for bending the teeth of the fastener past the plane of the perpendicular. In that case the prongs were liable to be irregularly or unevenly bent, from the fact that the prong-deflecting die did not sufficiently guide the points of the prongs. Another defect of said die was that unless all the prongs were suitably bent in the preceding operations such improperly bent teeth could not then engage the working side of the die, thus producing imperfect and unsalable fasteners.

In my present invention the defects just referred to have been overcome. Each die-cavity is independent with respect to the other cavities and is adapted to receive a tooth and at the same time to centralize it and bend it to the required shape or angle. And since all the cavities of the die are alike in form it follows that the several teeth of the fastener will at one operation be simultaneously centralized and deflected, thereby not only greatly reducing the percentage of imperfect fasteners but at the same time so bending the prongs that the points thereof along each edge of the fastener-base are in true alignment. The present die is the one referred to in my pending application for Letters Patent, Serial No. 506,337, filed April 4, 1894.

In the accompanying sheet of drawings, Figures 1 and 2 are perspective views of sheet-metal belt-fasteners, provided with teeth or hooks bent or inclined from the plane of the perpendicular. Fig. 3 is a side view of my improved die adapted for thus bending the fastener-teeth. Fig. 4 is a transverse sectional view, taken on line *x x* of Fig. 3, and also showing the stationary or fellow die member. Fig. 5 is an inverted face view of the die. Fig. 6 is a side view of the die, the die-cavities being formed in a single block. Fig. 7 is an end view of the same. Fig. 8 is an end view of the two die-members having curved faces arranged to bend the plate of the fastener simultaneously with the bending of the teeth. Fig. 9 is an end view

of the thus bent fastener, and Fig. 10 is an end view of the die provided with a modified form of the bending cavities.

Sheet-metal belt-fasteners having straight teeth, that is, teeth bent at substantially right angles with the plane of the table or base of the fastener, are well-known. It is found to be advantageous to employ fasteners having the teeth further bent or "hooking," as it is sometimes termed, that is, fasteners in which the teeth are inclined past the plane of the perpendicular. Such a fastener is represented in the drawings at A, Figs. 1 and 2; the prongs *p'*, integral with the base *p*, being inclined from the perpendicular. In order to thus bend the prongs I have devised the die *a* forming the subject of my present invention. The die may be removably secured to any suitable holder or head *a'*, adapted to be secured to the plunger of a press, and provided with any well-known knock-off device; as for example, the movable rod *d* extending vertically through the die and holder and arranged to contact with a stop as common. The die *a* may be formed in one piece, as in Figs. 6 and 7, or it may be composed of a series of interchangeable multiple smaller dies, as shown in Figs. 3, 4 and 5. In the latter case removable side cheeks *f* are employed for clamping them in position in the holder.

The lower or working face of the die is provided with a series of prong-bending cavities *c*, each being drilled therein at an angle with both axes of the working face. The shape of the cavity or recess *c* may be cone-shaped, as shown say in Figs. 3 and 5, or uniform in diameter throughout its length or depth, as in Fig. 10.

In order to deflect or incline the previously bent teeth the fastener is first placed, inverted, on the seat of the lower die-member *b*, as indicated in Fig. 4, followed by depressing the die *a*, thereby forcing the sides of the die-cavities *c* into engagement with the corresponding prong-points, thus simultaneously centralizing and gradually deflecting all of the prongs uniformly and completing the

bending operation. The fastener after being thus bent and detached from the die is represented at A in Fig. 1.

When the fastener-plate or base *p* is to be curved or bent I employ a stationary die-member *b* having a concave seat *b'*, the corresponding or coacting face *c'* of the upper die *a* being convex. See Fig. 8. In this case the several prongs are inclined simultaneously with the bending of the base. Fig. 9 is an end view of a thus-bent sheet-metal belt-fastener.

I claim as my invention—

1. The prong centralizing and bending die, substantially as hereinbefore described, provided with a series of suitably arranged independent holes or die-cavities in its working face, each of said die-cavities being substantially cone-shape and having its longitudinal axis inclined with respect to the die-face, constructed and arranged whereby the previously bent prongs of a belt-fastener upon being pressed therein are simultaneously centralized and bent or inclined from the plane of a perpendicular.

2. The prong-bending die hereinbefore described, consisting of the head or holder portion, a series of die-blocks removably secured to said holder having oblique holes or bending cavities *c* formed therein, and a clearing device attached to and forming a part of the die.

3. The combination with a fixed die having a concave face, of a movable fellow die having a convex working surface provided with a series of obliquely formed bending cavities *c* arranged to receive and deflect the prongs of belt-fasteners, and means for clearing or detaching the fasteners from the die, substantially as hereinbefore set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

WALTER O. TALCOTT.

Witnesses:

GEO. H. REMINGTON,  
CHARLES H. HISCOX.