

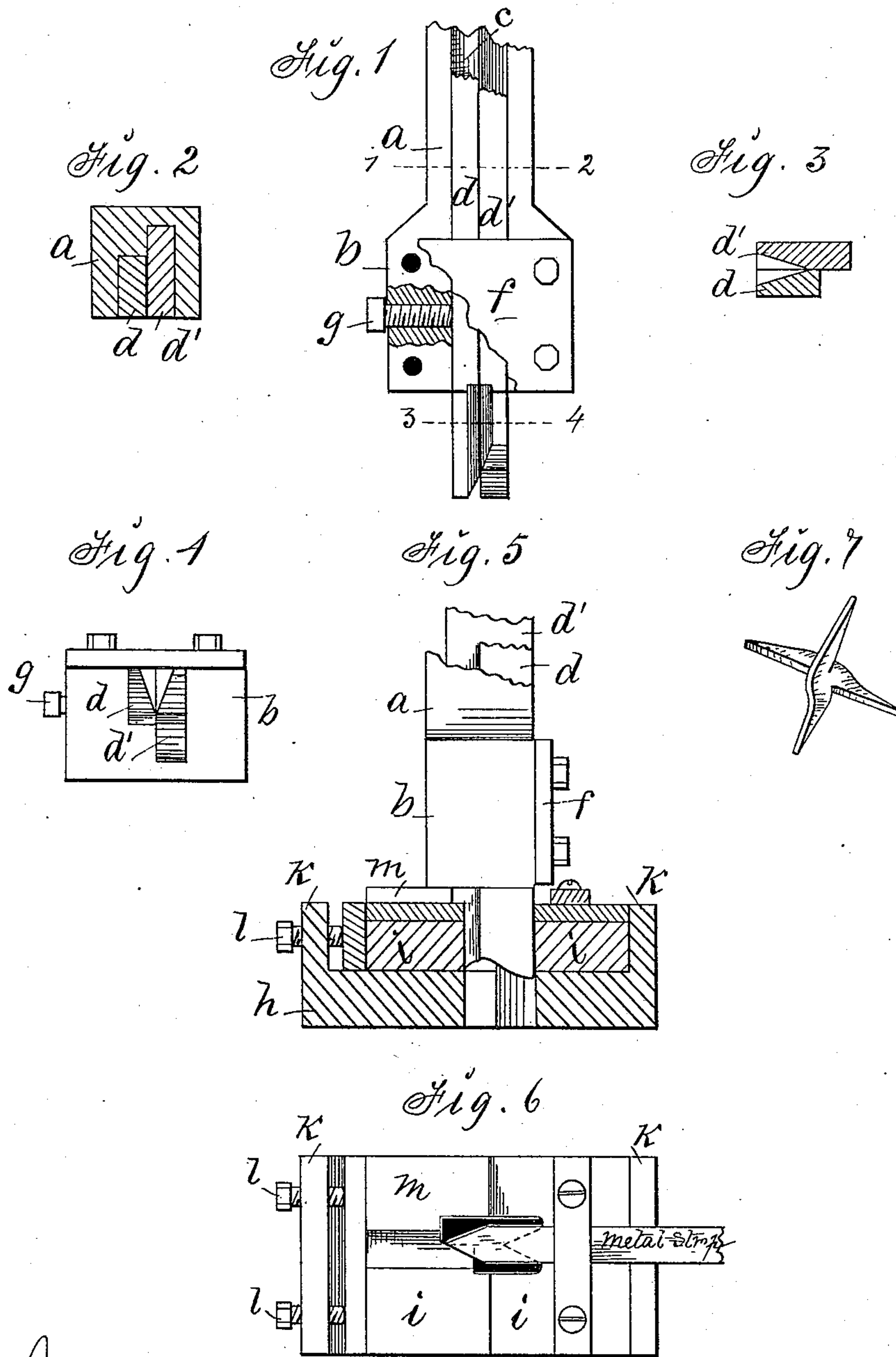
(No Model.)

A. HENLEY.

Device for Forming Fence Barbs.

No. 234,870.

Patented Nov. 30, 1880.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT HENLEY, OF LAWRENCE, KANSAS.

DEVICE FOR FORMING FENCE-BARBS.

SPECIFICATION forming part of Letters Patent No. 234,870, dated November 30, 1880.

Application filed July 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, ALBERT HENLEY, of Lawrence, in the county of Douglas and State of Kansas, have invented an Improved Punch and Die for Cutting Fence-Barbs from Sheet Metal, of which the following is a specification.

The object of my invention is to save labor and expense in constructing a punch, to facilitate repairs, and to promote the efficiency and durability of the complete barb-cutting device.

It consists in forming the punch in two parts and clamping them together in a plunger, to be operated with a die having a guide on the die-plate, as hereinafter fully set forth.

Figure 1 of my accompanying drawings is a side view, showing the front face of a section of the plunger that carries the punch. Fig. 2 is a cross-section through the line 1 2 of Fig. 1. Fig. 3 is a cross-section through the line 3 4 of Fig. 1. Fig. 4 is a bottom view of the punch and plunger. Fig. 5 is a sectional view of the bed-plate and die and punch combined. Fig. 6 is a top view of the bed-plate and die, showing a metal strap or plate in position as required to engage the descending punch. Fig. 7 is a perspective view of a complete four-pointed barb produced by means of my improved punch and die.

Jointly considered, these figures clearly illustrate the construction and operation of my complete invention.

a represents a plunger-bar having a head, *b*. It is made of metal, and has a longitudinal recess or groove, *c*, deeper on one side than the other, formed therein to receive the two parts of my punch that correspond in form and size with the groove into which they are jointly placed and operated.

d and *d'* are plain steel bars that jointly fill the irregular groove *c* in the plunger and holder *a b*. Their lower ends are cut off diagonally, so as to form cross-angles relatively to each other, and their mating edges are chamfered some distance upward to produce a V-shaped cavity, and an irregular end face and cutting-edge that will produce a pointed

or cone-shaped end on the metal strap from which barbs are stamped.

Heretofore a punch of corresponding form has been formed of one solid piece and secured by mortise and tenon and screw-bolts to a plunger or holder, and it has been found very difficult to shape and temper the cutting-edge and to sharpen it when worn blunt.

By my manner of forming the punch in two parts from plain steel bars the irregular cutting-edges required can be readily shaped by filing and grinding, and tempered and sharpened or repaired whenever required, and adjusted in the plunger to compensate for the shortening occasioned by wearing and repairing until they are almost entirely consumed.

f is a plate clamped to the face of the plunger-head and over the punch *d d'*, inclosed in the groove *c*, by means of set-screws.

g is a set-screw entering the side of the head *b*, to engage and clamp together and to the plunger the punch-bars *d d'*.

h (shown in Fig. 5) is the bed-plate of a die. *i i* is a die, formed in two parts, and clamped to the bed-plate by means of flanges *k* on the ends of the bed-plate and set-screws *l* in a common way.

The bed-plate and joint die-plates have openings corresponding with the form of the punch *d d'*, that is designed to descend through them in cutting and shaping a barb.

m is my punch-guide, in the form of a block fitted on top of one of the die-plates *i*, to form a bearing for the descending punch-bar *d'*, and to engage and direct the punch before it comes into contact with the metal plate from whence the barbs are to be cut, or the opening in the die into which the punch enters. This block and guide *m* may be formed integral with the die or attached in any suitable way.

I am aware that two distinct punches of irregular shape have been adjustably connected with a head or plunger having two distinct and irregular openings to receive them; but my manner of forming a single punch in two parts and clamping the said two parts jointly in the plunger by means of a single

set-screw is novel and greatly advantageous, in that the two parts of the complete punch are thereby made to mutually support each other, and are much more easily taken out and
5 sharpened when necessary.

I claim as my invention—

In a punch for cutting fence-barbs, the combination of the plunger *a b*, having a longi-

tudinal groove, *c*, and the adjustable and removable straight punch-bars *d d'*, substantially as shown and described, for the purposes
10 specified.

ALBERT HENLEY.

Witnesses:

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