

(No Model.)

W. HEISER.  
DEVICE FOR MAKING NUTS.

No. 335,195.

Patented Feb. 2, 1886.

FIG. 1.

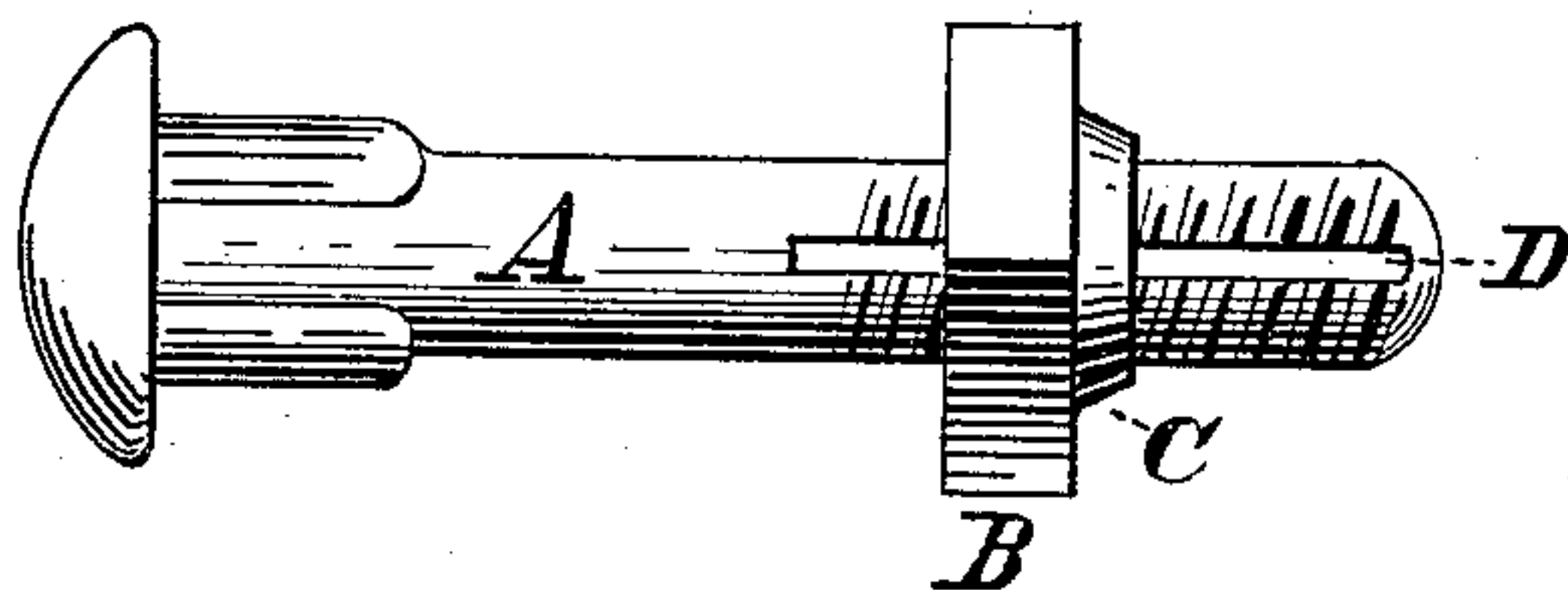


FIG. 5.

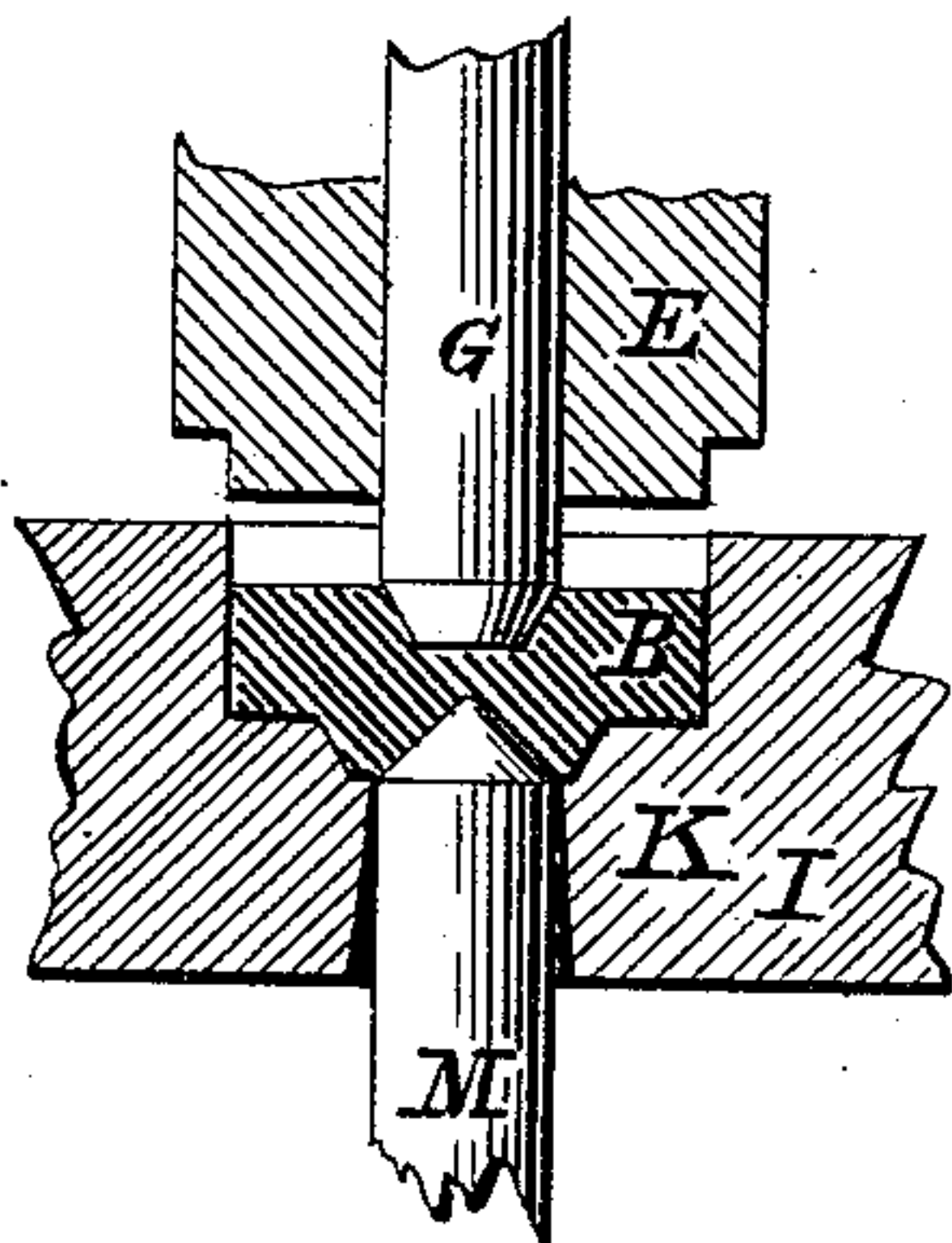


FIG. 2.

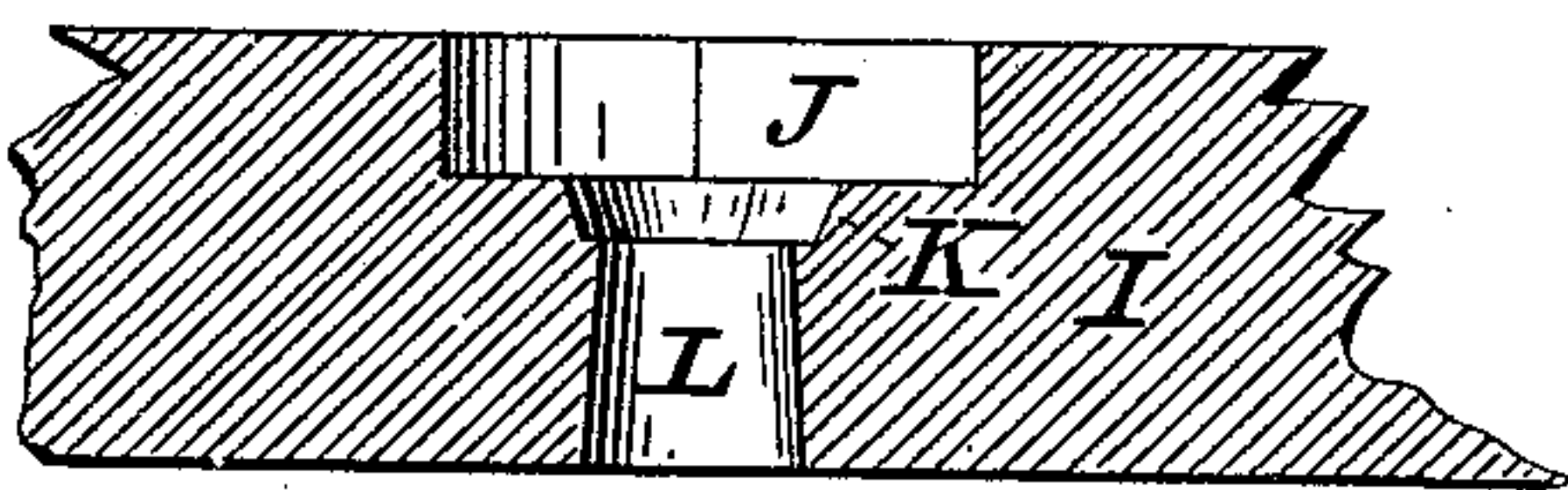
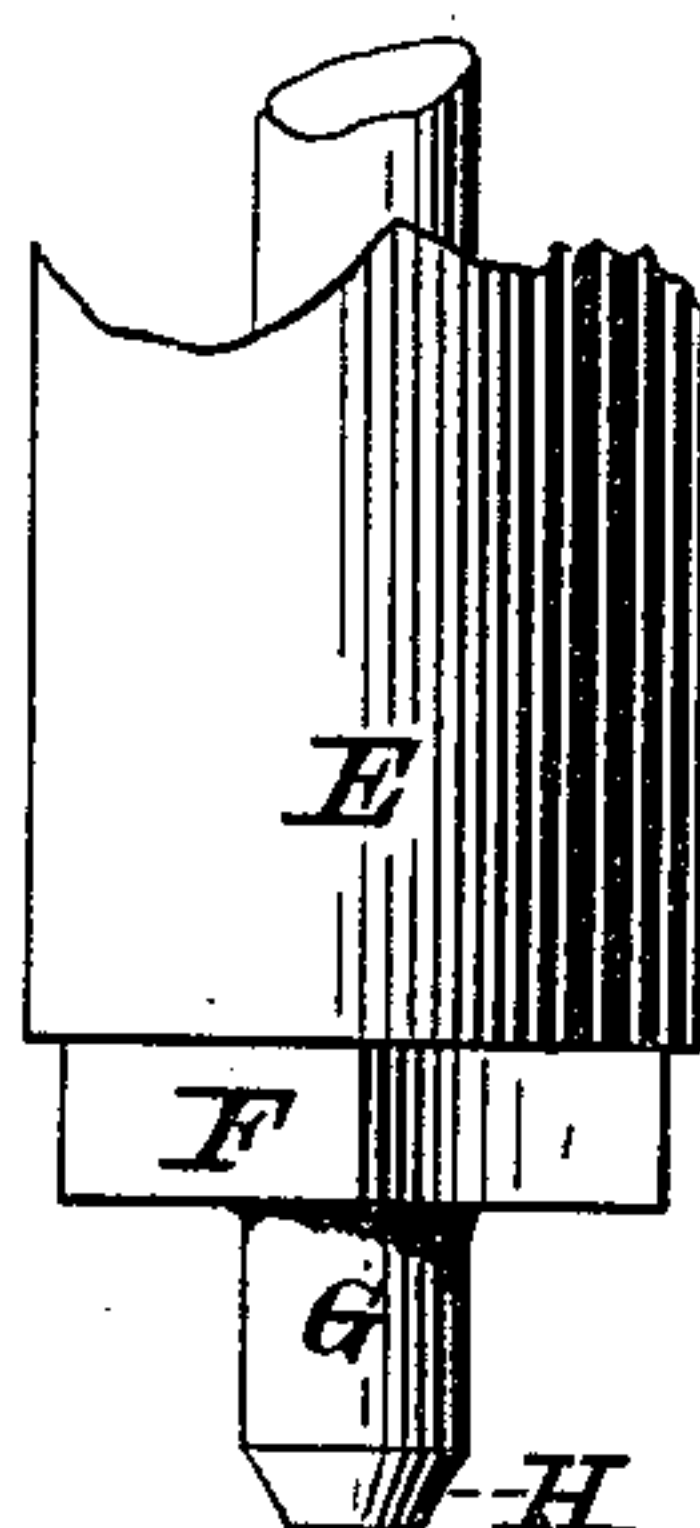


FIG. 3.

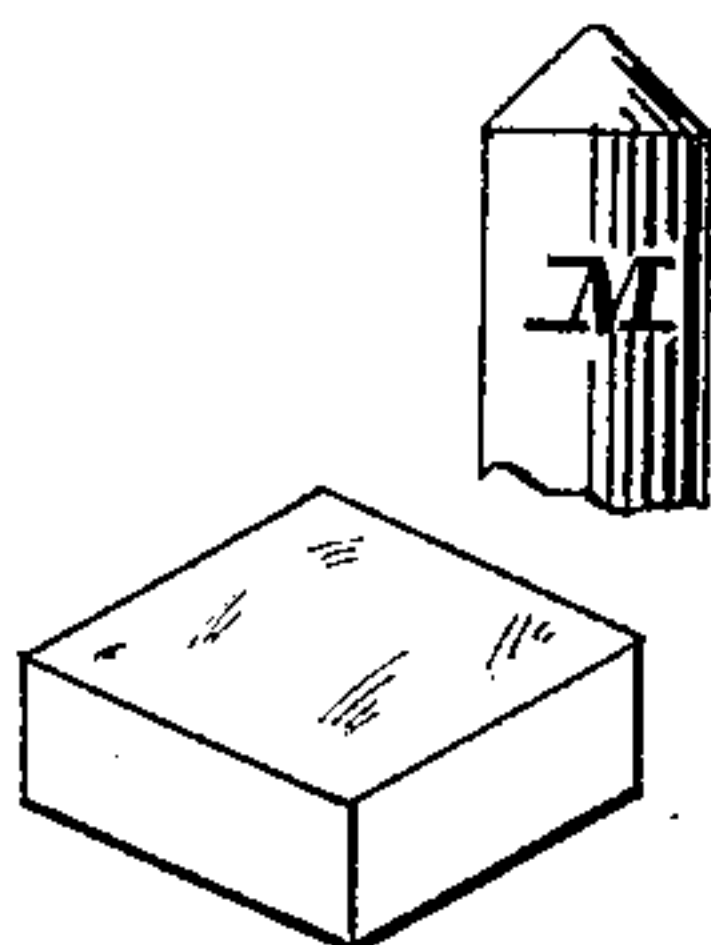
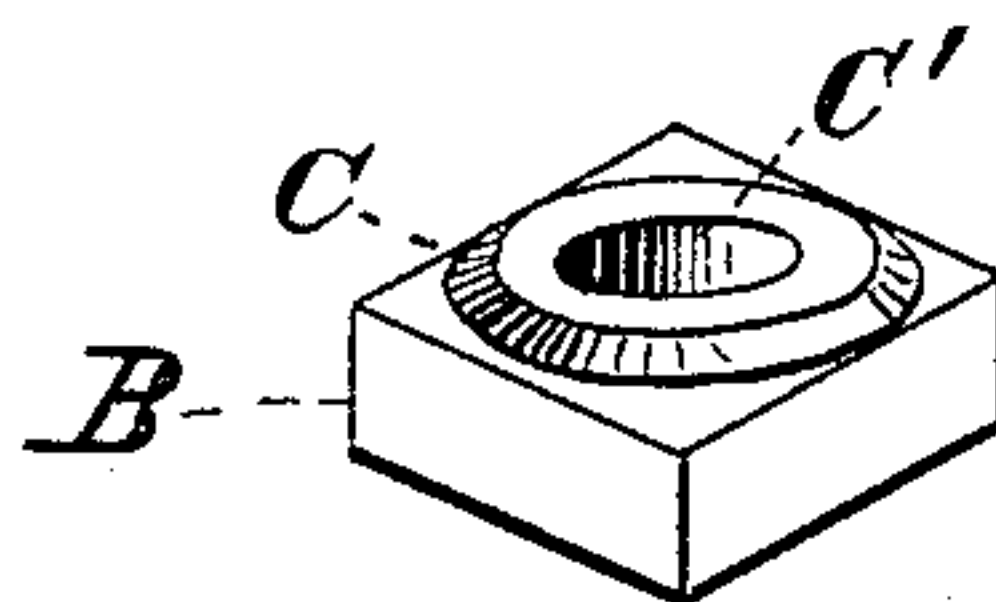


FIG. 4.



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM HEISER, OF BUFFALO, NEW YORK.

## DEVICE FOR MAKING NUTS.

SPECIFICATION forming part of Letters Patent No. 335,195, dated February 2, 1886.

Application filed October 5, 1883. Serial No. 108,184. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HEISER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful  
5 Improvements on Method of and Means for Manufacturing Lock-Nuts; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear,  
10 and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention is a device for manufacturing wrought-iron nuts, and especially that  
15 class having in their face around the central aperture an annular rise or projection.

In the drawings already mentioned, which serve to illustrate my said invention more fully, Figure 1 is a plan view of a bolt and nut,  
20 the latter being one of the class to which my invention appertains. Fig. 2 is a sectional elevation of a portion of a die and punch. Fig. 3 is a perspective view of a nut-blank previous to its being punched. Fig. 4 is a per-  
25 spective view of a finished nut, and Fig. 5 is a sectional elevation of a set of dies illustrating the position of the parts during the process of punching.

Like parts are designated by corresponding  
30 letters of reference in all the figures.

A designates a fish-plate bolt provided with a nut, B, having on its face a rise or projection, C, concentric with the screw-threaded portion or aperture of said nut, said bolt A  
35 having in its externally-screw-threaded part a groove, D, into which a portion of the metal in the rise or projection is forced by means of a punch, set, or other analogous tool or implement (not shown) in an obvious and well-  
40 known manner.

To successfully manufacture this nut B, which is the object of my present invention, I proceed substantially as follows: I construct a male punch, E, Fig. 2, of any suitable contour,  
45 length, and size to fit a properly-constructed press, and provide this punch with an angular section, F, on its lower end, said section being either a square, a hexagon, or of such a shape as the nut is to possess. Below this angular  
50 section F, I provide a cylindrical or at most only a slightly-tapering part, G, of the size of

the bore of the nut to be produced, and terminate this portion G in a point or very tapering part, H. I also construct a die, I, with an angular recess, J, corresponding with the  
55 size and contour of the punch E, a circular depression, K, answering to the rise or projection C on the nut B, and with a cutting-aperture, L, fitting the punching portion G. Below this die I arrange a second punch, M,  
60 passing through the die from the bottom upward, this punch having a pointed or nearly pointed end, as clearly shown in the drawings, similar to that of the upper punch, G. This die I secure in the press already mentioned,  
65 (not shown,) and place therein a nut-blank, Fig. 3, said nut-blank fitting the depression J. I now force the punch E, or rather the portion G thereof, down upon said blank, which will have the effect of first pushing a portion of the  
70 metal of said blank into the annular depression K in said die, and after this is filled to force the surplus metal out through the cutting-aperture L, such surplus metal or "punching" being in the form of a burr. 75  
During the time that the upper punch descends and enters the metal of the nut B the lower punch, M, ascends and enters the nut-blank from below, thereby causing the compression of the metal that would otherwise be  
80 forced out by the upper punch in the form of a burr, and at the same time assisting in both filling the recess K and in defining the contour of the tapping-aperture on the lower side of the nut. As soon as the recess K is  
85 well filled with metal the lower punch descends, together with the upper punch, so that the perforating of the nut-blank is completed when the upper punch has fully passed through the same in the usual manner. 90

Having thus produced the nut, it will be discharged from the die by any suitable mechanism. (Not shown.)

It will be readily observed that in the drawings I have attempted to show the principal  
95 portions of a die and punch, only regardless of their details of construction, such details being left to the judgment of the die-maker acquainted with the requirements of nut-punching machinery, and not being of my  
100 present invention. The lower punch, entering the metal from the under side, severs it so



that when the upper punch begins to push the burr out of the nut-blank the hole has already been perfectly defined by the lower punch. This double punching has, furthermore, the  
5 effect of compressing the metal of the nut-blank, and it is a matter of fact that the burr resulting from the punching, as aforesaid, weighs only about half as much as a similar burr produced when the upper punch alone is  
10 caused to perforate the nut.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

The male punch E, having angular section  
15 F on its under side, said section F being provided on its under side with the finger-punch

G, having a tapering point, H, in combination with the die I, having angular recess J, depression K, and an aperture, L, and the punch M, having a tapering upper end, the punch M  
20 being located immediately under the aperture L, the parts being arranged and operated substantially as described, and for the purposes set forth.

In testimony that I claim the foregoing as  
25 my invention, I have hereto set my hand in the presence of two subscribing witnesses.

WM. HEISER.

Attest:

MICHAEL J. STARK,  
JOHN C. DUERR.