

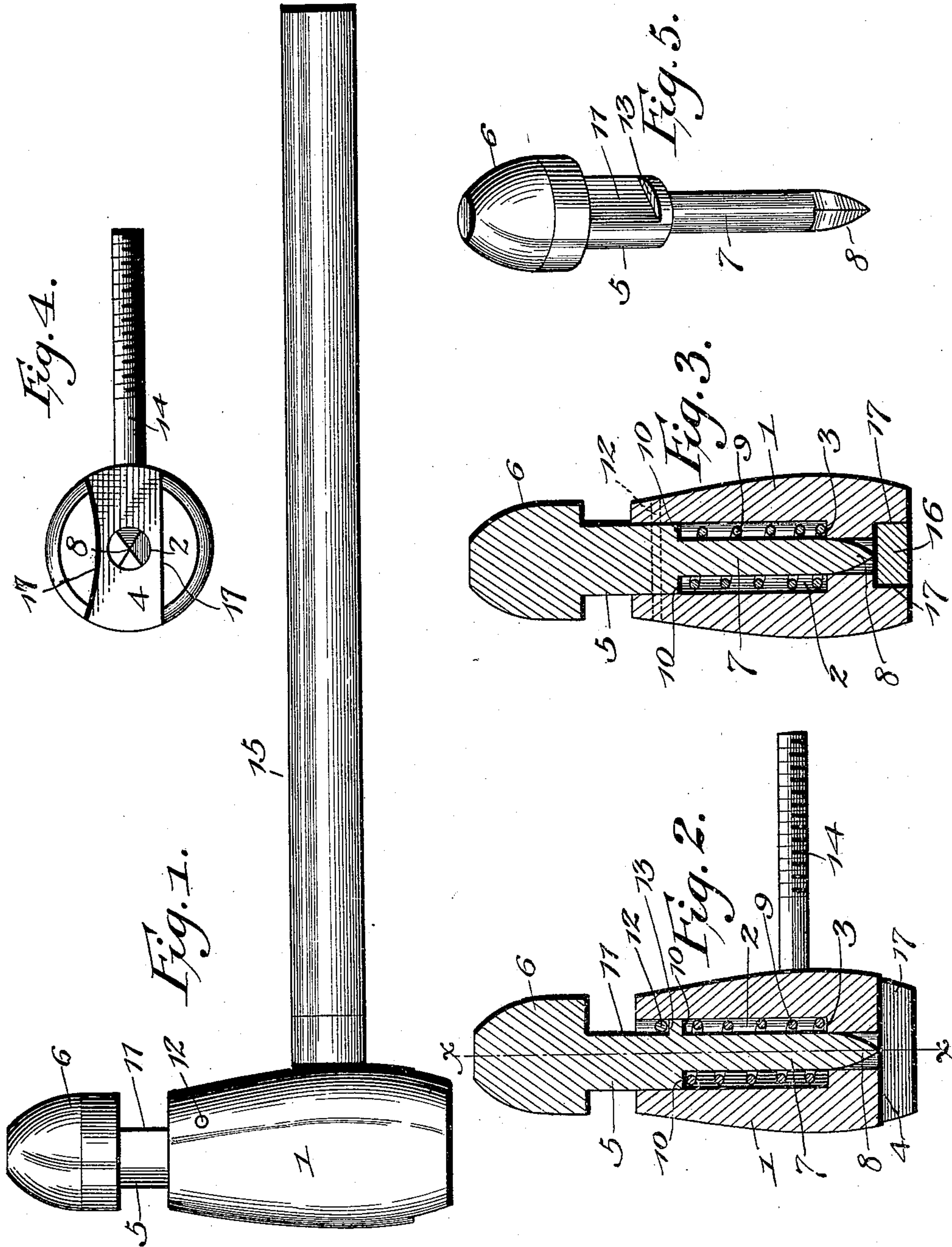
No. 640,696.

Patented Jan. 2, 1900.

E. PEARL.  
PUNCH.

(Application filed Jan. 27, 1899.)

(No Model.)



Witnesses

*A. Roy Apperson*  
*W. B. Shepard*

By *His* Attorneys,

*Ellsworth Pearl,* Inventor.

*C. Snow & Co.*



# UNITED STATES PATENT OFFICE.

ELLSWORTH PEARL, OF ROCHESTER, NEW HAMPSHIRE.

## PUNCH.

SPECIFICATION forming part of Letters Patent No. 640,696, dated January 2, 1900.

Application filed January 27, 1899. Serial No. 703,615. (No model.)

*To all whom it may concern:*

Be it known that I, ELLSWORTH PEARL, a citizen of the United States, residing at Rochester, in the county of Strafford and State of New Hampshire, have invented a new and useful Punch, of which the following is a specification.

This invention relates to metal punches, being particularly designed for punching holes in horseshoes for the reception of the nails, although capable of general use to punch holes in metal strips or bars.

The essential object of the present invention is to spread the mouth of the hole formed to receive the head of the nail and at the same time prevent the edges of the shoe or metal strip from being bulged outwardly by the action of the punch, and thereby preserve the same even and unbroken.

To these ends the invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, particularly pointed out in the claims, and shown in the accompanying drawings.

In the drawings, Figure 1 is a side elevation of the implement. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a vertical sectional view taken at right angles to Fig. 2 on the line *xx*. Fig. 4 is a bottom plan view thereof. Fig. 5 is a detail perspective view of the punch.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 1 designates the body or casing of the device, having a vertical longitudinal bore 2 extending entirely through the body. Near the lower end of the bore an inner annular stop-shoulder 3 is provided. A transverse groove 4 extends entirely across the lower face of the body 1 and intersects the bore thereof. This groove may be of any shape and size desired, it being designed to receive the strip of metal to be punched.

The reciprocating punch or die comprises a stem 5, having an enlarged head 6 at its upper end and a reduced shank 7 extending from its lower end. The extremity of the shank is pointed, as at 8, forming the operating part of the punch, which may be of any

desired shape to suit the character of work to be performed. A coiled spring 9 is arranged within the bore of the body 1 and rests upon the annular shoulder 3. The punch is placed within the bore of the body, which forms a support for the punch, the shank being encircled by the spring, which bears against the shoulder 10 of the stem to normally hold the punch up. The cross-sectional shape of both the bore 2 of the body and the punch is circular, and to prevent turning of the punch within the body the stem of the former is notched upon one side to form a flat smooth surface 11, and a pin 12 extends transversely through and to one side of the bore. This pin engages the flat surface 11 and prevents the punch from being turned, but permits of the latter being reciprocated in its operation. The lower shoulder 13, formed by the notch in the punch, provides a stop which is adapted to engage the under side of the pin 12, whereby the punch is limited in its upward movement and is prevented from being thrown out of the body or casing by the recoil of the spring 9. A suitable shank 14 extends exteriorly and laterally from one side of the body 1, whereby a handle 15 may be attached to the implement for use in positioning and holding the same firmly when being operated.

In the operation of the implement the handle 15 is grasped in one hand and the body 1 is placed upon the horseshoe or strip 16 to be punched, as shown in Fig. 3. The latter is received within the groove 4, which forms a seat for holding the material to be punched, and the opposite walls 17 fit flush against the edges of the strip, as indicated in Fig. 3. A blow is struck upon the head 6 of the punch by means of a hammer held in the other hand or by an attendant, whereby the punch is forced downward, the point 8 punching a hole in the metal strip, the walls 17 of the seat 4 preventing the edges of the strip from being bulged outward, as is usual with the ordinary form of punch. The downward movement of the punch is limited by its head engaging the upper end of the body, and the coiled spring raises the punch to its normal position after the blow has been struck. The implement is then slipped along upon the strip of metal being punched by means of the handle 15 and



the operation repeated. In this way the holes are effectively made and are spread out or countersunk by the bevel or shape of the pointed end of the punch, while at the same time the opposite edges of the metal strip are prevented from being bulged out and are preserved even and unbroken. Thus each hole is formed and completed in one operation without the necessity of going over the strip again to force down the outwardly-bulged opposite edges of the strip where the holes have been formed.

The construction and arrangement as herein described provides an exceedingly simple, effective, and durable device, having its operating parts conveniently incased within the body thereof and provided with a handle whereby the implement may be positioned and held during the operation thereof.

The shape of the body, the punch, and groove in the under side of the body may be varied as necessity requires, and various other changes in the details of construction and arrangement may be made without departing from the spirit and scope or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is—

1. An implement of the class described, comprising a body, a punch carried by the body, and means, embracing the sides of the bar to be punched to prevent the edges of the same from being bulged outward by the op-

eration of the punch, substantially as shown and described.

2. An implement of the class described, comprising a body or casing provided with a longitudinal bore, and a groove in one of its ends intersecting the bore, and a punch mounted within the bore and adapted to operate transversely through the groove, substantially as shown and described.

3. An implement of the class described, comprising a punch, a support therefor, and a seat adapted to receive and hold the work, the walls of the seat being adapted to prevent the material from being bulged outward by the operation of the punch, substantially as shown and described.

4. An implement of the class described, comprising a body or casing having a longitudinal bore formed therethrough, a transverse groove formed in the under side thereof intersecting the bore, a shank extending transversely from the body, a handle fitted to the shank, and a punch mounted within the bore of the body and adapted to operate transversely through the groove, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ELLSWORTH PEARL.

Witnesses:

M. V. B. WENTWORTH,  
H. F. BROCK.