

No. 618,022.

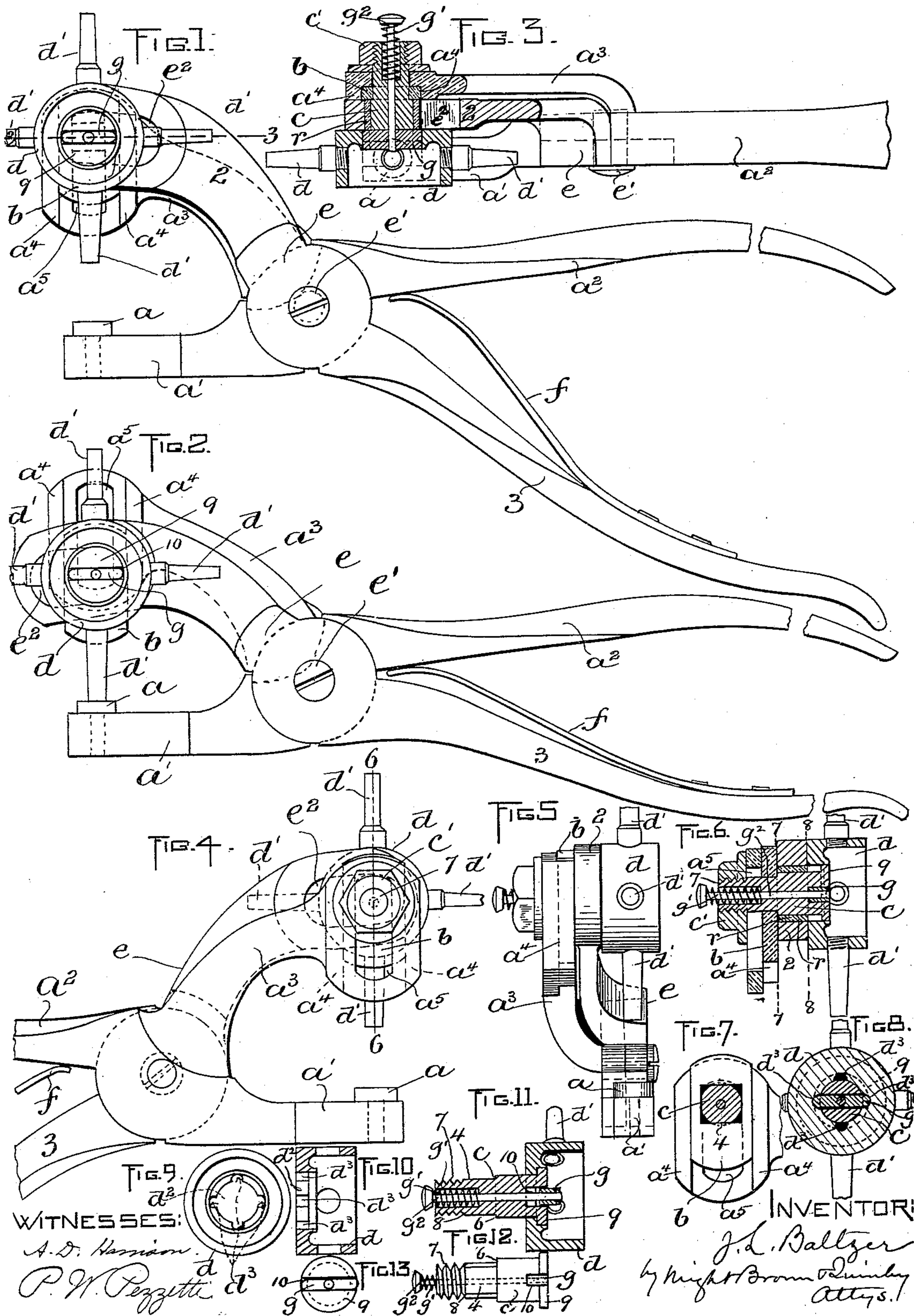
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J. L. BALTZER.

PUNCH.

(Application filed Oct. 21, 1897.)

(No Model.)





# UNITED STATES PATENT OFFICE.

JOHN L. BALTZER, OF CHELSEA, MASSACHUSETTS.

## PUNCH.

SPECIFICATION forming part of Letters Patent No. 618,022, dated January 17, 1899.

Application filed October 21, 1897. Serial No. 655,901. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. BALTZER, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Punches, of which the following is a specification.

This invention relates to punches in which an arm or holder provided with a cutting-bed is combined with a pivoted lever carrying a punch arranged to be moved toward and from the bed and to cooperate with the latter in punching or cutting a hole in a piece of leather or other material interposed between the bed and punch, the said arm or holder being preferably extended to form a lever so arranged relatively to the punch-lever as that both levers can be held in one hand and operated thereby.

The invention has for its object to enable a series of punches to be carried by the punch-lever and adjusted thereon so as to be used interchangeably, each punch being locked in its operative position.

The invention also has for its object to provide simple and efficient means for giving the cutting or punching die an easy rectilinear movement toward and from the bed.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a punch embodying my invention, the cutting tool or die and bed being separated. Fig. 2 represents a view similar to Fig. 1, showing the cutting-die in contact with the bed. Fig. 3 represents a section on line 3 3 of Fig. 1. Fig. 4 represents an elevation of the opposite side from that shown in Figs. 1 and 2. Fig. 5 represents an end view. Fig. 6 represents a section on line 6 6 of Fig. 4. Fig. 7 represents a section on line 7 7 of Fig. 6. Fig. 8 represents a section on line 8 8 of Fig. 6. Fig. 9 represents a side view of the turret detached. Fig. 10 represents a sectional view of the turret. Fig. 11 represents a sectional view of the turret and the stud on which it is mounted, taken on the plane of line 3 3 of Fig. 1, the latch being displaced to unlock the turret. Fig. 12 represents a side view of the stud detached. Fig. 13 represents an end view of the stud detached.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents the cutting-bed, which is made of a suitable relatively-soft metal or alloy, such as brass.

*a'* represents the arm or holder to which the bed is affixed, said arm being preferably provided with a lever or handle *a<sup>2</sup>*, the arm and handle being here shown as of the form usually employed in hand-punches.

*a<sup>3</sup>* represents an arm formed on or rigidly affixed to the arm *a'* and provided with parallel ribs *a<sup>4</sup> a<sup>4</sup>*, forming a guide which is fixed relatively to the bed and is arranged to direct the movements of the punch-carrier, hereinafter described, toward and from the bed.

*b* represents a slide or punch-carrier which is movable between the ribs *a<sup>4</sup>* and is provided with a stud *c*, which projects laterally from the slide over the bed *a*. The stud is preferably secured to the slide by the following means: The stud has a squared portion 4, which fits closely in a square orifice in the slide *b* and projects through and is movable in an elongated slot *a<sup>5</sup>* formed in the arm *a<sup>3</sup>* between the ribs *a<sup>4</sup> a<sup>4</sup>*. The stud has a shoulder 6, which bears on one side of the slide, and a reduced threaded outer portion 7, which projects from the arm *a<sup>3</sup>* and has a nut *c'*, bearing on a shoulder 8 at the outer end of the squared portion 4. The inner end of the stud has a head 9, in which is formed a transverse slot 10, the purpose of which will be presently described.

*d* represents a punch-carrying turret, which is preferably of circular form and has a series of radially-arranged punches *d' d' d' d'* of different sizes. The said turret is recessed at one side and is partly closed at one end to form an orifice *d<sup>2</sup>*, formed to receive the portion of the stud adjoining the head 9, said orifice being of smaller diameter than the head, so that the latter bears upon the portion of the turret surrounding the orifice *d<sup>2</sup>* and confines the turret against the operating-lever *e*, presently described.

*d<sup>3</sup> d<sup>3</sup> d<sup>3</sup> d<sup>3</sup>* represent a series of notches formed in the portion of the turret which forms the wall of the orifice *d<sup>2</sup>*, said notches corresponding in number and position to the punches, for a purpose presently described.

*e* represents the operating-lever, which is pivoted at *e'* to the bed-carrying arm *a'* and



comprises the two arms 2 3, the arm 2 having a slot  $e^2$ , through which the stud  $c$  passes. The walls of said slot bear on the stud, so that the stud is moved by the lever, together with the slide  $b$  and punch-turret  $d$ , toward and from the bed  $a$  when the lever  $e$  is operated. The arm 3 is so arranged relatively to the lever or handle  $a^2$  that the two can be held and manipulated by one hand, as usual in hand-punches, a spring  $f$ , attached to the lever  $e$ , normally forcing the two levers apart.  $g$  represents a locking device or latch which is formed to enter the slot 10 in the head of the stud and is yieldingly held in said slot by a spring  $g'$ , located in a longitudinal cavity in the stud and bearing at one end on the inner end of said cavity and at its other end on the head of a pin  $g^2$ , attached, by a screw-thread connection or otherwise, to the latch  $g$  and extending through the stud, the pin being adapted to be pressed inwardly to force the latch  $g$  outwardly. The ends of the latch are formed to engage two of the notches  $d^3$  in the turret, the arrangement being such that when the latch is held by the spring  $g'$  in the slot 10 its ends are also held in engagement with two of said notches, so that the turret is locked to the stud; but when the latch is forced outwardly, as shown in Fig. 11, it leaves said notches and releases the turret. When the turret is thus locked, one of its punches is in position to cooperate with the bed  $a$ , and when it is desired to bring another punch into operative position the pin  $g^2$  is pushed inwardly, thus disengaging the latch from the turret, whereupon the turret may be turned upon the stud until the desired punch reaches its operative position, when the latch springs back into the slot 10, its ends again engaging notches in the turret and locking it. It will be seen, therefore, that the turret may be locked in as many positions as there are notches, and as there is a punch for every notch provision is made for securely holding each punch in its operative position.

When the levers are forced toward each other, the arm 2 moves the operative punch toward the bed  $a$ , and when the levers are released the spring  $f$  separates the punch from the bed.

The slot  $e^2$  in the operating-lever is preferably curved or cam-shaped, its curvature being such that when the arm is being moved to operate the punch the point of contact of the wall of the slot with the stud will be directly over the center of the stud, so that the pressure will be directly toward the bed, and the frictional resistance reduced to the minimum. The portion of the stud that passes through the slot  $e^2$  is preferably provided with an antifriction-roll  $r$ , which rotates loosely on the stud and rolls on the wall of the slot.

I do not limit myself to the details of construction above described, as the same may be variously modified without departing from the spirit of my invention.

My improvements may be applied to power-punches, the arm  $a'$  being fixed and the arm 2 moved by power applied in any suitable manner.

The guide  $a^4 a^4$ , fixed relatively to the bed  $a$ , and the slide  $b$ , movable in said guide, constitute a simple and efficient means for giving the punch a rectilinear movement toward the bed. These parts may therefore be used in connection with a punch engaged with the slide in any suitable way and are not limited to use in connection with a turret and a plurality of punches.

I claim—

1. A punch comprising an arm or holder having a bed, a guide fixed relatively to said bed, a slide movable in said guide toward and from the bed, a stud affixed to said slide, a movable locking member on the stud, a turret rotatable on said stud and provided with a plurality of punches and with a plurality of locking members to engage the locking member on the stud, and a pivoted operating-lever engaged with the stud and adapted to move the stud, slide, and turret toward and from the bed.

2. A punch comprising an arm or holder having a bed, a guide fixed relatively to the bed, a slide movable in said guide toward and from the bed, a stud affixed to the slide, a latch movable in the stud and having a spring-controlled operating-pin extending through the stud, a punch-carrying turret rotatable on the stud and having a series of notches arranged to engage said latch, and a pivoted operating-lever having means for moving the slide and turret.

3. A hand-punch comprising an arm or holder having a bed, a guide fixed relatively to the bed, and a lever or handle, said parts being rigidly connected; a slide movable in said guide toward and from the bed, a punch-turret rotatably connected with the slide and provided with a plurality of punches, means for locking the turret to the slide in different positions, and an operating-lever pivoted to said lever or handle and having means for moving the slide and turret.

4. A hand-punch comprising an arm or holder having a bed, a guide fixed relatively to the bed, and a lever or handle, said parts being rigidly connected; a slide movable in said guide toward and from the bed, a stud affixed to the slide, a punch-turret on the stud and provided with a plurality of punches, means for locking the turret, and a pivoted operating-lever having a slot embracing the stud, said operating-lever being adapted to impart motion to the stud, slide, and turret.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of October, A. D. 1897.

JOHN L. BALTZER.

Witnesses:

THOMAS E. CHERRY,  
C. F. BROWN.