P. W. AND B. B. BRITTS.

PUNCH.

APPLICATION FILED FEB. 24, 1919.

1,338,969. Patented May 4, 1920.

Fig. 1.

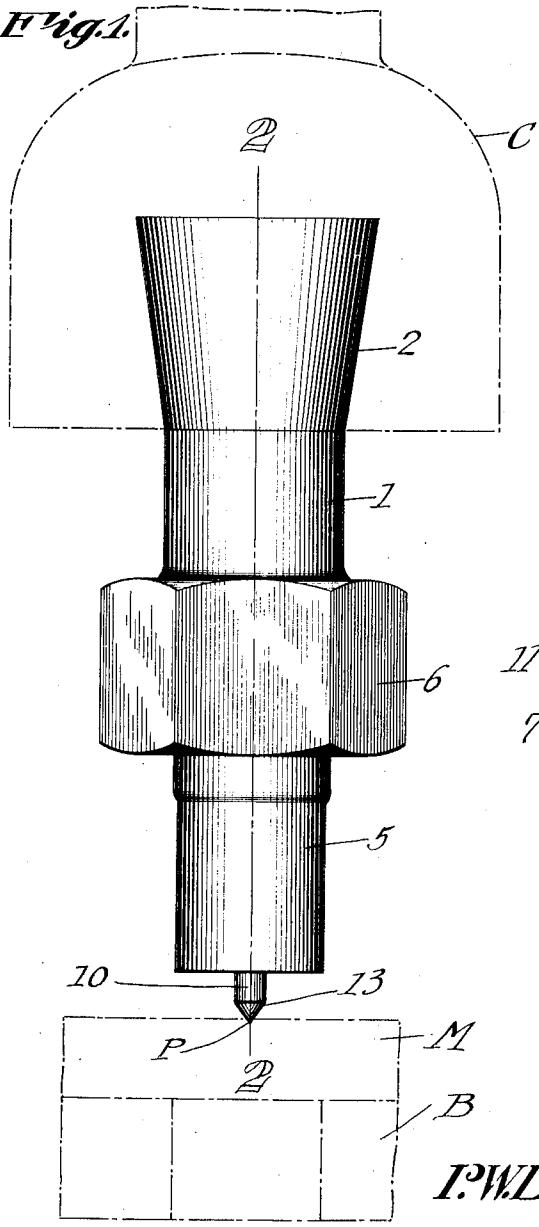
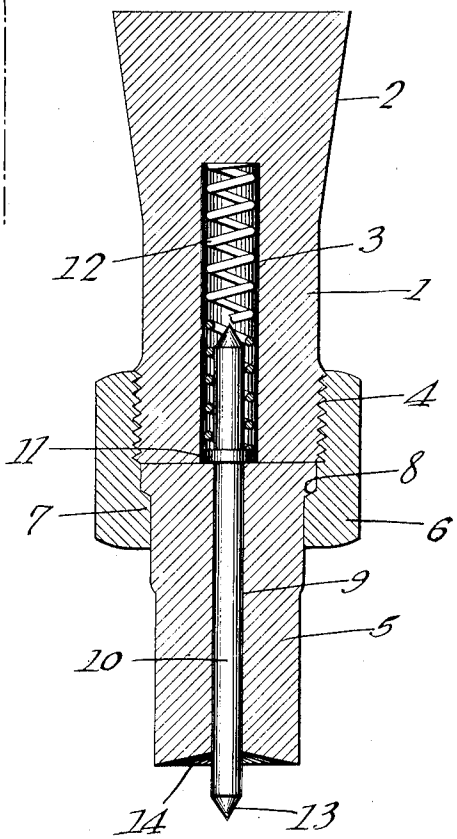


Fig. 2.



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Witness

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UNITED STATES PATENT OFFICE.

PETER W. BRITTS AND BANCROFT B. BRITTS, OF PORTLAND, OREGON.

PUNCH.

1,338,969. Specification of Letters Patent. Patented May 4, 1920.

Application filed February 24, 1919. Serial No. 278,867.

To all whom it may concern:

Be it known that we, PETER W. BRITTS and BANCROFT B. BRITTS, citizens of the United States, residing at Portland, in the county of Multnomah, State of Oregon, have invented a new and useful Punch, of which the following is a specification.

The device forming the subject matter of this application is a punch adapted to be employed in punching sheet metal and the like.

An object of this invention is to provide novel means for enabling the operator to accurately and conveniently aline the punching tool with the usual center-punch marks.

It is the present practice to provide the punch with a small axial teat or projection which extends only a very short distance from the punching or operative face of the tool. This form is objectionable and inconvenient because the teat soon becomes worn and mutilated to such an extent that it is very difficult to accurately determine when the punch is in alinement with the center mark. And when the usual teat or projection is in its normal condition, the punch can only be properly alined with difficulty, since the teat can only project a relatively short distance beyond the operative face of the punch, therefore, the teat is only visible from points in approximately a horizontal plane that passes through the operative or punching face of the punching tool.

A specific object of this invention is to provide a punch having a yielding axial stem which projects a sufficient distance beyond the operative face of the punching tool to enable the operator to readily aline the tool from any convenient position.

A further object of this invention is to provide a punch of generally improved construction, whereby the device will be simple, durable and inexpensive in construction, as well as practical, serviceable and efficient in its use.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

The invention has been illustrated in its preferred embodiment in the accompanying drawing, wherein:—

Figure 1 is a side view of the invention showing it applied to a portion of a suitable punching machine.

Fig. 2 is a longitudinal sectional view of the device, taken on the line 2—2 of Fig. 1.

Referring to the drawing there is depicted any suitable form of chuck C, the usual bed-plate or support B, and a piece of stock or material M. This material is shown in place upon the support and in position to be punched.

The device comprises a plunger 1, having its upper or outer terminal flared, as indicated at 2, to provide a tapering surface for the reception of the usual gripping device or chuck. An axial recess 3 extends inwardly from that end of the plunger which is remote from the flared terminal 2, and an exterior thread 4 is formed on this end of the plunger. A punch 5 is secured to the plunger 1 by a hollow nut 6, which has an inwardly extending flange 7, that engages a shoulder 8 provided adjacent the inner or upper end of the punch. When the nut 6 is screwed or advanced on the threads 4, this causes the flange 6 to engage the shoulder 8 and securely hold the inner terminal of the punch against the inner face of the plunger. An axial opening 9 extends through the punch member 5 for the sliding reception of a stem 10, that projects beyond the operative or outer face of the punch member at one terminal, and the opposed terminal of this stem extends into the axial recess 3 of the plunger 1. A collar 11 is formed on the stem 10, and one face of this collar engages the inner face of the punch member, in order to limit the outward longitudinal or axial movement of the stem 10. Mounted in the recess 3 is a helical compression spring 12, having one terminal engaging the inner face of the collar 11, and the opposed terminal of this spring engages the end wall of the recess 3, thereby normally holding the collar 11 against the inner face of the punch member, which causes the outer pointed end 13 of the stem 10 to project the required distance beyond the outer or operative face of the punch

member 5. The outer or operative face of the punch member is slightly concaved or dished, as indicated at 14, in order to facilitate the punching or shearing action of the punch member.

In use, the device may be positioned as illustrated in Fig. 1, with the pointed end 13 of the stem 10 yieldingly engaging the stock or material that is to be punched. Now when the stem 10 registers or alines with the usual punch or center mark P, the pointed end 13 of the stem will snap into the punch mark and thereby indicate to the operator that the punch is accurately alined. The punch member 5 may now be forced through the material M, in the usual manner, and as the punch member 5 approaches the material M the stem 10 will move axially within the opening 5 and recess 3 against the tension of the spring 12. Therefore, as the punch member 5 approaches and enters the material M the stem 10 will move into the punch member 5 and plunger 1, so that this stem will not interfere with the punching operation. By this arrangement the pointed end 13 of the indicating stem 10 may project any required distance beyond the operative face of the punch member, thereby enabling the operator to readily and conveniently aline the punch with the stock or material.

Having thus described our invention, what is claimed as new is:—

A device of the class described including a plunger having an axial recess formed therein, a wall formed at one end of the axial recess, a stem mounted for axial movement within the recess, the opposed terminals of the stem being pointed, a collar formed on the stem between its pointed terminals, said collar adapted to engage the inner face of the punch member to thereby limit the outward movement of the stem, a helical spring mounted within the recess and surrounding that portion of the stem that is positioned within the said recess thereby axially alining the spring in spaced relation to the side wall of the axial recess, said spring having one terminal engaging the collar and the opposed terminal engaging the end wall of the axial recess to thereby normally project the outer end of the stem beyond the operative face of the punch member.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

PETER W. BRITTS.
BANCROFT B. BRITTS.

Witnesses:
L. J. ROBINSON,
C. C. MOORE.