No. 734,157. PATENTED JULY 21, 1903.

W. A. BERNARD.

PUNCH.

APPLICATION FILED OCT. 6, 1902.

NO MODEL.

Fig. 1.

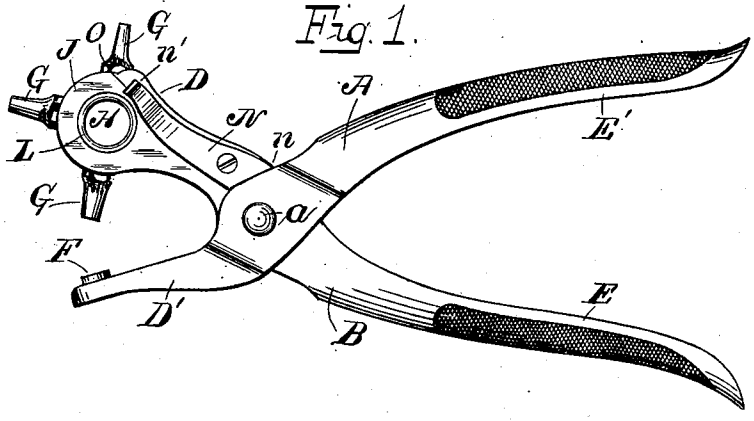


Fig. 2.

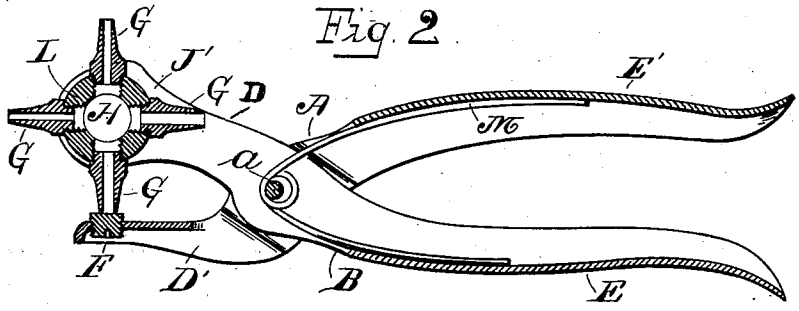


Fig. 3.

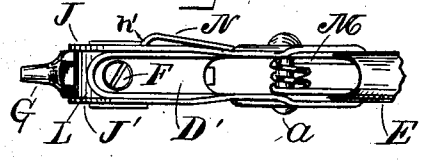
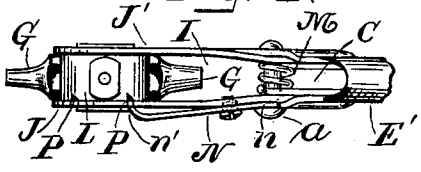


Fig. 4.



WITNESSES:

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No. 734,157. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

WILLIAM A. BERNARD, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WILLIAM SCHOLLHORN COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PUNCH.

SPECIFICATION forming part of Letters Patent No. 734,157, dated July 21, 1903.

Application filed October 6, 1902. Serial No. 126,242. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BERNARD, of the city and county of New Haven, State of Connecticut, have invented new and useful Improvements in Punches, of which the following is a full, clear, and exact description when taken in connection with the accompanying drawings, which form a part thereof, and in which—

Figure 1 represents a side view of a punch embodying my improvements; Fig. 2, a longitudinal vertical central section of the same; Fig. 3, a bottom view of the jaws broken away, and Fig. 4 a plan view of the same.

In all figures similar letters of reference represent like parts.

This invention relates to the class of hand-punches carrying a revoluble head having a plural number of cutting-tubes of different sizes for perforating leather, paper, or the like; and it consists in the production of a novel tool of this class having the improvements and combinations of parts hereinafter set forth and claimed. The device is made of sheet metal with one of the jaws forked to carry between its arms a revoluble head with a plurality of punching-dies. This parallel-forked jaw is stiffened and strengthened by being tightly clasped by parallel plates, within which it is pivoted and in which the pivot-pin has its bearings.

Referring to the drawings for a more particular description, this implement comprises a pair of sheet-metal levers A and B, intermediately crossed and pivoted as at A; one lever passing through a longitudinal mortise C in the other, their portions at one end forming jaws D and D′ and at the other forming handle-arms E and E′. One of the jaws, D′, carries on the inside an anvil F, against which the cutting-tubes G set when punching, while the end of the other jaw, D, is enlarged and is provided with a longitudinal mortise I, which so bifurcates the end of the jaw D as to form a fork, each arm J and J′ of which has an annular opening or perforation H. Between the fork is a barrel or revoluble head L, from which radially project any desired number of cutting-tubes G, the ends of the hub projecting into and having bearing in the perforations H.

To assemble the revoluble head H within the bifurcated jaw D, the forked arms J and J′ are sprung apart, which is possible, owing to the elasticity of the sheet metal, and the ends of the hub L fitted into the circular perforations H, whereupon the forked arms are permitted to return to their normal positions, wherein they will hold the revoluble head in place.

By passing the exterior parallel vertical sides of the bifurcated lever B between the parallel vertical sides of the other lever, A, the plier portions are easily fulcrumed and the arms J and J′ of the bifurcated jaw D are stiffened and strengthened by being tightly clasped by the sides of the outer lever A, thus holding the tube-barrel more firmly and rigidly in place. A spring M is applied between said handle-arms for normally maintaining said jaws separate. The rotary movement of the handle-arms (caused by said spring) is limited by means of one end, n, of a spring-plate N, which is screwed, riveted, or otherwise secured to the outside of the bifurcated jaw D. The other end, n', of the plate N serves to assure the proper position of punches G by extending through a perforation O in the jaw and engaging notches P on the head L, so that when the outer end of the spring-plate N is engaged in one of the notches one of the punches will be in a proper position for punching. Each notch is formed with one perpendicular side and the other diagonal or inclined. The perpendicular side of the notch engages the outer end of the spring-plate and positively retains the barrel against the forward rotary pressure exerted upon the tube and head when the jaws are closed, while the inclined side of the notch permits the barrel to be easily rotated when desired in the opposite direction by applying sufficient pressure upon any of the tubes to force the end of the spring-plate up the inclined side and out of the notch.

In order to save the cutting edges of the punches, the anvil F is usually formed of soft metal; but this soon becomes worn from be-

ing brought repeatedly into contact with the punches G. With this objection in view I make the anvil cylindrical and provide it with a thread to engage a threaded perforation in the jaw, so that the anvil may be screwed into the jaw to expose a larger portion, if desired, and the face may be filed down so as to present a new surface.

Having now described my invention, which may vary somewhat in its details without departing from the spirit thereof, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a punch, with handles; of jaws connected thereto, one of said jaws being formed of sheet metal and forked at its forward end to form two parallel resilient plates; a revoluble head carrying a plurality of punching-dies adapted to fit between said plates and have bearings in the same; two secondary parallel plates embracing the tines of said forked end and having a pivoted connection therewith, substantially as described.

2. The combination in a punch, with levers consisting of handles and jaws, one of said jaws being formed of sheet metal and forked at its forward end to form two parallel resilient plates; a revoluble head carrying a plurality of punching-dies adapted to fit between said plates and have bearings in the same; of an intermediate longitudinal mortise in the other of said levers, through which said plates are passed and in which they are fulcrumed, substantially as described.

3. The combination in a punch with lever-arms consisting of handles and jaws, one of said jaws being formed of sheet metal and forked at its forward end to form two parallel plates; a spring for normally forcing said handles apart; a flat plate secured to the outside of the inner lever-arm for engagement with one of the said parallel sides of the outer lever-arm to limit the rotary movement of the handles caused by said spring, substantially as described.

4. The combination in a punch with handles; and jaws, one of said jaws being formed of sheet metal and forked at its forward end to form two parallel resilient plates; a revoluble head carrying a plurality of punching-dies adapted to fit between said plates and having bearings in the same; a spring for normally forcing said handles apart; a flat spring-plate secured to one of said parallel plates, its outer end bent for engagement through a perforation in said arm, with a series of notches in said head; said spring-plate engaging one of the said parallel sides of the outer lever-arm to limit the rotary movement of the handles caused by said spring, substantially as described.

In witness whereof I have hereunto set my hand on the 2d day of October, 1902.

WILLIAM A. BERNARD.

Witnesses:
WILLIAM R. PITKIN,
SAMUEL H. FISHER.