W. K. Lewis,

Metal Punch.

No. 46,681. Patented Mar. 7, 1865.

Fig. 1

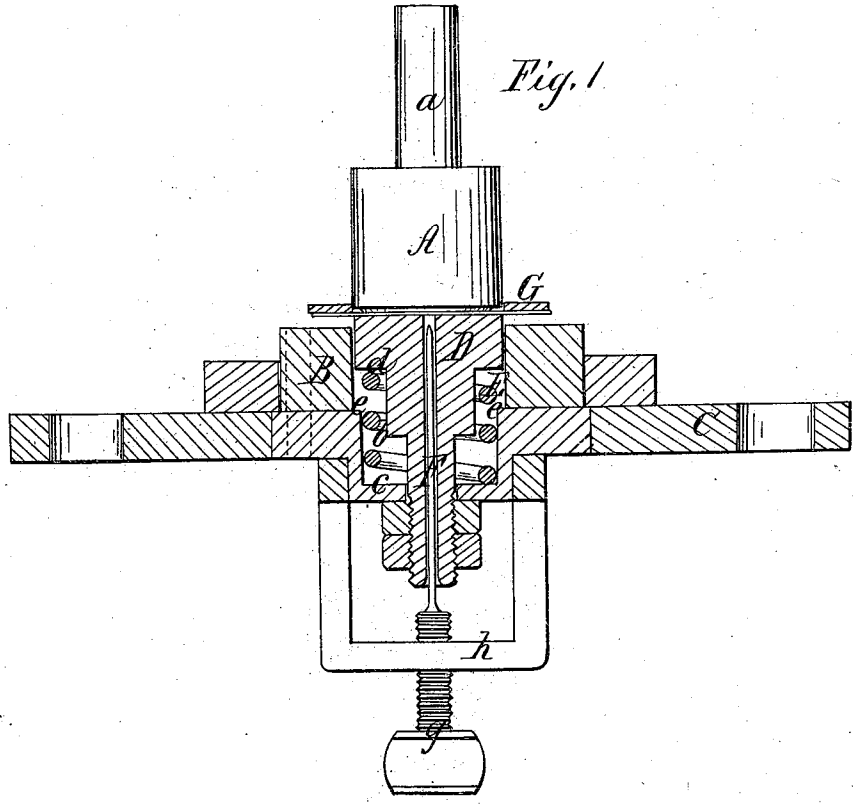
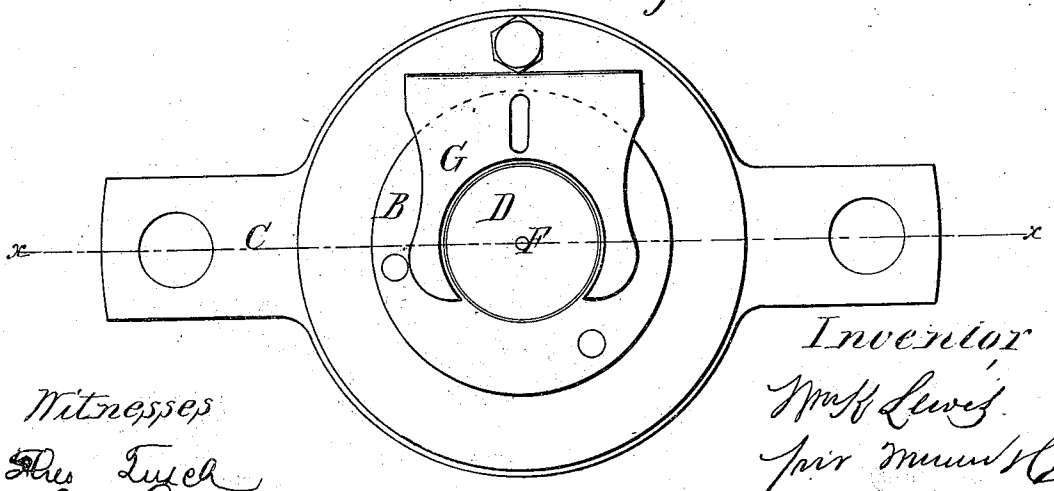


Fig. 2



Witnesses
Thos Tyler
Wm Freurn

Inventor
Wm K Lewis
per Munn & Co
attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM K. LEWIS, OF BOSTON, MASSACHUSETTS.

PUNCH AND DIE.

Specification forming part of Letters Patent No. **46,681**, dated March 7, 1865.

To all whom it may concern:

Be it known that I, WILLIAM K. LEWIS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Punch and Die; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of this invention, the line *x x*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention relates to an improvement in that class of punches and dies which are used for cutting and pricking studs, caps or covers for tin cases, &c., at one operation.

The invention consists in the employment or use of a pointed needle passing through the center of the die, which, being made yielding, recedes as the punch advances in such a manner that the stud or cap, after it has been cut out or while being cut out, is brought in contact with the central needle, and the operation of pricking and cutting the same is accomplished at one and the same operation. Said pricking-needle is adjustable by means of a set-screw applied below the die, and it is guided by a hole passing in a longitudinal direction through the yielding center piece of the die, which is supported by a spring, so that it recedes as the punch advances, and after the operation of cutting and pricking has been accomplished it throws out the finished stud and makes room for a new stud.

A represents the punch, which is secured in the press by means of its shank *a* in the ordinary manner. Its cutting-edge is chamfered off, as clearly shown in Fig. 1 of the drawings, so that the same cuts the sheet metal, leaving the burr or roughness, if any, on the inside of the studs, rendering the same easier to close and with much less solder than studs cut out by a punch and die of the ordinary construction. The die B is secured to the die-holder C in the usual manner, and it is provided with a center piece, D, which is supported by a spring, E. This spring is concealed in a cavity, *b*, in the bed-plate, being supported by a rim, *c*, as clearly shown in Fig. 1 of the drawings, and it bears on a shoulder, *d*, at the under side of the center piece. When the center piece is depressed, the shoulder *d* strikes the projection *e* of the die-holder, and by these means its downward motion is confined within certain limits. The shank of the center piece passes through the flanged guide or rim *c* of the die-holder, and it is held in place by two jam-nuts, *e*, which also serve to adjust said center piece at the desired height.

F is the pricking-needle, which passes through a hole bored in a longitudinal direction through the middle of the yielding center piece. This needle rises from a screw, *g*, which is tapped into a bridge, *h*, that is rigidly attached to the under surface of the die-holder C. By turning this screw the pricking-needle can be adjusted higher or lower, as may be desired. The sheet metal to be cut is placed between the upper surface of the yielding center and the lower surface of the fork G, which serves to disengage the sheet metal after it has been cut from the punch, and as the punch is depressed the center piece yields and the pricking-needle pierces the stud or cap, while at the same time, or nearly so, the punch takes action and cuts the same to the required size.

The operation of cutting out and pricking studs or caps for fruit-cans which require to hermetically sealed is thereby considerably facilitated and much time is saved.

I claim as new and desire to secure by Letters Patent—

1. The pricking-needle F, applied in combination with the yielding center piece, D, die B, and punch A, substantially as and for the purpose set forth.

2. The combination of the center piece, D, and needle F, separably adjustable in height, and employed in connection with the spring E, in the manner and for the purposes explained.

WILLIAM K. LEWIS.

Witnesses:

ELBRIDGE C. COWEY,

ROBERT P. LONG.