

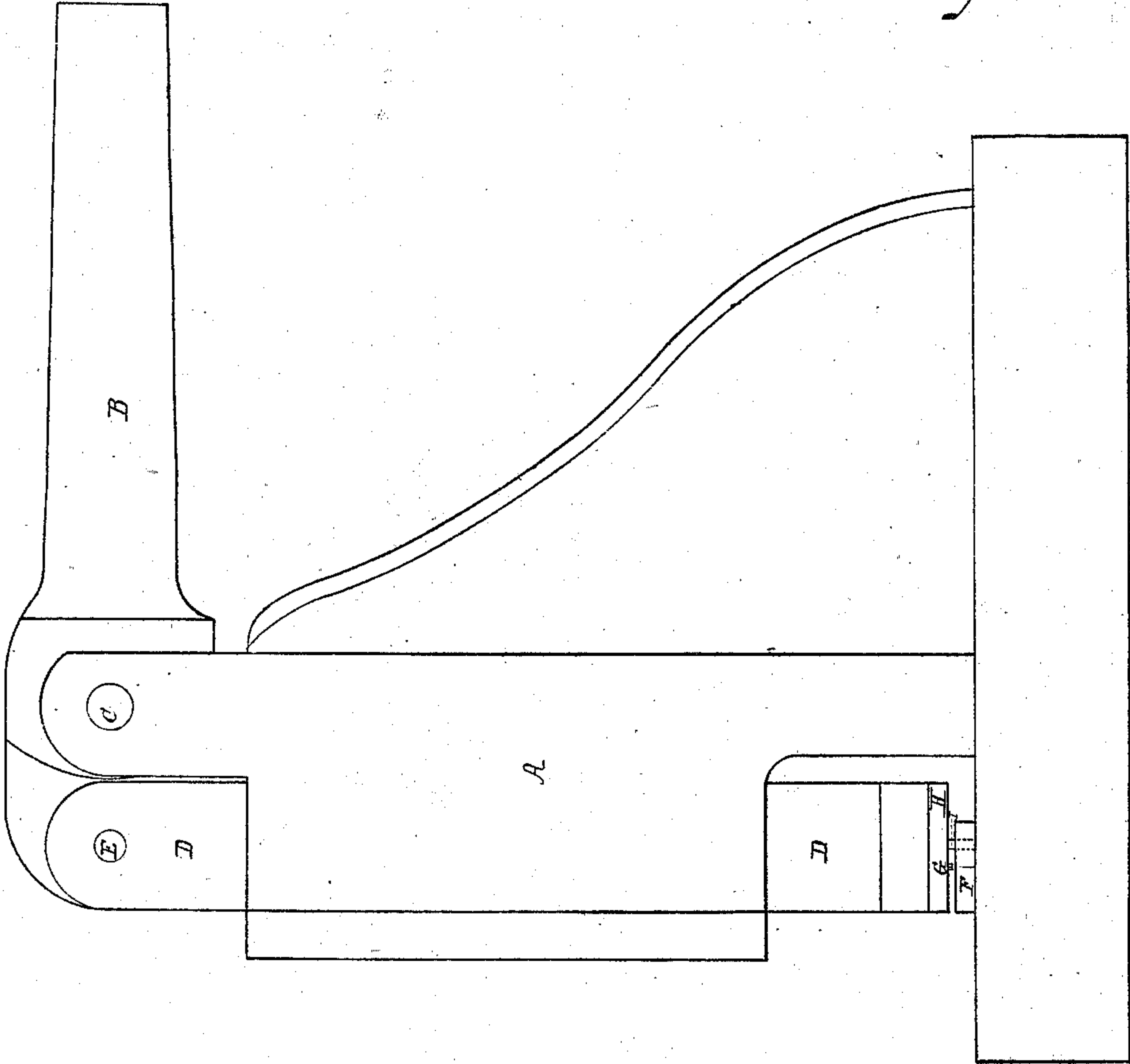
*A. L. Dennison,*

*Making Watches,*

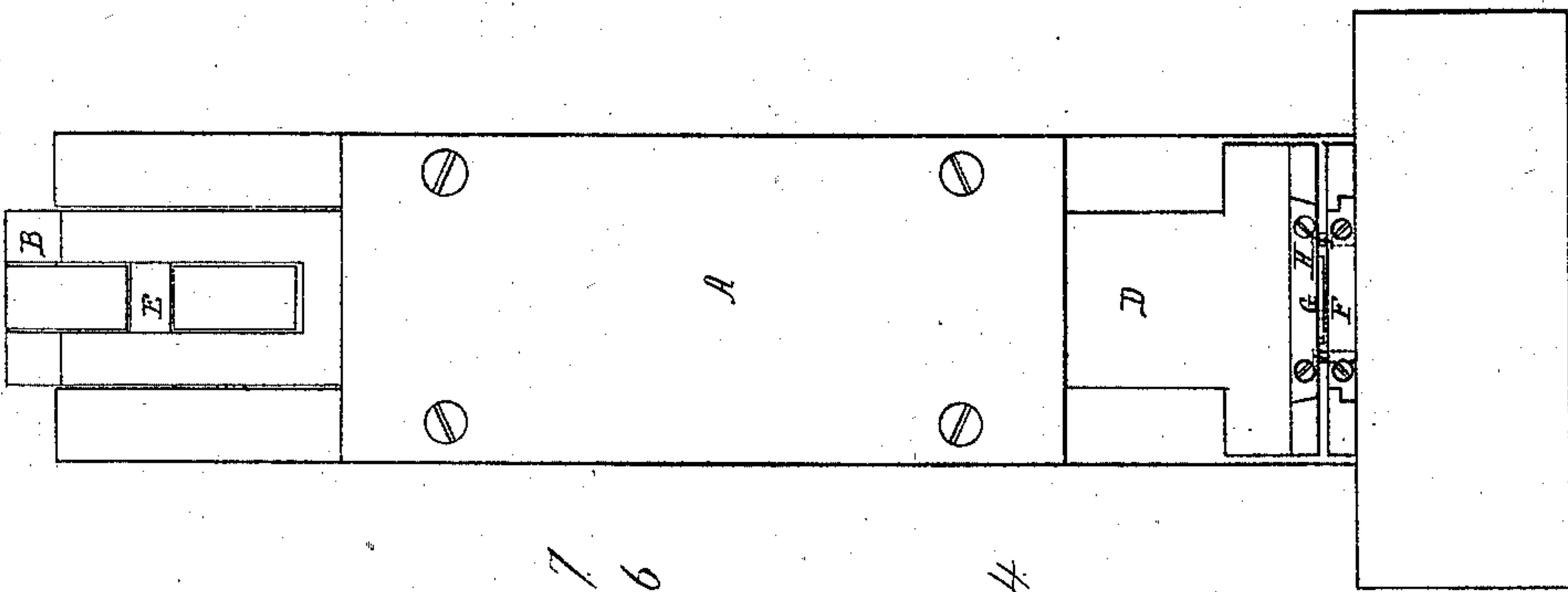
*N<sup>o</sup> 11522.*

*Patented Aug. 15, 1854.*

*Fig. 1*

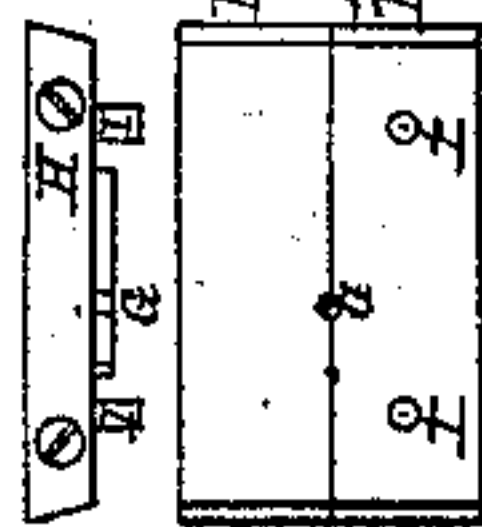


*Fig. 2*



*Fig. 7*  
*Fig. 6*

*Fig. 5*



*Fig. 4*

*Fig. 3*





# UNITED STATES PATENT OFFICE.

AARON L. DENNISON, OF ROXBURY, MASSACHUSETTS.

## PUNCH AND DIE FOR PUNCHING WATCH-HANDS.

Specification of Letters Patent No. 11,522, dated August 15, 1854.

*To all whom it may concern:*

Be it known that I, AARON L. DENNISON, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in the Method of Making Punches to be Used in the Manufacture of Watch-Hands; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side elevation; Fig. 2, is a front elevation; Fig. 3, is a plan of the die; Fig. 4, is a plan of the punch, secured between two metallic blocks; Fig. 5, is a front elevation of the punch and blocks; Fig. 6, is a plan of the different parts of the punch; and Fig. 7, is an elevation of the punch in separate pieces.

To form the parts of my punch for the very delicate operations which it has to perform, I form a counter die in two parts, as shown at F, Figs. 1, 2, and 3, of hardened steel blocks, or their equivalent, screwed together with the exact shape of the hand it is designed to imitate, made between them by removing such portion of their edges as will leave a space of the form intended. The punch to be used with this die consists of two similar pieces, H, H; between which in like manner the shape of the article is to be exactly imitated; for all the circular parts of the punch, I use pieces of round steel wire, drawn their whole length to the exact figure required; if any other figure is desired than round, I cause a wire of that figure to be used; for the straight or curved parts that are long and narrow, I take thin slips of steel also, assuming the exact form of the article to be made throughout their whole depth, which exactly fits the parts of the blocks H, for which they are intended; these pieces being small and of simple elements, of a uniform thickness throughout, I am enabled to temper them perfectly without danger of warping; they are readily and accurately made, and are sure to always fit their places without any extra finishing of their shanks, there is consequently a great saving in the construction of such minute pieces, and fitting them to their places, as well as the facility, ease, and consequent

economy in the reconstruction of the entire punch, or of the replacing of any of the delicate parts of the same when they become broken or injured, which frequently occurs in such small work as watch hand punching.

When the blocks H, H, have had the pieces of the punch placed between them, they are screwed tightly together, embracing firmly every part of the shank of the compound punch, leaving the part that projects sufficiently beyond the face of the blocks, for the purpose intended, and the blocks are then firmly secured to the lower end of a slide D, in a punching press of any convenient construction, which moves up and down directly over the die.

There are two guide pins I, I, set in the punch block H, which are fitted to slide up and down in holes, J, J, Fig. 3, in the die block, for the purpose of keeping the punch and die in their true relation to each other while in operation. To operate this punch I first place a piece of thin metal between the die and punch; the power is then applied to the lever, every elevation of the lever causes a depression of the slide, forcing the punch through the metal into the die, and taking out a piece precisely the shape of the punch.

Having thus fully described my invention, what I claim therein as new, and for which I desire to secure Letters Patent, is—

The construction and arrangement of the punch and die in the manner and for the purposes set forth, the punch being of elementary parts, formed to the same figure, or nearly so, in their cross section throughout their whole depth, and braced between blocks or clamps made to the figure of the article to be formed, by which construction the most delicate and complex punch can be formed in a cheap and expeditious manner, and readily renewed or changed; and being throughout of the same magnitude, are readily and perfectly hardened, without injury, which has heretofore been found an insuperable difficulty in punching small delicate work.

A. L. DENNISON.

Witnesses:

N. P. STRATTON,  
GEO. HASTINGS.