

(No Model.)

G. F. EVANS.

DIE FOR FORGING WRENCH HEADS.

No. 352,528.

Patented Nov. 16, 1886.

Fig. 1.

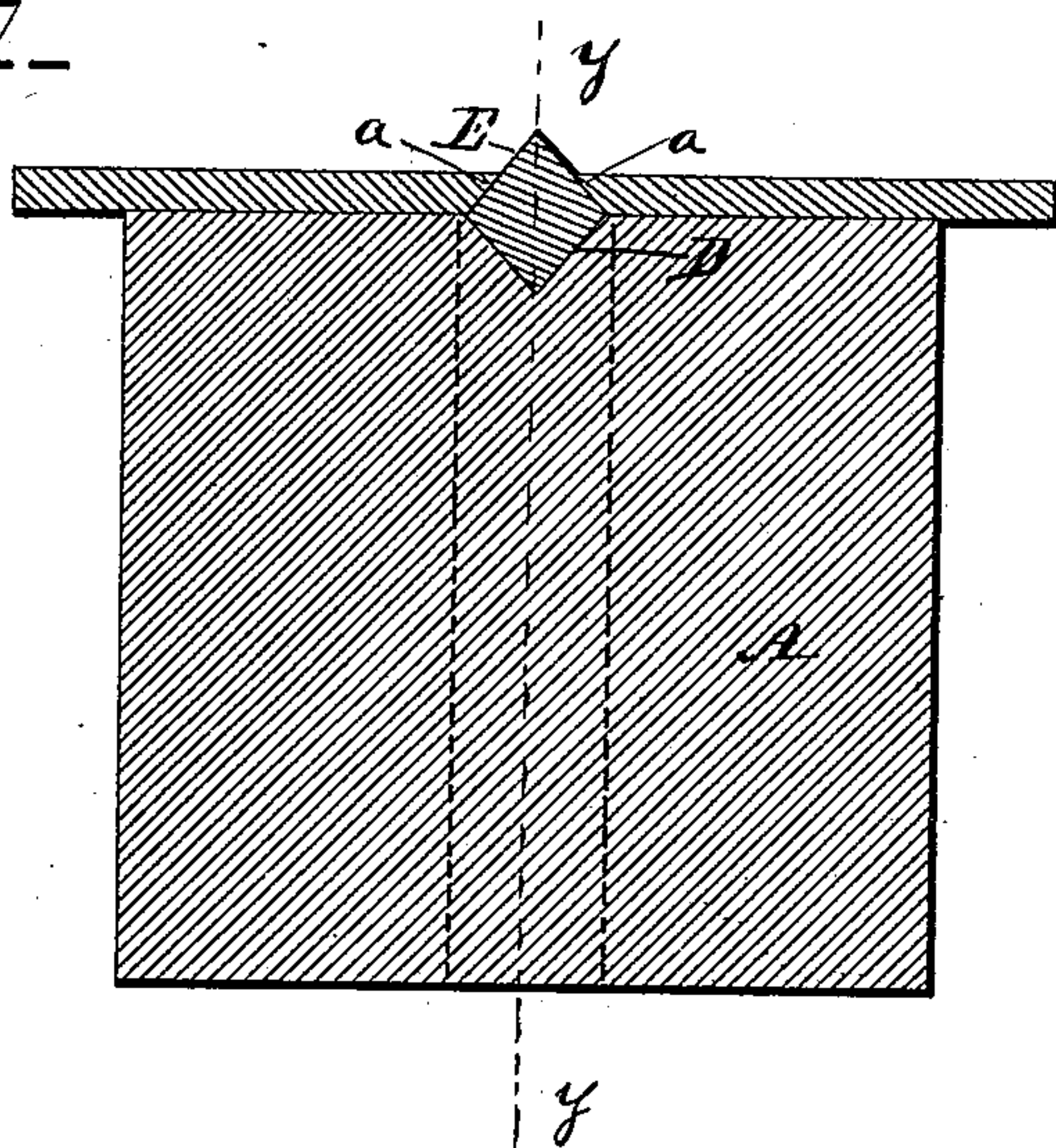


Fig. 2.

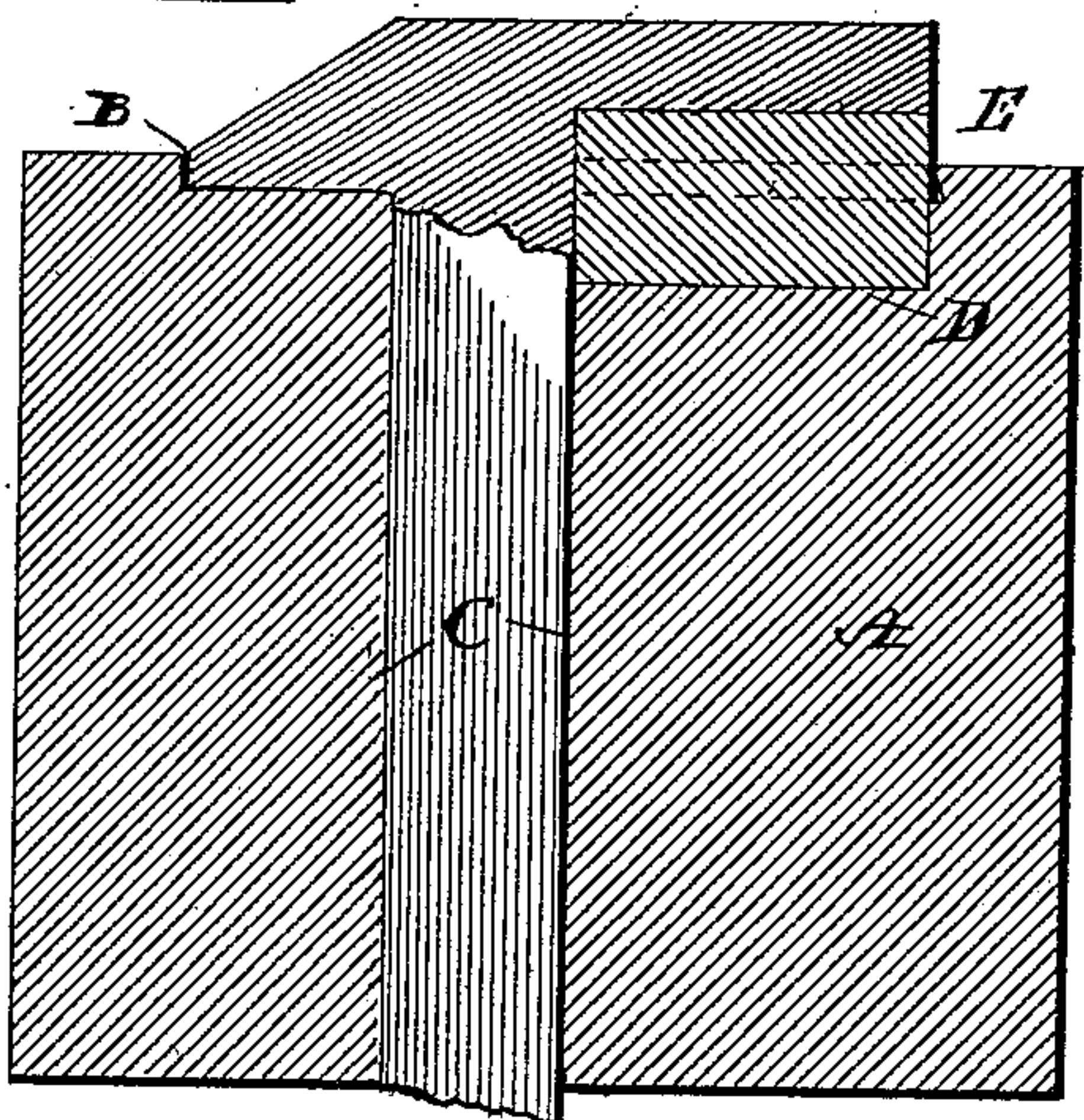
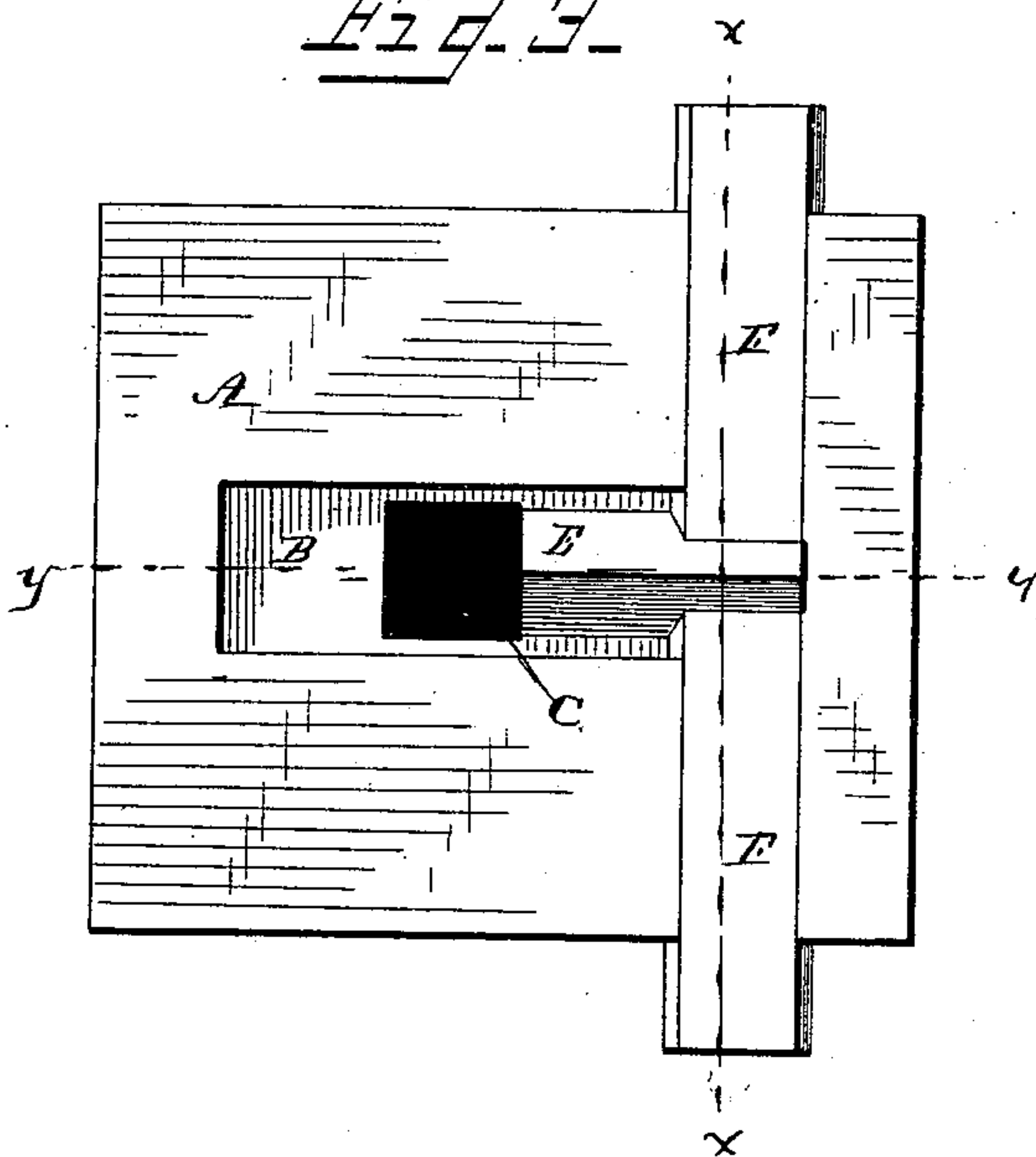


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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DIE FOR FORGING WRENCH-HEADS.

SPECIFICATION forming part of Letters Patent No. 352,528, dated November 16, 1886.

Application filed April 14, 1886. Serial No. 198,791. (No model.)

To all whom it may concern:

Be it known that I, G. FRANK EVANS, a citizen of the United States, residing at Portland, in the county of Cumberland, State of Maine, have invented certain new and useful Improvements in Dies for Forging Metal, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to improvements in dies for making depressions V-shaped in cross-section in the meeting surfaces of the jaws of monkey and other hammer-headed wrenches, and its object is to make the die producing the depression detachable from the die-block, so that when the former becomes broken or untrue under the blows of the drop-hammer the latter may not be thrown aside as worthless, but may be fitted with a new and perfect die.

A further object is to provide a die with more than one forming-angle that may be reversed upon the die-block, so that when one angle is impaired the other may be used, and the life of the die thus lengthened.

In the accompanying drawings, Figure 1 represents a sectional view of the die-block and die, taken on the line *xx* of Fig. 3. Fig. 2 is a similar view on the lines *yy* of Figs. 1 and 3. Fig. 3 is a plan view of the die-block and die.

The wrench-blank here shown has the jaws of a monkey-wrench, and the V-shaped depressions are made in the backward extensions of the same. These depressions adapt the jaws to readily engage upon angular rests and bolt-heads.

Referring to the accompanying drawings, A designates the die-block, having a shallow recess, B, in its upper surface, and an opening, C, about centrally through it, the said opening communicating with the recess. When the movable jaw of the wrench is taken off, the shank is passed into the opening C until the meeting surface of the fixed jaw rests upon the die, hereinafter described. The recess B is of just sufficient size to receive and hold the jaw B' after being stamped.

D is a recess V-shaped in cross-section, running from the opening C to that end of the recess B which corresponds to the rearward ex-

tension of the jaw. The angle of said recess is preferably a right angle, but may be more acute or obtuse, if desirable.

E is the steel die, having four sides and equilateral in cross-section. The die is of the proper size to have one of its angular corners rest in the recess D, with one end of the die against the end of the recess B and the other flush with the opening C.

f f are recesses in the upper surface of the die-block at right angles to the recess B and entering the same at its rear end, or end in which the rearward extension of the wrench rests. The said recesses are in line with each other on each side of the recess B, and are dovetailed in cross-section to hold the sliding locking-bars F F. The inner ends of the said bars are properly beveled at *a a*, to impinge flatly against the sides of the die E and hold it firmly in place.

The method of using the die is as follows: The movable jaw of the wrench being detached, the shank is passed through the opening C until the fixed jaw rests upon the die. The drop-hammer then falls, causing the die to make the V-shaped recess or depression in the surface of the jaw. The shank is then removed and the movable jaw of the wrench placed in the recess B and stamped in a similar way. The impact of the drop-hammer forces the die into the recess D, so as to prevent iron scales, oil, or water from penetrating between them and injuring either. The die, when one corner is worn untrue, can be reversed, so that its life is lengthened, and the dies being detachable, when worn out can be replaced and do not render the die-block useless.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the die-block having the recess on its upper surface to receive the jaw of the wrench, the opening through it for the passage of the wrench-shank, and the die-recess running from said opening to the rear end of the recess for the jaw, with the die four-sided and equilateral in cross-section and fitting into the die-recess, as set forth.

2. The combination of the die-block provided with the recesses B D *f f* and opening C, the

four-sided die equilateral in cross-section, the sliding locking-bars F F, having their inner edges beveled to rest against the surface of the die.

5 3. The combination of the recessed die-block and the detachable die, as set forth.

4. The combination of the recessed die-block, the detachable die, and means, substantially as described, to hold the die firmly in place.

In testimony whereof I affix my signature in the presence of two witnesses.

G. FRANK EVANS.

Witnesses:

O. B. BLACKSTONE,
H. T. BLACKSTONE.