

(No Model.)

A. W. TABER.

DIE FOR MAKING TWIST DRILLS.

No. 380,146.

Patented Mar. 27, 1888.

FIG. 1.

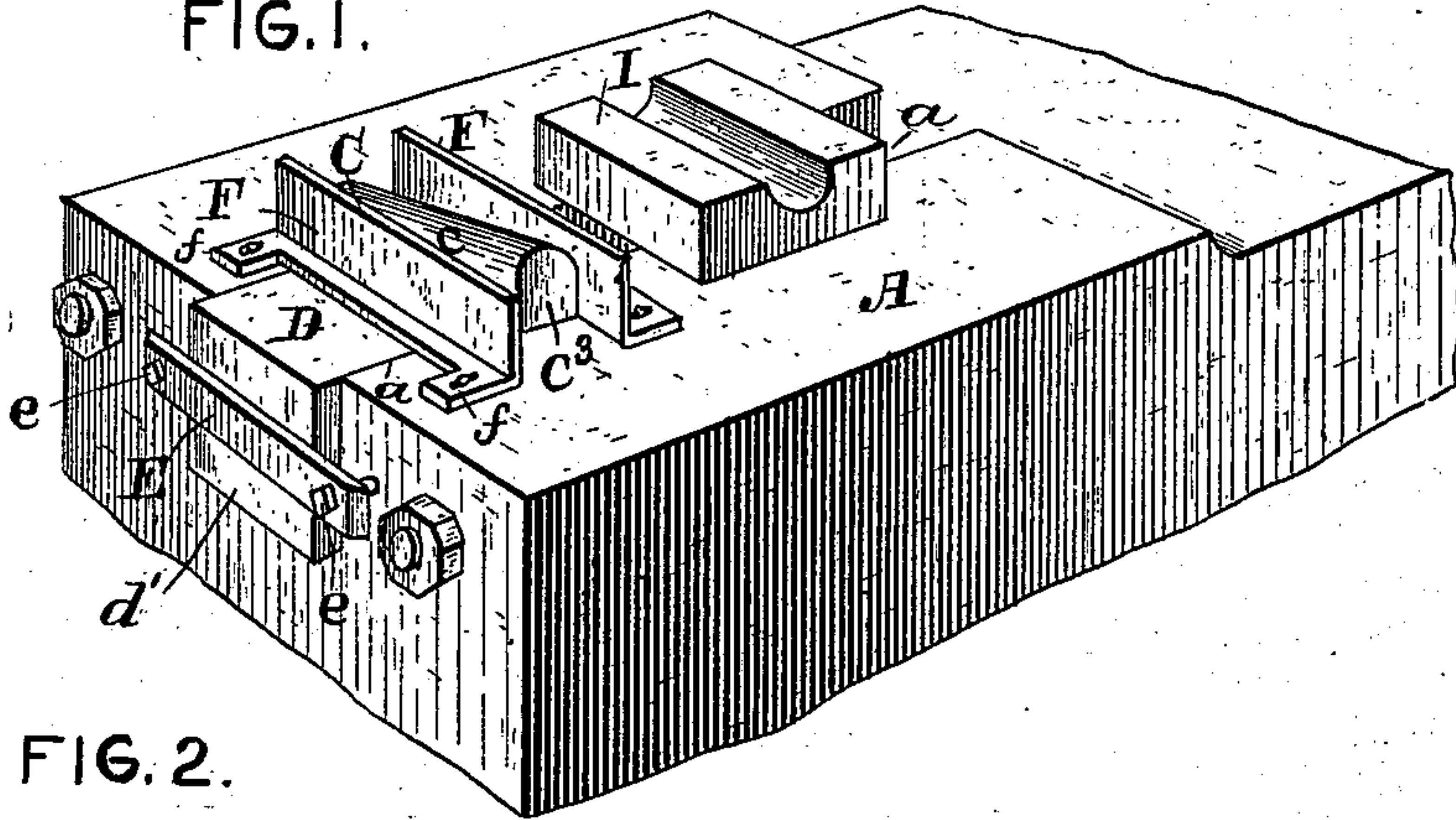


FIG. 2.

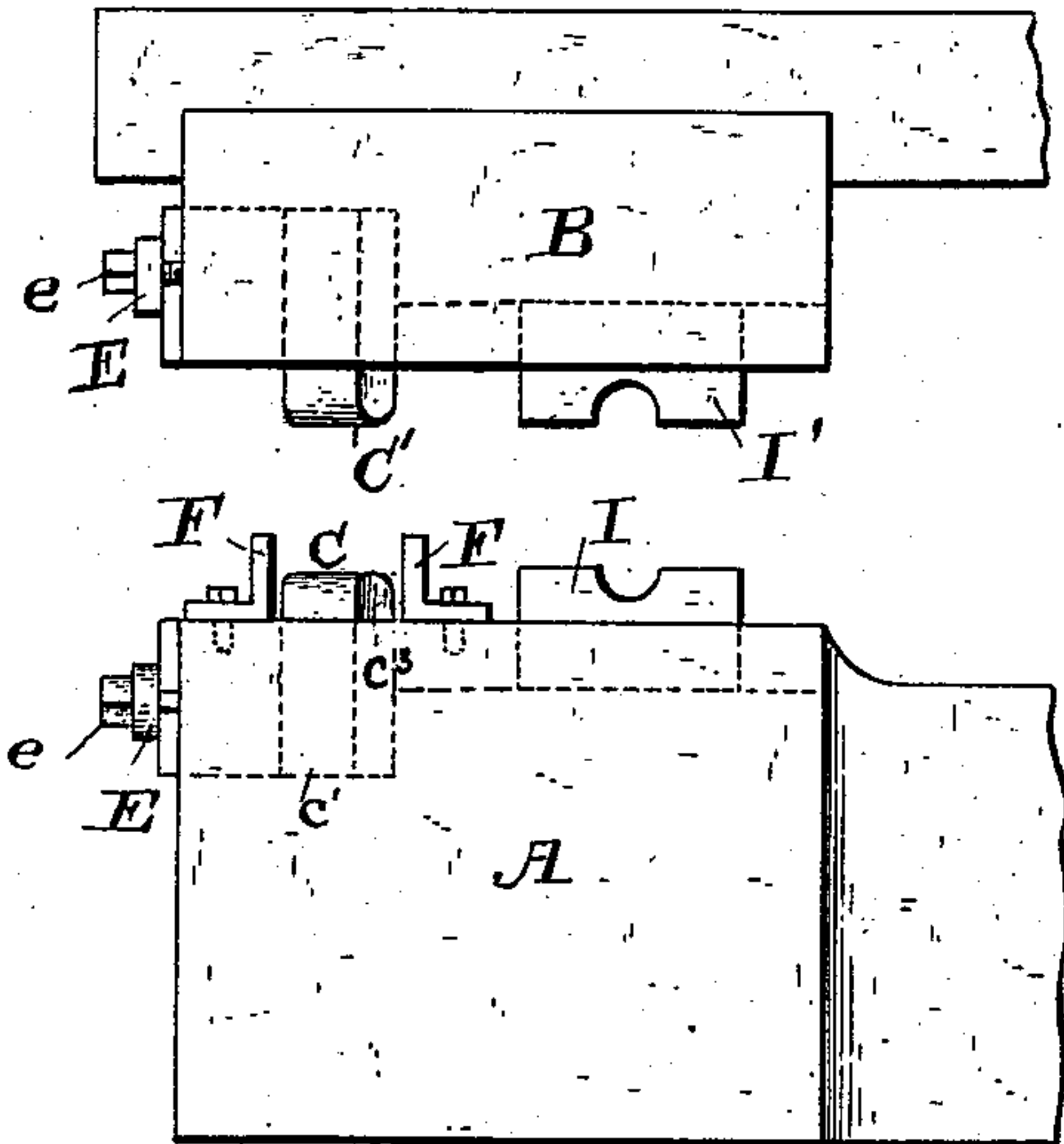


FIG. 3.

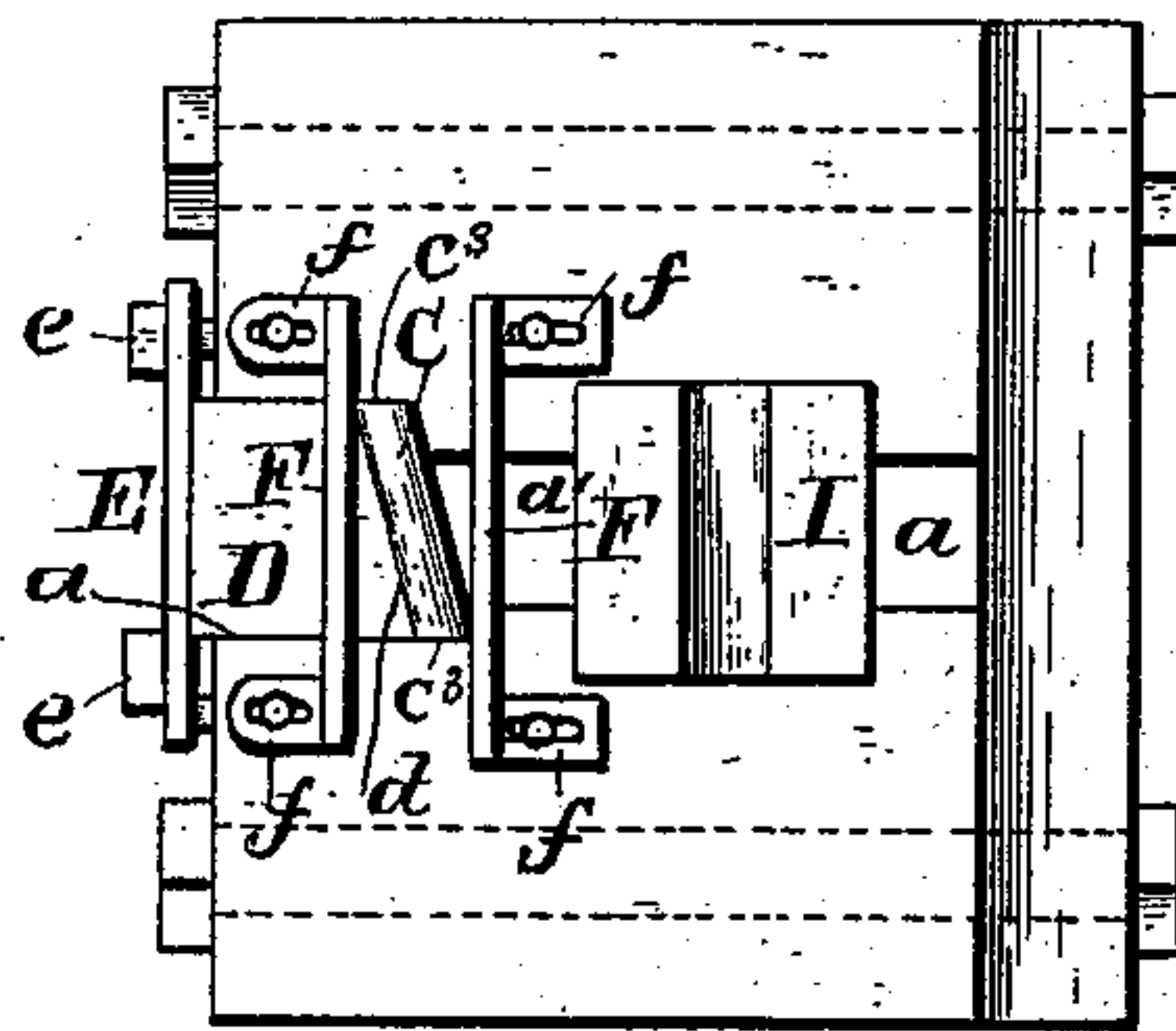


FIG. 5.

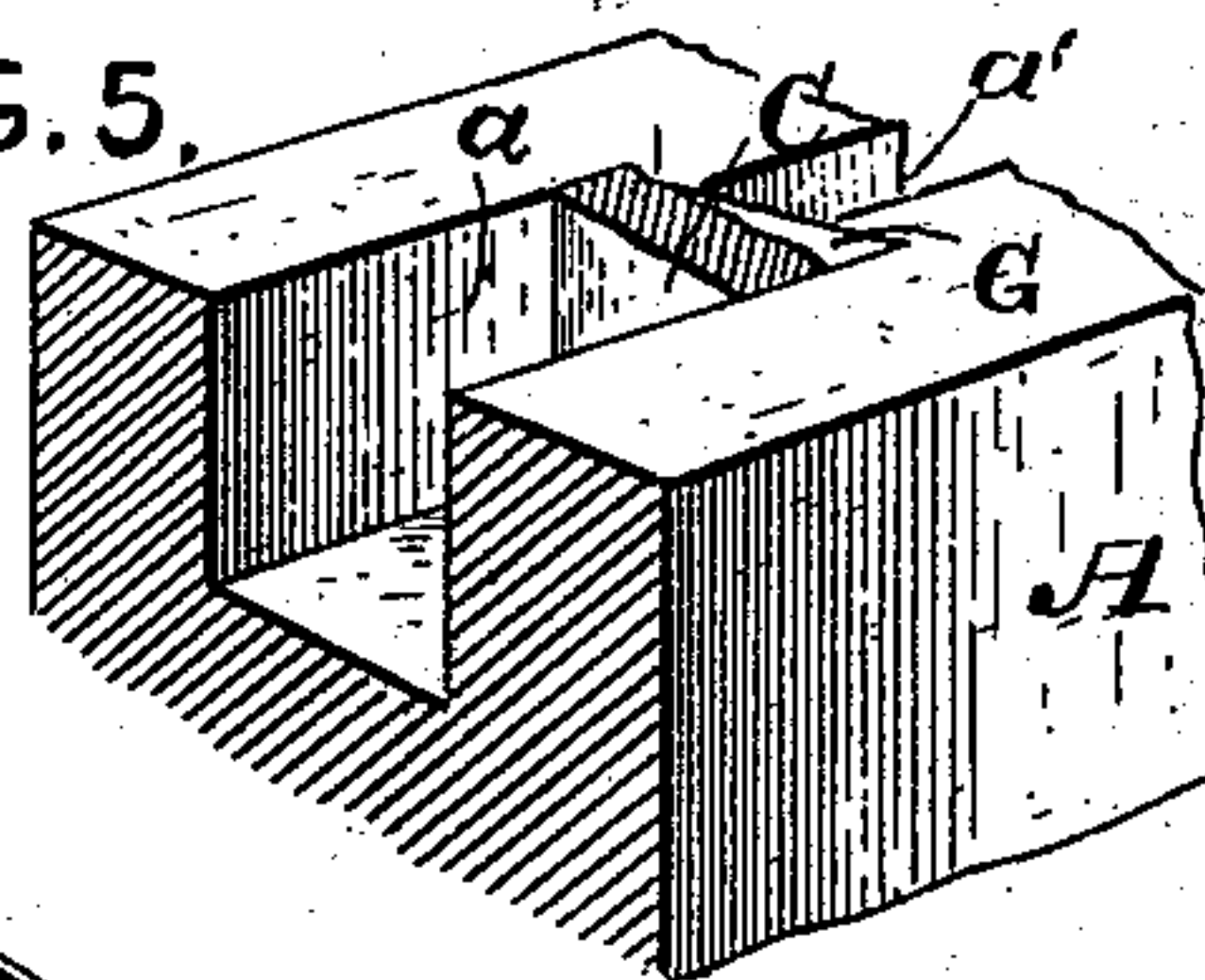


FIG. 4.

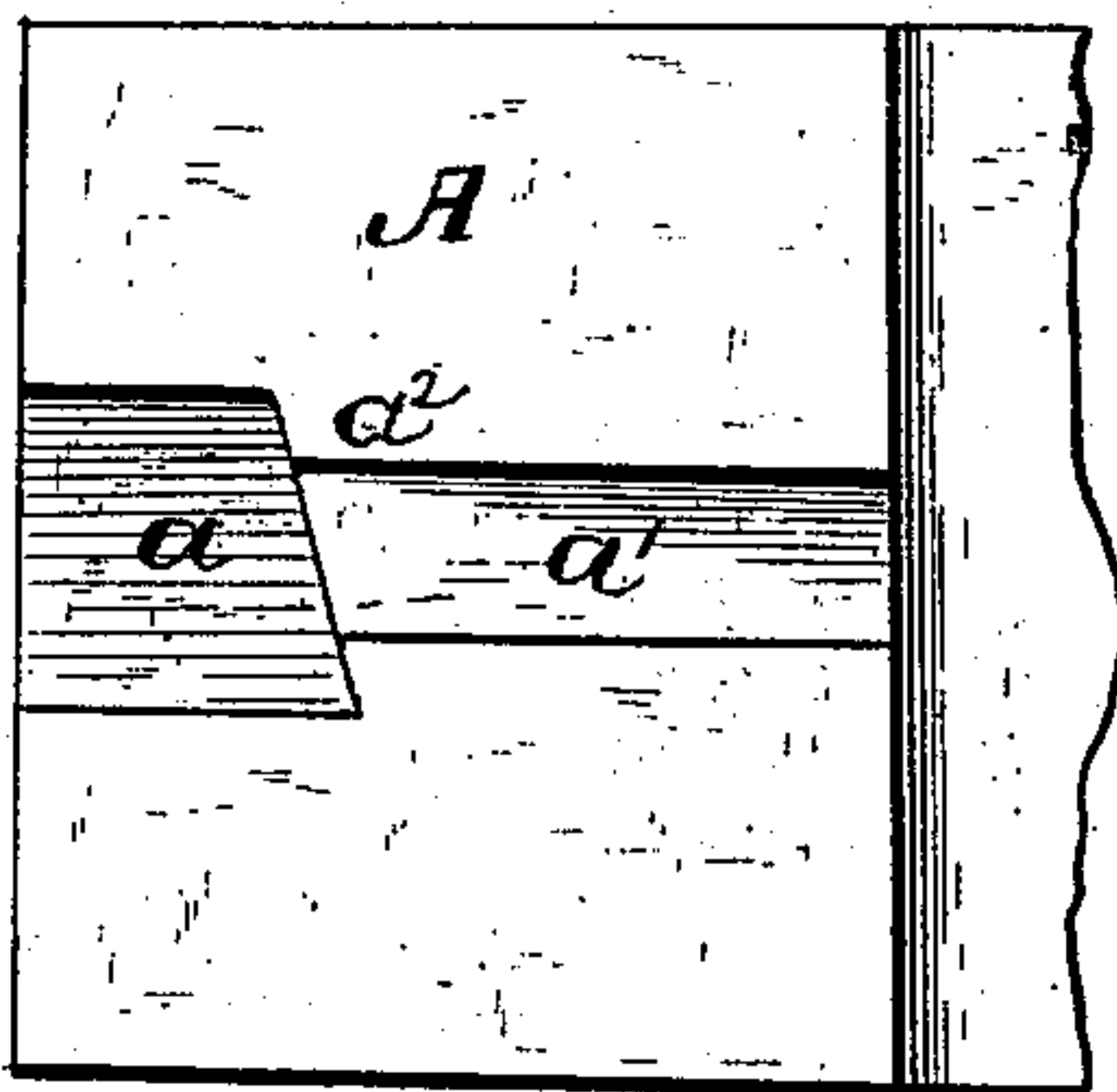


FIG. 7.

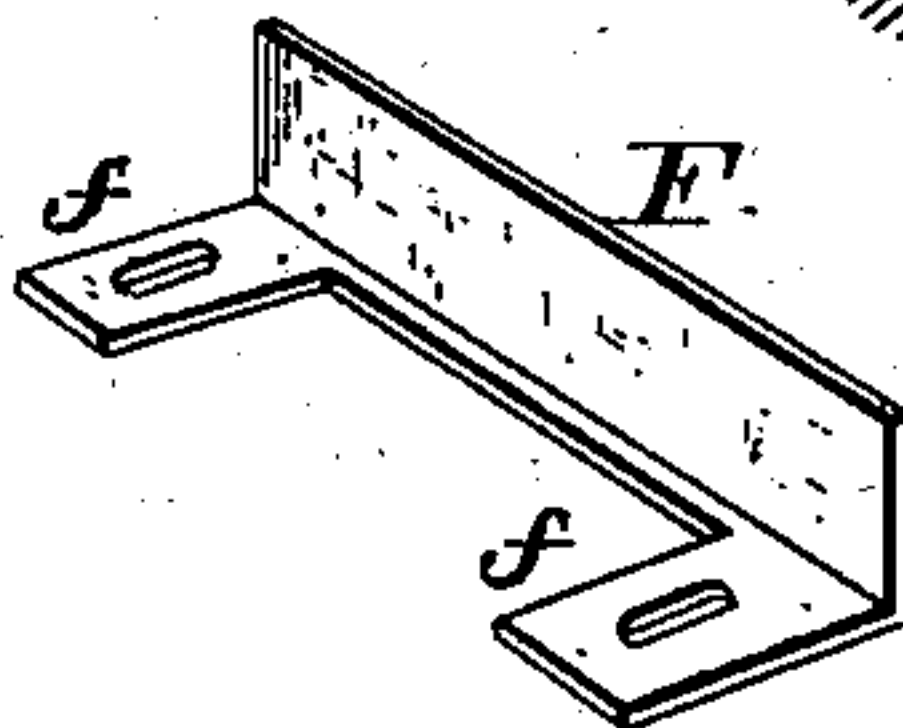


FIG. 8.

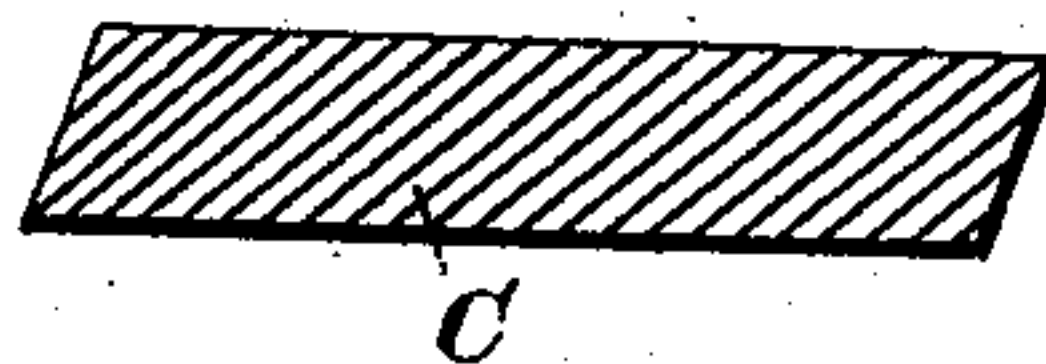
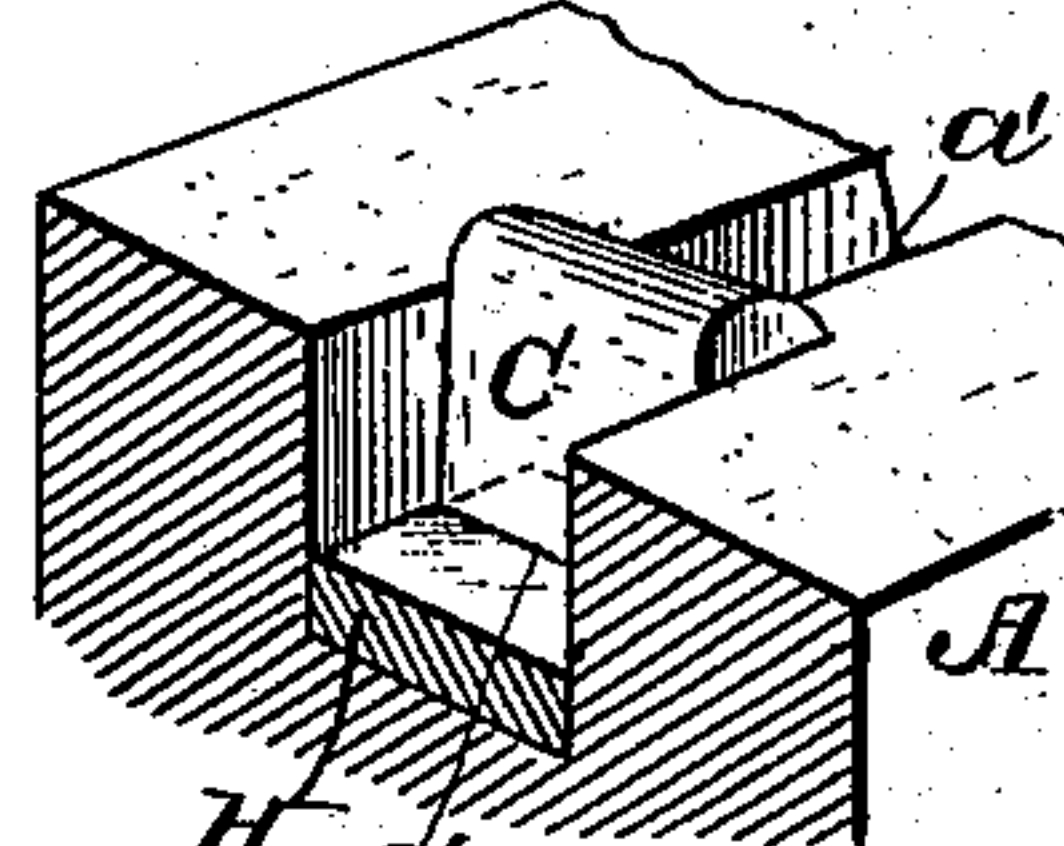


FIG. 6.



ATTEST.

J. Henry Kaiser.  
M. Redman

INVENTOR.

Albert W. Taber.

By his Attorney.

L. Deane



# UNITED STATES PATENT OFFICE.

ALBERT WEST TABER, OF NEW BEDFORD, MASSACHUSETTS.

## DIE FOR MAKING TWIST-DRILLS.

SPECIFICATION forming part of Letters Patent No. 380,146, dated March 27, 1888.

Application filed May 4, 1887. Serial No. 237,112. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT WEST TABER, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Twist-Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1 is a perspective view of the anvil-block, showing the fuller or piece of steel as in position for use. Fig. 2 is a side elevation of the anvil-block and hammer-head. Fig. 3 is a top plan view of the anvil-block with the fuller or steel as in position for use. Fig. 4 is a top plan view of the anvil-block alone, all the other parts being removed. Fig. 5 is a detail, partially in section, showing the anvil-block and how the fuller can be set at any desired angle. Fig. 6 is a detail in section showing how the fuller or steel can be raised when necessary, as when the top is worn off; Fig. 7, a perspective of one of the guides. Fig. 8 is a horizontal section of the fuller, showing its shape.

My invention relates to the manufacture of twist-drills; and the points of novelty consist in the construction of a pocket in the anvil-block and in the hammer-head, and in the adjustment in the pocket of a peculiarly-shaped fuller or piece of steel for forging a spiral groove in the drill, and in the construction of a guide for holding the steel of which the drill is made in position when the groove is being formed in it, and in the means for adjusting the fuller or piece of steel at any desired angle, so as to make any desired twist in the drill, and in the means used for elevating the fuller or steel as its head becomes worn, and in the construction and combination of the several parts, all as will now be set out and explained, reference being had to the accompanying drawings.

In the drawings, A denotes the anvil, and B the hammer-head, the latter operating in any desired way and manner, details of which are not necessary for the purpose of understanding the scope and aim of the present invention. Centrally and in the upper or top part of the anvil-block is a recess,  $a\ a'$ . The rear part,  $a^2$ ,

of the forward portion,  $a$ , of this recess is inclined at an angle to the longitudinal axis of the anvil A, so as to form a suitable seat for the fuller or steel C, which is rounded upon its upper end,  $c$ , in the form of the desired groove that is to be made in the drill. This piece of steel is flat on the bottom  $c'$ , its sides  $c^2$  parallel with each other, its ends  $c^3$  being parallel but oblique to its sides, and is of sufficient length that when placed vertically within the recess  $a\ a'$  it will project sufficiently above the anvil to form the groove in the drill. The fuller is pushed to the rear of the recess, where it snugly fits, and here it is at an angle with the longitudinal axis of the recess of the anvil-block. To retain it in position the metallic block D, with an angular back face,  $d$ , is placed in the recess so as to come snugly against the fuller, its front end,  $d'$ , projecting a little beyond the front wall of the anvil-block. By means of the metal strap or bar E, which is placed about centrally over the front end of the recess and secured on each side by means of the bolts  $e$ , upon the front face or end of the anvil-block, the metal block D and the fuller C can be held rigidly in position. The upper end of the block D is about flush with the top of the anvil-block. In like manner in the front edge of the hammer B a similar recess is formed with the angle of its inner end reversed, and in this is placed the fuller  $C'$ , which is, in like manner as the fuller C, secured in place by block and strap and bolts. The angle of the inner end of the recess in the hammer-head being reversed from that in the anvil-block, the fuller  $C'$  will be in a position diagonally across that of the fuller C.

When the groove is to be made in the rod or bar of steel, the rod or bar will be held in position between the guides F, which are made of bent pieces of metal securely fixed upon the top of the anvil-block and on each side of the fuller, and project a little above the fuller C. These guides can each be adjusted to or from the fuller by means of the slots  $f$  in the part which rests upon the top of the anvil-block. By merely slackening the nuts which clamp the guides in position they can be moved forward or back in the slots and then be firmly secured again upon the top of the block. It will be observed that each guide is placed diagonally across the anvil-block from side to side,



and by means of this construction the edge of the groove which is being made in the drill is kept perfect. In practice this is a matter which has proved to be of the greatest value.

5 It may be desirable sometimes to change the angle of the fullers or steel, and in order to do this metallic shims or wedges G, as shown in Fig. 5, may be placed between the rear face of the former and the end of the recess, and so  
10 the angle can be increased at will. It will be noted that the angle at the rear of the recess is as little as can be desired, and that the shims or wedges are simply put in to increase it.

When the top of the former wears down, the  
15 former can be adjusted to a proper height by putting shims or blocks H underneath. The swages I I' upon the anvil-block and hammer-head are thus of ordinary construction and such as are used to keep the drill at its proper  
20 diametrical size. It will be observed by those skilled in this line of invention that this device is applicable for use in a steam, trip, or other hammer, or in a swaging or other machine used for forging.

25 Having now described my invention, what I consider new, and desire to secure by Letters Patent, is—

1. In a machine for making twist-drills, an anvil-block having a recess in its upper front edge angular at the rear of its larger part, the  
30 fuller C, made as described, the angular metallic block D, the strap E, and the bolts e, substantially as and for the purpose set forth.

2. In combination with an anvil-block having the recess a, made angular, as described,  
35 the fuller C, confined in position, as set forth, and the adjustable guides F on each side of the fuller.

3. An anvil-block having a recess made angular at the rear, as described, and a fuller  
40 adapted to fit in said recess, the angular block D, and strap and bolts securing the same upon the fuller to hold it in place, combined with a hammer-head fitted in like manner with a fuller, substantially as and for the purposes  
45 set forth.

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

ALBERT WEST TABER.

Witnesses:

MORTIMER REDMAN,  
M. A. BALLINGER.