(No Model.)

C. F. SULLIVAN.

DIE FOR MAKING SCREW DRIVER BLADES.

No. 562,934. Patented June 30, 1896.

Fig. 1.

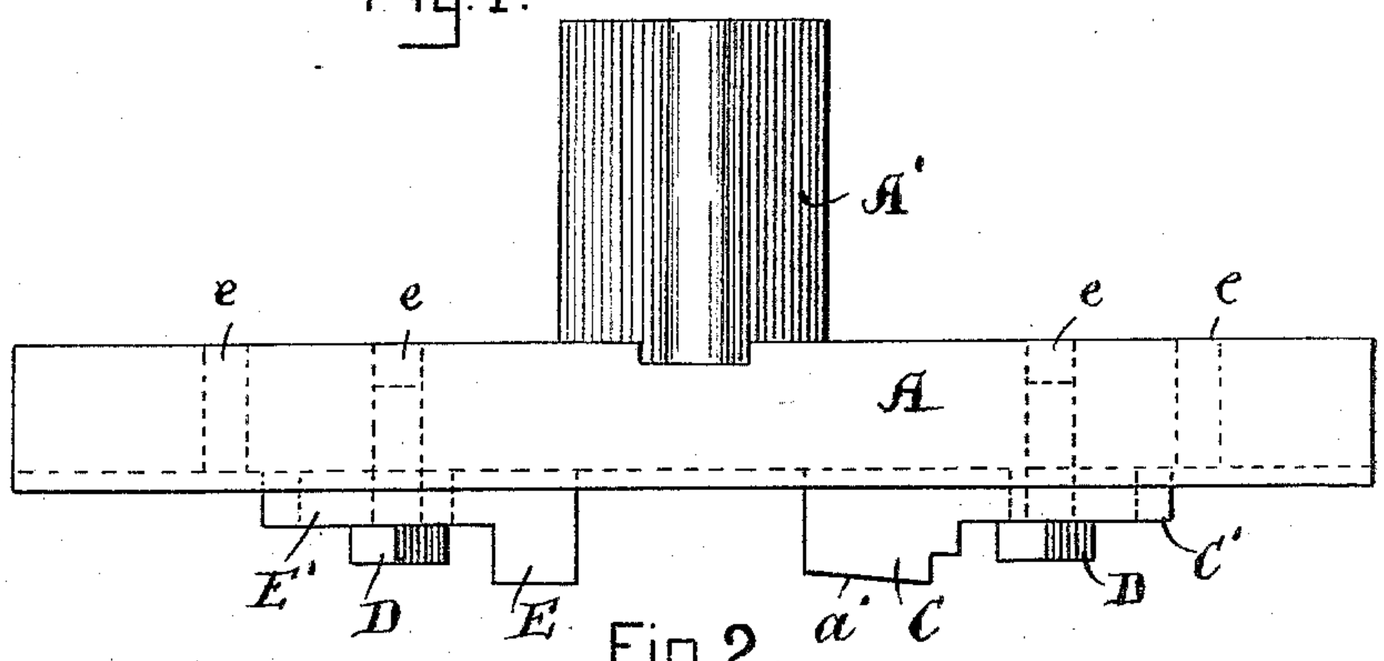


Fig. 2.

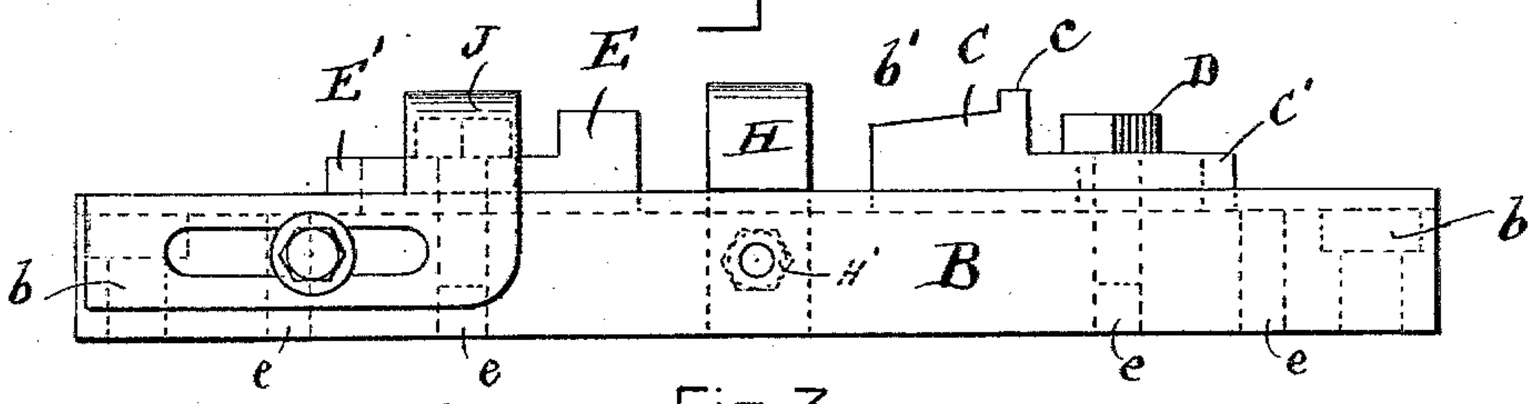


Fig. 3.

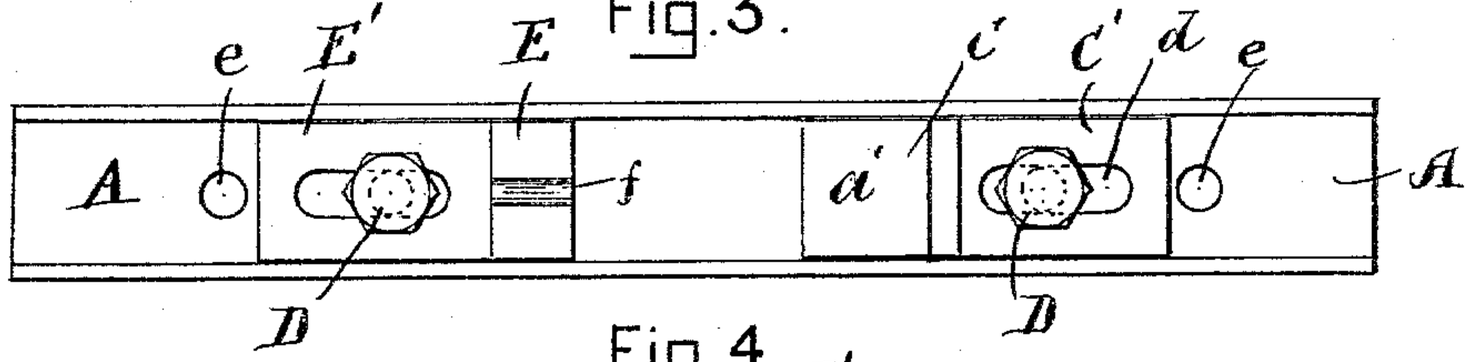


Fig. 4.

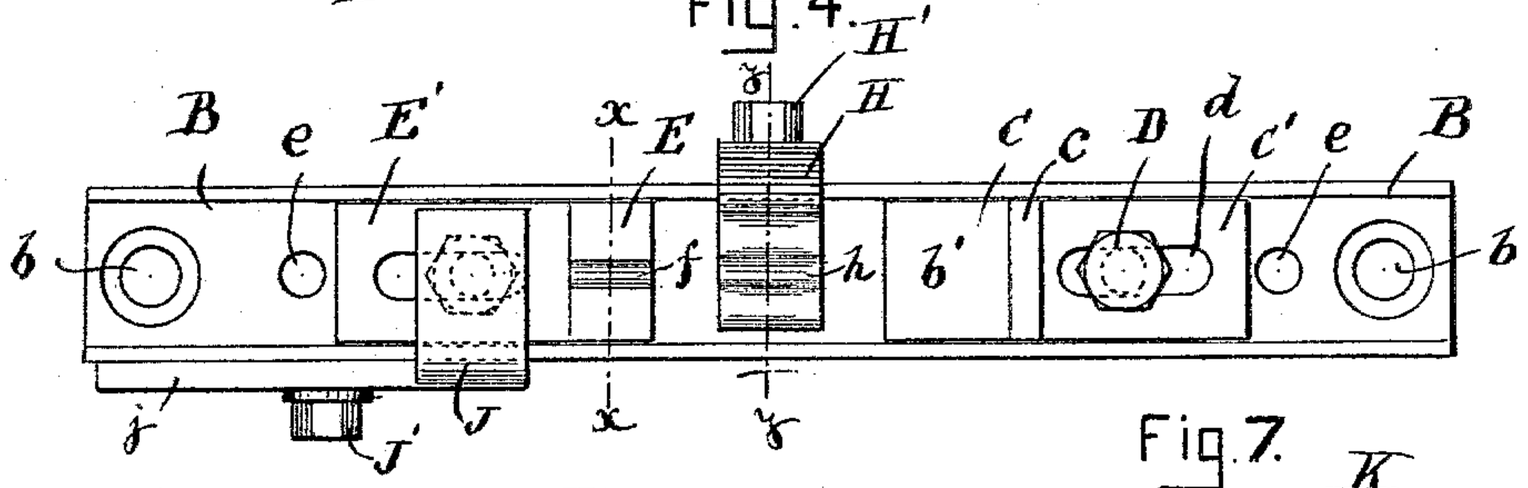


Fig. 5.

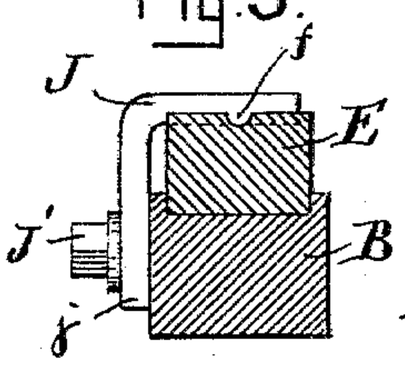


Fig. 6.

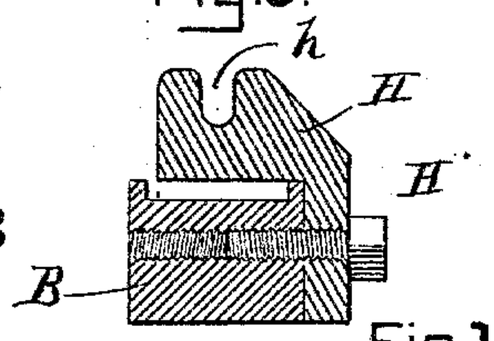


Fig. 7.

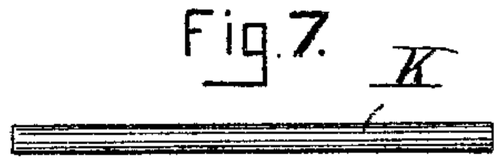


Fig. 8.

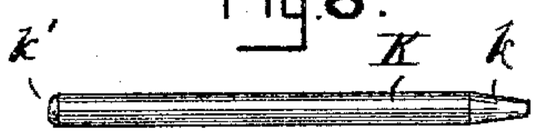


Fig. 9.

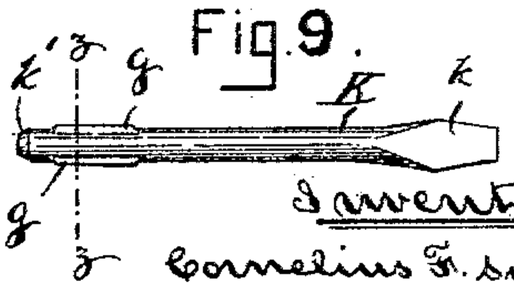
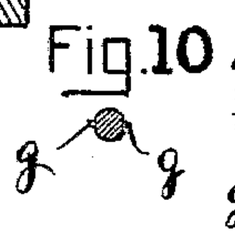


Fig. 10.



Witnesses.
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Inventor.
Cornelius F. Sullivan
by Edwin Blanta.
Attorney.

UNITED STATES PATENT OFFICE.

CORNELIUS F. SULLIVAN, OF BOSTON, MASSACHUSETTS.

DIE FOR MAKING SCREW-DRIVER BLADES.

SPECIFICATION forming part of Letters Patent No. 562,934, dated June 30, 1896.

Application filed October 6, 1894. Serial No. 525,083. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS F. SULLIVAN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dies for Making Screw-Driver Blades, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to certain improvements in dies for manufacturing screw-driver blades, whereby I am enabled to form screw-driver blades from wire or metal bars, as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of the upper holder and dies embodying my invention. Fig. 2 is a similar view of the lower holder and dies. Fig. 3 is a plan or view of the under side of the upper holder and dies. Fig. 4 is a plan or top view of the lower holder and dies. Fig. 5 is a vertical cross-section taken on line *x x* of Fig. 4. Fig. 6 is a vertical cross-section taken on line *y y* of Fig. 4. Fig. 7 is a view of a piece of wire or metal bar cut to the required length to form a screw-driver blade. Fig. 8 is a view of the same reduced or pointed at one end and chamfered at the other end ready to be operated upon by the dies. Fig. 9 is a view of the same after being operated upon by the dies and pressed into shape. Fig. 10 is a cross-section taken on line *z z* of Fig. 9.

A represents the upper die-holder; A′, the head for securing the same in the press.

B is the lower die-holder, which is secured to a bed-plate by bolts passing through holes *b*.

At one end of each of the die-holders A B is secured a die C, the surfaces *a′ b′* of which are beveled off at opposite angles, so that when they come in contact with the wire or metal bar they will press it and form point of the screw-driver blade. The lower die is made with a projecting piece *c*, that forms one end of a gage for the wire or metal bar and also prevents its spreading lengthwise when compressed. Each of the dies is formed with a tailpiece C′, having a slot *d* therein, and are each secured to its die-holder by a single bolt D, said bolt passing through the slot and into a screw-threaded hole *e* in the holder. The holders are grooved out, as shown, (see Figs. 5 and 6,) so that the dies cannot twist therein. Two or more of said holes *e* are made in the holders, so that the position of the screw D can be changed to adjust the die according to the length of the screw-driver blade to be made. At the other end of the holders A B are secured dies E to form a small flange on each side of the end of the screw-driver blade for holding it in the handle and prevent its turning in the same. These dies are made with a half-round depression *f*, which is somewhat smaller in diameter than that of the wire or metal bar, so that the dies will press out a portion of the wire and form a flange *g* on each side. (See Figs. 9 and 10.) These dies are made with tailpieces E′ and are secured to the holders by bolts D in the same manner as described with reference to the dies C.

In the central portion of the lower die-holder B is secured a holder for the wire or metal bar to be operated upon. This holder consists of a block of metal H, secured to one side of the die-holder by a bolt H′, and is made in its center with a slot *h*, the bottom of which is somewhat lower than the face of the dies C E, so that when the wire or metal bar is dropped in it will rest at each end upon said dies, but be held longitudinally by said holder H.

J is a gage secured to one side of the lower die-holder B and held in place by a screw J′, passing through a slot in the tail *j* of said gage, so that it can be adjusted as required. The upper end of this gage passes above the top of the die-holder B, the space between the inner edge of this gage and the projecting piece *c* on the die C being just sufficient to admit the length of wire or metal bar to be operated upon.

The operation is as follows: The wire or metal bar K is first cut to the required length. (See Fig. 7.) It is then reduced or pointed at one end, as shown at *k*, and chamfered off at its other end, as shown at *k′*. (See Fig. 8.) It is then placed in the holder H, which retains it longitudinally, and the gages J and *c* retain it so that its ends rest upon the dies C E in their proper position. The upper dies are then brought down and the point *k* is pressed into the form shown in Fig. 9, and at

its other end are pressed the flanges *g g*, as shown in Figs. 9 and 10. The object of these flanges is to prevent the tool turning in its handle, and by means of the chamfered end *k'* the tool can be forced into a handle having a hole somewhat smaller in diameter than the wire or metal bar itself.

What I claim is—

1. The die-holders A, B, in combination with the dies C, C, having beveled contact-surfaces *a'*, *b'* the lower die having a projecting piece *c*, said dies being adjustably held to the die-holders, and the adjustable gage J, substantially as and for the purposes set forth.

2. The die-holders A, B, in combination with the dies C, C, having beveled contact-surfaces *a'*, *b'*, the dies E, E, having circular recesses *f*, *f*, said dies being adjustably held to the die-holders the adjustable gage J, and the wire-holder H, all arranged and operating substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 13th day of September, A. D. 1894.

CORNELIUS F. SULLIVAN.

Witnesses:
CHAS. STEERE,
EDWIN PLANTA.