(No Model.)

J. F. WICKMAN.

STENCIL CUTTER.

No. 440,835. Patented Nov. 18, 1890.

Fig. 1.

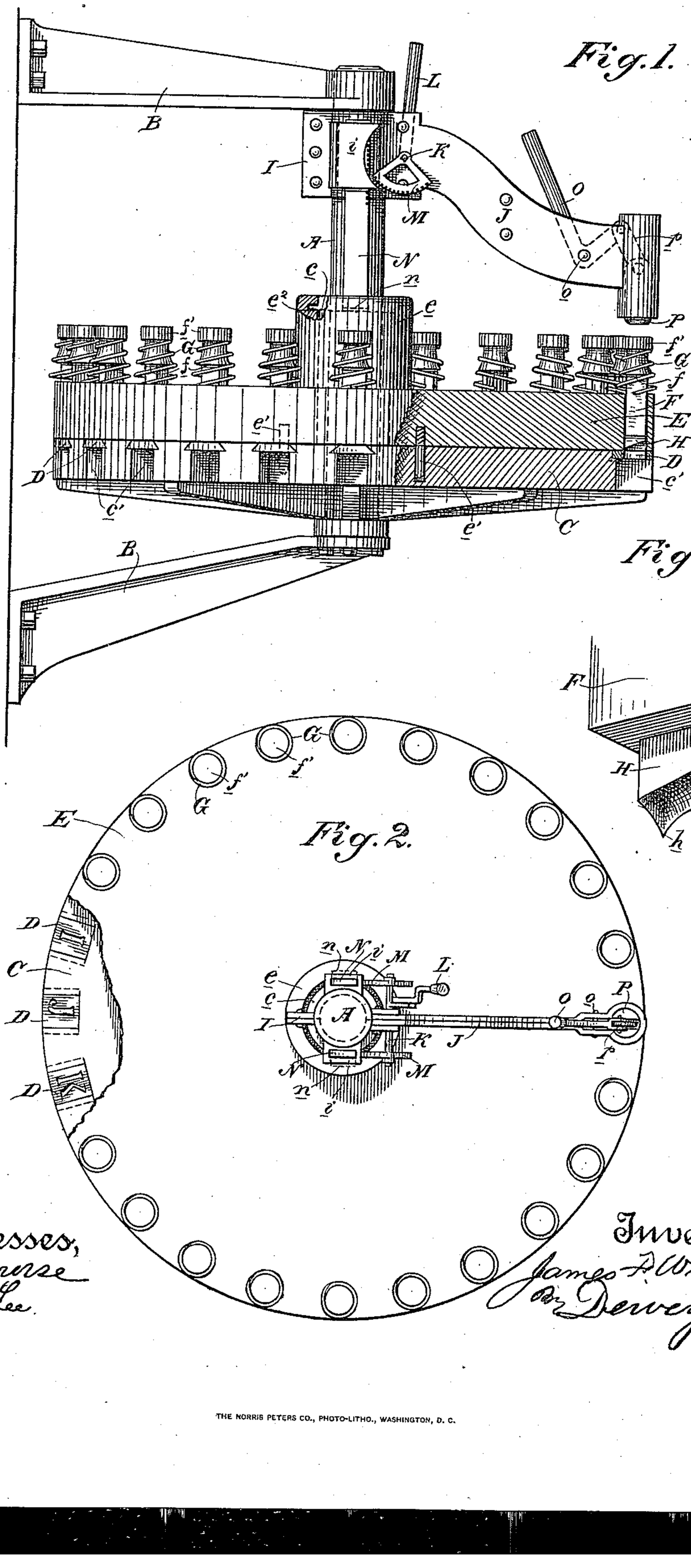

Fig. 3.

Fig. 2.

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STENCIL-CUTTER.

SPECIFICATION forming part of Letters Patent No. 440,835, dated November 18, 1890.

Application filed July 25, 1890. Serial No. 359,928. (No model.)

To all whom it may concern:

Be it known that I, JAMES FREDERICK WICKMAN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Stencil-Cutters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of cutters especially adapted for the making of stencils; and it consists in the novel construction of the punch, and in connection therewith in the novel mechanism for operating it, all of which I shall hereinafter fully describe, and specifically point out in the claims.

The object of my invention is to provide a simple and serviceable stencil-cutter, the punch in which, by reason of its peculiar shape, is adapted to cleanly cut the material with the exercise of but little power.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation and part section of my cutter. Fig. 2 is a plan of the same. Fig. 3 is a perspective view of one of the punches.

A is the standard of the machine, which is adapted to be supported in any suitable manner (here shown as being supported by a bracket B) from the wall at a height which insures its convenient use.

C is the bed-plate, having a tubular hub *c*, by which it is fitted over and can turn on the standard A. The edge of this bed-plate is cut out to form the sockets *c'*, and the upper portion of these sockets is dovetailed to receive the flat-faced dies D, which are also dovetailed and slipped to place. These dies are to be made of steel, and have cut out in them the shapes of the letters and other characters of which it is desired to form the stencil.

E is the punch-carrying plate, having a tubular hub *e*, said plate fitting down upon the bed-plate C, its hub fitting freely over the hub *c* of said bed-plate, and in order to hold the two plates so that they will turn together pins *e'*, extending from the base of the plate E, are adapted to pass down into holes in the bed-plate C.

F are the punch-shanks, having a shoulder at *f* and a head *f'*. These shanks fit down through suitable holes or seats in the plate E, and springs G, encircling their upper portion, bear between their heads and the top of the plate, whereby said shanks are held normally up and are adapted to be pressed down until their shoulders *f* come in contact with the surface of the plate.

H are the punches, which are secured to or formed with the lower ends of the shank F. These punches are made to represent the different letters and characters, and they consist of the usual grooved surfaces having a cutting-edge on each side; but their peculiarity and novelty consist in having their cutting-faces made on a bevel or slope, as shown. At its longer or deeper end this cutting-face begins with a point *h*, from which the edges extend to the opposite side, where, reaching the same or past the vertical plane, they terminate separately at *h'* in different horizontal planes.

Around the upper end of the standard A is fitted a clamp I, from which extends an arm J in a radial plane above the plate E. In the arms of this clamp I is pivoted a rock-shaft K, which carries a lever L. The ends of this rock-shaft carry toothed quadrants M, which engage the upper rack ends of lifting-bars N, which are seated in guides *i* on the sides of the clamp I and have their lower ends *n* bent, as shown. The hub *e* of the punch-plate E has an inner groove E^2 at its top, and the lower bent ends *n* of the lifting-bars N pass down into this hub and fit into the groove e^2 of the hub *e*. Now by bearing down on the lever L the shaft K is rocked, so that the quadrants M, engaging the rack ends of the lifting-bars N, raise said bars, and their lower bent ends, by contact with the groove e^2, raise the whole punch-plate E above the bed-plate C, so as to admit the material upon the bed-plate. The reverse movement presses the plate E down again.

In the outer end of the arm J is pivoted at *o* the bell-crank lever O. In said arm is also seated and adapted to move up and down the plunger P, the upper end of which is connected by a link *p* with the short arm of the bell-crank lever O.

The operation of the machine is as follows: By means of the lever L the punch-plate E is raised so as to admit of the insertion of the material from which the stencil is to be made upon the bed-plate D. Then the punch-plate

E is let down upon said material to hold it in place. Now by operating the lever O the plunger P is forced down upon the head of the punch-shank F, thereby pressing the punch down through the plate E onto and through the material and through the dies D in the bed-plate below. In this operation the punch, by reason of its peculiar shape, does not bodily force out the material, but, beginning with its longer portion, cuts it gradually against the flat-faced lower dies, somewhat after the manner of shears, thereby making a clean cut, and requiring but the exercise of small power to operate it. This shear-like effect is insured by the point *h*, with which the cutting-edges begin, and which wholly prevents any forcible punching tendency, but enters easily and sharply and begins the cutting operation. The end of the cut is also a clean sharp one, due to the separated terminals *h'* of the cutting-edges, which, coming to the same vertical plane, cut out the material, but not being in the same horizontal plane avoid any tearing, making a perfect cut.

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

1. A punch having its cutting-face on a bevel or slope beginning in a point and its edges terminating separately in about a vertical plane and in different horizontal planes, substantially as herein described.

2. The combination of a punch having its cutting-face on a bevel or slope, and a flat-faced die opposing said punch having the shape of letters or analogous characters formed therein, substantially as herein described.

3. The combination of a punch having its cutting-face on a bevel or slope beginning in a point and its edges terminating separately in about the vertical plane and in different horizontal planes, and a flat-faced die opposing said punch, substantially as herein described.

4. In a stencil-cutter, the combination of the bed-plate having the dies D arranged around its periphery, the vertically-moving punch-plate above the bed-plate and having the spring-controlled shanks arranged around its periphery, punches carried by the lower ends of said shanks, and means for raising and lowering the punch-plate, substantially as herein described.

5. In a stencil-cutter, the combination of the fixed standard, the bed-plate C, having the tubular hub fitted upon said standard, the punch-carrying plate E, having the tubular hub fitted upon the hub of the bed-plate, the dies arranged around the periphery of the bed-plate, and the spring-controlled shanks with punches arranged around the periphery of the punch-plate, substantially as herein described.

6. In a stencil-cutter, the combination of the bed-plate with its series of dies D, the punch-carrying plate with its series of spring-controlled shanks and punches, the standard upon which said plates are fitted, and the means for raising the punch-plate to admit the material under it, consisting of the lever L, the rock-shaft K, the quadrants M, and the vertically-movable lifting-bars N, engaging the punch-carrying plate and having rack-tops with which the quadrants engage, substantially as herein described.

7. In a stencil-cutter, the combination of the bed-plate with its series of dies D, the punch-carrying plate with its series of spring-controlled shanks and punches, the arm J above, the plunger P in the outer end of said arm, and the lever O and link for operating the plunger, substantially as herein described.

8. In a stencil-cutter, the combination of the bed-plate C, having the series of flat-faced dies D arranged around its periphery, the punch-carrying plate E above, the spring-controlled shanks F, carried by said plate E, and the punches of said shanks, the cutting-faces of which are on a bevel or slope beginning with a point, substantially as herein described.

9. A stencil-cutter consisting of the combination of the fixed standard, the bed-plate mounted thereon and having the series of dies D arranged around its periphery, the vertically-movable punch-plate E, fitted upon the bed-plate, the spring-controlled shanks with punches arranged around the periphery of the punch-plate, the means for raising the punch-plate, consisting of the lever, the rock-shaft with its quadrants, and the rack-lifting bars, the lower ends of which engage the punch-plate, and the means for operating the punches, consisting of the arm J, the plunger P, the lever O, and link *p*, substantially as herein described.

In witness whereof I have hereunto set my hand.

JAMES FREDERICK WICKMAN.

Witnesses:
S. H. NOURSE,
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