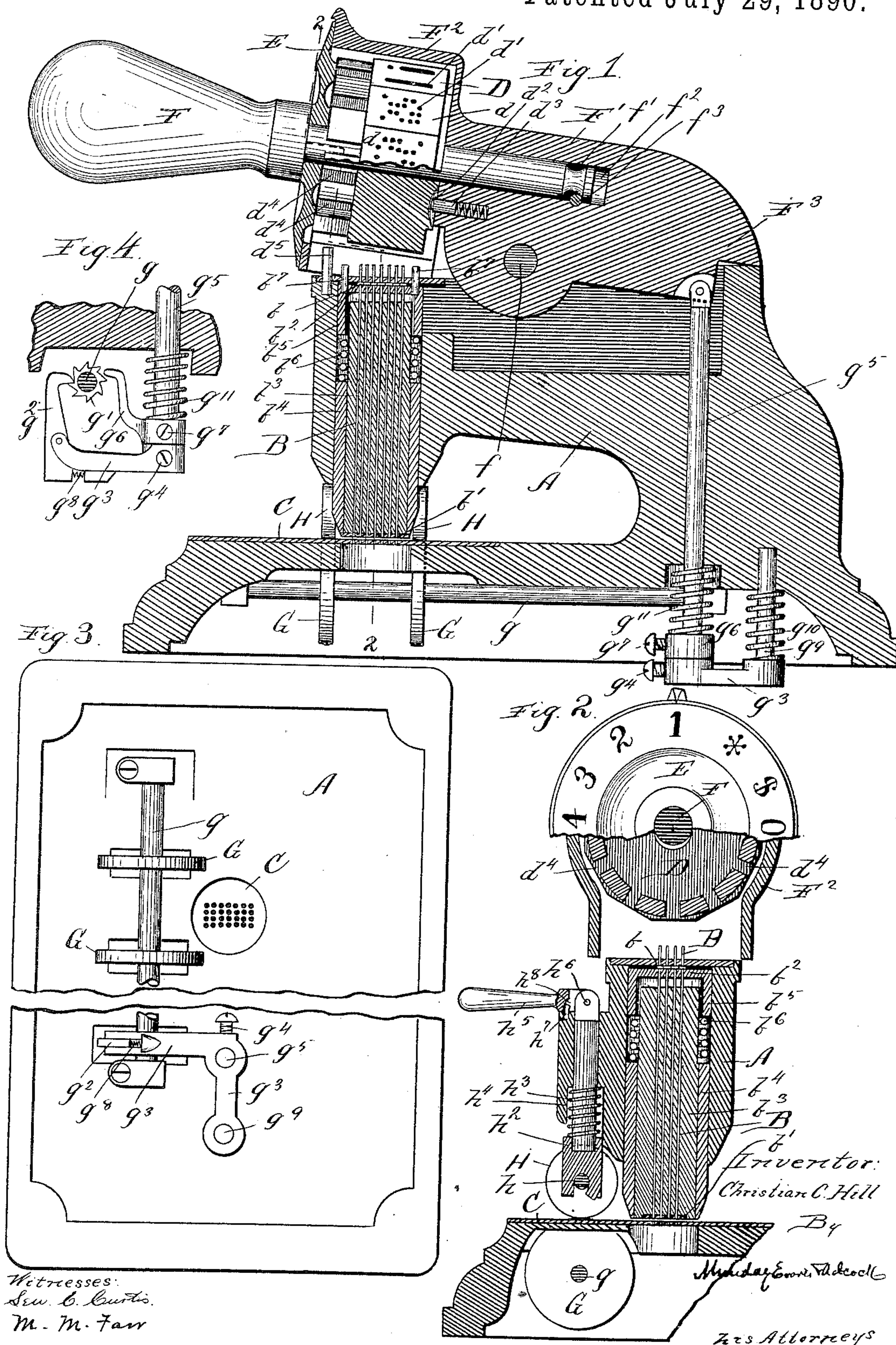


(No Model.)

C. C. HILL.
PERFORATING STAMP.

No. 433,003.

Patented July 29, 1890.



UNITED STATES PATENT OFFICE.

CHRISTIAN C. HILL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HILL MANUFACTURING COMPANY, OF SAME PLACE.

PERFORATING-STAMP.

SPECIFICATION forming part of Letters Patent No. 433,003, dated July 29, 1890.

Application filed October 23, 1888. Serial No. 288,887. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN C. HILL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Perforating-Stamps, of which the following is a specification.

My invention relates to improvements in hand-stamps for perforating checks, drafts, &c., with numbers or characters indicating amounts or other data; and it relates more particularly to improvements upon the perforating-stamp shown and described in my application, since patented as No. 409,324 and dated August 20, 1889, and wherein a series of independently-movable perforating-punches and their female die are employed in connection with a revoluble reversely-socketed matrix or plunger for operating only such punches as may be required to make or perforate any particular figure or character.

My present improvement consists, in connection with the series of independently-movable perforating-punches and their female die, between which the paper to be perforated is inserted, of a revoluble matrix carrying pivoted lever, whereby the matrix may be by one and the same hand of the operator both readily revolved to bring the required face thereof into position and easily operated with the requisite power or leverage to perforate the paper. The matrix-lever is preferably made in two parts, the handle part, to which the matrix is secured, revolving on the other part, which is pivoted to the frame. It, however, may be made in any other suitable way which will permit of both the vibrating and rotary movement of the lever or of the portion thereof to which the matrix is secured. The operating-face of the matrix should be, when the same comes in contact with the perforating-punches to operate them, on a radial line from the point or fulcrum about which the lever turns, so that the matrix-face may fit squarely and bear equally against the several punches required in the series. Each of the several operating-faces of the matrix of course in turn assumes this radial position with the pivot of the lever when revolved into position for operation.

My invention also consists in the novel devices and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a vertical longitudinal section of a perforating-stamp embodying my invention. Fig. 2 is a vertical cross-section taken on the offset-line 2 2 of Fig. 1. Fig. 3 is a plan view showing the paper-feed mechanism. Fig. 4 is a detail elevation of the paper-feed mechanism.

In said drawings, A represents the frame of the machine.

B are the independently-movable punches for perforating the paper.

C is the female-die plate, secured to the frame A, upon which the sheet of paper rests during the punching operation.

D is the matrix for operating the independently-movable punches, the same having, preferably, twelve reversely-socketed operating-faces *d*, one for each of the ten Arabic numerals, one for a dollar-mark, and one for a period. The independently-movable punches B have shoulders *b* near their upper end. The punches reciprocate in suitable guides or holes formed by the perforated lower guide-plate *b'* and upper reciprocating guide-plate *b''* and the soft-metal filling *b'''* in the inclosing case or shell *b''''*. A reciprocating sleeve *b'''''* is secured to the movable guide-plate *b''*, and a coil-spring *b''''''*, encircling the soft-metal filling *b'''* at the upper end thereof and acting against said sleeve *b'''''*, serves to operate the movable guide-plate *b''*, which fits against the shoulders *b* on the punches B, and thus serves to raise or retract the punches automatically. This coil-spring is compressed, when the matrix D descends to operate the punches, by pins or projections *b'''''''*, secured to the guide *b''* or sleeve *b'''''*, against which the operating-faces *d* of the matrix impinge.

The matrix D is operated by a rotary pivoted lever, the rotary movement of the lever serving to bring the particular face desired of the matrix into position for operation, and

the pivotal or vibratory movement of the lever serving to cause the matrix to impinge against the independently-movable punches and thus operate the punches to perforate the paper. This rotary pivotal operating-lever is preferably made in two parts $F F'$, the handle part F' to which the matrix D is rigidly attached being journaled to revolve on the part F , which is pivoted to the frame A by the pin f . The rotary handle F has an annular groove f' near its end, and is secured in the socket or hole f^2 of the pivotal part F' by a pin f^3 . The part F' is preferably made of cast metal and is furnished with a partial annular rim F^2 to form a cover or protection for the matrix D and to serve as a support for the index-plate E , which is rigidly attached to said rotatable lever F . The pivotal portion F' of the lever is also provided with an arm or projection F^3 to the rear of the pivot f for operating the paper-feed mechanism.

The rotary matrix D or its operating-lever F , which may be made integral with the matrix, is furnished with cam-shaped or curved guiding-recesses d^2 , in which a spring-pin d^3 , mounted on the non-rotary part F' of the lever fits and which serves to guide or hold the matrix in approximately the proper rotary position for the sockets d' in the faces d to register with the punches B ; and the rotary lever F or matrix D is further provided with guide-sockets d^4 , which engage a guide-pin d^5 mounted on the frame A , which serves to insure the accurate registry of the matrix with the punches B when the matrix is forced down by its operating-lever. The spring guide-pin d^3 , owing to the curve or cam shape of the guide-recesses d^2 , in no way interferes with the rotation of the matrix by the operating-lever F .

The paper-feed mechanism consists of a pair of milled feed-wheels $G G$, secured to a rotary shaft g , and an opposing pair of milled feed-wheels $H H$, secured to a rotatable shaft h , which is journaled on a reciprocating slide h^2 . The feed-wheels $H H$ are pressed down against the opposing feed-wheels $G G$ by a coil-spring h^3 , encircling the slide h^2 . The slide h^2 reciprocates in a suitable guide h^4 on the frame of the machine, and it is provided with a lever h^5 , by which the spring-operated guide-wheels $H H$ may be raised when it is desired to insert the paper between the feed-wheels or remove it therefrom. The lever h^5 is pivoted by a pin h^6 to the slide h^2 , and has a flat under face which fits upon the flat upper face of the guide h^4 , so that the lever may slip sufficiently to permit of its pivotal or vibrating movement. A guide-pin h^7 fits in a slot h^8 in the end of the lever, and serves to keep the same laterally in position.

The shaft g is furnished with a ratchet-wheel g' , and it is rotated the space of one letter or character at each stroke of the lever $F F'$ by means of a pawl g^2 , pivoted to an arm g^3 , which is adjustably secured by a set-

screw g^4 to the connecting-rod g^5 , which is pivoted to and operated by the operating-lever $F F'$. A stop-pawl g^6 is adjustably secured to the rod g^5 by a set-screw g^7 . The pivoted pawl g^2 is held in position by a spring g^8 on the arm g^3 . The arm g^3 reciprocates on a guide-pin g^9 , rigidly secured to the frame A . Coil-springs $g^{10} g^{11}$ surround the guide-pin g^9 and rod g^5 , and serve to automatically raise or retract the operating-lever $F F'$ and matrix D .

By reason of the pawl-carrying arm g^3 and the stop-pawl g^6 being adjustably secured to their operating-rod g^5 , the pawls may be readily adjusted so as to properly engage and operate the ratchet-wheel after the lever $F F'$ is mounted in the frame.

I claim—

1. In a perforating-stamp, the combination, with a series of independently-movable punches and their corresponding female die, of a matrix for operating the same, and a rotatable pivotal operating-lever, to which said matrix is rigidly secured and by which it is carried, substantially as specified.

2. In a perforating-stamp, the combination, with a series of independently-movable punches and their corresponding female die, of a matrix for operating the same, and a rotatable pivotal operating-lever, said operating-lever being made in two parts $F F'$, the part F' being pivoted to the frame and the part F being mounted to rotate on the part F' , said matrix being rigidly secured to the part F , substantially as specified.

3. The combination, in a perforating-stamp, with a series of independently-movable punches B , of their female die C , rotatable matrix D , having a series of operating-faces d on its periphery, and a rotatable pivoted lever for operating said matrix, and to which said matrix is rigidly secured, substantially as specified.

4. The combination, in a perforating-stamp, with a series of independently-movable punches B , of their female die C , rotatable matrix D , having a series of operating-faces d on its periphery, a rotatable pivoted lever $F F'$, the part F' being pivoted to the frame and the handle part F rotatable on the part F' , and said part F' being provided with a rim F^2 , covering said matrix, substantially as specified.

5. The combination, in a perforating-stamp, with a series of independently-movable punches B , of their female die C , rotatable matrix D , having a series of operating-faces d on its periphery, a rotatable pivoted lever $F F'$, the part F' being pivoted to the frame and the handle part F rotatable on the part F' , and said part F' being furnished with a rim F^2 , covering said matrix, and an index-plate E , secured to said rotatable lever F , substantially as specified.

6. The combination, in a perforating-stamp, with a series of independently-movable punches B , of their female die C , rotatable

matrix D, having a series of operating-faces d on its periphery, a rotatable pivoted lever $F F'$, the part F' being pivoted to the frame and the handle part F rotatable on the part F' , paper-feed wheel H , and opposing paper-feed wheel G , a revolving shaft g , ratchet g' , said lever part F' being provided with an arm F^3 , connecting-rod g^5 , and a pawl operated thereby and engaging said ratchet, substantially as specified.

7. In a perforating-stamp, the combination, with the punch-operating lever, of paper-feed wheels $H H$ and $G G$, shaft g , ratchet g' , connecting-rod g^5 , pawl-carrying arm g^3 , pawl g^2 , pivoted thereon, stop-pawl g^6 , guide-pin g^9 , and springs $g^{10} g^{11}$, substantially as specified.

8. The combination, in a perforating-stamp, of independently-movable punches B , having shoulders b for retracting the same, guide-plates $b' b^2$, sleeve b^5 , case b^4 , soft-metal guides inside said case, coil-spring b^6 , surrounding said soft-metal guide between said case and

said movable sleeve, and pins or projections b^7 , secured to said movable guide, and a matrix for operating said punches, said matrix impinging against said pins or projections to compress said coil-spring, substantially as specified.

9. The combination, in a perforating-stamp, of a series of independently-movable punches, the matrix for operating the same, and an operating-lever made in two parts $F F'$, the part F' pivoted to the frame of the machine and the part F mounted to rotate on the part F' , and provided with an annular groove and a pin f^3 for securing said part F in the part F' , said matrix being secured rigidly to the part f on said operating-lever, substantially as specified.

CHRISTIAN C. HILL.

Witnesses:

EDMUND ADCOCK,
JOHN W. MUNDAY.