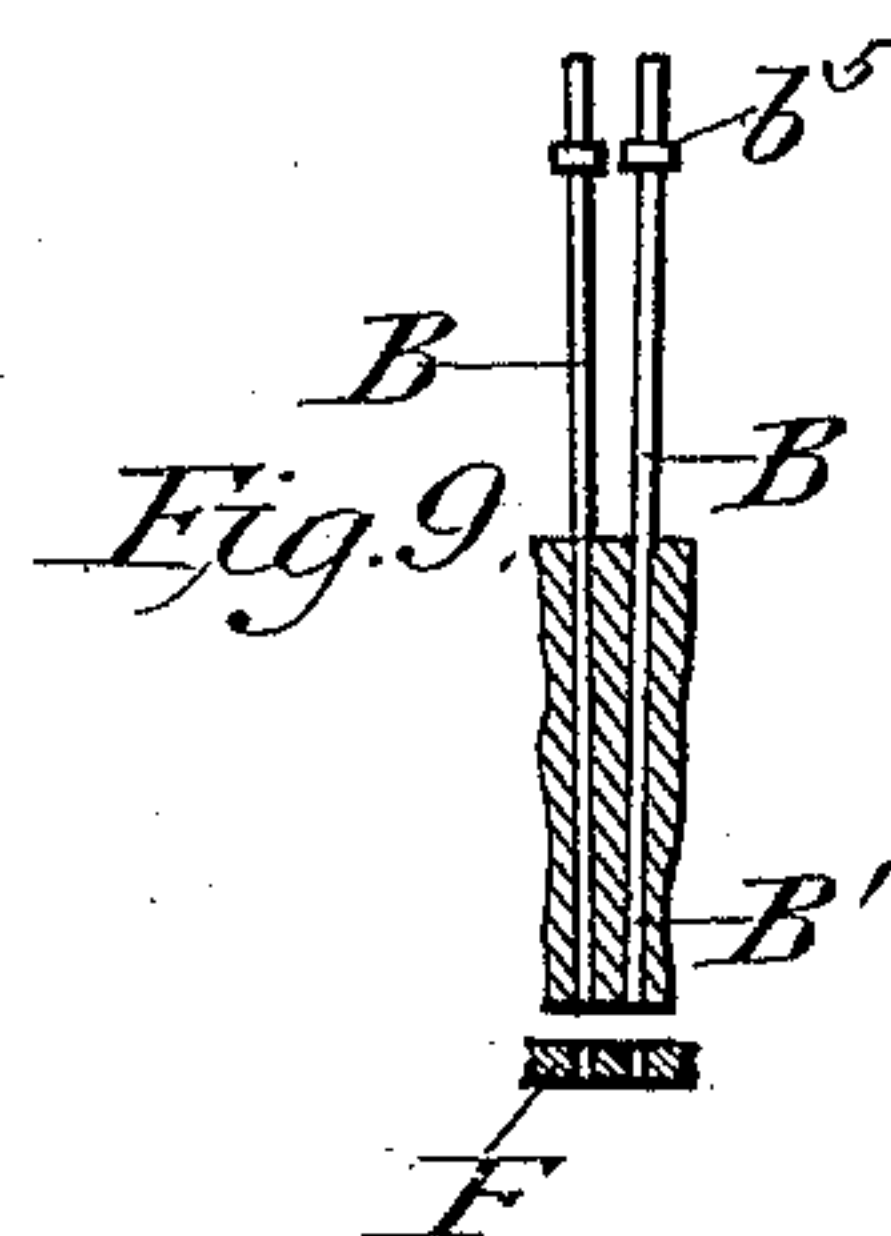
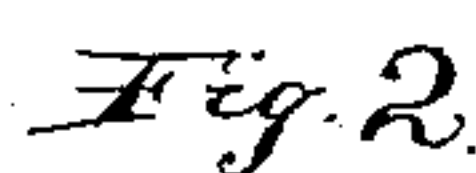


3 Sheets—Sheet 1.

No. 409,324.

Patented Aug. 20, 1889.



Witnesses:
 Lew. C. Curtis.
 H. W. Munday,

Inventor:
Christian C. Hull.
By Munday, Everts
and Adcock
his Attorneys:

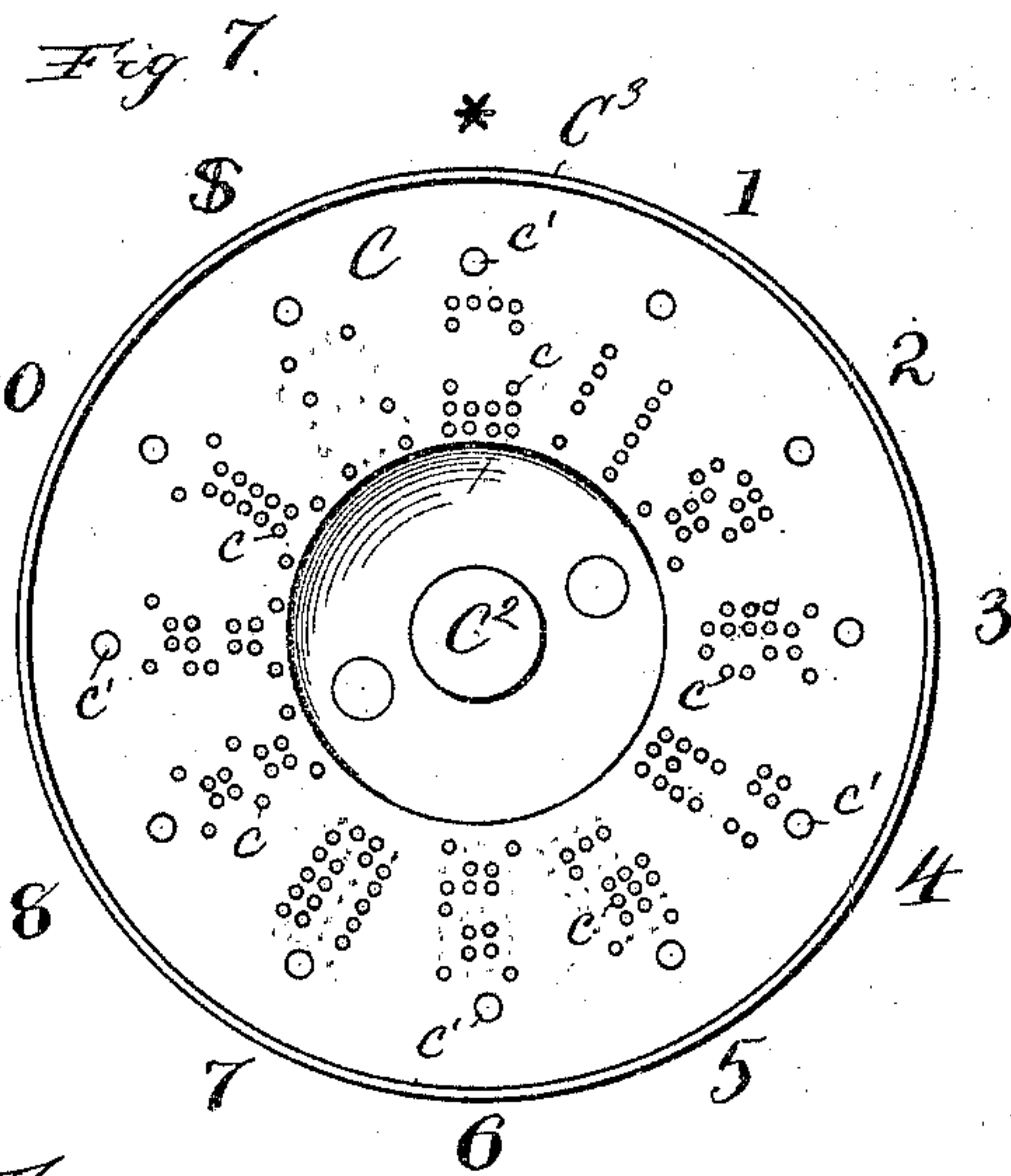
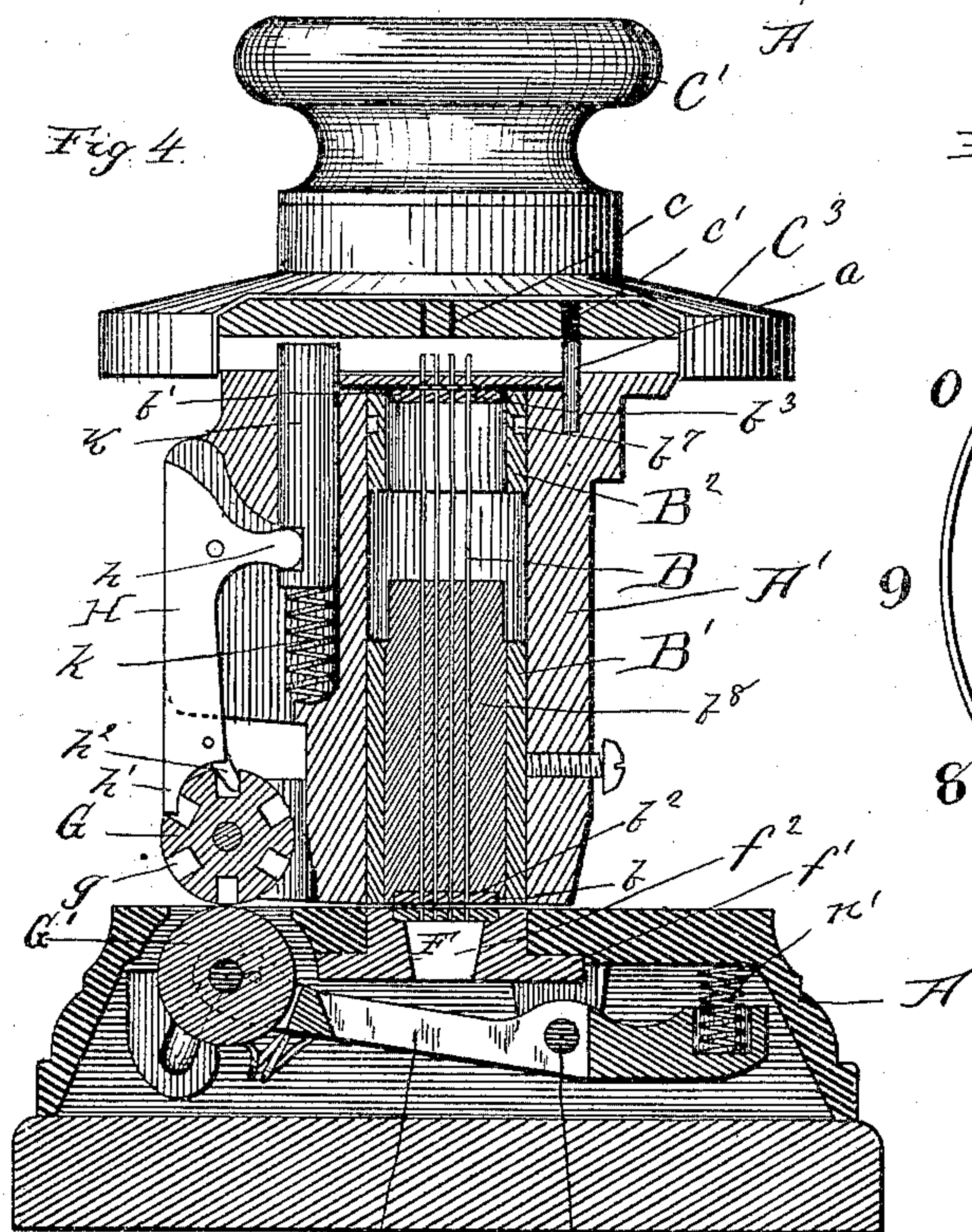
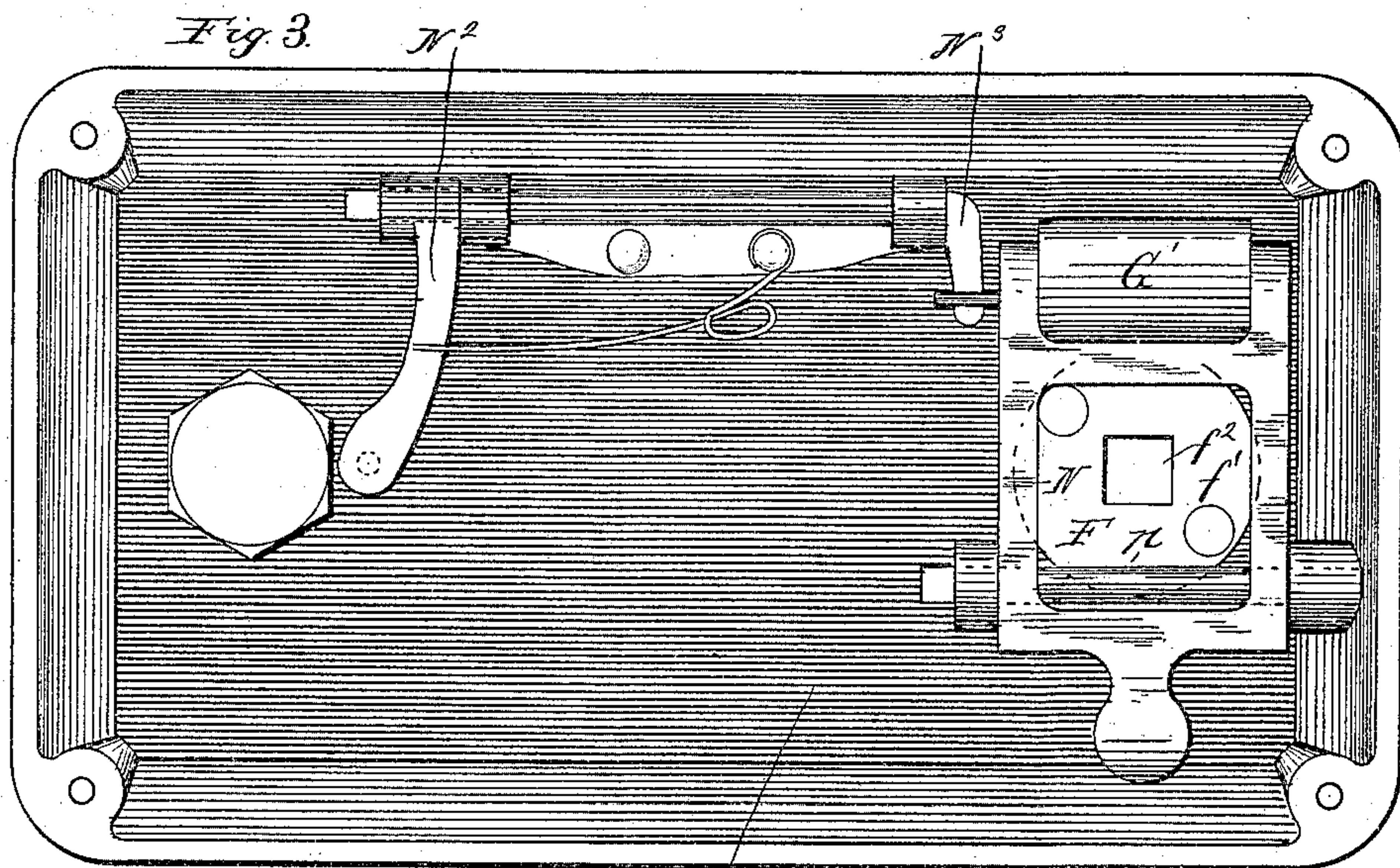
(No Model.)

3 Sheets—Sheet 2.

C. C. HILL.
PERFORATING STAMP.

No. 409,324.

Patented Aug. 20, 1889.



Witnesses:

Lew. C. Curtis.

A. W. Munday

Inventor:

Christian C. Hill

By Munday, Evans & Adcock

his Attorneys:

(No Model.)

3 Sheets—Sheet 3.

C. C. HILL.
PERFORATING STAMP.

No. 409,324.

Patented Aug. 20, 1889.

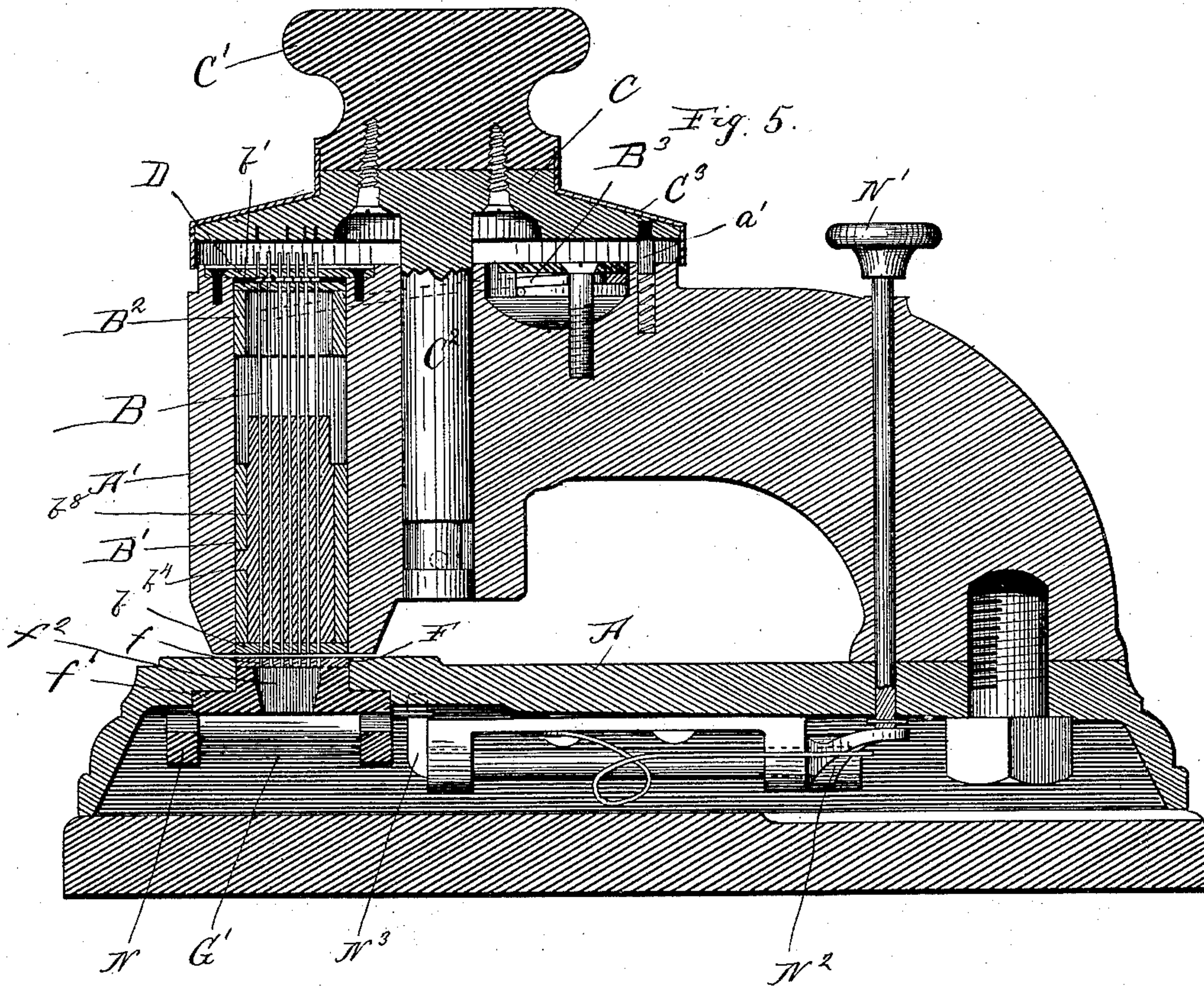


Fig. 6

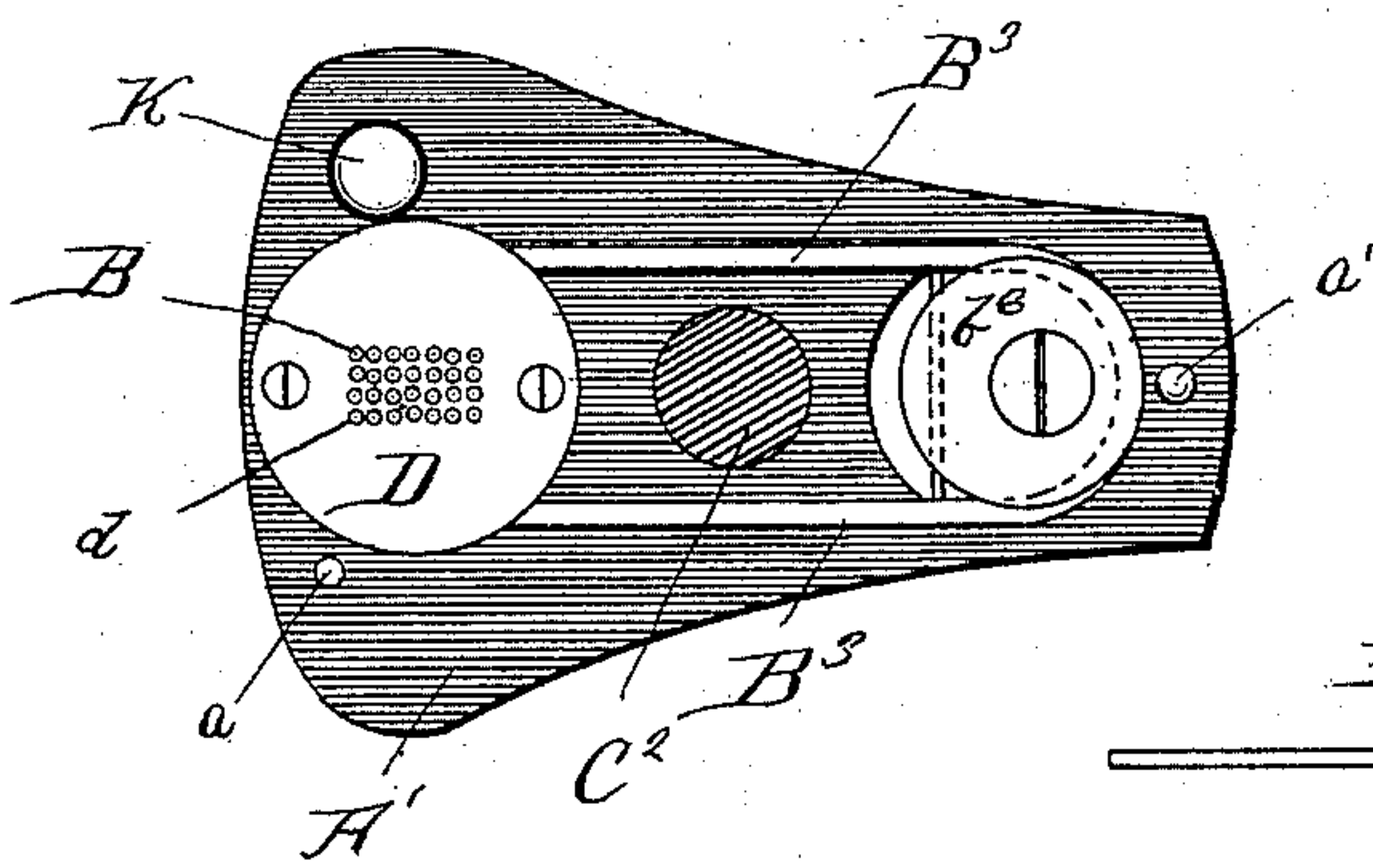
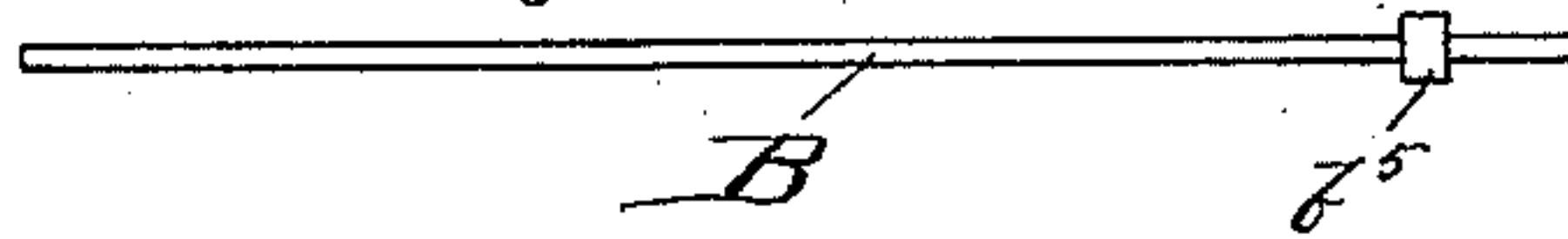


Fig. 8.



Witnesses:

Lew. C. Curtis.
A. W. Munday.

Inventor:

Christian C. Hill.

By Munday, Everts & Adcock
His Attorneys:

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. 409,324, dated August 20, 1889.

Application filed December 22, 1887. Serial No. 258,699. (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 stamps used for stamping checks or other papers with perforated numbers or letters indicating amounts or other data as a security against alteration or forgery. These perforating-stamps as heretofore constructed have usually been provided with a series of separate punches and dies or perforating-type for making each separate figure, letter, or other character desired.

In my invention a common set or series of independently-reciprocating punches, with their corresponding female dies, are employed for punching or perforating all the different characters desired, the independently-moving punches being assembled closely together, and the necessary ones to make any given figure or character being operated by an adjustable socket-piece, plunger, or cap-piece having sockets or holes to receive the punches which are not operated in making the given figure or character.

My invention consists in a series of independently reciprocating or movable punches and their corresponding female dies in connection with an operating cap-piece or socket-piece or plunger having a series of holes or sockets which are arranged the reverse of the perforations necessary to make the characters desired, said punches being mounted in slightly-converging guides, so that the perforations made in the paper thereby may be close together, while at the same time the different punches are adequately separated from each other at their upper ends to permit of their proper operation.

It also consists in the means I employ for mounting these independently-movable punches in suitable sockets or bearings—that is to say, a metallic cylinder having perforated heads or end pieces for holding the punch-rods in position, and which is then filled with some soft metal or metallic alloy having a low

melting-point, the alloy being poured in around the punches previously put in place.

It also consists in the novel device 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, I have shown what I deem to be one of the best means or forms of mechanism for reducing my invention to practice now known to me. However, the particular form of mechanism or machine may be greatly varied while still embodying and operating according to the principle of my invention.

In said drawings, Figure 1 is a side elevation; Fig. 2, a front view; Fig. 3, a bottom view; Fig. 4, a vertical cross-section on line 4 4 of Fig. 1; Fig. 5, a central vertical longitudinal section on line 5 5 of Fig. 2. Fig. 6 is a partial plan view looking down from line 6 6 of Fig. 5. Fig. 7 is a plan or bottom view of the reversely-socketed plunger and showing the holes or sockets which receive the punches unnecessary for use in the making of each given character or figure. Fig. 8 is an enlarged view of one of the punches. Fig. 9 is a detail sectional view, enlarged, showing two contiguous punches in their guides, the convergence of the guides being slightly exaggerated in order to illustrate the same more clearly.

In said drawings A represents the bed-plate, and A' the upper portion of the frame in which the independently-movable punches B and the reciprocating reversely-socketed operating plunger C are mounted. The independently-movable punches B reciprocate in suitable guides on the frame. The guides for the whole series of plungers are, for convenience of construction, formed in the metal cylinders B' B², which I term the "guide-case." These guide-cases are furnished with heads or ends b b', having a series of holes b² b³, through which the punches pass. The two parts B' B² of the guide-case are placed end to end, and the punch-rods B all inserted in their respective holes b² b³ in the heads b b', and then the interior of the cylinder or case is poured full of some soft metal or alloy b⁸—such as "fusible al-

loy"—through the opening b^4 in the side of the cylinder, thus forming a separate, true, and continuous guide and support for each of the independently-movable punches. Each of the punch-rods B is furnished with a slight shoulder or enlargement b^5 , preferably formed by simply upsetting the rod or wire of which the plunger is made. This shoulder is larger in diameter than the bearing-hole b^3 in the head b' , so that as the head b' is raised it will also raise or withdraw all the punches B which have been depressed by the movement of the reversely-socketed plunger C. It is for this purpose that the cylinder $B^1 B^2$ is made in two parts, as shown. The part B^1 of the guide-casing, with its head b , is mounted rigidly in the frame A' , while the part B^2 , with its head b' , may reciprocate up and down in said frame. A spring B^3 is secured to the frame at b^6 , the end of which fits in a slot or cavity b^7 in the sleeve B^2 and serves to lift or withdraw upward the sliding portion B^2 of the guide-case after each stroke of the operating-plunger C. The guide-holes b^2 in the lower head b are made somewhat closer together than the similar guide-holes b^3 in the upper head b' , thus causing the series of guides to incline or converge toward each other at their lower or operating end. The purpose of this is to make the perforations as close together as possible, while at the same time the punches are sufficiently separated at their upper ends to enable them to be properly operated by the solid portion of the plunger C between the holes or perforations c therein. The plunger C is furnished with a series of holes, sockets, or perforations c , which are arranged the reverse of the particular character desired to be punched or perforated in the paper or check by the punches B. As shown the drawing, (Fig. 7,) these series of reverse perforations are designed to operate the punches necessary to make the perforated characters 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, \$, and *. For example, the machine indicated in the drawings has a series or set of twenty-eight punches assembled together, and in making, for example, the perforated character 4 twelve perforations are employed. In making this character 4, therefore, there are sixteen of the twenty-eight punches which will not be operated, and consequently the reversely-socketed plunger C has sixteen holes to receive these sixteen punches when this character 4 is being printed; and in like manner the other characters, or any other desired characters, may be perforated or printed by the machine. The holes or sockets c in the plunger C are bored or drilled therein, a suitable jig being made for the purpose.

To cause the plunger C and the perforations c therein to properly register with the series of punches B, so as to properly print or perforate the different characters desired, I provide the frame A' with a registering-pin a , which enters a series of registering-sockets c' in the plunger C, one of these registering-sockets being provided for each of the char-

acters to be printed. The plunger C is provided with an operating knob or handle C' , and with a spindle or shaft C^2 , upon which it revolves in order to bring the separate characters or sets of reverse sockets c in position for registering with or operating the punches B.

To facilitate the adjustment of the revolving plunger C, so that the socket c' will properly register with the pins a , I provide the frame A' with a spring-indicating pin a' , which slightly enters the registering-sockets c' in the plunger C. This spring-pin is larger in diameter than the sockets c' , and has a rounded end, so that it can only slightly enter the sockets, and not enough to prevent the easy turning of the plunger on its axis. The resistance offered by this spring-pin, however, clearly indicates when the plunger is in the right position to register with the registering-pin a . The spring-pin a' , of course, projects slightly above the end of the registering-pin a , and the registering-pin a projects somewhat above the ends of the punches B, so as to insure the proper registering of the punches B with the sockets c . As the part B^2 of the guide-case, with its head b' , reciprocates with the punches B, I provide the frame A' with a stationary plate D, having perforations d for the punches, so as to properly support, sustain, and guide the series of punches at their upper ends as they are driven down by the plunger C.

F is the female die-plate having holes or female dies f for each of the punches B. This die-plate is secured in a cylindrical block or head F' , which for convenience of manufacture is made concentric with the guide-case cylinder B^1 . It has a flange f' , for securing the same in place on the bed-plate A. This block or head has an opening f^2 , through which the bits of paper punched from the sheet may fall or escape.

G and G' are a pair of feed-rolls for feeding the paper forward the necessary distance after each character is punched or perforated. These feed-rolls are suitably journaled on the frame of the machine, and the upper one is automatically rotated to feed the paper the required distance at each blow of the plunger C by means of a pivoted pawl-lever H, having a short arm h , which is engaged and operated by a sliding spring-pin K. The pawl-lever H has a rigid pawl h' , and a pivoted pawl h^2 , which engage contiguous notches g of the ratchet on the feed-roller G. The sliding pin K is depressed by the reciprocating plunger C, and is raised or moved in the opposite direction by a spring k , and thus operates the feed-roller after the plunger C and punches are withdrawn. The lower feed-roller G' is journaled on the end of a lever N, pivoted at n to a bracket on the frame A, and having a spring n' , which operates to force this feed-roller against the upper feed-roller with sufficient pressure to feed the paper. The press-

ure of this spring on the feed-roller may be relieved by depressing the button N' , which acts against the lever N through the intermediate bent lever $N^2 N^3$. This is to enable the operator to easily insert the check or paper between the feed-rollers and into position for stamping it without danger of tearing it when forcing it between the feed-rolls. The plunger C is provided with a rim or cap C^3 , preferably made of sheet metal, furnished with indicator-characters c^2 , corresponding to the characters punched by each set or series of perforations or sockets c .

I do not claim herein the combination, in a perforating-stamp, of independently-movable punches having shoulders for retracting the same, the two guide-plates through which the punches project, the sliding sleeve, the case for the soft-metal guides, the soft-metal guides inside said case, and a coiled spring surrounding said soft-metal guide between said case and said sliding sleeve, as this combination is claimed by me in my pending application, Serial No. 288,887, filed October 23, 1888.

I claim—

1. The hand perforating-stamp having, in combination, a series of independently-movable punches B , converging guides in which said punches are mounted, consisting of a shell or case having a molded filling in which the guide-holes are formed, a corresponding female die for said punches, and a reversely-

socketed revoluble plunger for operating only those punches necessary for making the character required, substantially as specified.

2. The combination, with a series of independently-movable punches B and their female die, of revoluble reversely-socketed plunger C , a registering-pin, said plunger C having registering-sockets to engage said registering-pin, and indicator spring-pin a' , substantially as specified.

3. The combination, with a series of independently-movable punches B , of a guide-case therefor having perforated heads or ends through which the punches pass, the interior of said guide-case being filled with soft metal to form continuous and independent guides for each of said punches, substantially as specified.

4. The combination of frame A , punches B , guide-case $B' B^2$, said part B^2 being movable, perforated heads $b b'$, soft metallic filling b^8 , and a socketed plunger C , substantially as specified.

5. The combination of frame A , punches B , guide-case $B' B^2$, said part B^2 being movable, perforated heads $b b'$, soft metallic filling b^8 , a socketed plunger C , and a perforated guide-plate D , substantially as specified.

CHRISTIAN C. HILL.

Witnesses:

EDMUND ADCOCK,
H. M. MUNDAY.