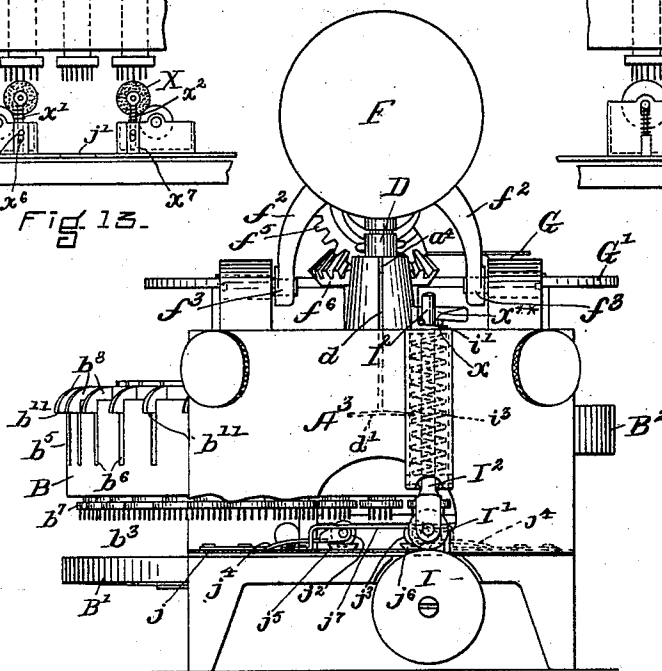
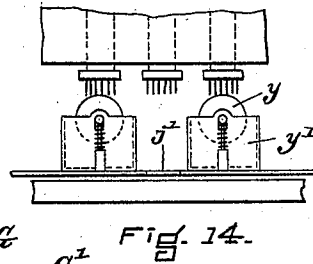
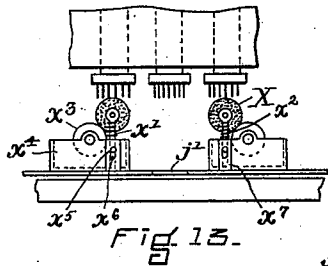
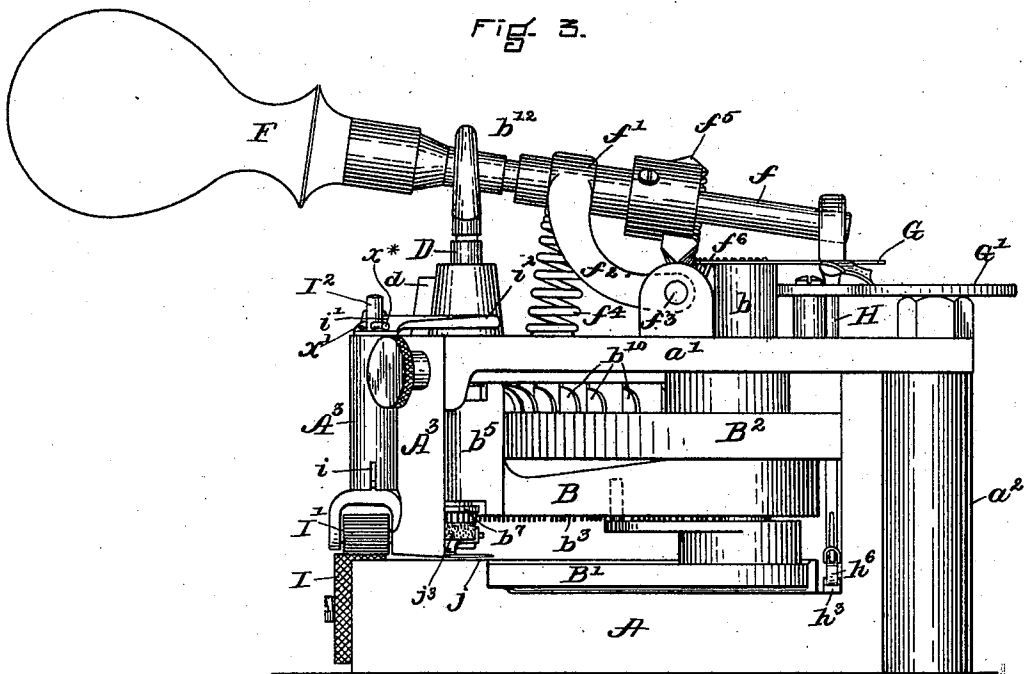


J. O. CLARK.
CHARACTERING MACHINE.

No. 581,268.

Patented Apr. 27, 1897.



WITNESSES.

A. D. Smith.
Charles H. Jones.

INVENTOR.

Joseph O. Clark
by his Atty.
Edward J. Beach.

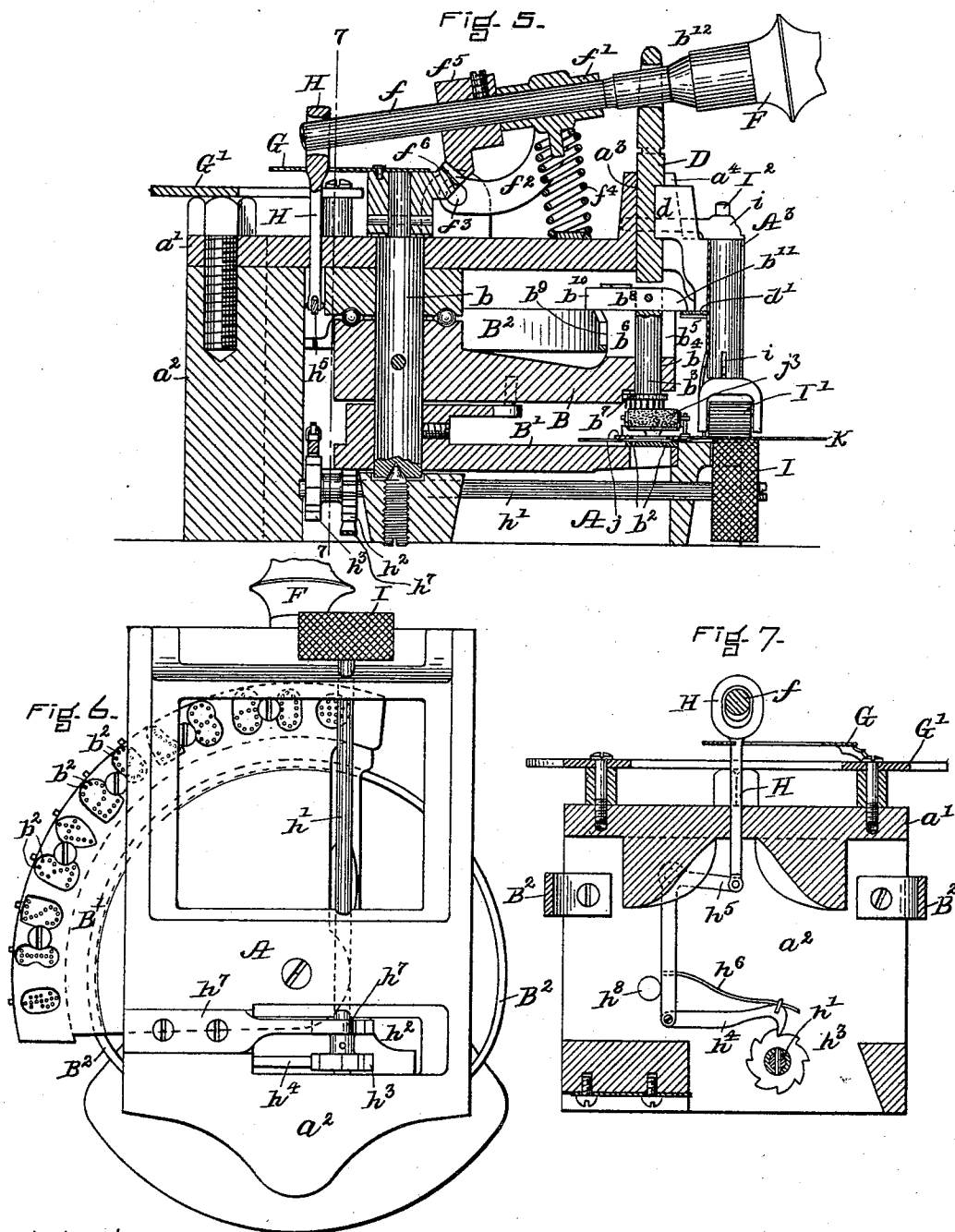
(No Model.)

4 Sheets—Sheet 3.

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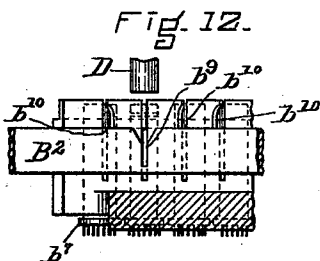
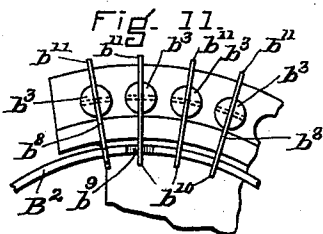
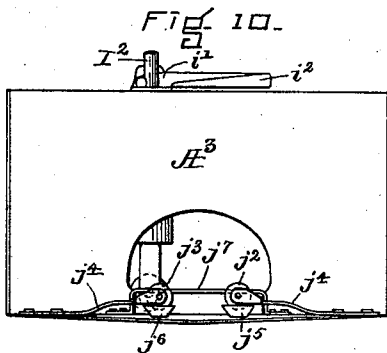
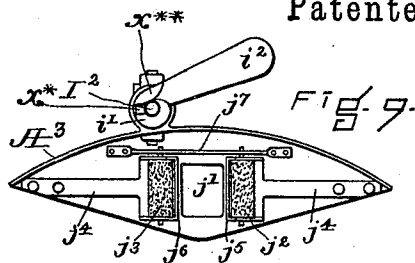
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UNITED STATES PATENT OFFICE.

JOSEPH OSGOOD CLARK, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE VICTOR MANUFACTURING COMPANY, OF MAINE.

CHARACTERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 581,268, dated April 27, 1897.

Application filed June 29, 1896. Serial No. 597,487. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH OSGOOD CLARK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a Charactering-Machine, of which the following is a specification.

Figure 1 is a top plan view of my new charactering-machine, the punch-carrier being in one of its extreme positions. Figs. 2 and 3 are side elevations of so much of the charactering-machine as is shown in Fig. 1. Fig. 4 is a front elevation of the charactering-machine with the punch-coloring mechanism in place. Fig. 5 is a sectional elevation from front to rear of the machine on line 5 5 of Fig. 1. Fig. 6 is a bottom plan view of the machine. Fig. 7 is a transverse sectional view at line 7 7 of Fig. 5. Fig. 8 shows a check with the numeral-indicating perforations colored. Fig. 9 is a top plan view of the front plate removed, showing also in plan view the punch-coloring mechanism supported by the front plate. Fig. 10 is a rear elevation of the front plate removed, showing also in side elevation the punch-coloring mechanism. Fig. 11 is a detail view showing in plan view a portion of the punch-carrier and guide-bar and illustrating the registering slot in the guide-rail and the function of the guide-rail and registering slot in relation to the cross-bars or heads of the punches. Fig. 12 is a rear elevation of what is shown in Fig. 11. Figs. 13 and 14 show modifications of the punch-coloring mechanism.

The objects of my invention are to produce an effective protection against the fraudulent alteration of checks, drafts, and other instruments and to produce a simple and practical perforating writing-machine; and my invention consists in certain important and novel features of construction hereinafter set forth.

In the drawings illustrating the principle of my invention and the best mode known to me of applying that principle, frame A comprises a top plate a' , united to frame A at the rear by a suitable upright a^2 . Punch-carrier B is secured to a vertical rocker-shaft b , journaled in base A and top plate a' . A die-plate B' is also secured to said rocker-shaft, its

die-recesses b^2 being in alinement with the punches b^3 . Each punch b^3 is movable endwise in a socket b^4 in a rib b^5 at the front of punch-carrier B, this rib having a series of cross-slots b^6 , which intersect the sockets b^4 , preferably at each side of each socket and in a radial line from the central lengthwise axis of the rocker-shaft b . Punches b^3 have heads b^7 , that are larger than the sockets b^4 , in which the punches are mounted, and prevent the punches from being displaced upwardly from the punch-carrier. Their upper ends are provided with cross-arms b^8 , which work in the cross-slots b^6 , the ends of the cross-arms b^8 preferably projecting beyond the outer and inner sides of the punch-holding rib b^5 of the punch-carrier. A suitable guide-bar B^2 is provided with a slot b^9 , over which the inner ends b^{10} of the cross-arms b^8 are successively brought when the punch-carrier and its die-plate are swung to do the perforating. This bar is curved and attached at its ends to upright a^2 . The inwardly-extending ends b^{10} of the cross-arms b^8 rest on the upper edge of the guide-bar B^2 and are thus kept from falling in the sockets b^4 , excepting only when an end b^{10} is brought over the vertical slot b^9 , which is in line with the impression-plunger D. This plunger is mounted in a vertical socket a^3 in the top plate, the wall of the socket having a vertical slot a^4 . Plunger D is provided with a fixed laterally-projecting fin d , which slides down and up in slot a^4 when the plunger is reciprocated against and away from the punches.

The lower portion of the fin d is provided with a cross-section d' , which goes under the outwardly-projecting ends b^{11} of the cross-arms b^8 of the punches. Depression of impression-plunger D causes the plunger to bear on the head of a punch, if its cross-arm be in line with slot b^9 in guide-bar B^2 , and forces the punch downwardly to perforate material interposed between its lower end and the die-plate. Upward motion of the plunger causes cross-plate d' to engage the outwardly-projecting end b^{11} of the depressed punch and to lift the punch from its operative position to its position of rest. Impression-plunger D is preferably actuated through the rotary and

tiltable handle F, which, as shown, has an extension f , rotatively mounted in a bearing f' of a rocker-frame f^2 , journaled at f^3 on the face of top plate a' and at right angles to the lengthwise axis of the handle. A suitable spring f^4 is mounted between top plate a' and the swinging frame f^2 . When handle F is depressed, frame f^2 is swung forwardly and then compresses spring f^4 , which automatically returns the handle, impression-plunger, and depressed punch to position of rest, the handle F being through an eye b^{12} at the upper end of the impression-plunger D.

Between the bearing f' , in which the handle F is rotatively mounted in the swinging or rocker frame f^2 , and the inner end of the handle's extension the extension f is provided with a mutilated bevel-gear f^5 , that meshes with a mutilated bevel-gear f^6 at the upper end of the rocker-shaft b . Consequently a rotary movement of handle F swings the punch-carrier B, which is fixed on the main or rocker shaft b , from one extreme position to its other extreme position and back again and to any desired intermediate position, so that any desired sign on the lower ends of the punches may be used to perforate the material subjected to the action machine. Shaft b also carries an index-pointer G, that travels over the index-plate G', which is provided with any desired numerals or letters or other signs, these letters, numerals, or signs, as the case may be, corresponding to the perforating-characters on the lower ends of the punches. In the present instance the index-plate is provided with the United States of America dollar-mark (\$) and with the numerals "1" to "9," inclusive, and the sign for naught and with a conventional arbitrary star-like sign frequently used in check-punches to indicate that all the legitimate or intended perforations are the preceding perforations.

The punches are preferably each provided with a series of pins arranged to form signs, but they may be ordinary block-type, if desired, so long as they are of a construction that enables them to perforate the material operated on.

The inner end of the rotary and tiltable handle F engages a vertically-reciprocating link H to connect the handle with the main feed-roll I through the following instrumentalities: Feed-roll I has a roughened surface that projects a little above the upper surface of the die-plate and intermediate upper surface of the base of frame A. This roll is mounted on a shaft h' , which is journaled in said base and which is provided at its inner end with a spur-wheel h^2 and a ratchet h^3 . Ratchet h^3 is successively engaged, as the handle F is successively depressed, by a pull-pawl h^4 , loosely pinned to an arm of a bell-crank lever h^5 , that is loosely pinned on the inner surface of upright a^2 . Pull-pawl h^4 is held in operative contact with the ratchet h^3 by a suitable spring h^6 . To the other arm of the bell-crank lever h^5 the link H is loosely pinned. Every de-

pression of handle F throws pawl h^4 over one tooth of the ratchet h^3 and into position to engage that tooth when the handle is raised. A dog h^7 , fast on the base, coöperates with the spur-wheel h^2 and prevents the feed-roll from moving farther than required when the pull-pawl draws on the ratchet-wheel h^3 . The pull of the pawl is due to expansion of spring f^4 , if the handle be not lifted positively by the operator.

A stop h^8 on the upright a^2 is desirably mounted back of the lower arm of the bell-crank lever, so that the bell-crank engages the stop when the lever completes its backward movement in pulling the feed-ratchet from one position to another position. Feed-roll I coöperates with a coöperating presser-roll I', mounted on a slide-bar I². This slide-bar I² works in ways i on front plate A³, and is provided with a suitable cam-acting device at i' and cam bar or handle i^2 , whereby the presser-roll is lifted to admit a check or other instrument to be perforatedly characterized. Said cam-acting device in this instance is made up of a pin x^* through the bar I², against which pin the incline x^{**} (see Fig. 3) on handle i^2 engages to lift the bar I² when the handle is turned. One end of the handle is bored and passed over the upper end of bar I², the pin x keeping the handle in place with its under side resting on the front plate A³. The presser-roll I' is held down by force of a spring i^3 .

My new charactering-machine is adapted for use independently of the coloring-applying mechanism, but I prefer to apply color to the punches in order to color the side walls of the perforations. I find in practice that the freshly-cut walls of the perforations quickly absorb any ink, dye, or coloring-matter on the punches, and that even though the surface of the paper is highly calendered the margins of the perforation, as well as the side walls thereof, become of a colored or contrasted appearance. It thus becomes practically impossible to alter the perforations by removing the coloring-matter or by refilling the holes and re-perforating. I have referred to the parts forming the perforations as "punches," but in the broadest sense they are type-bars or type-carriers or type-heads, although the types are cutters or punchers. I refer to this fact because while I show my invention embodied in a "check-punch" yet many of my novel features of construction may be embodied, if desired, in an ordinary type-writing machine that prints without perforating the paper impressed, and by increasing the number of punches in my machine to include all the characters and signs of any written language the machine may be used as a type-writer, and in the same broad sense the die-plate is a platen and the punch-carrier a type-bar carrier. By forming the type-heads so that they perforate the paper or other material operated on and providing a sufficient number of such type-heads a complete type-writing machine is produced, and

by adding colored mechanism to the machine wills, deeds, and other instruments may be written with colored perforations representing the signs of any written language and in a manner that defies fraudulent alterations or effacement.

Front plate A^3 has an inwardly-extended lip j , slotted at j' , in line with the impression-plunger D and slot b^3 in guide-bar B^2 . In the construction shown the punch-coloring devices consist of rolls $j^2 j^3$, mounted at ends of leaf-springs j^4 , rising from lip j , to which their rear ends are fast. Rolls $j^2 j^3$ are within fountains $j^5 j^6$ and are held down against the force of their upwardly-bearing supporting-springs j^4 and j^5 by a suitable cross-bar j^7 . The surfaces of the rolls j^2 and j^3 touch the lips of the punches when the punch-carrier is swung from one position to another, and consequently apply to the punches a suitable amount of ink or other coloring taken up by the rolls from the fountains j^5 and j^6 .

Any other suitable punch-coloring device may be used, if desired. In Fig. 5 a check K is shown in place for perforation and coloring of the perforations.

In Fig. 8 the marginally-colored perforations k are indicated on a check K . The inner wall of the perforation is colored and the coloring is marginally visible and generally marginally present because the freshly-cut surfaces permit the absorption of the coloring-matter to a limited marginal extent around and about the perforations.

Figs. 13 and 14 show a modification of the punch-coloring mechanism. In Fig. 13 the journals of each coloring-roll x are mounted on movable uprights x' , held in working position in the path of the punches by a spring x^2 . A cross-bar connects the two uprights. Roll x contacts with a roll x^3 , journaled in sides of fountain x^4 , and uprights x' are provided with projections x^5 , working in slots x^6 in hollow posts x^7 on opposite sides of the fountain. In Fig. 14 a roll y , immersed in fountain y' , colors the punches. In both modifications there is a punch-coloring mechanism at each side of the punching-point.

What I claim is—

1. In a charactering-machine, a swinging type-bar carrier; an endwise-movable type-bar socketed therein, a cross-bar on the type-bar and projecting beyond said carrier through a slot which intersects the type-bar socket; in combination with a guide-bar having a registering slot; the cross-bar projecting over the guide-bar except when over the impression-point and then moving in said registering slot.

2. In a charactering-machine, a swinging type-carrier; an endwise-movable type-bar therein; a cross-bar on said type-bar; a rotatable and tilting handle; a type-bar plunger carried by the handle; a fin connected with

the plunger and having a head which extends under the cross-bar of the type-bar; the type-bar plunger having an eye through which the handle passes loosely.

3. In a charactering-machine, the combination of a rotatable and tilting handle with a charactering mechanism which comprises a plunger having an eye through which the handle passes loosely and a platen and type-bar guide having a registering slot in line with said plunger; a type-bar-carrying mechanism comprising a gear meshing with a gear on the handle; an intermittent feeding mechanism comprising a link having an eye through which the handle passes loosely.

4. In a charactering-machine, the combination of a charactering mechanism comprising a type-bar carrier; a type-bar and a platen; a type-bar plunger; a type-bar guide having a registering slot in line with said type-bar plunger; means substantially such as described for connecting said plunger with successive type-bars to lift them from the platen; an intermittent feeding mechanism; a rotating and tilting handle having a gear connection with the type-bar carrier; the feeding mechanism comprising a link provided with an eye through which the handle passes loosely; and the type-bar plunger being in the path of the handle when the same is moved to give impression.

5. In a charactering-machine, a swinging type-bar carrier; an endwise-movable type-bar socketed therein, a cross-bar on the type-bar and projecting beyond said carrier through a slot which intersects the type-bar socket; in combination with a guide-bar having a registering slot; the cross-bar projecting over the guide-bar except when over the impression-point, and then moving in said registering slot; and a coloring mechanism, whereby the perforations will be contrasted in color with the material that is perforated.

6. In a charactering-machine, a swinging type-bar carrier; an endwise-movable type-bar socketed therein, a cross-bar on the type-bar and projecting beyond said carrier through a slot which intersects the type-bar socket; in combination with a guide-bar having a registering slot; the cross-bar projecting over the guide-bar except when over the impression-point, and then moving in said registering slot; and upwardly-spring-pressed inking-rolls $j^2 j^3$, suitable ink-fountains, and cross-bars j^7 .

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 12th day of June, A. D. 1896.

JOSEPH OSGOOD CLARK.

Witnesses:

EDWARD S. BEACH,
E. A. ALLEN.