Nov. 26, 1935. P. J. E. GLOGAUD ET AL 2,022,498

MACHINE FOR MAKING PRINTING PLATES OR STENCILS

Original Filed Aug. 7, 1931 4 Sheets-Sheet 1

Fig. 1

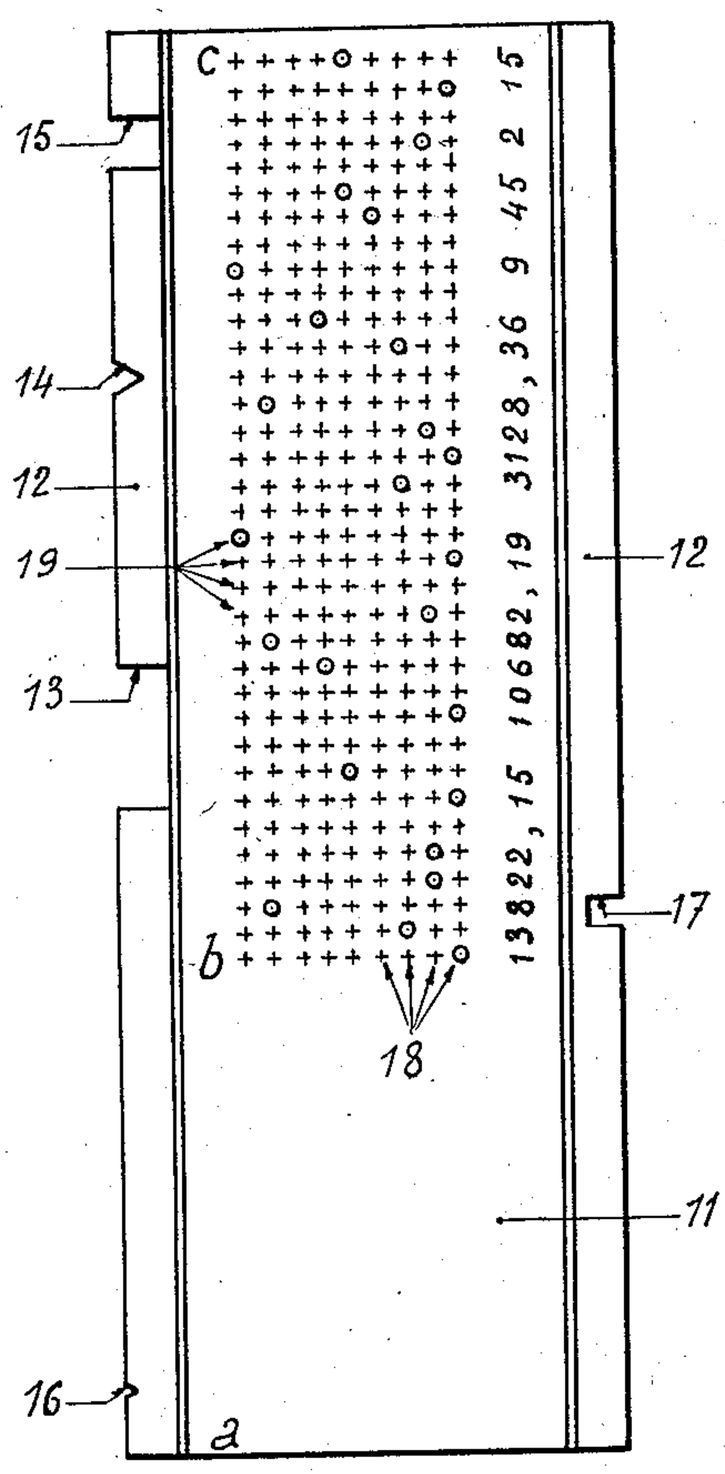


Fig. 2

Fig. 3

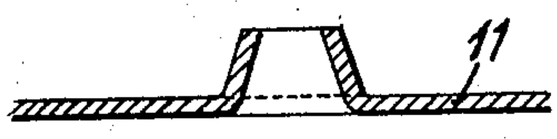
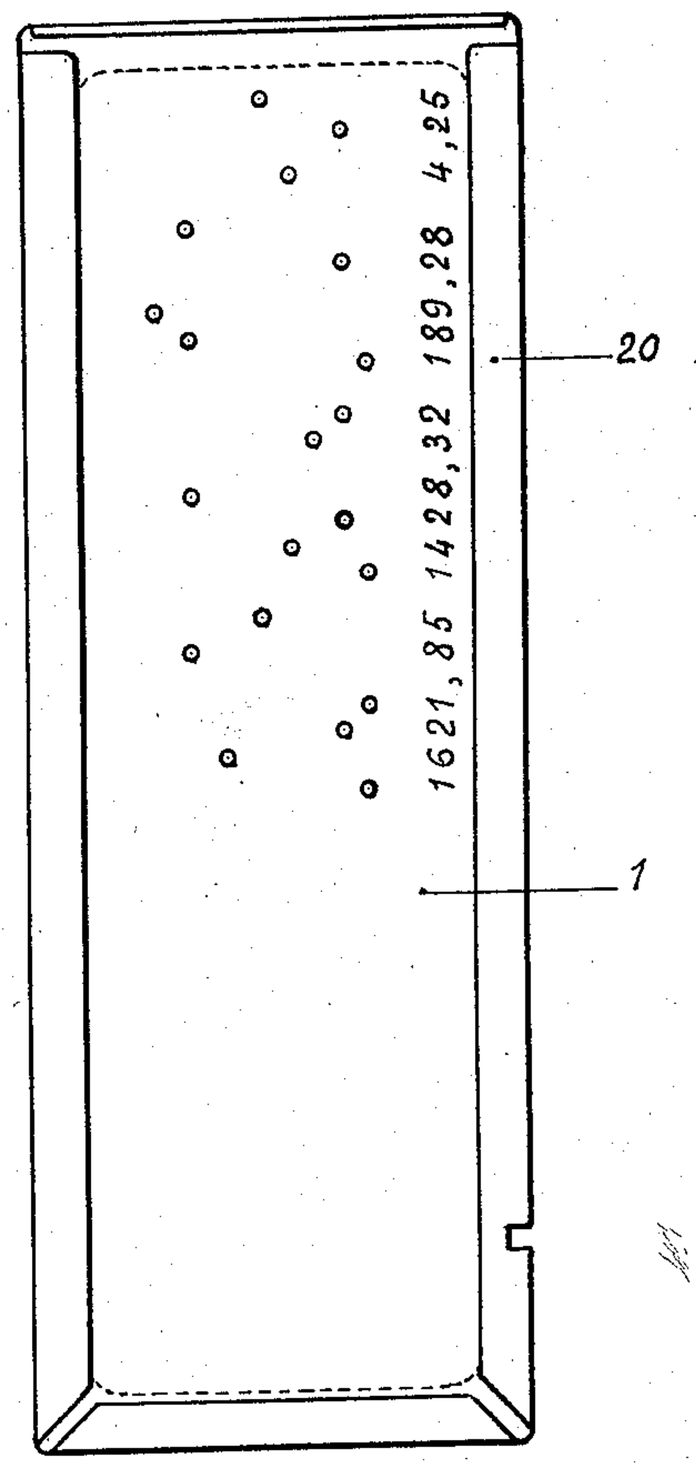


Fig. 4



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MACHINE FOR MAKING PRINTING PLATES OR STENCILS

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Fig. 5

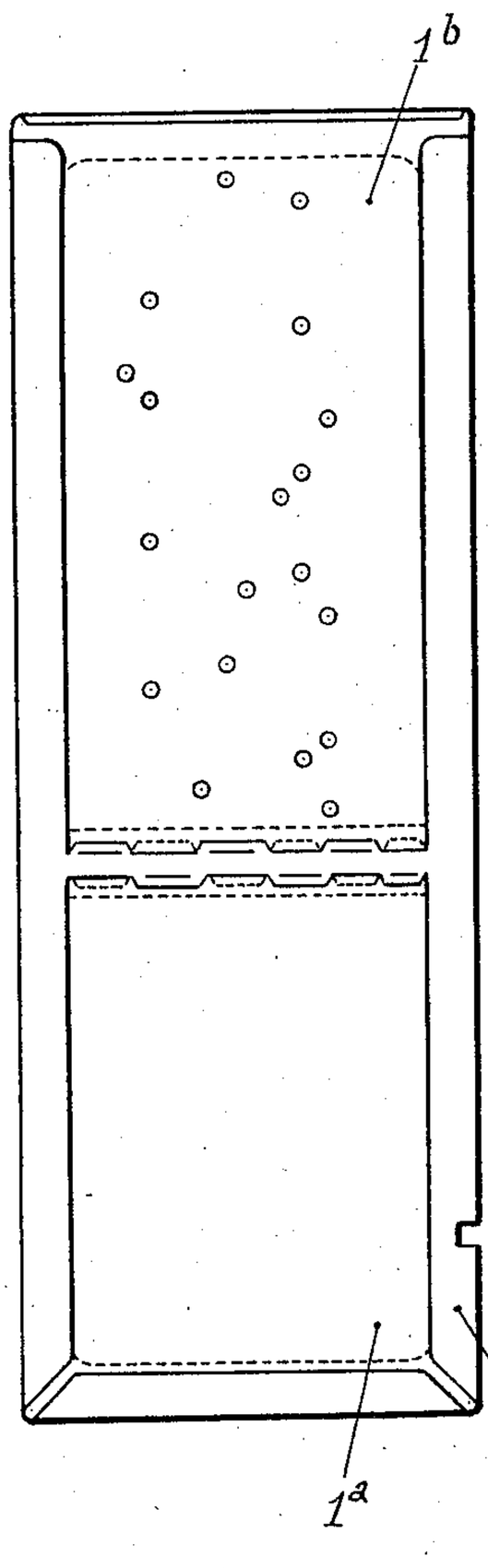


Fig. 6

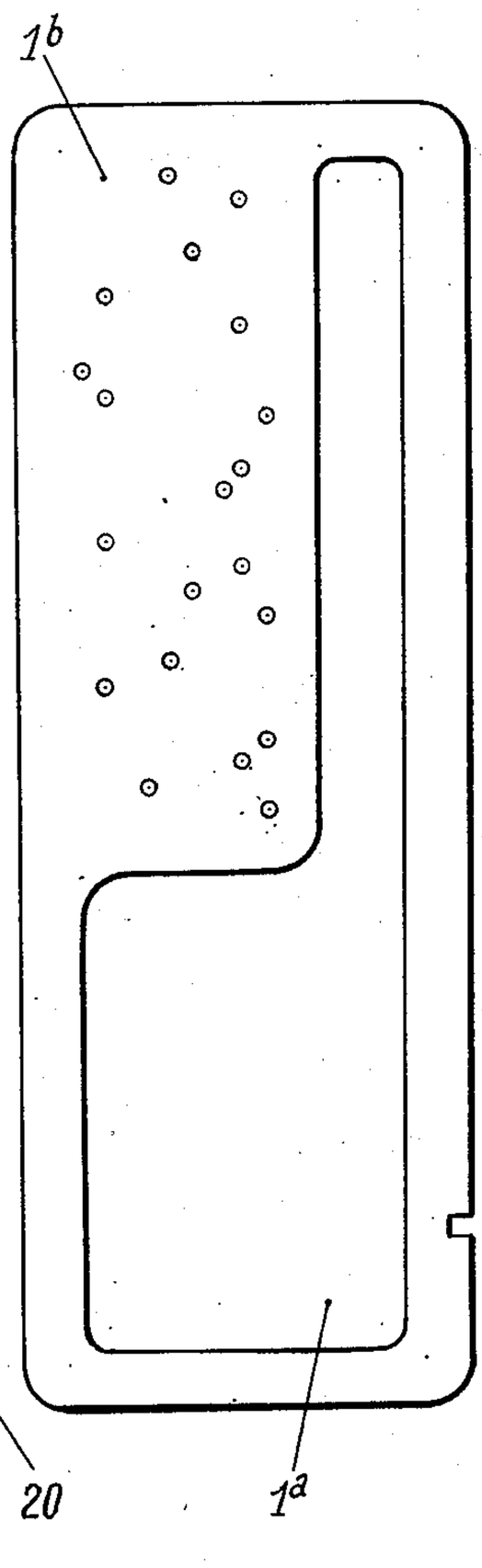
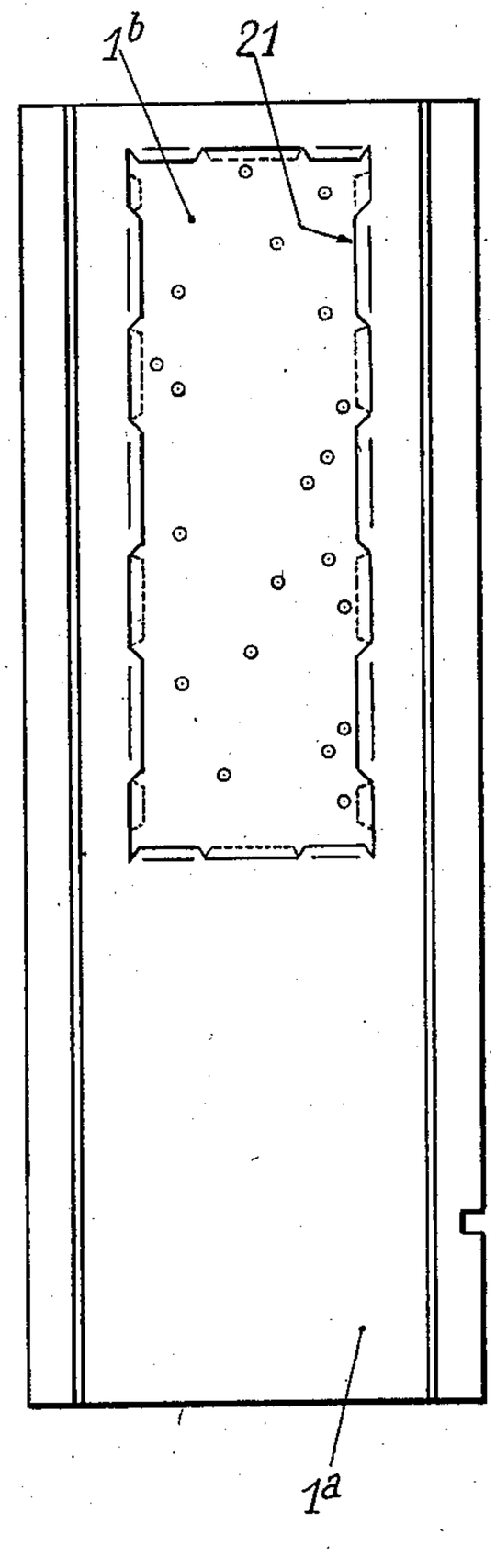


Fig. 7



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MACHINE FOR MAKING PRINTING PLATES OR STENCILS

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Fig. 9.

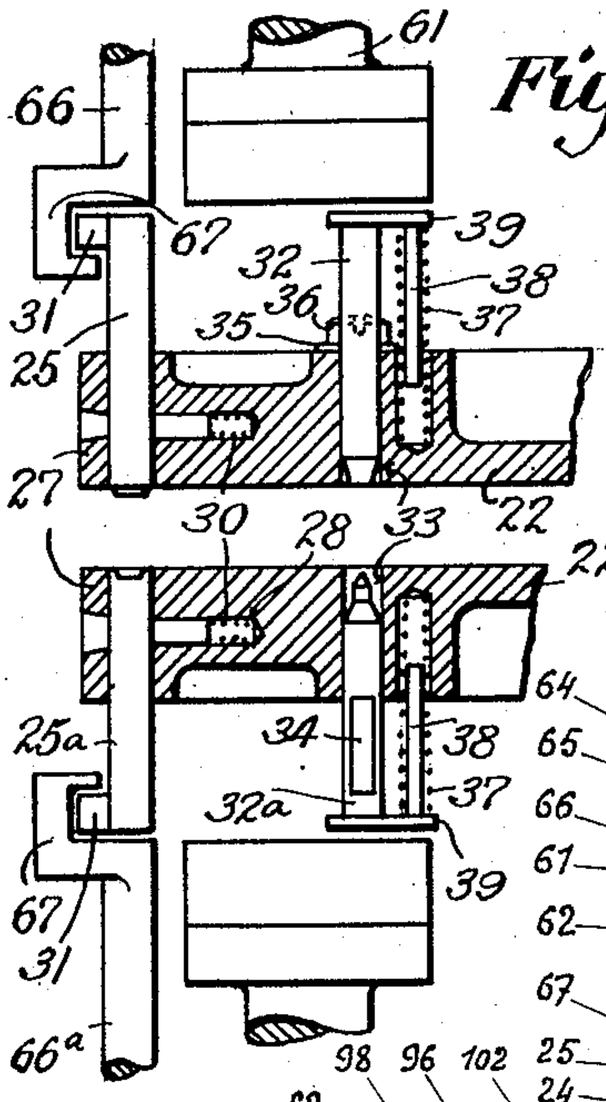


Fig. 8.

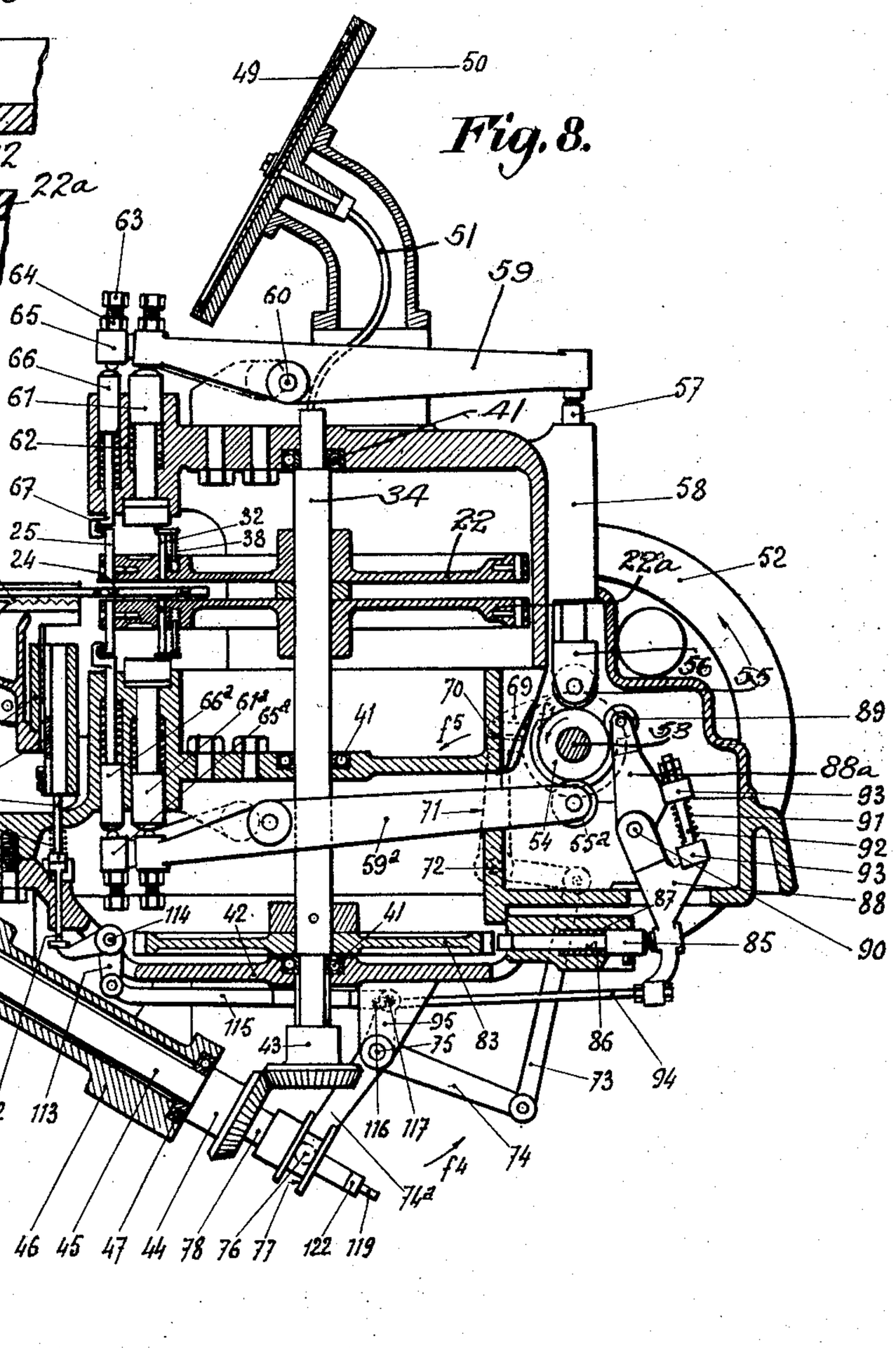
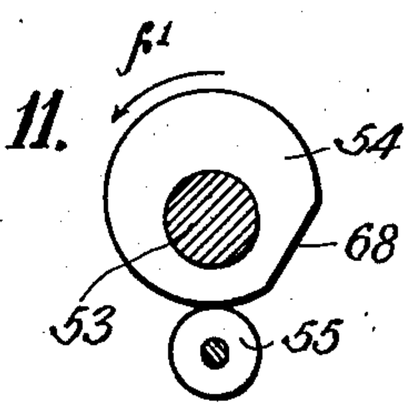


Fig. 11.



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MACHINE FOR MAKING PRINTING PLATES OR STENCILS

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Fig.10

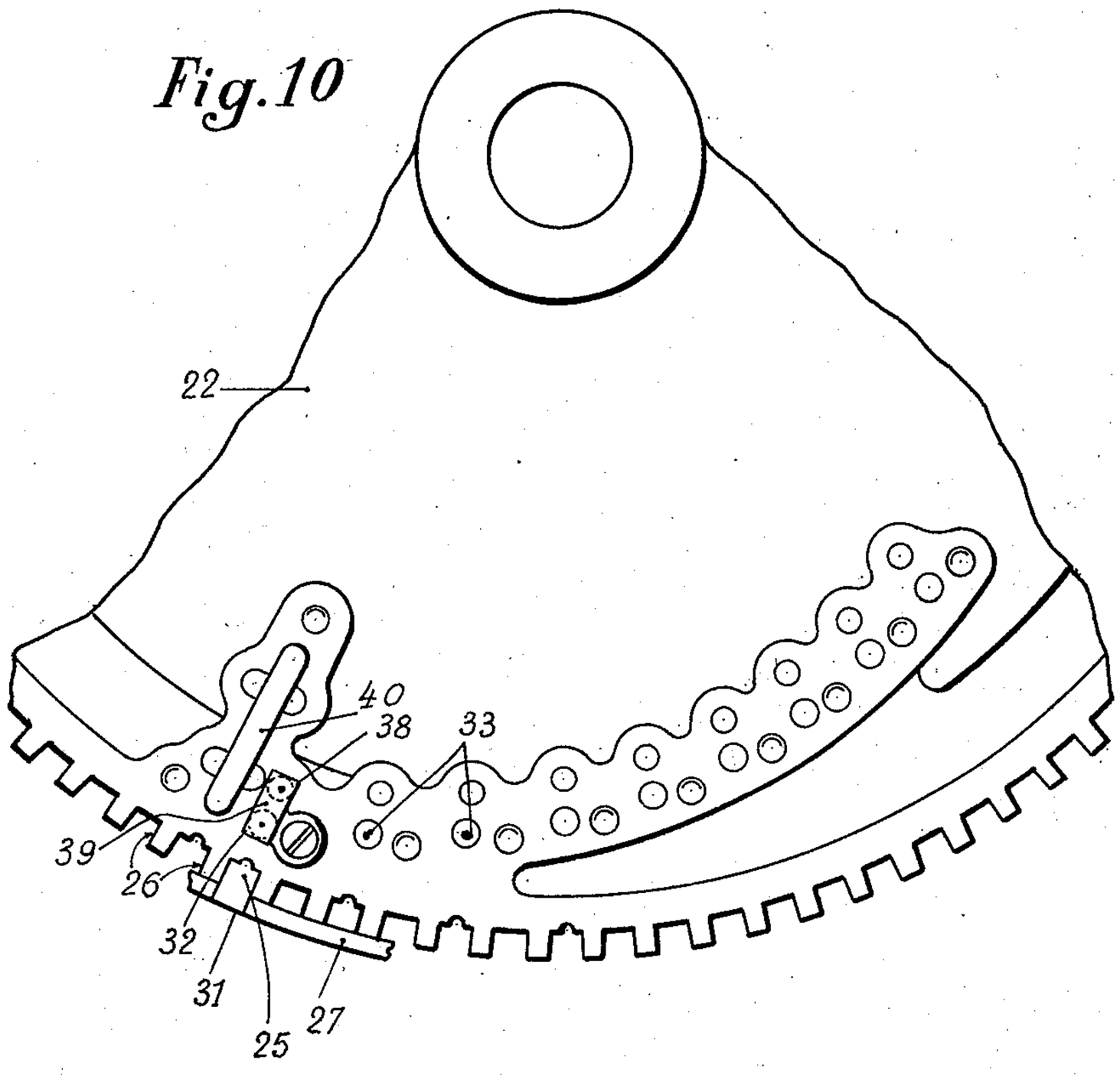
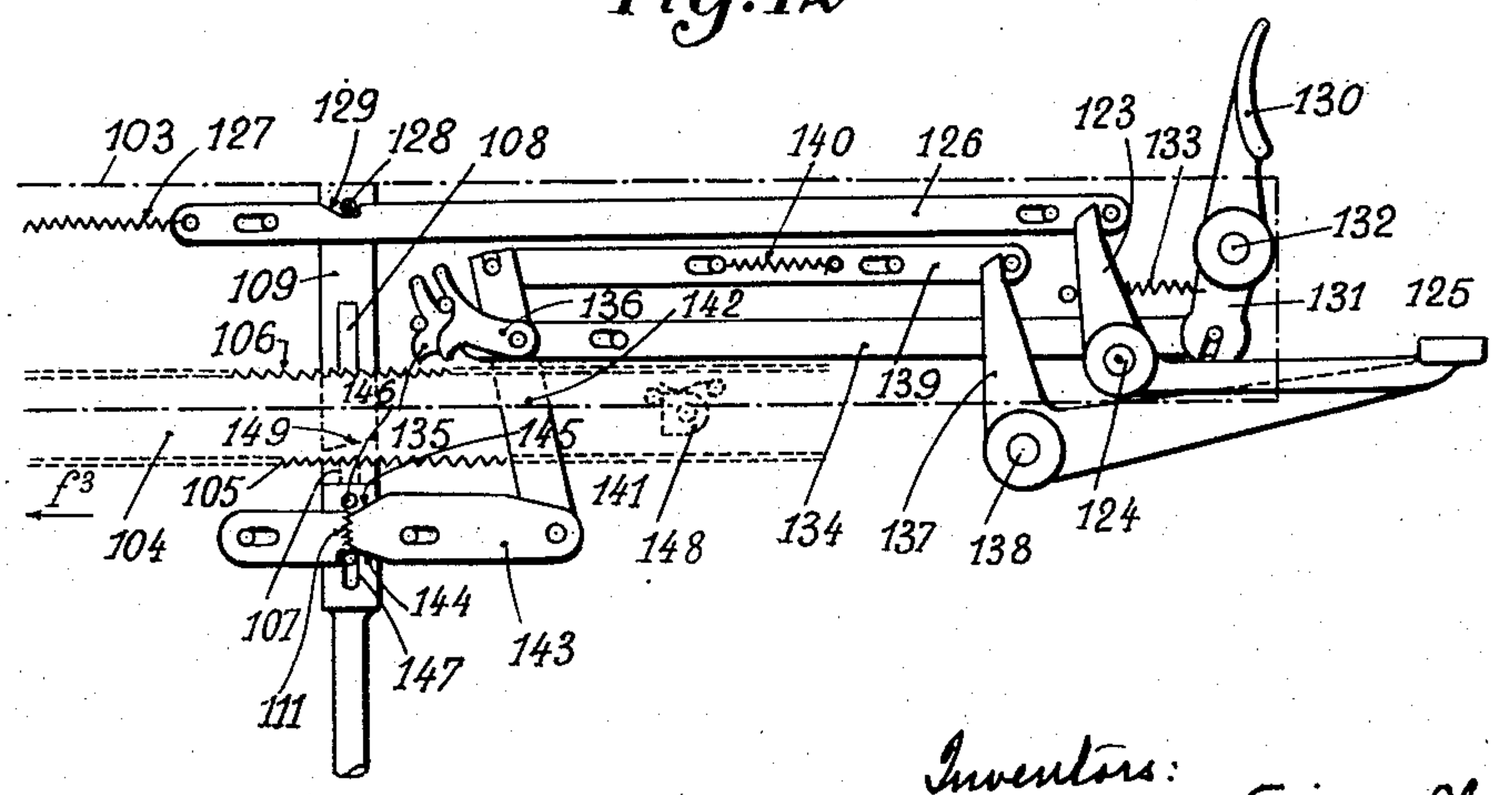


Fig.12



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UNITED STATES PATENT OFFICE

2,022,498

MACHINE FOR MAKING PRINTING PLATES OR STENCILS

Pierre James Etienne Glogaud and Paul Amédée Souze, Paris, France

Original application August 7, 1931, Serial No. 555,742. Divided and this application March 17, 1933, Serial No. 661,322. In France July 16, 1930

16 Claims. (Cl. 164—111)

This is a divisional application divided out of application, Serial No. 555,742, filed Aug. 7, 1931 and the invention relates to a machine for producing printing plates or stencils, more particularly those in which the text, letters and ciphers are stamped on one part of the printing plate, the other part comprising means which permits of controlling the associated machines, calculating machines or the like. Herein said means consists illustratively of perforations which correspond to the stamped character, ciphers or the like.

One of the objects of the invention is to provide a machine of the class described which, when stamping a character or cipher on the printing plate, also provides on the printing plate at a point corresponding to the value of the character or cipher, the means for controlling the associated machine. Other objects of the invention will appear from the following description.

The invention and its aims and objects will be readily understood from the following description, taken in connection with the accompanying drawings of one embodiment of the invention herein shown and described for illustrative purposes, the true scope of the invention being more particularly pointed out in the appended claims.

In the drawings:

Figs. 1 to 7 illustrate examples of printing plates made by the machine, Fig. 1 being a front view of a printing plate of one type.

Fig. 2 is an end view of the printing plate shown in Fig. 1.

Fig. 3 is a section on an enlarged scale taken through a perforation of the same printing plate.

Figs. 4 to 7 show in front elevation other illustrative printing plates.

Fig. 8 is a vertical section of a machine embodying one illustrative embodiment of the invention.

Fig. 9 is a part vertical section showing the stamping and perforating devices.

Fig. 10 is a part plan view of the drum and shows the location of the matrices and the perforating punches.

Fig. 11 shows in an elevation the form of one of the cams serving to operate the stamping characters.

Fig. 12 is an elevation of the tabulating mechanism of the carriage.

The printing plates illustrated will now be briefly described.

For a detailed description thereof reference may be had to the parent application Serial No. 555,742.

The printing plate shown in Figs. 1 to 3 is formed of a metal sheet 11 of zinc for example, the longitudinal edges of which are folded to form flanges 12 (Fig. 2). Notches are provided as usual in one of the flanges 12, one 13 to receive a signal or flag (not shown). Another notch 14 serves to lock the printing plate when it is used in the printing machine, while a further notch 15 serves for example, to feed the printing plate in its passage into the printing machine by means of a suitable pawl. There may also be provided a small notch 16 for classifying the printing plate, and the position of which on the printing plate depends upon the position which it occupies in this classification. Thus the notch 16 may indicate by its position the first letter of the name carried by the printing plate.

One or more notches 17 may be formed in any suitable manner in the second flange 12 and may be utilized in combination with a selector mechanism forming part of the printing machine. Thus the location of the notch or notches 17 on the flange 12 being the same for all printing plates of the same category, when these printing plates pass with others into the printing machine, only the first serve for printing if the selector has been regulated for the corresponding notch.

A part *ab* of the printing plate is reserved for the text which is stamped on this printing plate in known manner, the other part *bc* being reserved for the numbers, stamped like the text, and for the controlling means, herein exemplified by perforations corresponding to these numbers. Preferably the numbers occupy a single line. The perforations are placed in several longitudinal rows 18 associated with one of the ciphers 1 to 9 and following columns 19 associated each for a corresponding cipher corresponding to the cipher stamped at the base of the column. Thus the cipher 4, for example, may be indicated by a perforation on the fourth line starting from the base in the same column as this cipher.

Fig. 1 shows a receipt printing plate of an insurance company. The part *ab* is reserved for the text, (name of person insured, order number and other particulars). The part *bc* is divided into several columns corresponding to the total premium: 13822.15 fr.; the second the net premium 10682.19 fr.; the third, the tax 3128.36 fr.; the fourth, the expenses and so on, 9.45 fr.; and the last the stamp duty 2.15 fr. These sums are inscribed on the lower part of the printing plate in

a single line, the perforations corresponding to each cipher being placed above.

Preferably the perforations will have the form of a pyramid or truncated cone as illustrated in Fig. 3, as this facilitates the introduction of a small piston connected to a key of the associated machine.

The printing plates are used in the following manner:

The printing plates being put in place in the printing machine, the selecting mechanism is regulated so as to permit only the printing of the printing plates of one category, (for example, those of the same maturity in the case of insurance companies) that is to say, those in which the notch 17 occupies a definite position.

Each of these printing plates in passing into the machine prints the text and ciphers which it carries. At the same time that part of the printing plate which carries the perforations passes, as in statistical machines, over a keyboard constituted by small pistons connected to keys of one or more calculating machines. These pistons are regularly disposed and are located exactly beneath the perforations and the places for the perforations, so that when any printing plate enters the printing machine, there is always a piston opposite each perforation of the printing plate. Thus only the pistons which are located beneath a perforation are adapted to be displaced and to actuate the corresponding keys of the calculating machine or machines. If it is desired to print the total of each column of the printing plate of the same maturity, it will be necessary, in the example shown in Fig. 1, to have at least two calculating machines provided to permit the addition of several columns. The printing plate entering the machine will actuate simultaneously the two calculating machines, which will totalize the sums of the corresponding columns of the successive printing plates selected by the special device.

The printing plate shown in Fig. 4, comprises a metal frame 20, the edges of which are folded so as to hold between them a card 1 serving both for the text and for the ciphers and perforations. This sheet of cardboard 1 may readily be inserted at one of the ends of the frame 20. The card 1 may be in two pieces as shown in Fig. 5, the part 1*a* being reserved for the text and the other 1*b* being readily removable and reserved for the ciphers and perforations.

The printing plate of Fig. 6 comprises a card 1*a* for the text and ciphers and is held and gummed between two sheets of cardboard 1*b* forming a mounting. These sheets, 1*b* are suitably cut to leave free the space reserved on the card 1*a* and the part not cut away, receives the perforations. The intermediate card 1*a* may be replaced by a stencil on Japanese paper.

Composite stencils of card and zinc, for example, may be used as shown in Fig. 7. In this example an opening 21 is cut in the zinc stencil for positioning the perforations and the part cut out is replaced by a removable card 1*b* suitably fixed on the zinc sheet 1*a*.

These printing plates whatever their form are produced by the machine of the present invention, which at the same time, that it embosses the characters or ciphers, also perforates the printing plate at corresponding points. It would be inconvenient to separate these two operations, first on account of the time required and secondly because such a method of operation would lead to errors, the perforation or other controlling device not corresponding by its position to the desired character or cipher.

Referring now to Figs. 8 to 12, the machine therein illustrated is more particularly intended for the manufacture of zinc printing plates. In the illustrated example shown in Figs. 8, 9 and 10, the machine, of the address stamping type, comprises means for carrying the text and cipher stamping dies or the like, and preferably also the means for providing the plate with a device for controlling the machine in which the plate is to be used. Herein said carrying means comprises a rotary drum formed of two superposed plates 22, 22*a* between which is placed the printing plate 24 to be stamped and perforated.

The drum carries on its periphery the means, dies 25, 25*a*, intended for stamping the text and the ciphers, the male dies 25 being preferably carried by the upper plate 22 and the female dies 25*a* by the lower plate 22*a*. For example in the plates 22, 22*a* are formed notches 26 opposite each plate, see Fig. 10.

The dies 25 are capable of sliding in these notches 26 at right angles to the plates and are held in these notches by any suitable means. In the example shown in Fig. 9, the notch 26 is closed on the outside by a guard 27. A seating 28, formed in the bottom of the notch 26, receives a finger 29 which a spring 30 maintains pressed against the dies 25, 25*a*. Thus, when any force is exerted on the die, the latter remains in the position wherein it is left, because it is held between the guard 27 and the finger 29 by action of the spring 30. Each die 25, 25*a* comprises at the outer end of the drum, a lifting stud 31 disposed preferably adjacent the periphery of the drum.

In accordance with the invention means are provided for providing the printing plate or stencil with a controlling device for the machine in which said plate or stencil is to be used. In the illustrative embodiment of the invention shown, said controlling means or device consists of a perforation and for providing such perforation punches 32*a* and perforating matrices 32 may be carried by the drum plates 22, 22*a*, the matrices being carried by one plate and the punches by the other. In the illustrative embodiment of the invention, the matrices are carried by the upper plate 22 so that the cone formed by the perforation shall be on the opposite side to the embossed character on the printing plate. The punches 32*a* and matrices 32 are slidable in the seatings 33, traversing the plates 22, 22*a* and facing them. Each seating 33, is provided in the radius of the plate which passes through the axis of the corresponding character (Fig. 10). These seatings are located on circumferences, the common center of which is on the axis of rotation 34 of the plate and of which the radii are different, the difference between the radii of two consecutive circumferences being equal to the distance which separates two consecutive longitudinal rows of perforations on the printing plate.

Thus in this example shown in Fig. 10, a punch 32*a* and a matrix 32 are located at the intersection of the radius passing through the axis of the character 25 representing the cipher 1 and of the circumference of greatest radius so as to perforate the printing plate at the place relating to the cipher 1. Moreover, another punch 32*a* and another matrix 32 are located at the intersection of the radius passing through the axis of the character 2 and of the following circumference etc. The arrangement of the perfora-

tions may, moreover, be inverse, the punch and the perforating matrix corresponding to the cipher 9 being on the greatest circumference and those corresponding to the cipher 1 on the smallest. In this case the cipher 1 will be shown on the printing plate by a perforation on the upper row and the cipher 9 by a perforation on the lower row.

Preferably each punch 32*a* or matrix 32 has a longitudinal flat portion 34 and passes through a washer or other plate 35 fixed on the plate by a screw 36, for example. This washer 35 co-operates with said flat portion 34 of the matrix or the punch to limit its movement.

Suitable means is provided to return the punch 32*a* or matrix 32 to its retracted position of rest. Said means herein is constituted for example (Figs. 8, 9) by a spring 37 guided on a rod 38 sliding in a recess in the corresponding plate. This spring 37 bears on the one hand on said plate and on the other hand on a plate 39 connecting the punch 32*a* or the matrix 32 with the rod 38.

It may be necessary to remove or modify the ciphers and the controlling means, herein the perforations, on the printing plates, that is to say to close the existing perforations by filling in the cones of said perforations in order to make others, and to flatten the characters stamped. This may be effected by any suitable means, herein, for example, a hammer 40 (Fig. 10) which is relatively narrow and of elongated form so as to cover the perforations 1 to 9 of a single column at a time.

As in most stamping machines of known type, the dies 25, 25*a* carried by the drum are moved to the desired point by rotation of said drum. For this purpose, said drum 22, 22*a* is keyed on a shaft 34 rotating in bearings 41 carried by the framework 42 of the machine. To one of the ends of the shaft 34 is keyed a bevelled pinion 43 which meshes with a second pinion 44 mounted in the end of a tubular shaft 45 rotating within a socket 46 on two ball-bearings 47. An operating or handwheel 48 is fixed to the other end of said shaft 45. A pointer 49 movable in front of a scale 50, and connected by a flexible connection 51 to said shaft 34 permits of comparing the movements of rotation of the drum 22, 22*a*.

The dies 25, 25*a* and the punches 32*a* and matrices 32 are operated by suitable operating or actuating means, preferably from an operating wheel 52 driven by an electric motor. This wheel 52 is loose on a shaft 53 on which are keyed suitably profiled cams 54. One of said cams 54 acts on a roller 55 mounted to oscillate in a stirrup 56 forming the end of a rod 57, which slides in a suitable guide 58 forming, for example, part of the frame 42. On this rod 57 bears one end of a lever 59 mounted on a fixed axis 60. The other end of said lever 59 bears on a member, herein a pusher 61 sliding in the frame 42 and which a spring 62 tends to push away from the plate 22. An abutment screw 63 with a lock-nut 64 and screwing into the lever 59 is preferably interposed between the said lever and said pusher 61, so as to permit regulation in depth of said matrices 32. The free end of said member 61 is enlarged its width being such that it acts only on the matrix 32 which is fed beneath it by rotation of the drum 22, 22*a*, and its length is sufficient to operate all matrices 32 whatever their distance from the axis 34 of the plate.

An arrangement similar to that just described permits of operation of the punches 32*a* from the shaft 53, the lever 59*a* bearing preferably directly on a cam through the roller 55*a*.

The male dies 25 and female 25*a* are operated in the same manner as punches 32*a* and matrices 32 from shafts 53 by levers 65, 65*a* acting on the pushers or members 66, 66*a*, the said levers being actuated directly or not, by cams mounted on the said shaft 53. The end of each pusher 66, 66*a*, has the form of a hook 67 in which engages a lug 31 of a die 25, 25*a*, so that said pusher acts in both directions on said die 25, 25*a* to lower and raise it again. The internal dimensions of said hook 67 are greater than the diameter of the lug 31 so as to allow sufficient play for the passage of the lugs into the hooks and out of them on rotation of the drum 22, 22*a*.

For the same object cams 54 which control the levers 65, 65*a*, for the dies preferably have a profile indicated in Fig. 11 and a slightly flattened portion 68. This flat portion permits, when the dies 25, 25*a* are separated, by rotating the shaft 53, to give an excess of movement to said members or pushers 66, 66*a* and to the dies 25, 25*a*, then to approach slightly said pushers 66, 66*a*. In this position of rest the lug 31 of the dies 25, 25*a* which are held by fingers 29 is not in contact with the hook 67 of the pushers 66, 66*a*, and can thus be displaced freely on rotation of the drum (Fig. 9).

The machine comprises a usual arrangement for locking the shaft 53 to avoid incorrect manipulation. In the example shown in Fig. 8 a member 69 mounted on the shaft 53 comprises a finger 70, a movable abutment formed by the end of the shaped lever 71 being placed in position of rest opposite finger 70. This lever 71 pivoted at 72 is connected by a link 73 to another lever 74 fixed on a shaft 75 terminating in a lever 74*a*. The free end of the lever 74*a* has a finger or lug 76 movable in a circular groove 77 forming one end of a tubular member 78. This member 78 slides in the tube 45 and a plate 79 is fixed at its upper end. A spring 80 abutting at one end on the wheel 48 and at the other on the plate 79 tends to press the latter against the flange 81 fixed on the wheel 48, for example by columns 82. In this position (shown in Fig. 8) the movable abutment 71 is opposite the finger 70 and prevents the shaft 53 from turning in the direction of the arrow *f*1.

A suitable arrangement permits stopping the drum 22, 22*a*, during the stamping operation. This arrangement is formed for example by a special toothed wheel 83 keyed on the shaft 34. The finger 85 sliding in a recess 86 is subjected to the action of a spring 87 which tends to separate it from the said wheel and to press it against an arm 88 of a double lever. The other arm 88*a* of this lever carries a roller 89 running on the cam of suitable profile keyed to the shaft 53. Preferably the arms 88, 88*a* of the double lever pivoted at 90 are connected to one another by elastic means for example a spring 91 guided by rod 92, and bearing on bosses 93 of these two levers so as to absorb the excess movement of the lever 88*a* when the finger 85 is locked at the bottom of the tooth of the wheel 83. Moreover, the arm 88 of the lever is connected by a rod 94 to an arm 95 and effects the displacement of the printing plate carriage as described later.

The printing plate 24 is capable of being displaced between the two plates 22, 22*a* in such manner as to produce stamping and perforations at the desired points. For this purpose the plate 24 is carried by a plate 96 sliding horizontally in

a slide in a carriage 97 so as to be moved nearer or more or less further from the axis 34 of the drum 22, 22*a*. The plate 96 is integral with a rack 98 engaging with a pinion 99 keyed on a shaft 100 which may be turned by hand. Preferably an elastic device not shown, tends to turn the plate 96 backwards in the direction of the arrow *f*2 and to remove the plate 24 thus from the drum 22, 22*a*. A pawl 101 in engagement with one tooth 102 of the teeth opposes this movement.

The carriage 97 is displaced at right angles to the movement of the plate 96, that is to say, tangentially of the drum 22, 22*a* on a fixed guide 103 (shown in dotted lines in Fig. 12) carried by the frame 42. The carriage 97 is integral with the double rack 104 of which the lower teeth 105 and the upper teeth 106 are in the form of saw teeth inclined in the opposite direction. These teeth engage respectively with pawls 107, 108 which hold it against the action of a spring, not shown, tending to displace the carriage 97 and the rack 104 (Fig. 12) in the direction of the arrow *f*3.

The upper pawl 108 is fixed on a pawl-carrying rod 109 movable vertically across the frame 42 and returned downwards by a spring 110 (Fig. 8).

The distance apart of teeth of the rack 104 is so selected that it corresponds to the distance between two successive characters on the printing plate 24. Preferably there are employed for the ciphers, characters which are further from one another than for the text so as to avoid errors in reading. For this purpose the teeth comprise for example two different pitches, one for a certain width corresponding to the passage beneath the characters of the stamping part of the stencil reserved for the text, the other greater than the former for the rest of the rack corresponding to the parts of the printing plate reserved for the ciphers and for the perforations.

The displacement of the printing plate 24 between the plates for stamping successive characters and consequently for advancing the rack 104 in the direction of the arrow *f*3 may be obtained automatically. In the example shown in Fig. 8 the lower end of the rod 109 bears on a pusher 112 which rests on the end on an arm of a bell crank lever 113 pivoted at 114. On this lever 113 is pivotally connected a rod 115, on the other end of which is a slot 116 in which slides a pin 117 carried by the lever 95.

The advance of the carriage 97 may also be effected by hand for example by a push button 118 placed on the wheel 48 (Fig. 8). This button is solid with a rod 119 located within the tube 78 and connected by levers and a Bowden cable, not shown, to a pawl carrying rod 109. A spring 120 bears on the one hand on a sleeve 121 fixed on the flange 81 and at the other end on the button 118. The ring 122 is held by a pin for example on the rod 119 and limits the displacement of the latter under the action of the spring 120.

Preferably the carriage 97 is itself associated with a spacing key mechanism which is actuated to advance the carriage in the direction of the arrow *f*3 (Fig. 12). This mechanism comprises a bell crank lever 123 mounted to rock on an axis 124, one arm of which forms a key 125 while the other bears on a rod 126. This rod 126 can slide by virtue of slots on fixed lugs, a spring 127 tending to return it into its position of rest. The pawl holder 109 bears by means of a finger 128 on a ramp 129 of this rod so that when the latter is displaced in the opposite direction from the arrow *f*3 the pawl holder 109 is raised.

The return (in the direction opposite to the arrow *f*3) of the carriage 97 is obtained tooth by tooth by an arrangement comprising a key 130 forming one of the arms of the lever 131 pivoted at 132. The other arm of this lever moved in the direction of the arrow *f*3 by a spring 133 acts on a rod 134 sliding by means of slots on gudgeons. Two pawls 135, 136, are pivoted on the rod 134 and engage with the teeth 106. The distance between the pawl 135 and pawl 108 is a multiple of the pitch of one of the toothed gearings of the rack, while the distance of the other pawl 136 from the pawl 108 is a multiple of the pitch of the other teeth of the rack. Thus when two pawls act on the teeth of the smaller pitch the return of the carriage is effected by these two pawls. When one 135 is on the teeth of smaller pitch and the other 136 is on the other teeth, they work alternately. Finally when they are both on teeth of the larger pitch, only the pawl 136 ensures the return of the carriage.

When the stamping of the text of the stencil or plate is very short and when it is desired to pass immediately from the stamping of the ciphers, the carriage may be advanced rapidly in the direction of the arrow *f*3 to the desired position by a device which releases the rack 104 simultaneously from the pawls 107 and 108. This arrangement is constituted for example by a key forming one of the arms of the bell crank lever 137 pivoting about an axis 138. The other arm of this lever acts on a rod 139 which slides by slots on fixed pins and is returned in the direction of the arrow *f*3 by a spring 140. This rod 139 is connected by a lever 141, mounted to rock on an axis 142, to a member 143 which can slide by slots on lugs.

The member 143 comprises two ramps 144, 145 adapted to come in contact one with the pin 146 mounted on the pawl carrier 109, the other with a pin 147 in one with the movable pawl 107. Thus when the member 143 is displaced in the direction of the arrow *f*3, the ramps, 144, 145, of this member effect separation of the pawls, 107, 108 and release the rack 104 which is displaced in the direction of the arrow *f*3 under the action of its spring. An abutment 148 is fixed on the rack 104 at a convenient point so as to limit the travel of the rack in this direction by striking of the abutment with the edge of a notch 149 provided in the pawl carrier 109. This notch is located in such manner that the abutment 148 may pass through it when the pawl carrier 109 is lowered and when the pawls 107, 108 have resumed their normal position. Thus the carriage may continue to advance tooth by tooth for stamping ciphers.

The operation of this machine is as follows:— The printing plate 24 to be stamped and perforated is placed (Fig. 8) on the plate 96, the position of which is regulated by the rack 98 and the carriage 97 is displaced by the rack 104 on the fixed guide 103 in such manner as to lead the desired point of the printing plate to the position for stamping. The drum 122, 122*a* is turned by the operating wheel 48 to bring between the pushers 66, 66*a*, 61, 61*a* the dies 25, 25*a* and punches selected. The pointer 49 permits of marking this position.

At this moment pressure is applied to the plate 79. The lever 74 pivots in the direction of the arrow *f*4 and carries by the rod 94 the lever 88 which pushes the finger 85 against the

toothed wheel 83. The finger 85 engages between two teeth of the wheel and holds the drum 22, 22*a* stationary. During this movement the lug 117 is displaced in the slot 116 so that the rod 115 is not entrained.

At the same time the rotation of the lever 74 about its axis entrains that of the lever 71 in the direction of the arrow *f5* which releases the member 69 and produces clutching for one rotation of the shaft 53 in the direction of the arrow *f1* by means of the wheel 52. The cams 54 keyed on this shaft raise the rollers 55 and 55*a* and 89.

The arm 88*a* of the double lever thus pivots about the axis 90 and entrains in its rotation the other arm 88. The latter pushes forward the finger 85 between the teeth of the wheel 83. Moreover, the lug 117 of the rod 94 bearing on the bottom of the slot 116 entrains by the rod 115 the bell crank lever 113 which raises the pawl carrying rod 109 and consequently the fixed pawl 108 in relation to the rack 104. This pawl releases the said rack which advances by half a tooth and comes into engagement with the lower pawl 107.

Similarly the rollers 55, 55*a* being raised by the corresponding cams 54, the levers 59, 59*a*, 65, 65*a*, pivot about their axis and bear on the pushers 61, 61*a*, 66, 66*a*, the pushers 66, 66*a* force the dies selected 25, 25*a*, into the printing plate 24 and the cipher which they carry is thus stamped on the base of the stencil. At the same time the punches and matrices 32*a*, 32 under the action of the pushers 61*a*, 61 perforate the stencil 24 at the point corresponding to the cipher stamped.

If the character stamped is a letter there will be no punches and matrices under the pushers 61*a*, 61 so that there will be stamping without perforation as in known stamping devices.

At the conclusion of rotation the pushers resume their position of rest as shown in Fig. 8 under the action of springs. The punches and matrices as also the dies resume their original positions as indicated above.

At the same time the roller 89 approaches the shaft 53 and the arm 88 of the double lever under the action of the finger 85 returned by the spring 87 moves back, releasing the wheel 83 and consequently the drum 22, 22*a*. The pawl holder 109 moves downwards under the action of the spring 110. It follows that the upper pawl 108 is lowered and located between two teeth of the teeth 106. The lower pawl 107 is also lowered and releases the rack 104 which advances by half a tooth and comes into engagement by its upper teeth 106 with the upper pawl 108.

Moreover during the rotation of the shaft 53 and the return of the lever 88 this lever has entrained by the rod 94 and in a direction opposite to the arrow *f4* the lever 74 which was thus moved by the spindle 78 and the spring 80. The movement of the bell crank lever 74 has returned the movable abutment 71 opposite the finger 70 and the member 69 and has thus stopped the shaft 53.

To stamp the following cipher it is sufficient to recommence the same operations without it being necessary to cause the carriage to advance, since the carriage is advanced automatically in two steps, by a half tooth of the rack 104 at each step. If it is desired to leave a space between two characters, the carriage is caused to advance by the desired amount by acting either on the stud 118 or on the key 125.

Obviously the invention is not limited to the embodiment illustrated and described which has been selected only by way of example. In particular the arrangements of the texts and of the perforations on the printing plates may vary and in all cases the best adapted to the application in view. Moreover, the constitution of the characters of the stamping machine depends on the material of which the printing plate is formed. Thus in the case for example where a stencil on Japanese paper is prepared, the text and the ciphers may be produced on the stencil by simple pressure of the male characters on a plastic material, rubber or the like, effecting the same work as the characters of a typewriting machine.

We claim:

1. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, die means; plate perforating means to make a perforation for controlling an associate machine; actuating means for said die means and said plate perforating means; a carrier for said die means and said plate perforating means; means relatively to move said carrier and said actuating means to bring said die means and said plate perforating means into operative relation with said actuating means; plate carrying means; means to adjust said die means and said plate perforating means relatively to said plate carrying means to enable said die means and said plate perforating means to act upon a printing plate carried by said plate carrying means at the desired points; and means to render said acuating means operative to actuate said die means and said plate perforating means.

2. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, plate carrying means; a plurality of sets of die means and perforating means, the latter to make perforations for controlling an associate machine, each set comprising a die means and a perforating means, the spacing of the die means and perforating means of each set being different; actuating means for said sets of die means and perforating means; means to move each set of die means and perforating means into operative relation with said actuating means; and means to position said plate carrying means relatively to said sets of die means and perforating means, to enable each set to act upon a plate carried by said plate carrying means at the desired point.

3. A machine for making printing plates or stencils, more particularly those of the types described, comprising, in combination, plate carrying means; a plurality of sets of die means and perforating means, each set comprising a die means and a perforating means spaced therefrom; actuating means for said sets of die means and perforating means; a rotary carrier in which said sets of die means and perforating means are mounted, the spacing of the die means and perforating means of each set being different radially of said carrier; means to rotate said carrier to bring said sets of die means and perforating means singly into operative relation with said actuating means; and means relatively to adjust said plate carrier and said rotary carrier radially and tangentially of the latter.

4. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing means and a movable machine controlling device pro-

ducing means, the spacing of the character producing means and machine controlling device producing means of each set being different; means to actuate said sets of character producing and machine controlling device producing means to cause each set to produce upon a plate carried by said plate carrier a character and a mchine controlling device; means to move each set of character and machine controlling device producing means singly into operative relation with said actuating means; and means to position said plate carrying means relatively to said sets of character and machine controlling device producing means, to cause each of said sets to act upon the plate carried by said plate carrier at the desired points.

5. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing means and a machine controlling device producing means spaced therefrom; a rotary carrier in which said sets of character and machine controlling device producing means are mounted, the spacing of the character producing means and machine controlling device producing means of each set being different radially of said carrier; actuating means for said sets of character and machine controlling device producing means; means to rotate said rotary carrier to bring said sets of character producing and machine controlling device producing means into operative relation with said actuating means; and means relatively to adjust said plate carrier and said rotary carrier radially and tangentially of the latter.

6. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a movable carrier, a plurality of sets of character producing means and machine controlling device producing means carried by said movable carrier, each set comprising a character producing and a machine controlling device producing means, the spacing of the character producing means and the machine controlling device producing means of each set being different; actuating means for said sets of character producing and machine controlling device producing means, to cause each set to produce upon said plate a character and a machine controlling device; and means to position said plate carrying means relatively to said sets of character and machine controlling device producing means to cause each of said sets to act upon the plate carried by said plate carrier at the desired points.

7. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a movable carrier, a plurality of sets of character producing and machine controlling device producing means carried by said movable carrier, each set comprising a character producing and a machine controlling device producing means, the spacing of the character producing means and the machine controlling device producing means of each set being different; actuating means for said sets of character producing and machine controlling device producing means, to cause each set to produce upon a plate carried by said carrier a character and a machine controlling device; means to position said plate carrier relatively to said sets of character and machine controlling device producing means to cause each of said sets to act upon the plate carried by said plate carrier at the desired points; and locking means for said actuating means.

8. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing and a movable machine controlling device producing means, the spacing of the character producing means and machine controlling device producing means of each set being different; means to actuate said sets of character producing and machine controlling device producing means, to cause each set to produce upon a plate carried by said carrier a character and a machine controlling device; means to move each set of character and machine controlling device producing means singly into operative relation with said actuating means; means to position said plate carrier relatively to said sets of character and machine controlling device producing means, to cause each of said sets to act upon the plate carried by said plate carrier at the desired points; and locking means for said means for moving each set of character and machine controlling device producing means into operative relation with said actuating means.

9. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing means and a machine controlling device producing means spaced therefrom; a circular carrier in which said sets of character and machine controlling device producing means are mounted, the spacing of the character producing means and machine controlling device producing means of each set being different radially of said carrier; actuating means for said sets of character and machine controlling device producing means; and means relatively to adjust said plate carrier and said rotary carrier radially and tangentially of the latter.

10. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, die means; plate perforating means to make a perforation for controlling an associate machine; actuating means for said die means and said perforating means; a movable carrier for said die means and said perforating means, in which said die means and said perforating means are mounted in predetermined spaced relation; means relatively to move said carrier and said actuating means to bring said die means and said perforating means into operative relation with said actuating means; plate carrying means; means to adjust said die means and said perforating means relatively to said plate carrying means to enable said die means and said perforating means to act upon a plate carried by said plate carrying means at the desired points; and means to render said actuating means operative to actuate said die means and said perforating means.

11. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing and a

movable controlling device producing means; means to maintain the character producing means and controlling device producing means of each set in predetermined spaced relation, the spacing of the character producing means and controlling device producing means of each set being different; means to actuate said sets of character producing and controlling device producing means to cause each set to produce upon said plate a character and a controlling device; means to move each set of character and controlling device producing means into operative relation with said actuating means; and means to position said plate carrying means relatively to said sets of character and controlling device producing means to cause each of said sets to act upon a plate carried by said plate carrier at the desired points.

12. A machine for making printing plates cr stencils, more particularly of the types described, comprising, in combination, a plate carrier; a plurality of sets of character producing means and machine controlling device producing means, each set comprising a character producing means and a controlling device producing means spaced therefrom; a circular carrier in which said sets of character and controlling device producing means are mounted, the spacing of the character producing means and controlling device producing means of each set being different radially of said carrier; actuating means for said sets of character and controlling device producing means; and means relatively to adjust said plate carrier and said rotary carrier radially and tangentially of the latter, said last named means comprising a rack toothed on both sides, and cooperating pawls to engage said teeth, said teeth being of different pitches.

13. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, plate carrying means; character stamping means; plate perforating means; means to actuate said character stamping means and said plate perforating means; and means to adjust said plate carrying means relatively to said character stamping means and said plate perforating means, the construction and arrangement being such that when said stamping means stamps a character on a plate carried by said plate carrier, said plate perforating means also perforate said plate at a point corresponding to the value of said character.

14. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, plate carrying means; character producing means; machine controlling device producing means; operating means for said character producing means and said machine controlling device producing means; and means to move said plate carrying means relatively to said character producing means and said machine controlling device producing means, the construction and arrangement being such that on actuation of said character producing means and said machine controlling device producing means, a character and a machine controlling device will be produced upon a plate carried by said plate carrier, said machine controlling device being produced at a point on said plate corresponding to the value of said character.

15. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, plate carrying means; character producing means; machine controlling device producing means; operating means for said character producing means and said machine controlling device producing means; means to lock said operating means against movement; and means to move said plate carrying means relatively to said character producing means and said machine controlling device producing means, the construction and arrangement being such that on actuation of said character producing means and said machine controlling device producing means, a character and a machine controlling device will be produced upon a plate carried by said plate carrier, said machine controlling device being produced at a point on said plate corresponding to the value of said character.

16. A machine for making printing plates or stencils, more particularly of the types described, comprising, in combination, plate carrying means; character producing means; machine controlling device producing means; operating means for said character producing means and said machine controlling device producing means; means operable to obliterate a character and machine controlling device produced; and means to move said plate carrying means relatively to said character producing means and said machine controlling device producing means, the construction and arrangement being such that on actuation of said character producing means and said machine controlling device producing means, a character and a machine controlling device will be produced upon a plate carried by said plate carrier, said machine controlling device being produced at a point on said plate corresponding to the value of said character.

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