May 11, 1926. 1,584,368

E. L. GEIGER

METHOD OF PREPARING PLATES FOR THE PRINTING OF IMPRESSIONS

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Fig. 1.

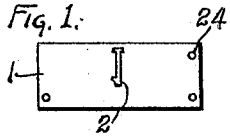


Fig. 2.

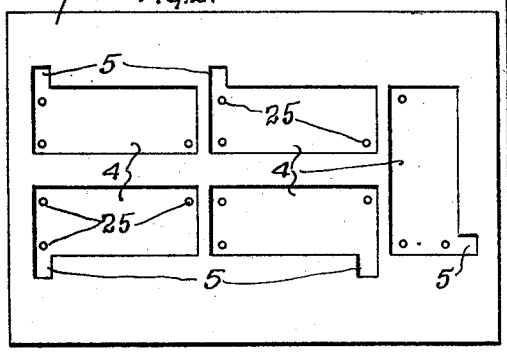


Fig. 3.

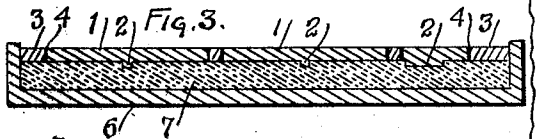


Fig. 4.

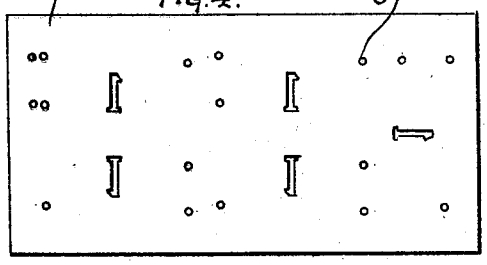


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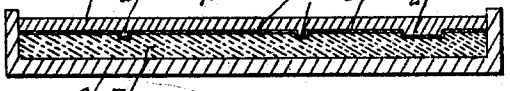


Fig. 6.

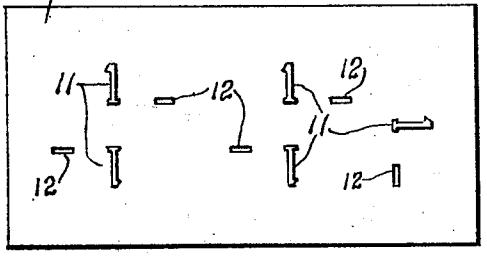


Fig. 7.

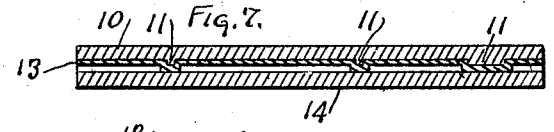


Fig. 8.

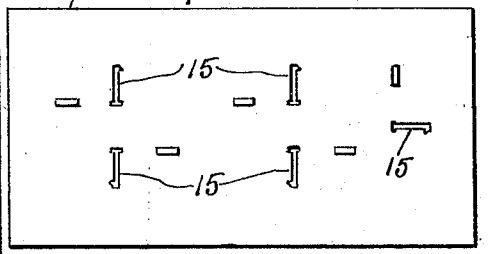


Fig. 9.

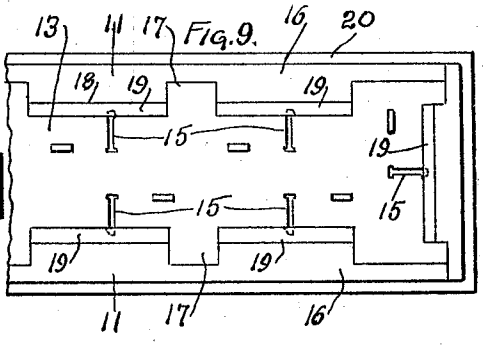


Fig. 10.

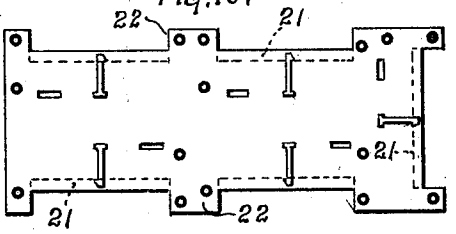


Fig. 11.

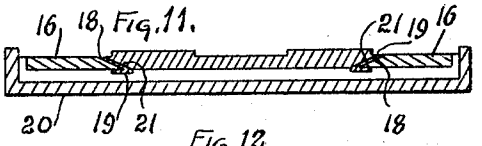
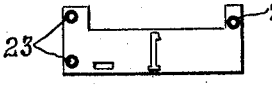


Fig. 12.



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Fig. 13.

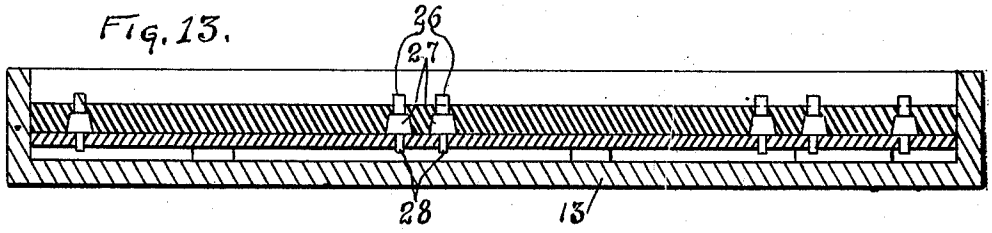
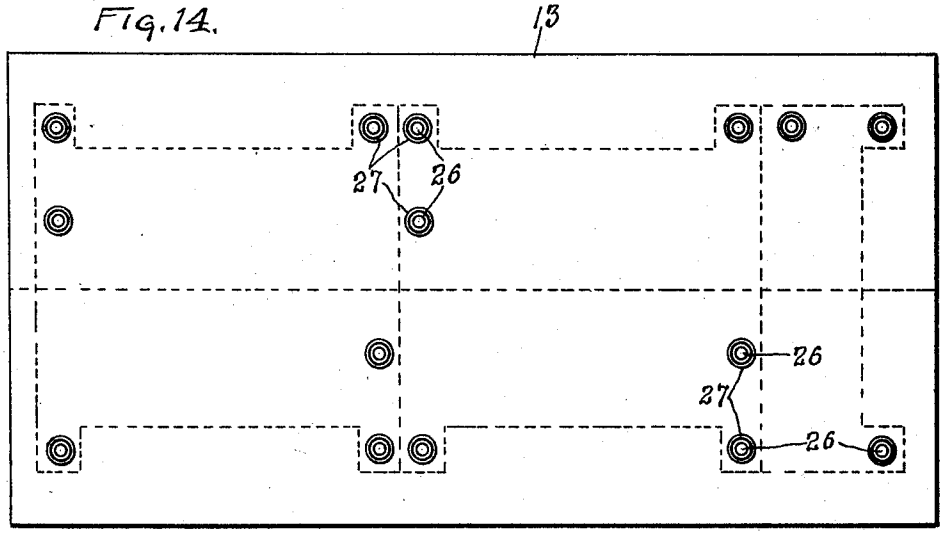


Fig. 14.



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Patented May 11, 1926. 1,584,368

UNITED STATES PATENT OFFICE.

EARL L. GEIGER, OF DAYTON, OHIO.

METHOD OF PREPARING PLATES FOR THE PRINTING OF IMPRESSIONS.

Application filed March 28, 1925. Serial No. 18,961.

My invention relates to apparatus and method of preparing and producing plates for the printing of impressions therefrom.

It is my object to produce plates for printing impressions therefrom adapted to varying uses and particularly adapted for use in recording machines such as taximeters and the like.

It is an object of my invention to be able to provide such plates in finished form suitably coated with a desirable metal, properly beveled, shaped, drilled and countersunk with suitable serial numbers cast therein so that each plate will have its own number.

Heretofore it has been necessary to saw the individual plates from a master plate, bevel the plate on a special machine and separately drill and countersink each of said plates.

It is a further object of my invention to provide means of locating templets which form countersunk holes at the desired points in the casting plates to eliminate drilling and countersinking.

Referring to the drawings:

Figure 1 is a plan view of an electrotype pattern.

Figure 2 is a plan view of the templet and wax beneath.

Figure 3 is a section through the templet, wax impression plate and frame holding the wax.

Figure 4 is a plan view of the impression upon the wax.

Figure 5 is a section through the wax upon which a copper coating has been deposited, the frame and the metal cast upon the copper coating of the wax.

Figure 6 is a view of the cast metal plate which has been taken from the wax showing the openings mortised in the plate for the insertion of the serial numbers.

Figure 7 is a section through the metal plate, paper sheet and frame, which combination is put in a steam table under a molding brush.

Figure 8 is a plan view of the paper matrix.

Figure 9 is a plan view of the paper matrix with a casting frame in position.

Figure 10 is a plan view of the composite plate cast with its lugs and beveled edges, serial numbers and lettering, which plate is later sawed into the separate plate shown in Figure 12.

Figure 11 is a section on the line 11—11 of Figure 9.

Figure 12 is a plan view of the finished plate.

Figure 13 is a section through the casting box, matrix, and plate, showing the templets in position.

Figure 14 is a top plan of the matrix ready to receive molten metal with templets in position.

Referring to the drawings in detail, 1 is an electrotype plate having various configurations 2 mounted thereon in the usual manner depending upon the text matter desired. A templet 3 is formed of a plate of metal having cutaway portions 4 which are oblong with recessed portions 5 so that when the plate 1 is inserted in the space 4 it can be lifted by inserting an instrument or a finger in the opening 3 under the edge of the plate 1.

A frame 6 is provided in which there is a bed of wax 7. The templet 3 is laid on this bed of wax and the electrotype 1 is put in the successive openings 4 and impressed with the wax.

This results in the wax taking the impression from the text matter 2 on the face of the electrotype plate 1 as will be seen in Figure 4. A coating of thin copper is deposited electrolytically upon the surface 8 of the wax forming a film 9 as shown in Figure 5. Molten metal is then poured upon this copper surface and the plate shown in Figure 6 is formed.

This plate is designated 10. This plate 10 has upon it the embossed text matter 11. The plate has apertures 12 cut therein or mortised so that the blocks containing the serial numbers can be inserted therein in these openings. This finished plate 10 is then placed in the usual steam table being subjected to about fifty pounds pressure. In the press with the plate is the paper matrix sheet 13 and a frame 14. This results in producing a paper matrix 13 with the depressions 15 indicating the text matter. Upon this paper matrix are arranged marginal casting frame members 16 having recessed portions 17 and beveled edges 18 over which paper strips 19 have been pasted. These strips are coated with talc. The casting frame members and the paper matrix are pressed in a main frame 20. Stereotyped metal is poured on the paper matrix

so that the resulting plate shown in Figure 10 is secured in which the recessed margins 21 are beveled. Between these margins are the rectangular projections 22 which have been formed by the rectangular recesses 17 in the casting frame. The paper strips are pasted on the casting frame to prevent peeling of the metal and the talc is used to prevent sticking.

The finished plates are formed by simply sawing the master plate in Figure 10 into five plates such as shown in Figure 12 after having drilled and countersunk the plates at 23. Each plate has its serial number and the proper embossed text matter thereon and comes from the molding frame with a beveled edge so that it need not be milled and otherwise treated by machined tools to finish it.

After securing the finished plates I then give them a nickel bath which materially improves their wearing and printing qualities and extends their life.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

Referring to Figure 1, it will be noted that slight indentations 24 are provided in the master plate 1 by any suitable instrument. Such indentations result in raised portions 25 in the material with which the plate 1 comes in contact.

These locating depressions or extrusions continue throughout the plates, matrix etc. until they appear as depressions in the matrix paper 13. These points so located are then punched and steel templets consisting of a cylindrical shaft 26, a conical portion 27 and a restricted pin portion 28 are located in the matrix, the pin portions being placed in the holes in the matrix. The tapered portions 27 form the countersunk part of the resulting plate, while the cylindrical portions 28 form the holes in the plate. Thus the resulting plate turns out countersunk with holes in proper position to save drilling and countersinking.

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

1. In a method of forming printing plates, imprinting in a yielding substance from a master plate, casting a plate from the imprinted substance, imprinting in bas-relief upon a fibrous substance under pressure, providing a frame around the margin of the fibrous substance, pouring metal within said frame on said fibrous substance and severing the plate so secured into multiple plates so that the desired configuration is imparted to the plate.

2. In a method of forming printing plates, imprinting in a yielding substance from a master plate, casting a plate from the imprinted substance, imprinting in bas-relief upon a fibrous substance under pressure, providing a frame around the margin of the fibrous substance, pouring metal within said frame on said fibrous substance, severing the plate so secured into multiple plates so that the desired configuration is imparted to the plate, and electroplating the resulting plates.

3. In a method of forming printing plates, imprinting in a yielding substance from a master plate, casting a plate from the imprinted substance, imprinting in bas-relief upon a fibrous substance under pressure, providing a frame around the margin of the fibrous substance, pouring metal within said frame on said fibrous substance, severing the plate so secured into multiple plates so that the desired configuration is imparted to the plate, electroplating the resulting plates, and drilling and countersinking the resulting plates.

4. In a process of producing a printing plate, selecting a master plate, positioning said master plate on a wax bed and impressing it therein with successive impressions in different portions of the bed, copper plating the surface of said wax, casting a plate of metal from the copper plated surface of the wax, impressing the wax so secured into a paper matrix, placing a paper matrix in a frame, arranging marginal casting frame members about the margin thereof to give the proper configuration to a plate cast from said paper matrix and casting a plate from said paper matrix.

5. In a process of producing a printing plate, selecting a master plate, positioning said master plate on a wax bed and impressing it therein with successive impressions in different portions of the bed, copper plating the surface of said wax, casting a plate of metal from the copper plated surface of the wax, impressing the plate so secured into a paper matrix, placing a paper matrix in a frame, arranging marginal casting frame members about the margin thereof to give the proper configuration to a plate cast from said paper matrix, pasting paper strips over the margin of a portion of said frame to prevent the metal sticking thereto, and casting a plate from said paper matrix.

6. In a process of producing a printing plate, selecting a master plate, positioning said master plate on a wax bed and impressing it therein with successive impressions in different portions of the bed, copper plating the surface of said wax, casting a plate of metal from the copper plated surface of the wax, impressing the plate so secured into a paper matrix, placing a paper matrix in a frame, arranging marginal casting frame members about the margin thereof to give the proper configuration to a plate cast from said paper matrix, pasting paper

strips over the margin of a portion of said frame to prevent the metal sticking thereto, putting talc on said paper to prevent sticking, and casting a plate from said paper matrix.

7. In a process of producing a printing plate, selecting a master plate, positioning said master plate on a wax bed and impressing it therein with successive impressions in different portions of the bed, copper plating the surface of said wax, casting a plate of metal from the copper plated surface of the wax, impressing the plate so secured into a paper matrix, placing a paper matrix in a frame, arranging marginal casting frame members about the margin thereof to give the proper configuration to a plate cast from said paper matrix, pasting paper strips over the margin of a portion of said frame to prevent the metal sticking thereto, putting talc on said paper to prevent sticking, casting a plate from said paper matrix, severing said last mentioned plate into separable plates, and drilling and countersinking said separable plates.

8. In a process of producing a printing plate, selecting a master plate, positioning said master plate on a wax bed and impressing it therein with successive impressions in different portions of the bed, copper plating the surface of said wax, casting a plate of metal from the copper plated surface of the wax, impressing the plate so secured into a paper matrix, placing a paper matrix in a frame, arranging marginal casting frame members about the margin thereof to give the proper configuration to a plate cast from said paper matrix, pasting paper strips over the margin of a portion of said frame to prevent the metal sticking thereto, putting talc on said paper to prevent sticking, casting a plate from said paper matrix, severing said last mentioned plate into separable plates, drilling, countersinking, and nickel-coating said several plates.

9. In a method of producing a printing plate, forming a master electroplate, placing a templet on a wax bed, inserting the electroplate in successive openings in the templet and impressing the electroplate on the wax, removing the electroplate and templet, copper coating the surface of the wax impressed, casting a metal plate therefrom, mortising said plate and inserting serial number type in the mortised openings in said plate, impressing the finished plate into a paper matrix, arranging a casting frame with partially beveled edges around the margin of said paper matrix in a frame, pouring metal on said paper matrix, removing the plate so cast, severing into sections, drilling, countersinking and nickel-plating said plate.

10. In a method of producing a printing plate, selecting a master plate, impressing it into wax, copper plating the wax surface, casting a plate from the copper plated surface, impressing a paper matrix with the plate, placing the paper matrix in a frame, drilling holes in the paper matrix where the extrusions have made depressions from the plate, the extrusions coming from the original indentations on the master plate, placing templets in the holes in the matrix and arranging marginal casting frame members about the matrix and pouring metal on the matrix, whereby a plate is formed with suitable apertures therein.

In testimony whereof, I affix my signature.

EARL L. GEIGER.