

July 30, 1929.

W. H. WHEELER

1,722,778

PROCESS FOR MAKING IDENTIFICATION PLATES

Filed July 23, 1925

2 Sheets-Sheet 1

Fig. 1.

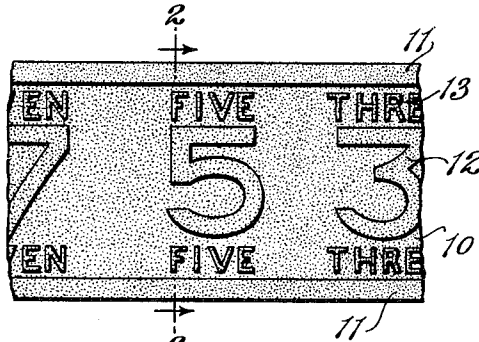


Fig. 2.

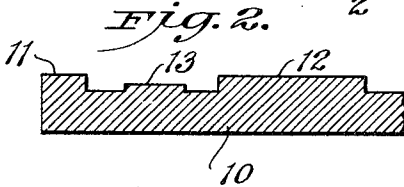


Fig. 3.

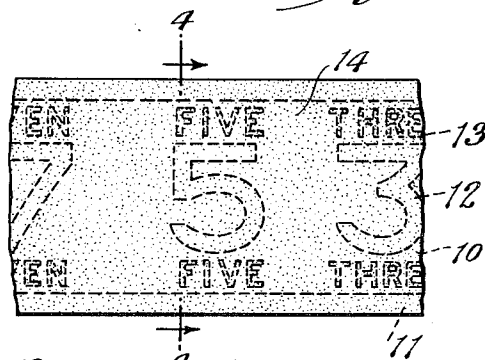


Fig. 4.

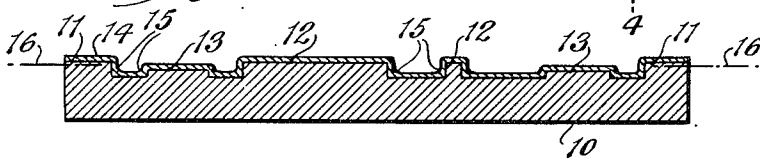


Fig. 5.

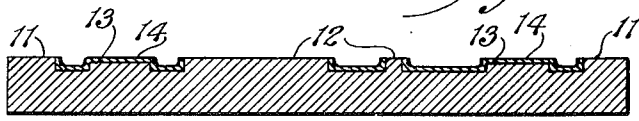
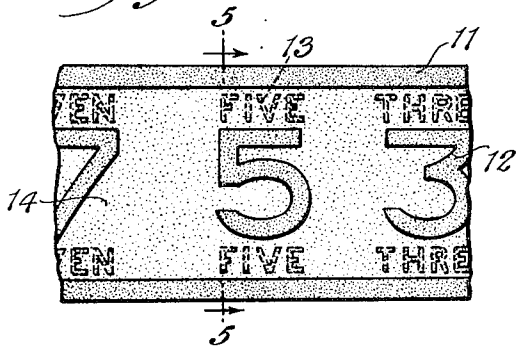


Fig. 6.



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Fig. 7.

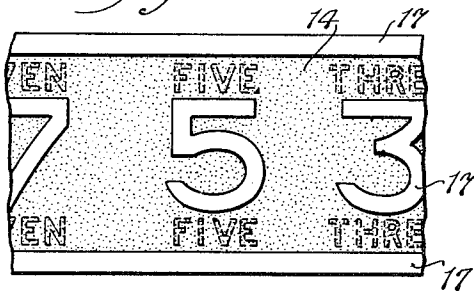


Fig. 8.

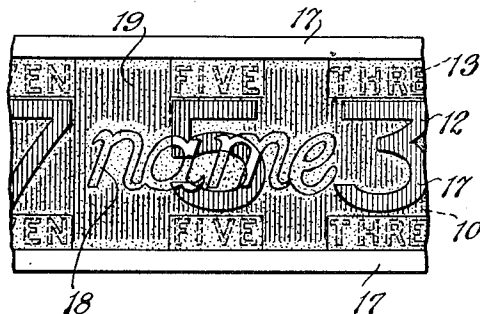
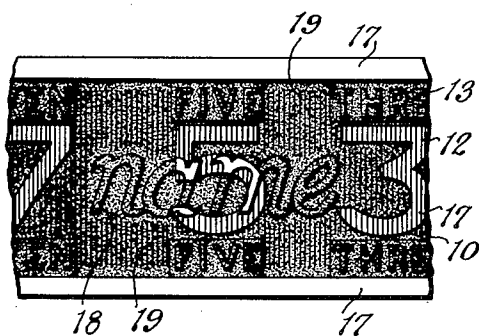
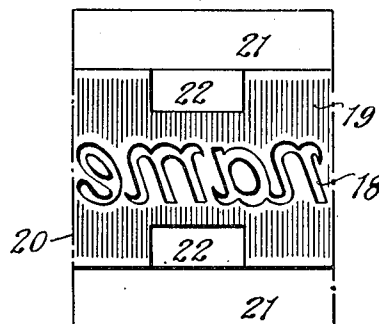


Fig. 10.

Fig. 9.



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Patented July 30, 1929.

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UNITED STATES PATENT OFFICE.

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PLATE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

PROCESS FOR MAKING IDENTIFICATION PLATES.

Application filed July 23, 1925. Serial No. 45,620.

The invention relates to an improved process for making identification plates of a type particularly adapted for the identification of automobiles, although it is not limited to such use.

It is an object of the invention to produce an identification plate which cannot be altered without disclosing the fact that it has been tampered with and which cannot be duplicated or counterfeited by an unauthorized person except at such expense as would be prohibitive or by the use of machinery or equipment involving considerable initial expense and a plant or establishment of such character as would betray a counterfeiter.

The present invention is an improvement upon the process of making identification devices described in my co-pending application, Serial No. 13,491 filed March 6, 1925, and has for an object to simplify and cheapen said process of manufacture.

Other objects of my invention will appear in the following detailed description of my process and will be clearly defined in the claims.

In the accompanying drawings:

Figure 1 is a plan view of one of my identification devices representing its appearance after being subjected to the first step of my process;

Fig. 2 is an enlarged fragmentary sectional view taken on line 2—2 of Figure 1;

Fig. 3 is a plan view of a fragment of one of my identification devices representing its appearance after being subjected to another step of my process;

Fig. 4 is an enlarged sectional view taken on line 4—4 of Fig. 3;

Figs. 5 and 6 represent the appearance of my plate after being subjected to the next step of my process, Fig. 5 being an enlarged sectional view taken on line 5—5 of Fig. 6 and Fig. 6 being a plan view of a fragment of the identification device;

Figs. 7 and 8 are plan views of a fragment of my identification device representing its appearance after being subjected to two further steps of my process;

Fig. 9 is a plan view of a fragment of a completed identification device; and

Fig. 10 is a bottom view of a fragment of an embossing die employed in my process.

The identification plate described in the co-pending application above referred to was formed on a plate composed of two metals of

contrasting color; one metal being superposed upon the other and such portions of the upper layer of metal as it was desired to eliminate from the face of the identification device had to be cut away. In the present invention on the other hand, I use to start with, a plate composed of a single metal and plate the surface with another metal of contrasting color at such places as it is desirable to show a difference of color in the surface of the identification device. For the base or body of my identification device I prefer to use a plate of copper, but I do not wish to confine myself to this metal as it will be evident that other metals might be used without departing from the spirit and scope of my invention. On the copper surface I deposit, by a suitable plating operation, a layer of nickel or other contrasting metal, confining the nickel plating to definite portions of the identification device as will be explained below. I propose to use for the identification indicia a name, mark or design (hereinafter termed the "make indicia") representing the make or model of a car and also a number (hereinafter termed the "number indicia") designating the particular car of said make or model to which the plate is attached.

The first step of my process is to emboss upon the plate a marginal frame and the number indicia. In order to increase the difficulty of altering or counterfeiting a plate, the numbers are applied in Arabic numerals and the name of each number is indicated in alphabetical characters, which name is preferably placed above and below each Arabic numeral. If desired, alphabetical characters may be used in place of numerals and the name of each character spelled out above and below it.

Figs. 1 and 2 illustrate the plate after it has gone through the first step of my process. The body of the plate is indicated by the numeral 10 and the marginal frame 11 has been struck up from the background, also the Arabic numerals 12 and the spelled out numbers 13. However, it will be observed on inspecting Fig. 2 that the marginal frame 11 and Arabic numerals 12 stand higher than the characters 13. After this embossing operation, it may be desirable to anneal the plate so that it will be in condition for a second embossing operation. However, if the plate be composed of copper or a similar soft metal the annealing operation may be dispensed

with. The next step of my process is to apply to the embossed face of the plate, a varnish or other liquid material which will harden quickly and form a fairly thick coating 14 over the embossing. This varnish must be readily soluble so that it can be removed easily during a later step of my process and it is important that the varnish be of such viscosity as to form a fairly thick layer and that it possess sufficient surface tension to form rounded fillets in the re-entered corners of the embossing. Another essential quality of the varnish is that it must be of such composition as to resist the plating operation to which the identification plate is subjected to later on.

The next step of my process is to grind or cut off the embossed face of the plate to a depth roughly indicated by the broken line 16 so that a section of the plate now appears as in Fig. 5. It will be observed that the coating 14 has been removed from the frame 11 and from the surface of the numerals 12, but that it still covers the characters 13 and the rest of the surface of the plate. This is indicated in the plan view of Fig. 6 by a heavier stippling on the surface of the Arabic numerals and the marginal frame to represent the copper surface of the plate as contrasted with the lighter stippling covering the rest of the plate and indicating the coating 14. The characters 13 and Arabic numerals 12 still show as embossed above the surface of the background, while the fillets 15 fill the re-entrant corners of the embossing. The plate is now subjected to the next step of my process, namely that of placing it in a plating bath which will deposit a coating of nickel upon the surfaces from which the varnish has been removed, namely upon the Arabic numerals 12 and marginal frame 11. This is indicated in Fig. 7 by the white surfaces 17 representing the nickeled surfaces of the plate. The plate is now subjected to a second embossing operation in which the make indicia is applied over the number indicia. By way of illustration I have shown certain characters 18 representing the name of the maker or model of car and a series of vertical lines 19 surrounding the name and forming a background design.

Referring to Fig. 10, it will be observed that the die 20 with which the make indicia is embossed upon the plate has not only offset portions 21, adapted to prevent excessive pressure upon the marginal frame 11 of the plate, but also has pockets 22 cut therein, which are adapted to register with the characters 13 of the number indicia so that said characters will not be subjected to as much pressure as the other portions of the plate. I have found that it is desirable to relieve the characters 13 of a certain portion of the pressure during the second embossing operation to prevent them from being partly obliterated or mutilated. The characters 13 are preferably smaller than the numerals 12 and consequently are likely

to be flattened out during the second embossing operation because they offer a smaller surface area to resist the pressure. But by providing the pockets 22 in this second embossing die, I find that they are preserved without obliteration. During the second embossing operation, the fillets 15 produce marginal depressions surrounding the numerals 12 and the characters 13 as explained in my co-pending application above referred to. The coating 14, however, is of such thickness as to permit the die 20 to emboss the surface of the plate not only across uncoated Arabic numerals but across the coated background as well. After the second embossing operation the coating 14 is removed and the identification plate then shows a surface on which the make indicia are superposed above the number indicia and yet the identity of both sets of indicia is preserved. As the final step of the process and in order to make the numerals 12 stand out in marked contrast to the rest of the plate, I find it desirable to oxidize the surface of the plate with an oxidizing medium and at a temperature which will not discolor the nickel surfaces. This is indicated in Fig. 9 in which the stippling on the surface of the plate is much heavier than in Fig. 1 to represent an oxidized copper surface. The Arabic numerals are clearly legible not only because they stand out in slight relief from the rest of the plate and are outlined by a marginal depression but also because the nickel surface represents a marked contrast to the oxidized copper surface.

While I have shown the plate as having the Arabic numerals in nickel and the characters 13 in copper, it may be desirable to have all the number indicia shown in nickel. This may be done by changing the die for the first embossing operation so that characters 13 will stand out in as high a relief as characters 12; then on cutting down the plate to the line 16 the coating 14 will be removed from the characters 13 as well as the numerals 12 and the characters 13 will then be coated with nickel during the plating process. The same effect could be produced without changing the die by grinding or cutting down the surface of the plate far enough to remove the coating from the characters 13.

I claim:

1. A process of producing superposed designs upon a base, which consists in embossing one design upon the base, covering the embossed surface with a coating, removing the coating from certain portions of the embossed surface, plating said portions, and embossing a second design over the first design.

2. A process of producing superposed designs upon a base which consists in embossing one design upon a base, covering the embossed surface with a coating, removing the coating from certain portions of the em-

bossed surface, coating said portions with metal, and embossing a second design over the first design.

3. A process of producing superposed designs upon a base which consists in embossing one design upon a base, covering the embossed surface with a coating, removing the coating from certain portions of the embossed surface, coating said portions with metal, embossing a second design on the first design, and removing said coating from the rest of the base.

4. A process of producing superposed designs upon a metallic plate which consists in embossing one design upon said plate, covering the embossed surface with a coating, removing the coating from certain portions of the embossed surface, plating said portions with a metal different from the metal of the plate, embossing a second design over the first design, and removing the coating from the rest of the plate.

5. A process of producing superposed designs upon a metallic plate which consists in embossing a design upon said plate, annealing said plate, covering the embossed surface with a coating, removing the coating from certain portions of the embossed surface, plating said portions with a metal of different color from that of the plate, embossing a second design over the first design, and removing the coating from the rest of the plate.

6. A process of producing superposed designs upon a metallic plate which consists in embossing a design upon said plate, annealing said plate, covering the embossed surface with a coating, removing the coating from certain portions of the embossed surface, plating said portions with a metal of different color from that of the plate, embossing a second design over the first design, removing the coating from the rest of the plate, and oxidizing one of the metal surfaces of the plate.

7. A process of producing superposed designs upon a metallic plate which consists in embossing one design upon the plate, coating the embossed surface with a liquid filler, permitting the filler to solidify, grinding the surface of the plate to remove the coating from certain portions of the plate that stand in relief, electro plating the plate with a metal of different color from that of the base, embossing a second design over the first design, and dissolving the coating.

8. A process of producing superposed designs upon a metallic plate which consists in embossing one design upon the plate, coating the embossed surface with a liquid filler which resists an electro plating bath, permitting the filler to solidify, grinding away the embossed surface of the plate to remove the filler from certain portions of the embossed surface, subjecting the plate to an

electro plating process to plate the uncoated surfaces with a metal of different color from the metal of the plate, embossing a second design over the first design, and dissolving the filler.

9. A process of producing superposed designs upon a metallic plate which consists in embossing one design upon the plate, coating the embossed surface with a liquid filler which resists an electro plating bath, permitting the filler to solidify, grinding away the embossed surface of the plate to remove the filler from certain portions of the embossed surface, subjecting the plate to an electro plating process to plate the uncoated surfaces with a metal of different color from the metal of the plate, embossing a second design over the first design, dissolving the filler, and subjecting the plate to an oxidizing process which will not affect the plated metal.

10. A process of producing superposed designs upon a metallic plate which consists in embossing one design upon the plate, coating the embossed surface with a liquid filler which resists an electro plating bath, permitting the filler to solidify, grinding away the embossed surface of the plate to remove the filler from certain portions of the embossed surface, subjecting the plate to an electro plating process to plate the uncoated surfaces with a metal of different color from the metal of the plate, embossing a second design over the first design, with a die having a recess therein in register with certain embossed parts of the first design, dissolving the filler, and subjecting the plate to an oxidizing process which will not affect the plating.

11. A process of producing superposed designs upon a metallic plate which consists in embossing a design upon the face of the plate with certain portions of the design in high relief and other portions in low relief, coating the embossed face of the plate with a filler, grinding the face of the plate to remove the filler from the parts in high relief, plating such uncoated parts with a metal of different color from the metal of the body of the plate, embossing a second design over the first, and removing the filler.

12. A process of producing superposed designs on a metallic plate which consists in embossing one design on the face of the plate with certain parts of the design in high relief and other parts in low relief, coating the embossed surface of the plate with a filler, removing the filler from the parts in high relief, plating said parts in high relief with a metal of different color from the body of the metal, embossing a second design over the first with a die which subjects the parts in low relief to little pressure, and removing the filler.

13. A process of producing superposed designs on a metallic plate which consists in embossing one design on the face of the plate

with certain parts of the design in high relief and other parts in low relief, coating the embossed surface of the plate with a filler, removing the filler from the parts in high relief, plating said parts in high relief with a metal of different color from the body of the metal, embossing a second design over the first with a die having a recess therein in register with the parts in low relief, and removing the filler.

14. A process of producing superposed designs upon a metallic plate, which consists in forming a design upon a surface of the plate, applying a removable coating to certain parts of said surface, applying a metal

of a different color from that of the plate to the remaining parts of said surface, embossing a second design over the first design, and removing said coating.

15. A process of producing superposed designs upon a metallic plate, which consists in forming a design upon a surface of the plate, applying a soluble coating to certain parts of said surface, applying a metal of a different color from that of the plate to the remaining parts of said surface, embossing a second design over the first design, and dissolving said coating.

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