Dec. 23, 1952 F. B. RINCK ET AL 2,622,990

METHOD OF MANUFACTURING NUMBER PLATES

Filed June 10, 1948 2 SHEETS—SHEET 1

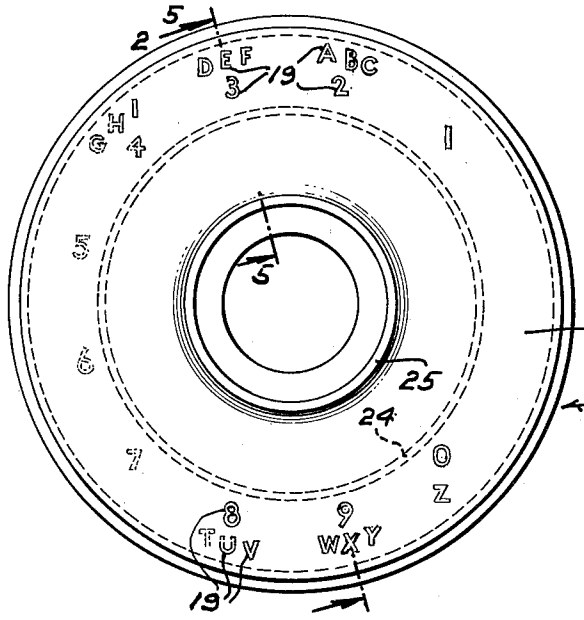

FIG. 1

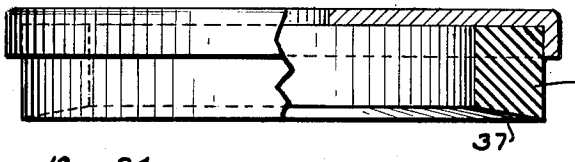

FIG. 3

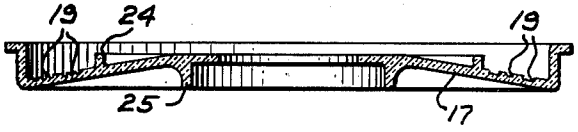

FIG. 2

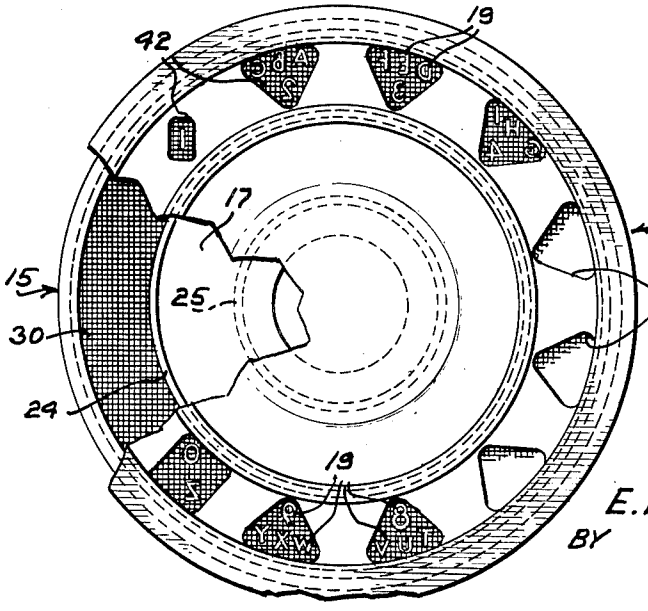

FIG. 4

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METHOD OF MANUFACTURING NUMBER PLATES

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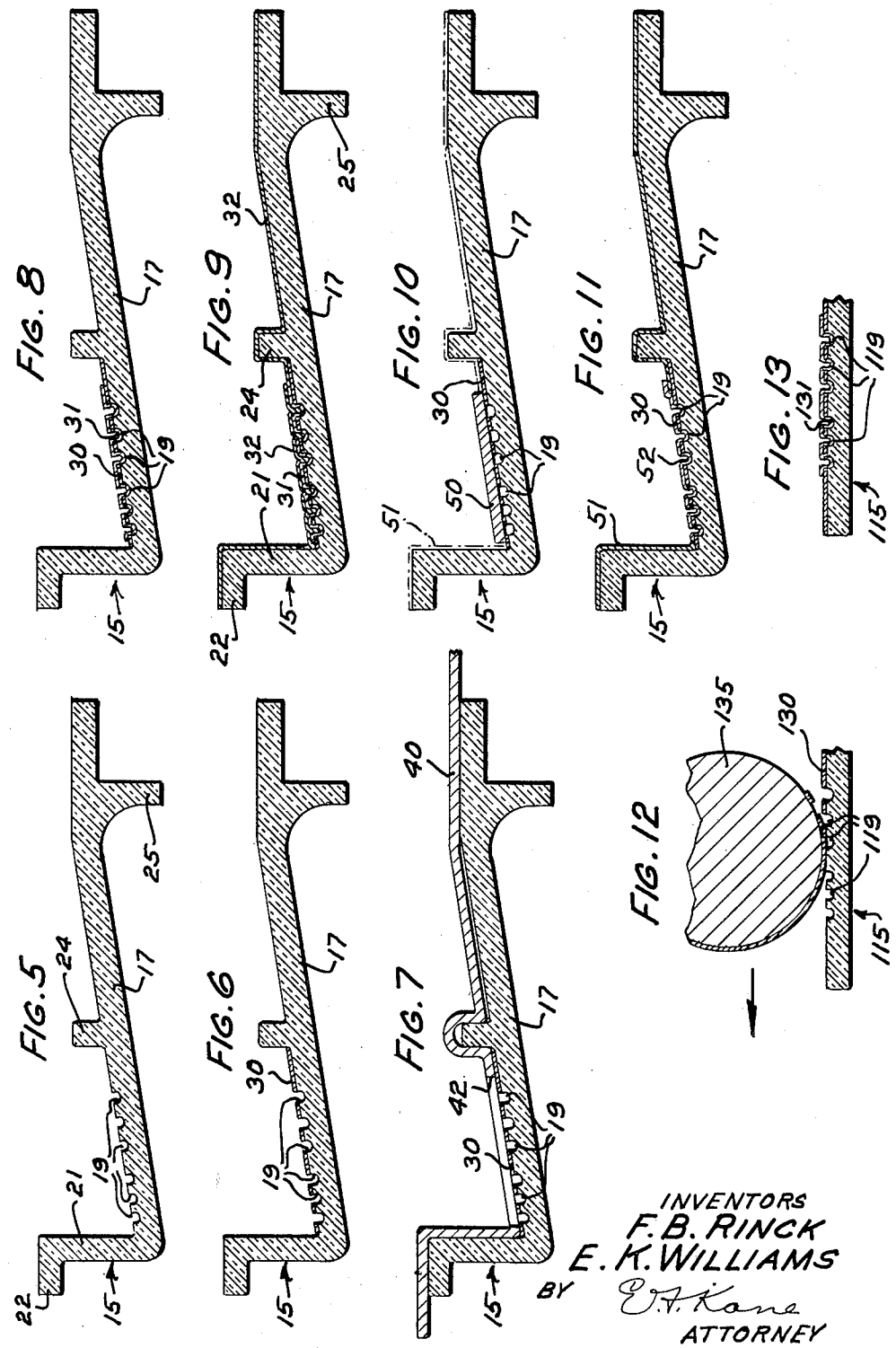

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METHOD OF MANUFACTURING NUMBER PLATES

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9 Claims. (Cl. 117—38)

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This invention relates to a method of manufacturing indicia bearing members and more particularly to a method of making number plates for use with dial type telephones.

It is an object of the invention to provide a simple and effective method of making indicia bearing members.

In accordance with one embodiment of the invention, a telephone number plate with number and other indicia defining recesses formed on the rear face thereof is molded from transparent plastic material. A large portion of the area of the rear face of the plate outside of the indicia defining recesses and extending up to the edges thereof is coated with a material of one color applied with an inking type of stamp to form a background color, after which a mask is applied to the rear face of the plate, exposing the recesses and relatively small areas of the coated rear face around the recesses, and a coating of another color is sprayed or otherwise applied to the recesses and the exposed coated surfaces surrounding them, after which the mask is removed and the entire rear face of the plate is sprayed or otherwise coated with a material of the background color.

In another embodiment of the invention, the molded transparent telephone number plate, having the indicia defining recesses formed on the rear face thereof, is coated over the entire area of the rear face outside of the recesses and extending up to the edges thereof by rolling a coating of material of one color thereon and then spraying or otherwise applying a coating of another color into the recesses and to the coated surfaces adjacent thereto.

Other features and objects of the invention will be apparent by reference to the following detailed description thereof and the accompanying drawings illustrating several embodiments of the invention in which:

Fig. 1 is a front face view of the molded number plate;

Fig. 2 is a cross sectional view through the molded number plate, indicated as taken on the line 2—2 of Fig. 1, showing the plate inverted and before any coating materials have been applied thereto;

Fig. 3 is an elevational-sectional view of a printing die or stamping member used for applying the initial background coating material to the plate;

Fig. 4 is a rear face view of the number plate showing a masking plate placed thereon with portions of the masking plate broken away;

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Fig. 5 is an enlarged fragmentary sectional view indicated as taken on the line 5—5 of Fig. 1 and showing the plate before any coating materials have been applied thereto;

Fig. 6 is a view similar to Fig. 5 showing the number plate after the first or background coating has been applied to portions of the rear face of the plate;

Fig. 7 is a view similar to Fig. 6 showing a masking disc applied to the plate;

Fig. 8 is a view similar to Fig. 6 showing a coating of another color applied to the recesses of the plate through apertures in the masking disc;

Fig. 9 is a view similar to Fig. 8 showing the plate with the final coating applied thereto;

Fig. 10 is a view similar to Fig. 7 showing a different form of mask applied to the plate;

Fig. 11 is a view similar to Fig. 10 showing the mask removed from the plate and the final coating applied thereto;

Fig. 12 is a diagrammatic sectional view of another embodiment of dial construction and a roller method of applying a background coating to the rear surface thereof; and

Fig. 13 is an enlarged sectional view similar to Fig. 12 showing the dial with a coating applied to the indicia defining recesses therein.

Referring to the drawings (Fig. 1), the telephone number plate 15 selected to illustrate one embodiment of the inventon is molded from suitable plastic material by any well-known method of molding to form a transparent member. The number plate 15 has an annular dished or conical shaped front wall 17 having a smooth front face and having indicia defining recesses 19 formed in the rear face thereof. The recesses 19 define a series of numbers from 1 to 9 and 0 and a plurality of letters grouped around some of the number defining recesses, as shown in Figs. 1 and 4. The side walls of the recesses 19 may be straight or curved and join with the rear surface of the plate to form sharp corner edges of the indicia defining recesses. A marginal cylindrical wall 21 extends from the rear surface of the plate and is provided with an outwardly extending flange 22. Circular reinforcing ribs 24 and 25 are also formed on opposite sides, respectively, of the plate.

In order to have the indicia easily seen through the front face of the plate, it is desirable to provide the surfaces of the indicia defining recesses and the rear surface of the plate, respectively, with contrasting appearances and this is accomplished by applying to the rear surface

of the plate a background coating of one color and applying to the indicia defining recesses a coating of another color. With the construction of the dial illustrated in Figs. 1 to 9, the method consists in coating large areas of the rear face of the dial outside of and adjacent the recesses 19 to provide the background color for the areas surrounding the recesses, then applying a coating of a different color to the recesses, after which the entire rear face of the plate is covered with a coating of the background color.

The background coating may be applied to portions of the rear face of the plate 15 by a printing or transfer process employing a stamp or die 35. The stamp 35, which may be formed of relatively hard rubber or other suitable material, is cylindrical and has an annular conical bottom surface 37 shaped to conform to a portion of the rear surface of the plate 15. A coating of printing ink or paint or other composition, preferably of black color and quick drying, may be applied to the lower surface 37 of the stamp 35 by engaging it with a composition-containing stamp pad or by rolling the composition thereon, as is usual in the printing art, and then the stamp 35 may be moved into engagement with the rear surface of the plate to transfer the coating 30 onto the plate. The coating 30 does not come in contact with the walls of the recesses 19 and adheres only to portions of the rear face of the plate, as indicated in Fig. 6, and extends to the edges of the indicia defining recesses 19 and maintains a sharp outline thereof. After the background coating 30 has dried, the walls of the recesses 19 may have applied to them a coating 31 of a contrasting color, as, for example, white, as by being brushed or sprayed thereon.

The coating 31 is preferably sprayed into the recesses 19 through apertures in a mask 40 covering the rear face of the plate. The mask 40, which is made of metal or other suitable material, is shaped to conform generally to the rear face of the plate and is provided with apertures 42, which are adapted to uncover predetermined areas of the plate when the mask is applied thereto. If desired, the apertures 42 may be connected together to form a continuous aperture exposing all of the recesses and the mask may be properly aligned with the plate in any suitable way. With the mask in position on the plate, as shown in Fig. 4, the entire rear face of the plate is covered except for the indicia defining recesses 19 and adjacent areas surrounding the recesses which are accessible through the apertures 42. The coating of paint or other composition 31, having a color different from that of the coating 30, is sprayed or otherwise applied to the recesses 19 and the coated surfaces of the plate accessible through the apertures 42. The mask 40 is then removed and the entire surface of the rear face of the plate is sprayed or otherwise covered with a coating 32 of the same color as the background coating 30.

Instead of following the sequence of steps as described above, the sequence may be varied as illustrated in Figs. 10 and 11. After the first portion 30 of the background coating is applied to the plate 15, a mask 50 (Fig. 10) may be placed on the rear face of the plate 15 to cover the recesses 19 and the adjoining portions of the coated rear face of the plate and a background coating 51 applied to the remainder of the uncovered background surface of the rear face of the plate, after which the mask 50 may be removed and a coating 52 of another color may then be applied to the walls of the recesses 19.

By first applying the background coating 30 to the plate, indicia defining apertures are formed therein which are sharp and definite and register exactly with the indicia defining recesses 19 in the plate 15. This is important, especially in small isolated or island areas as, for example, island areas within the numbers such as 8, 9 and 0, et cetera, and the letters *a*, *b*, *d*, et cetera. Thus, by applying the background coating first in the manner described, a definite and sharp outline of the indicia is obtained so that when the contrasting coating 31 is applied to the walls of the indicia recesses, the outline of the indicia as viewed from the front of the plate will be regular and sharp and conform exactly in outline to the recesses 19.

In number plates where there are no obstructing marginal walls, the background coating may be applied by rolling it on with a roller, as indicated diagrammatically in Fig. 12. In this embodiment, a plate, indicated diagrammatically at 115, is provided with indicia defining recesses 119 extending inwardly from the rear face thereof. The background coating 130 of one color may be applied to the rear face of the plate 115 by the roller applicator 135 or by a stamp pad, as previously described. The roller 135 may have a layer of coating compound applied thereto in the usual and well-known manner, as, for example, by rolling it over a flat surface containing the coating compound or placing it in engagement with compound distributing rolls, after which the roller 135 is rolled across the rear surface of the plate 115 to transfer the compound from the roller onto the plate and form a background coating 130 of colored material thereon. When the coating 130 has dried, a coating of material 131 of a contrasting color is sprayed or otherwise applied to the walls of the indicia defining recesses 119 and portions of the coated rear face of the plate adjacent the recesses 119.

From the foregoing, it will be seen that a transparent number plate having the indicia of one color set off from a background of a contrasting color may be readily formed from a transparent molded member or plate having indicia defining recesses on the rear face thereof by applying with a roller or stamp a background coating of material to all of the area of the rear face of the plate outside of the indicia defining recesses and extending up to the edges thereof and then spraying or otherwise applying a coating of different colored material to the walls of the indicia defining recesses. If the rear face of the plate is of such a nature that the entire rear surface except for the indicia defining recesses cannot be covered in one operation, areas of the rear face of the plate adjacent to and surrounding the indicia defining recesses may have the background coating applied thereto followed by either the application of the contrasting coating material to the recesses and adjacent coated portions of the rear face of the plate and then the application of the background coating to the remainder of the rear face of the plate, or the application of the background coating to the remainder of the rear face of the plate outside of the recesses and then the application of the contrasting colored coating to the walls of the recesses.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Nu-

merous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. In a method of making an indicia bearing article from a transparent plastic member having a relatively small indicia defining recess formed in the rear face thereof the steps of applying a coating of a composition of one color onto the relatively hard surface of a transfer member, moving the transfer member into contact with the raised portions of the rear face of said article and over the recess to engage the coating of said composition thereon with the raised portions only of the rear face of the article surrounding the recess and removing said transfer member from said article to cause a portion of the coating of said composition to adhere to and coat the raised portions only of the rear face of the article surrounding the recesses and extending to the edges thereof solely by contact with said raised portions to clearly define the recess, drying the coating on the article, and applying a coating of a composition of another color to the walls of said recess and portions of the coated surfaces adjacent thereto.

2. A method of making a number plate from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating of a composition of one color onto the relatively hard surface of a transfer roller, rolling the coating of said composition on the roller into engagement with the raised portions of the rear face of the number plate and over the recesses to cause a portion of said composition applied to the roller to adhere to and coat only the raised portions of the rear face of said number plate to the edges of the recesses to clearly define said recesses, drying the coating on the number plate, and applying a coating of a composition of another color onto the walls of said recesses and portions of the coated surfaces adjacent said recesses.

3. A method of making a number plate from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating of printing composition of one color onto the relatively hard surface of a transfer member, moving the transfer member into contact with the raised portions of the rear face of the number plate to engage the coating of printing composition thereon with the raised portions only of the rear face of the number plate and then removing the transfer member to cause a portion of the coating of printing composition applied thereto to adhere to and form a coating on only the raised portions of the rear face of said number plate and extending to the edges of the recesses to clearly define said recesses, drying said coating of printing composition on said number plate, and applying a coating composition of another color onto the walls of said recesses and portions of the coated surfaces adjacent said recesses.

4. A method of making an indicia bearing article from a transparent plastic plate having relatively small indicia forming recesses formed in the rear face thereof which comprises applying a coating of a composition of one color onto the relatively hard surface of a transfer member, moving the transfer member into engagement with portions of the raised surface of the rear face of the article and over the recesses to engage the coating composition thereon with portions of only the raised surface of the rear face of the article surrounding the recesses and extending to the edges thereof, removing said transfer member from said article to cause a portion of the coating composition to adhere to and coat only said portions of the raised surface of the rear face of the article surrounding the recesses and extending to the edges thereof to clearly define said recesses, drying the coating composition of said one color on said article, masking substantially all of the rear face of the article except the recesses and portions of the coated raised surface adjacent thereto, applying a coating composition of another color to the recesses and the unmasked portions of the coated surface adjacent thereto, unmasking the article, drying the coating composition applied to the article, and applying a coating composition of said one color to the uncoated portion of the rear face of the article and to portions of the coated surfaces thereof.

5. A method of making a number plate from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating of printing composition of one color to the relatively hard surface of a transfer member, moving the transfer member into contact with portions of the raised surface of the rear face of the plate to engage the coating of the printing composition thereon with portions of the raised surface of the rear face of the number plate with portions of the coating on the transfer member surrounding and extending across the recesses, removing the transfer member to cause a portion of the coating of printing composition applied thereto to adhere to and coat only said portions of the raised surfaces of the rear face of said number plate with the coating surrounding the recesses and extending to the edges thereof to clearly define said recesses, drying said coating of printing composition on said number plate, masking all of the rear face of the plate except the recesses and portions of the coated surfaces adjacent thereto, spraying a coating composition of another color to the recesses and the unmasked portions of the coated surfaces adjacent thereto, unmasking the plate, drying the latter coating applied thereto, and spraying a coating of said printing composition of said one color to the uncoated portion of the rear face of the plate and to portions of the coated surfaces thereof.

6. A method of making a number plate from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating composition of one color onto the relatively hard surface of a transfer member, moving the transfer member into contact with portions of the raised surface of the rear face of said article to engage the coating composition thereon with the portions of the raised surface of the rear face of the article surrounding the recesses and extending to the edges thereof and removing said transfer member from said article to cause a portion of the coating composition to adhere to and coat only said portions of the raised surface of the rear face of the article surrounding the recesses and extending to the edges thereof to clearly define said recesses, drying said coating on said plate, masking said recesses and portions of the coated surfaces adjacent thereto, applying a coating

composition of said one color to the unmasked portion of the rear face of the plate, unmasking the plate, drying the latter coating composition, and applying a coating composition of another color to the walls of said recesses and the coated surfaces adjacent thereto.

7. A method of making an indicia bearing article from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating composition of one color to the relatively hard surface of a transfer member, moving the transfer member into contact with the rear face of the article to engage the coating thereon with portions of the raised surface of the rear face of the article and with portions of the coating on the transfer member surrounding and extending across the recesses, removing the transfer member to cause a portion of the coating composition applied thereto to adhere to and coat only said portions of the raised surface of the rear face of the article surrounding the recesses and extending to the edges thereof to clearly define the recesses, drying the coating on said article, masking the recesses and portions of the coated surfaces adjacent thereto, spraying a coating of said composition of one color onto the unmasked portion of the raised surface of the rear face of said article, unmasking the article, drying said latter coating, and spraying a coating composition of another color to the surfaces of said recesses and the coated surfaces adjacent thereto.

8. A method of making a number plate from a transparent plastic member having indicia defining recesses formed in the rear face thereof which comprises applying a coating composition of one color onto the relatively hard surface of a transfer roller, rolling the transfer roller onto predetermined areas of the raised surface of the rear face of the plate surrounding said recesses and extending to the edges thereof to cause a portion of the coating composition applied to the roller to adhere to and coat said predetermined areas of the raised surface on the rear face of the number plate with the coating surrounding the recesses and extending to the edges thereof for clearly defining the recesses, drying the coating composition on said number plate, masking substantially all of the plate except the recesses and portions of the coated surfaces adjacent thereto, applying a coating composition of another color to the surfaces of the recesses and portions of the coated surfaces adjacent thereto, unmasking the plate, drying the coating composition applied to the recesses, and applying a coating composition of said one color to the uncoated portions of the rear face of the plate and to portions of the coated surfaces thereof.

9. A method of making a number plate from a transparent plastic member having relatively small indicia defining recesses formed in the rear face thereof which comprises applying a coating composition of one color onto the relatively hard surface of a transfer roller, rolling the transfer roller over predetermined areas of the raised portions of the rear face of the number plate surrounding the recesses and over the recesses to cause a portion of the coating composition applied to the roller to adhere to and coat only said predetermined areas of the raised portions of the rear face of said number plate with the coating surrounding the recesses and extending to the edges thereof for clearly defining said recesses, drying the coating on said number plate, masking the recesses and portions of the coated areas of the rear face of the number plate adjacent the recesses, applying a coating composition of said one color to the unmasked portion of the rear face of the number plate, unmasking the article, drying the latter coating of said one color on said plate, and applying a coating composition of another color to the surfaces of said recesses and the coated surfaces adjacent thereto.

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