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A. R. KUHN ET AL

1,725,199

METHOD OF LABELING BOTTLES

Filed March 31, 1928

Fig. 1.

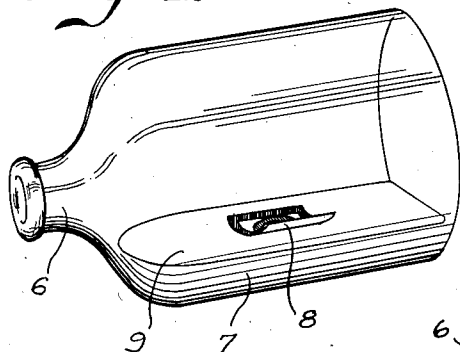


Fig. 2.

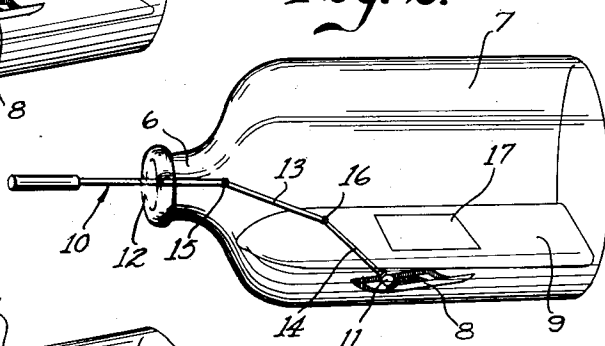


Fig. 3.

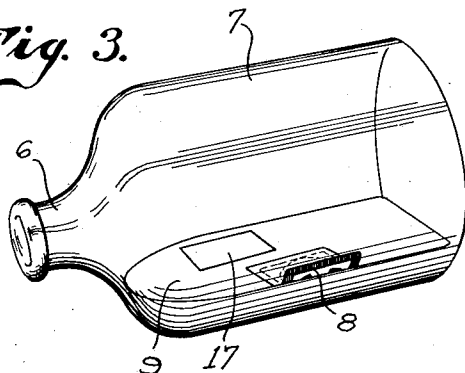


Fig. 4.

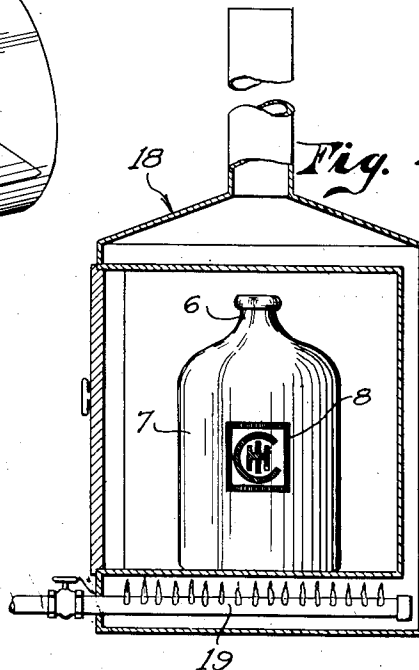
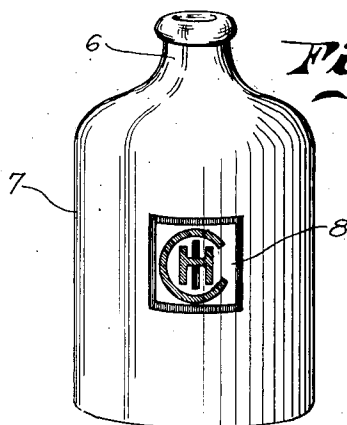


Fig. 5.



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METHOD OF LABELING BOTTLES.

Application filed March 31, 1928. Serial No. 286,412.

This invention relates to methods of labeling bottles. The terms "label" and "labeling" employed herein refer to any design, decoration or lettering that it may be desired to provide a bottle with for any purposes whatsoever.

An object of the invention is to increase the difficulty of removing from bottles any identifying lettering design applied thereto. More particularly the invention relates to the placing of the lettering or designs on the inner surfaces of bottles, so that access to such lettering or designs can not be had so readily for destruction or obscuration thereof. Bottles thus marked can not very readily be used for other purposes than those for which they are intended without the fact being known.

The invention is especially useful in marking or labeling bottles containing liquids such as medicines and spring waters, as the various liquids do not injure the applied design or lettering.

This method makes it possible to insert a decalcomania into a bottle and cause the same to adhere in the desired position to the inner surface of the bottle.

Decalcomanias, especially when wet, are easily injured and an important object of this invention is to make it possible to apply the decalcomanias to the inner surfaces of bottles without injuring said decalcomanias.

Other objects and advantages will appear in the subjoined detailed description.

The accompanying drawings illustrate some of the operations involved in performing this newly invented method:

Fig. 1 illustrates the operation of floating a decalcomania into a bottle;

Fig. 2 illustrates the operation of moving the color layer of the decalcomania into position with a portion thereof in contact with the inner surface of the bottle so as to cause said portion to adhere to said surface;

Fig. 3 illustrates the operation of rolling or turning the bottle so as to flow the water away from the color layer of the decalcomania, thus causing said color layer to adhere over its entire outer face to the inner surface of the bottle;

Fig. 4 illustrates the operation of firing the bottle with the label in position on its inner surface;

Fig. 5 illustrates the finished product.

Decalcomanias are of two types, a type in which the paper base or backing is stripped from the back of the colored design and a type, commonly termed "slip off," in which the paper base or backing is slipped off of the front face of the colored design. Either of these types may be employed, the only essential being that the designs of the decalcomania be in "metallic color." Types of decalcomanias that may be employed are disclosed in Patent 1,647,362 granted to R. S. Hughes, November 1, 1927. The metallic colors contain, for example, metallic oxides and other substances which, when heated to the required temperature fuse with the vitreous material to which they are applied.

The first operation is to place a liquid in the bottle, to which the decalcomania is to be applied. We generally employ water for this purpose. The amount of liquid employed may vary considerably, the minimum amount that may be used being sufficient to produce a film upon which the decalcomania can be slid or floated from the neck of the bottle into the larger portion thereof.

The second operation is to roll a metallic color decalcomania into a sufficiently small roll to enable it to pass into the neck of the bottle. The decalcomania, if of the slip-off type, preferably, will be rolled so that the color layer thereof is on the inside and the paper base or backing is on the outside, and, if of the other type, will be rolled so that the color layer is on the outside and the base on the inside.

The third operation, illustrated in Fig. 1, is to insert the decalcomania sufficiently far into the neck of the bottle to contact with the liquid which is indicated at 9. In inserting the decalcomania into the neck of the bottle so as to contact with the liquid, the operation is facilitated, if the liquid level is below the neck when the bottle is level, by tilting the neck of the bottle downwardly until the surface of the liquid is substantially flush with the lower inner surface of

the bottle neck. As soon as the rolled decalcomania touches the liquid the bottle may be leveled, thus causing the decalcomania to float into the enlarged portion of the bottle.

5 The liquid moistens the decalcomania and the moisture causes the decalcomania to unroll until it lies substantially flat upon the surface of the liquid. The decalcomania is permitted to lie for a sufficient length of time
10 on the liquid to cause the color layer to separate from the base.

The decalcomania color layer is then, by the next operation, floated on the liquid into the position that it is desired that it occupy
15 on the inner surface of the bottle. To effect this the bottle may be turned until one margin of the decalcomania color layer comes into contact with the inner surface of the bottle, as indicated in Fig. 2. It may be
20 desirable, in some instances, to assist this operation by inserting a metal rod 10, provided with a soft pad 11 on its inner end, into the neck of the bottle and engaging said pad 11 with the color layer of the decalcomania, employing the rod to move the
25 color layer accurately to the position desired. The rod 10 may be of wire so as to be bent into a shape that will facilitate engaging the pad 11 with the color layer and,
30 in the instance shown in Fig. 2, comprises a number of sections 12, 13, 14 connected by hinge joints 15, 16. The friction at the joints 15, 16 will be sufficient to hold the sections against relative movement when the
35 necessary pressures are applied to the outer end of the rod. Instead of floating the color layer into contact with the inner surface of the bottle, the pad 11 may be engaged with any portion of the rear face of the color layer
40 and said portion pressed thereby into contact with said inner surface.

After a portion of the color layer of the decalcomania has thus been engaged with the inner surface of the bottle, the bottle will be
45 turned into a position to flow the liquid away from the color layer and the paper base 17 of the decalcomania will float away with the liquid. This operation causes the entire outer face of the color layer to adhere to the
50 inner surface of the bottle.

The next operation is to empty the liquid out of the bottle and with it the base 17.

The decalcomania thus applied is then permitted to dry for a suitable period of time,
55 for example, twenty-four hours. After thus drying, the bottle will be placed in an oven, such as that indicated at 18 in Fig. 4, and fired. The heating element of the furnace is indicated at 19. This firing of the bottle
60 causes the metallic colors of the decalcomania to coalesce with the transparent material, glass or other suitable substance, from which the bottle is made. The firing operation preferably, is effected at a temperature of

approximately 950° F. After the firing operation has been completed, the bottle will appear as illustrated in Fig. 5. Thus, a portion of the inner surface of the bottle is formed of a fired metallic color.

If it is desired that the colors show stronger than they would if applied alone to the bottle and fired, there may be applied to the metallic color layer a backing material or composition for the colored design, this material being of the nature of a fusible or vitreous enamel. This enamel after firing is usually and desirably of light tint or white, and serves to optically emphasize or accentuate the color tones of the color design, the tints of which are more or less paled or subdued by their transparency and the transparency of the glass body when the enamel backing is not provided. The decalcomania, preferably will have on it the enamel backing so that said enamel backing and color
85 design are simultaneously applied to the inner surface of the bottle. After fusing, the color design appears directly to the view of the observer, and the underlying translucent or more or less opaque enamel backing of light or white tone, serves to optionally strengthen or emphasize the color effects of the design.

The color design is observed through the glass body or wall of the bottle, which in itself provides a glazed or polished appearance, and the color design is underlaid by the enamel coating, which accentuates or emphasizes the color effect of the design. In any event, the metallic color and the vitreous
100 enamel are substantially fused together and to the glass of the bottle and, especially, where the metallic color is located between the enamel and the glass, the enamel serves as a permanent protective coating for the
105 color design.

What we claim is:

1. The method described consisting in placing liquid in a bottle, forming a metallic color decalcomania into a roll, inserting
110 the rolled decalcomania into the neck of the bottle to contact with the liquid, permitting the decalcomania to lie for a sufficient length of time on the liquid to cause the metallic color layer to separate from the base, then
115 moving the color layer into the desired position with a portion thereof in contact with the inner face of the bottle, and then turning the bottle into a position to cause the liquid to flow away from the color layer so that the
120 entire outer face of said layer will adhere to the inner surface of the bottle.

2. The method described consisting in placing liquid in a bottle, forming a metallic color decalcomania into a roll, inserting
125 the rolled decalcomania into the neck of the bottle to contact with the liquid, permitting the decalcomania to lie for a sufficient length

of time on the liquid to cause the metallic
color layer to separate from the base, then
moving the color layer into the desired posi-
tion with a portion thereof in contact with
5 the inner face of the bottle, then turning the
bottle into a position to cause the liquid to
flow away from the color layer so that the

entire outer face of said layer will adhere to
the inner surface of the bottle, emptying out
the liquid, and then firing the bottle.

Signed at Los Angeles, Calif., this 23 day
of March 1928.

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