Nov. 3, 1931. C. E. KAIL 1,830,662

METHOD OF PROVIDING ARTICLES WITH ONE OR MORE COLORED BANDS OR STRIPES

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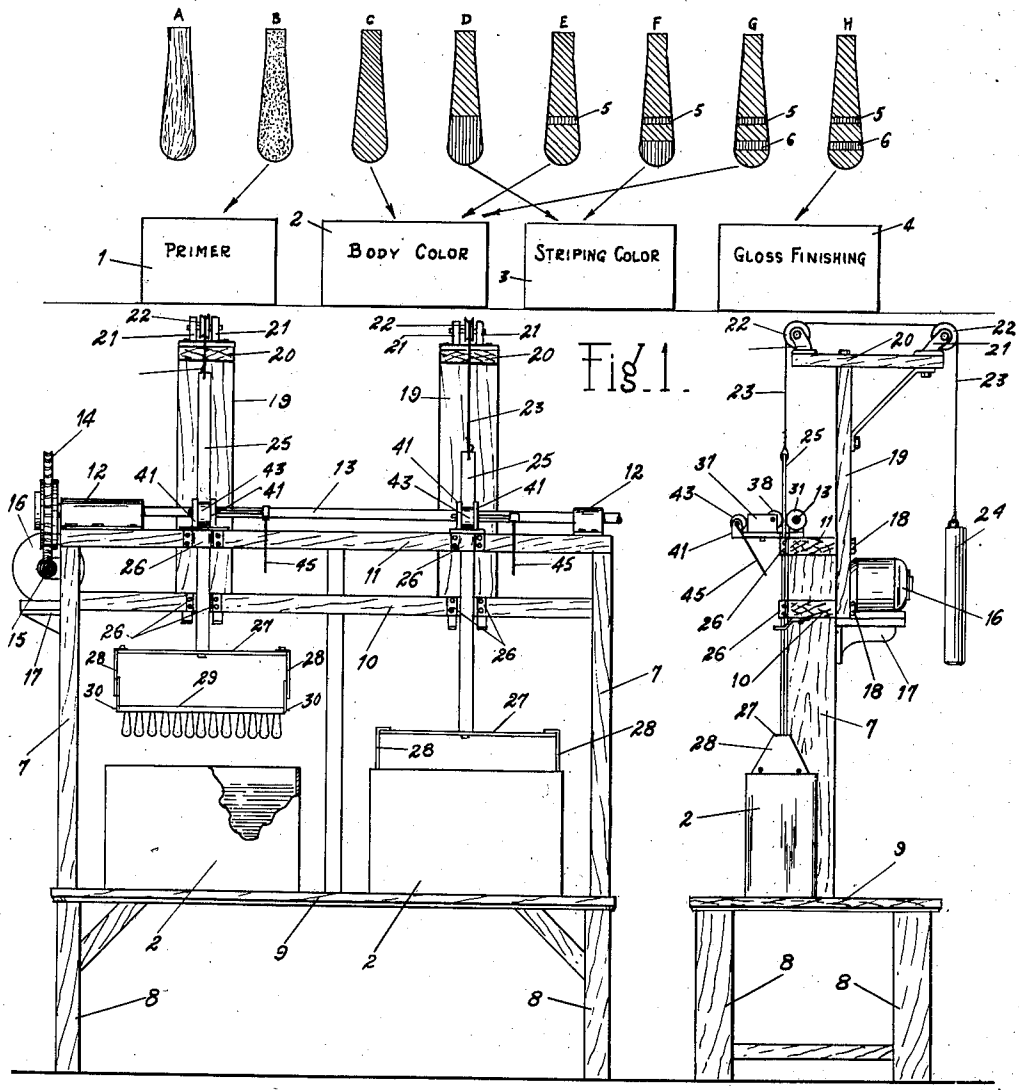


Fig. 1.

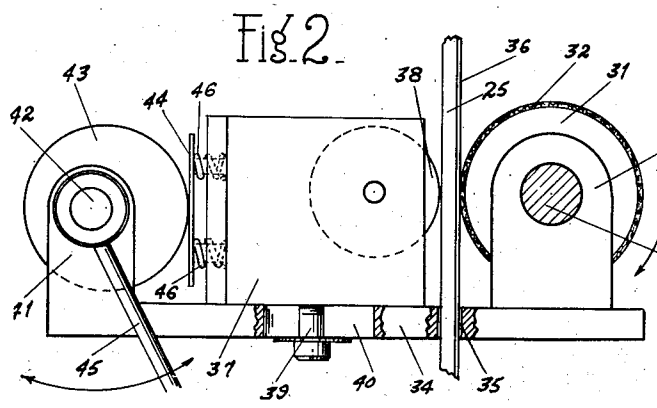


Fig. 2.

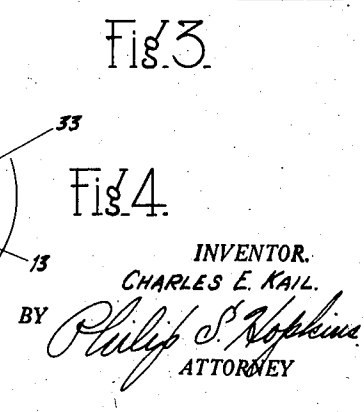


Fig. 3.



Fig. 4.

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UNITED STATES PATENT OFFICE

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METHOD OF PROVIDING ARTICLES WITH ONE OR MORE COLORED BANDS OR STRIPES

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My invention relates to a method of providing articles with one or more colored bands or stripes circumferentially around the body thereof and intermediate the ends thereof.

The use of color and combinations of colors both in a decorative capacity and in some distinctive and characteristic fashion to distinguish goods of a particular manufacture is well-known and at the present time very popular. With certain types of articles, however, either because of the size, shape or character of the articles, or because of the price at which they are sold in the trade limiting the amount which may be spent on their production, do not readily lend themselves to the use of distinctive colors or color combinations. The handles of kitchen tools and utensils such as egg beaters, knives, forks, spoons, spatulas, cake turners, etc. are illustrative of such articles.

I have devised a method, however, whereby distinctive colored bands or stripes contrasting with the body color of the handles may be easily and cheaply applied to such handles, and such method constitutes my invention.

Although I have illustrated and will describe my invention as applied to the handles of articles like kitchen tools or utensils, it will be obvious that the invention is not strictly limited thereto and is of broad application.

I am aware of course that there are various methods by which a colored band or bands may be placed around the body of an article such as by rolling the same thereon, stenciling, painting, transferring, printing, stamping, etc. None of these methods, however, are entirely satisfactory in application to such articles as the handles of kitchen tools for the reason that they are either too expensive or that the result is such a poor quality of color band application and the appearance of the finished handle is of such character as to detract from the sales appeal thereof rather than increase it. The use of such methods as above mentioned often results in the band or bands being unevenly disposed on the handles or in unsymmetrical position or in the color of the bands spreading into the body color of the handle.

The primary object of my invention is to entirely eliminate these objectionable features and to provide a method whereby such color banding may be accomplished in an attractive and commercially acceptable manner.

Other objects and advantages will be apparent as the description proceeds, reference now being had to the figures of the accompanying drawings forming a part of this application, illustrating the various steps of the invention and a means utilized in carrying it out, and wherein like reference numerals indicate like parts.

In the drawings:—

Figure 1 is a diagrammatic illustration of the various steps of my invention.

Figure 2 is a front view of an apparatus such as may be used in carrying out my invention.

Figure 3 is an end view of a portion of such apparatus.

Figure 4 is a detail view illustrating one of the parts of the apparatus.

I will first describe the various steps of my invention and then one form of apparatus which may be commercially used in carrying it out.

The reference character A refers to a plain handle, of wood or other suitable material, such as is commonly used on kitchen tools and utensils and which it is desired to provide with a body color and with one or more bands of a different color. Assuming that the handle A has been properly cut to size, smoothed as by sanding or otherwise preparing the material of the handle, it is first given an all over coating of some suitable primer which renders the surface of the handle readily adaptable to receive and retain the coloring materials to be placed thereon. The handle may receive this priming coat in many ways such as by placing a quantity of the handles in a vat containing the priming solution, by spraying the primer thereon or by dipping the handles in a tank of the primer solution. For illustrative purposes, I have indicated in Figure 1 a tank 1 which may contain the primer solution and into which the handle A may be dipped for this purpose.

The handle with the coat of primer thereon is indicated in Figure 1 as B and is of course

allowed to dry before being subjected to the next succeeding step of the process. Any suitable means for racking and drying the handles may be provided.

The next step consists in applying to the handle a coating of the body color, which may be in the form of enamel or other suitable coloring material. The application of this body color is preferably accomplished by dipping the handle downwardly into a tank or vat of the body color solution and slowly withdrawing it therefrom in a manner and by an apparatus to be described. This coating of body color is preferably an over all coating and the handle after having been subjected to such coating is indicated in Figure 1 at C. The tank or vat of body color solution is indicated at 2. The handle with the body color applied is now thoroughly dried in any desired or suitable manner and is then ready for the next step of the invention, namely, the application of the colored band or stripe on the handle. It should be stated at this point, however, that the application of the body color just described may be by means other than dipping, such as spraying or the like, although the dipping is to be preferred because of the even application of the coat of body color.

The next step of the invention is to dip the handle having the body color into a tank or vat such as 3 containing the striping color solution. The depth to which the handle is immersed in the striping color solution, depends entirely upon what position on the handle it is desired to form the colored stripe or band. The handle is dipped into the striping color solution to the desired point at right angles to the surface of the solution and carefully lowered into the solution to the desired point on the handle where it is desired that the stripe shall appear. The handle is then withdrawn from the solution slowly and dried. This leaves the handle with the appearance of that shown at D in Figure 1 namely with a portion thereof covered with the body color and the lastly dipped portion colored with the striping color. With proper care used in this dipping operation, the result will be that at exactly the desired place on the handle, there will be a fine clear line of demarcation of contrasting colors at the point where the body color leaves off and the striping color begins. This line will be at right angles to the length of the handle and if the body color coating was permitted to properly dry before the application of the striping color solution, there will be no spreading or blur at this line. Furthermore, because of the dipping, there will be an even and uniform application of the striping color right up to the body color line.

After this application of the striping color has completely dried, the handle is again dipped into the body color solution in tank 2, the dipping being to a depth which will leave on the handle a stripe or band of the striping color of whatever width is desired. Using the same precaution and care in this dipping operation, there will be thus provided on the handle at the desired point a colored stripe or band of desired width in proper alignment and symmetry around the handle and with the lines or edges marking the sides of the band clear and sharp.

After this dipping operation the handle is again allowed to dry and if only one band of color on the handle is desired, the handle may then be dipped into a solution contained in tank 4 of a transparent glossy finishing lacquer or other suitable material, this coating being an over all coating, which after the handle is dried gives to it a fine glossy finished appearance ready for use on the tool or utensil which may be attached thereto. It will be understood of course that this last coating of the finishing material may be applied other than by dipping inasmuch as the care required in the application of the body color and striping color in the formation of the stripe or band, need not be used.

If, however, it is desired to place another stripe, either of the same or another color on the handle, the handle after having received the second dipping of body color and therefore having the appearance of the handle indicated at E in Figure 1 may after drying, be again dipped into the striping color solution in tank 3, which solution may be the same color as previously used for the first stripe, indicated at 5, or a different color. During this operation, the handle is dipped into the striping color a distance which will bring the upper line of the striping color to the desired spacing from the first stripe 5, leaving of course a section of the body color therebetween. Naturally the same care should be taken with this dipping operation as before described and upon withdrawal of the handle from the striping color solution, the handle will have the appearance indicated at F in Figure 1. After drying, the handle is again dipped in the body color solution in tank 2, to a point forming the width of the second stripe 6 as indicated at G in Figure 1. Thus, there is provided on the handle a body color and two stripes of a contrasting color or colors, which may be of any desired width or at any desired position on the handle, depending upon the dipping operations to which the handle is subjected.

It should be stated here that obviously any desired number of stripes of the same or different colors may be thus applied to the handle by merely multiplying the number of dipping operations above explained. Likewise, it will be understood that if desired, the last dipping operation into the body color solution in tank 2, may be utilized to place a colored tip on the end of the handle of a

color differing from either the body color or the stripe color or colors, or both. This is, of course, accomplished by merely changing the color of the solution in tank 2 or substituting another tank of color solution therefor.

After the desired number of stripes have been placed on the handle, and the dipping operations incident to such stripes have been completed, and the handle dried, it is again subjected to the application of a coat of the finishing lacquer of tank 4 either by dipping, spraying or otherwise, whereupon, after the drying, the handle is ready for use.

I wish to emphasize again the importance of the dipping steps or operations which serve to provide the handle with the stripes or bands. This method of placing the stripes on the handle is far superior both in the quality of the work performed and in commercial feasibility than any other methods now known and being used. It insures straight lines for the bands, obviates spreading of the colors, insures uniform application of the coloring materials and is adaptable to articles of various sizes and shapes with equal facility.

The foregoing description of the various steps of my method has been in connection with a single handle but it will be understood, of course, that many handles are simultaneously subjected to the various steps of the process. The number of handles which can be simultaneously provided with the stripe or stripes in accordance with this invention is limited only by the size of the apparatus used, including the carrying racks and the tanks containing the solutions.

To illustrate one form of apparatus which is commercially practical for carrying out this invention, I have shown in Figures 2, 3 and 4 mechanism for performing the various operations. This mechanism includes a framework 7 provided with suitable supporting legs 8, a shelf 9 for supporting the various solution tanks and a pair of cross braces 10 and 11 providing supporting means and bearings as will hereinafter appear.

Supported upon the upper side of the member 11 are a plurality of bearings 12 for a shaft 13 of any desired length, depending upon the number of units making up the apparatus. One end of this shaft 13 may be provided with a relatively large worm gear 14 which may mesh with a relatively small worm 15 of the armature shaft of an electric motor 16 suitably supported on a bracket 17, carried by one of the side frames 7. The gearing 14 and 15 is illustrative only, it being understood that any desired form of reduction gearing may be employed whereby a very slow uniform rotation is imparted to the shaft 13.

Suitably secured at spaced intervals to the braces 10 and 11, as by bolts 18 are upstanding supporting arms 19 extending above the frame and provided at their upper ends with supporting shelves 20. Mounted upon the shelves 20 at the front and rear sides thereof in brackets 21 are pulleys 22 over which passes a cable 23 the rear depending end of which has secured thereto a suitable counter balance 24. A front depending end of the cable 23 is attached to one end of a slide 25 extending downwardly past the front edges of the brace members 10 and 11 and suitably guided for vertical sliding movement with respect thereto in strap or guide bearings 26 provided on such brace members 10 and 11. The lower end of this slide 25 has secured thereto a carrying member comprising a cross piece 27, the ends of which are provided with downwardly extending spring fingers 28 adapted to removably receive and hold a rack 29 provided on one side with a plurality of pins or other fastening devices to which the handles to be treated in accordance with the method above described are suitably secured. The racks 29 may be provided at their ends with pins 30 adapted to be received in suitable openings provided in the lower end of the spring fingers 28 whereby to hold the racks and handles securely in aligned relation and parallel with the surface of the coloring solution in the tank which may be positioned below the same and in alignment therewith on the paltform 9. The handles, of course, are placed on the racks at right angles to the plane thereof. When it is desired to remove one of the racks 29 from the carrier 27, it is necessary for the operator merely to spread the resilient ends 28 sufficient to permit removal of the racks therefrom.

The relation of the carriers 27 and 28 and the racks carried thereby, and the tanks of coloring solutions positioned beneath them, is such that the carriers may be lowered by the operator to bring the handles into dipping relation with the solution in the tanks in the manner and for the purpose heretofore described.

In order to remove the handles from the solutions in the tanks at a slow uniform speed, and without danger of angularly displacing them with respect to the coloring solutions, and thus to insure an even and uniform application of the coloring material to the handles, there is provided on the shaft 13 at points past which the slides 23 are adapted to move, rollers 31, the peripheries of which are preferably provided with a covering or facing of some suitable material such as leather and indicated at 32. These rollers are preferably mounted in brackets 33 carried by a base member 34 suitably secured upon the upper brace member 11, and are provided with openings 35 through which the slide 25 passes and by means of which it is guided in its vertical movement. The rear surfaces of the slides 25 are preferably roughened or provided with a facing of rough mate-

rial 36 such as sand paper, which is engageable with the periphery of the roller 31. Obviously therefore, if any pressure is exerted against the opposite side of the slide 25 whereby to cause its frictional engagement with the roller 31, such roller will upon rotation of the shaft 13 cause the slide 25 to be moved vertically. Inasmuch as the shaft 13 and rollers 31 always move in one direction, namely, in the direction of the arrow in Figure 4, any such movement of the slides 25 by the rollers 31 will be upward.

It may be stated that normally the slides 25 do not engage with the surfaces of the rollers 31 with such friction as to make effective this driving connection.

Slidable upon the base member 34 toward and away from the slide 25 is a clutch member 37 provided with an idle roller 38, the periphery of which extends beyond the end of the clutch member 37 and is adapted to engage with the front side of the slide 25. The clutch member 37 is slidable upon the base 34 by means of the pin 39 passing through a slot 40 in such base member 34. A bracket 41 is provided on the end of the base member 34 opposite the bracket 33 and rotatably supported in this bracket 41 is a pintle 42 upon which is eccentrically mounted a wheel or disk 43 adapted when rotated to one position, to engage a spring pressed pad 44 carried upon the clutch member 37 whereby to slide the clutch member 37 toward the slide 25 whereby to cause engagement of the roller 38 therewith and press such slide into frictional engagement with the roller 31 whereby the slide may be moved upwardly thereby. An operating handle 45 is secured to the pintle 42, whereby the eccentric 43 may be so operated. The springs 46 on the pad 44 serve as a cushion means or shock absorber in the operation of the clutch device and cause the engagement of the roller 38 with the slide 25 to be a more or less resilient engagement.

The operation of this device is as follows:—The operator first inserts a rack 29 carrying the handles to be dipped at any one of the dipping operations desired, in the carrier member 27 and 28, and lowers such rack, and with it of course the slide 25, until the handles are immersed in the solution in whatever tank is being used for that particular operation, to the desired depth or point. This he is easily able to observe by looking downwardly into the tank and of course, he may, if desired, provide any suitable marking means to govern the depth of insertion of the handles. When he is ready to remove the handles from the tank, he merely operates the handle 45 to rotate the eccentric 43 to engage the clutch member 37 through its roller 38 with the slide 25 whereby to place such slide in driving engagement with the roller 31. Thereafter, the operator may leave the device if he desires and attend to another unit and the rotation of the shaft 13 and the roller 31 will very slowly, gradually and uniformly raise the slide 25 and consequently the handles on the rack 29 out of the solution in the tank. When the upward movement is sufficient to permit the removal of the handles for disposition in the drying apparatus provided, the handle 45 may again be turned to relieve the clutching engagement between the rack 25 and the roller 31 whereupon such upward movement stops. The counterbalance 24 is such as to prevent the return downward movement of the carrier 27 and 28 into the tank.

Although only two units have been illustrated in the drawings and only one described in detail of parts, it will be obvious that as many units as desired or necessary may be utilized and because of the simplicity of operation, a single person can operate quite a number of units. The structure of all the units is identical.

Although the particular apparatus just described for use in connection with my invention is a very practical form, it must be understood that the carrying out of my invention is not limited to such an apparatus as others obviously might be used to adequately perform the steps of the invention.

By my invention, therefore, I have provided a method for placing upon articles one or more colored bands or stripes about the bodies thereof which consists in the dipping operations as heretofore described and explained. Of course, changes may be made in details without departing from the spirit and scope of my invention. I do not wish to be limited, therefore, other than by the appended claims.

I claim:

1. The method of placing a colored stripe around the body of an article comprising the steps of coating the article with a body color, drying the coating, dipping the article partially into a solution of contrasting color, drying the same, dipping the article partially into the solution of said body color to leave a colored stripe thereon, and drying said article.

2. The method of placing a colored stripe around the body of an article comprising the steps of coating the article with a body color, drying the coating, dipping the article partially into the solution of contrasting color, drying the same, dipping the article partially into the solution of said body color to leave a colored stripe thereon, and drying said article, and coating said article with a transparent finishing material.

3. The method of placing a colored stripe around the body of an article comprising the steps of coloring said article, dipping the article partially into a solution of contrasting color, drying the article, and again dipping said article partially in a solution of

color contrasting with said striping color, to leave a stripe of the first named contrasting color around said article.

4. The method of placing colored stripes around the body of an article comprising the steps of alternately partially dipping the article in solutions of contrasting color materials, the extent of each dipping being such as to leave spaced contrasting colored stripes around said article, and drying the article between each dipping operation.

5. The method of placing colored stripes around the body of an article comprising the steps of coating the article with a body color, drying the same, dipping the article partially in a striping color solution, drying the article, dipping the same partially in a solution of said body color to leave a stripe, drying the same, dipping the article partially in said striping color solution to a point spaced from said first formed stripe, drying the same, and partially dipping said article in said body color solution to form a second stripe.

6. The method of placing colored stripes around the body of an article comprising the steps of coating the article with a body color, drying the same, dipping the article partially in a striping color solution, drying the article, dipping the same partially in a solution of said body color to leave a stripe, drying the same, dipping the article partially in said striping color solution to a point spaced from sad first formed stripe, drying the same, and partially dipping said article in said body color solution to form a second stripe, drying the same and applying a coating of transparent glossy finishing solution to said article.

7. The method of color striping a body consisting in alternately dipping said body into contrasting color solutions and successively shortening the quantity or length of the body inserted into the several color solutions after each dipping operation.

In testimony whereof, I affix my signature.

CHARLES E. KAIL.