

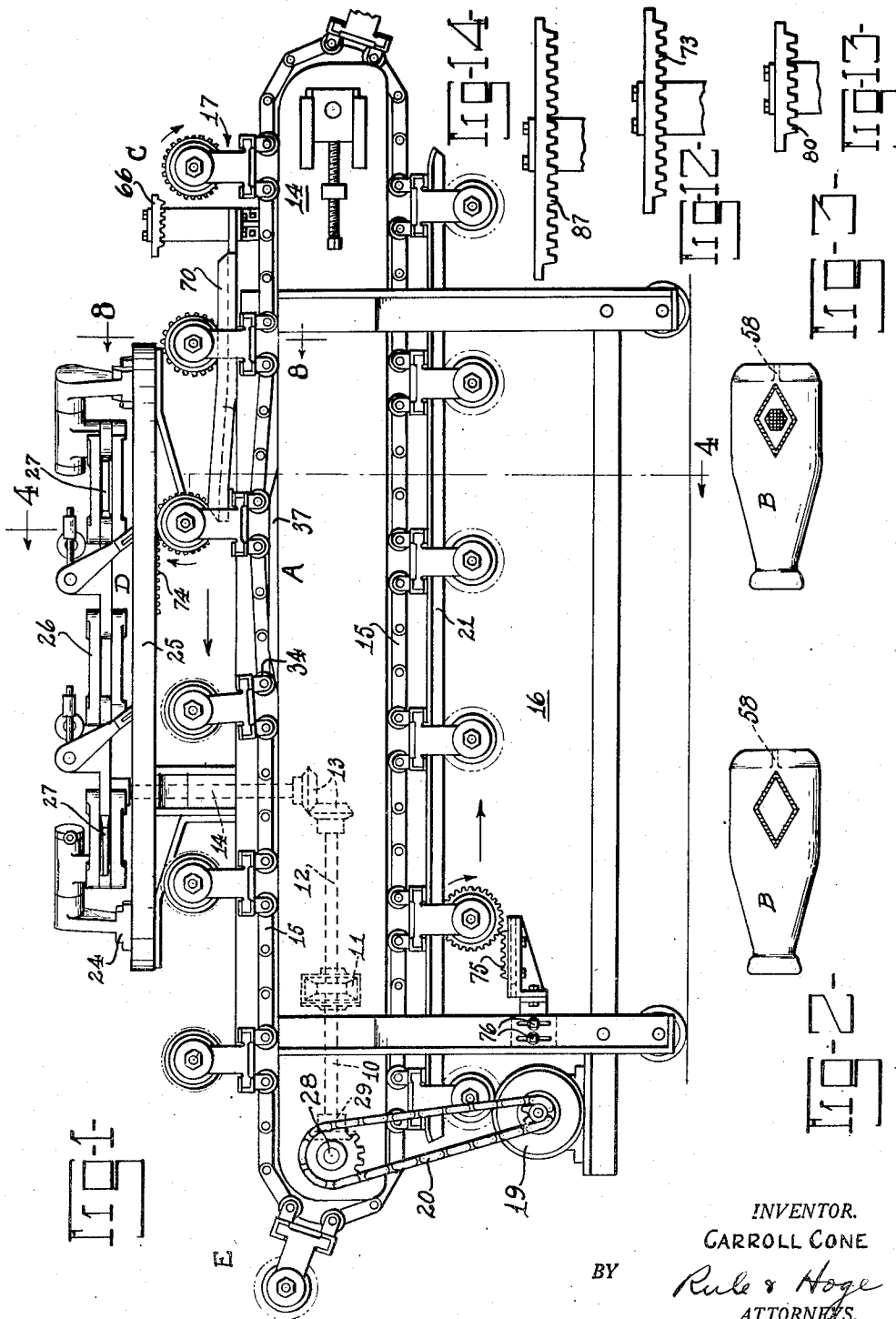
Oct. 11, 1938.

C. CONE

2,132,818

METHOD OF AND APPARATUS FOR DECORATING BOTTLES AND LIKE ARTICLES

Original Filed June 18, 1936 3 Sheets-Sheet 1



Oct. 11, 1938.

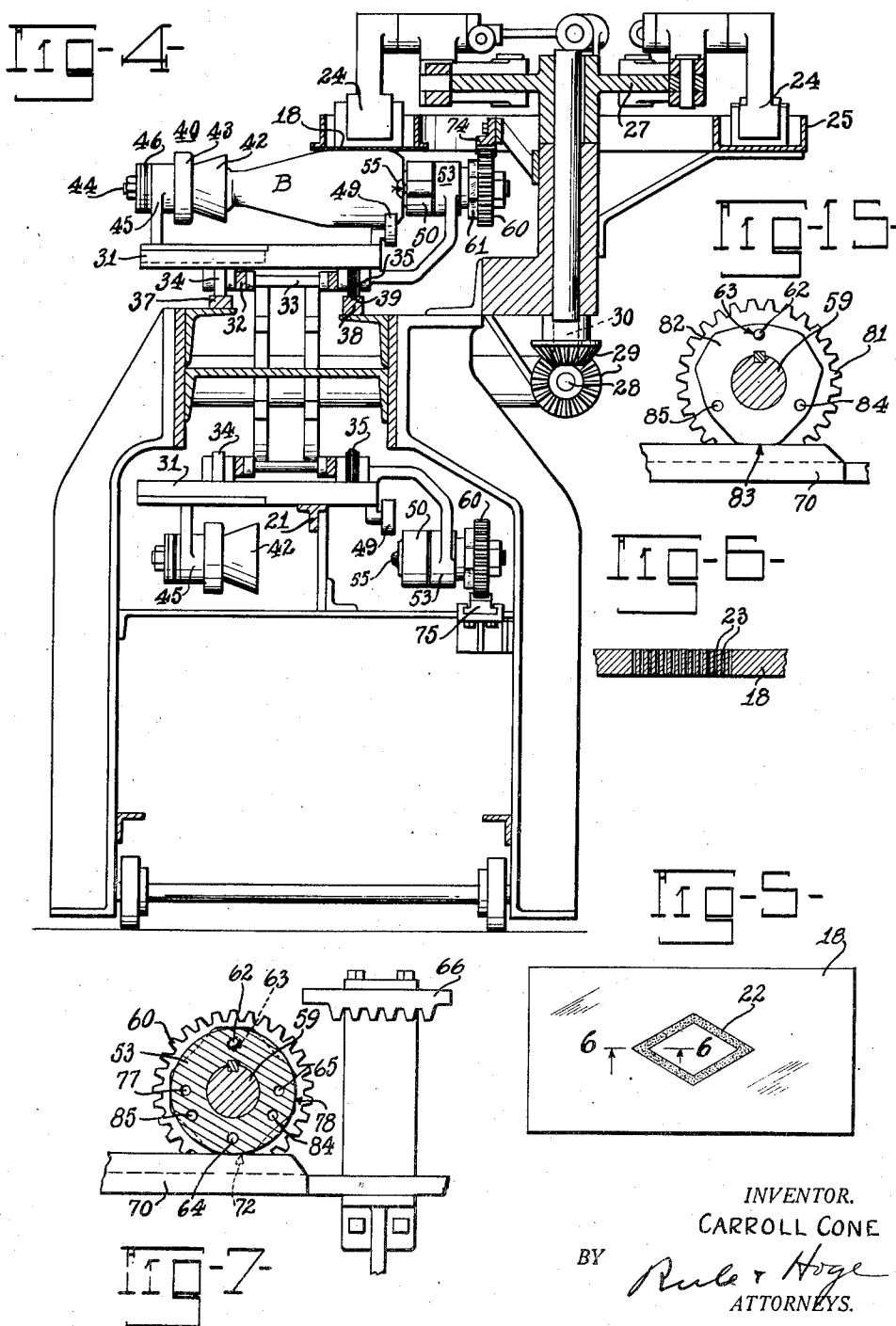
C. CONE

2,132,818

METHOD OF AND APPARATUS FOR DECORATING BOTTLES AND LIKE ARTICLES

Original Filed June 18, 1936

3 Sheets-Sheet 2



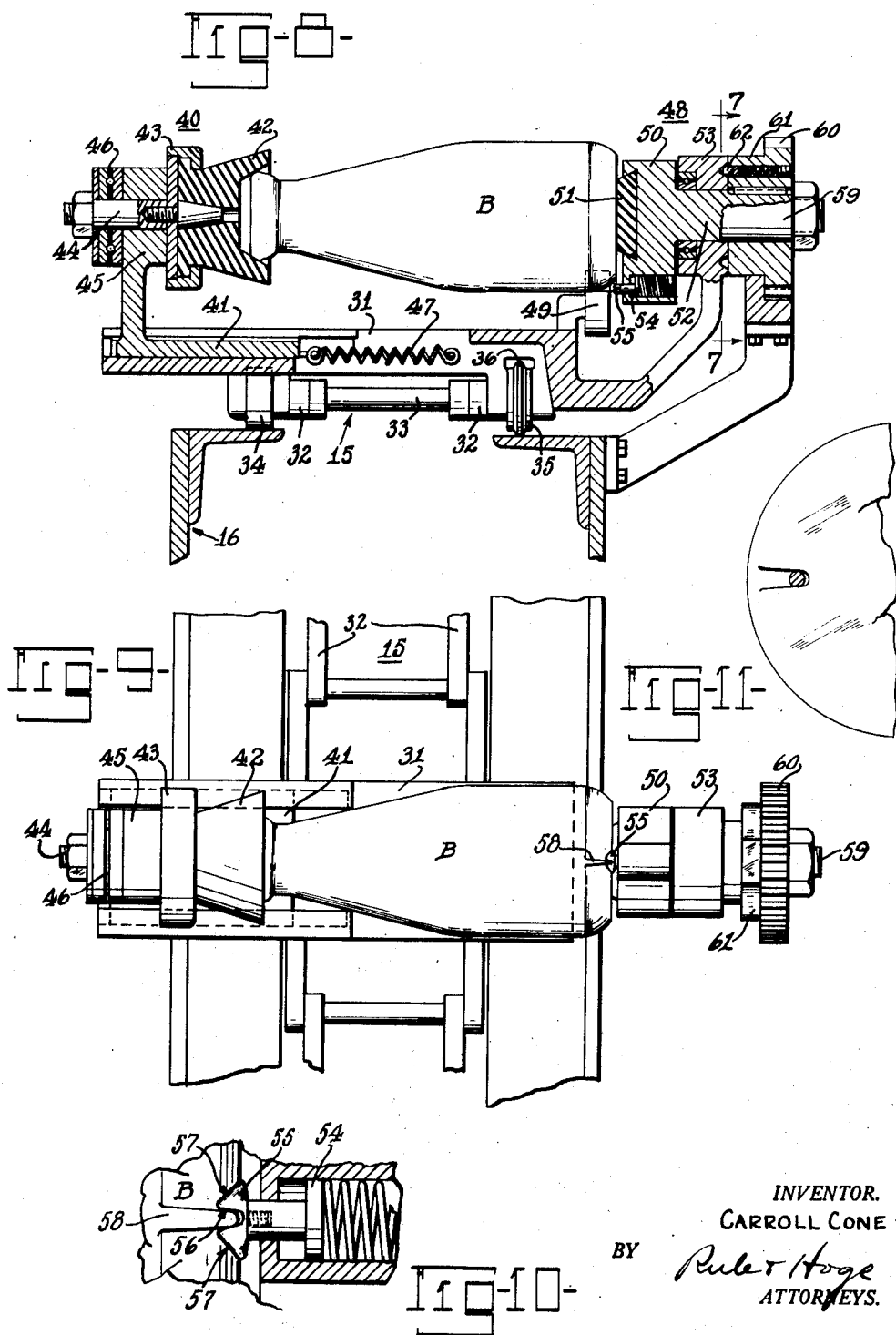
Oct. 11, 1938.

C. CONE

2,132,818

METHOD OF AND APPARATUS FOR DECORATING BOTTLES AND LIKE ARTICLES

Original Filed June 18, 1936 3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

2,132,818

METHOD OF AND APPARATUS FOR DECORATING BOTTLES AND LIKE ARTICLES

Carroll Cone, Alton, Ill., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Application June 18, 1936, Serial No. 85,938
Renewed March 1, 1938

17 Claims. (Cl. 101-115)

The present invention relates to improvements in apparatus for decorating or marking cylindrical bottles and like articles with multi-colored lettering or other desired designs by a screen process in which the ink or coloring material is forced through a stencil screen by means of a squeegee.

An object of the present invention is the provision of a novel method of and apparatus for decorating bottles or other articles whereby accurate relative positioning of several independently applied colors of a given design or decoration may readily be effected upon the bottles or other articles. Toward this end, the apparatus includes means for moving the bottles or other articles axially just prior to arrival at the decorating station or position, if such movement is necessary, to properly locate the independently applied colors of the decoration lengthwise of the articles and additional means intended to cooperate with an integral part of the articles and functioning to insure proper circumferential positioning of the various independently applied colors of the design or decoration upon the articles.

Another object of the invention is the provision of a device formed integral with the bottle or other article and designed for cooperation with a holder in order to insure proper relative positioning of the article and screen prior to the decorating operation.

Other objects and advantages of the present invention will become apparent from the following description taken in conjunction with the drawings, in which:

Fig. 1 is a side elevational view of a decorating apparatus constructed in accordance with the present invention;

Fig. 2 is a side elevational view of a bottle to which one colored portion of a design or decoration has been applied;

Fig. 3 is a view similar to Fig. 2, showing the second colored portion of the design or decoration applied in a predetermined position relative to the first applied portion;

Fig. 4 is a sectional elevational view taken substantially along the line 4-4 of Fig. 1;

Fig. 5 is a plan view of the metal screen which forms a part of the decorating apparatus;

Fig. 6 is a fragmentary detail sectional view taken substantially along the line 6-6 of Fig. 5;

Fig. 7 is a sectional elevational view taken substantially along the line 7-7 of Fig. 8;

Fig. 8 is a sectional elevational view taken substantially along the line 8-8 of Fig. 1;

Fig. 9 is a fragmentary plan view showing that part of the apparatus illustrated in Fig. 8;

Fig. 10 is a detail sectional elevational view of the cooperating locking devices on the bottle and bottom engaging chuck;

Fig. 11 is a fragmentary bottom plan view showing a recess on the periphery of the base of the bottle in lieu of the projection or boss illustrated in Figs. 2 and 3;

Figs. 12, 13 and 14 are enlarged fragmentary side elevational views of a plurality of stationary racks alternatively employed in connection with the present invention; and

Fig. 15 is a sectional view, similar to Fig. 7, showing a modified form of pinion employed in connection with the invention.

My invention is illustrated as embodied in a decorating apparatus including an endless horizontal conveyor 15, provided with a conventional tightening mechanism 14, and supported upon a wheeled frame 16 or carrier, said conveyor carrying a series of article holding units 17 which are adapted to carry bottles B or other similar articles in succession beneath a stencil screen 18. The conveyor is driven by a motor 19 to which driving connection is effected by a chain 20 or like element. Supporting rails 21 or tracks constitute a part of the frame 16 and assist in supporting the weight of the series of article holding units 17.

The screen 18 (Figs. 4, 5 and 6) in the illustrated embodiment of the invention, is formed of a thin metal sheet in which the design 22 is created by a plurality of comparatively close grouped apertures 23 through which the coloring material is adapted to be forced by means of squeegees 24. This screen is carried by a frame 25 (Figs. 1 and 4) which is supported on the upper side of the main frame 16. An endless chain 26, running over sprockets 27 at one end of the frame, carries the squeegees 24 which are moved in succession over the screen in timed relation with the arrival of the article holding units 17 at the decorating station D. One of the sprockets 27 is driven by the motor 19 which transmits power through the chain 20, horizontal transverse shaft 28, meshing bevel gears 29, horizontal longitudinal shafts 10 and 12 between which a reduction device 11 is interposed, bevel gears 13, and vertical shaft 14 which carries the sprocket 27 above referred to. The entire stencil assembly just described is positioned in a region above the conveyor 15 and is designated as the decorating station D.

Each of the article holding units 17 consists of an elongated frame 31, positioned outside the endless surface of the conveyor 15, and connected to and supported by links 32 by means of a pair of pivot pins 33. At adjacent ends of each pair of pivot pins 33, a pair of plain rollers 34 are arranged, while at the other ends, rollers 35, each having a circumferential V-shaped rib 36 are arranged. The plain rollers 34 are adapted to ride over a raised track or cam 37 (Figs. 1 and 4) at the decorating station or zone D in order

to elevate the units sufficiently to bring the bottles B or other articles into contact with the screen preparatory to the color applying operation. The other rollers 35, while assisting the rollers 34 in the function just stated in that they ride up over rails 38, perform the additional function of guiding the units 17 during the decorating operation insofar as the lengthwise position of the bottles relative to the screen is concerned. Toward this end, the annular V-shaped rib 36 rides or is guided in a longitudinal channel or groove 39 in the upper surface of the rail 38.

The frame 31 of each article holding unit carries a pair of cooperating chucks which are disposed at opposite sides of the conveyor 15. The head chuck 40 is mounted upon a slide 41 and includes an elastic cup 42 mounted in a holder 43 which, in turn, is supported upon a short shaft 44. This shaft is journaled in a horizontal bearing 45 and thrust bearing 46. A coil spring 47 connecting the inner end of the slide 41 and the frame 31 tends to move the cup 42 to its innermost article engaging position.

A base chuck 48 at the opposite end of the frame 31 cooperates with a pair of rollers 49 in supporting the base or bottom end of the bottle or other article in the necessary position for decorating or stenciling purposes. The base chuck includes a rotary head 50 carrying a block or pad 51 of rubber or like material, said head including a short horizontal shaft 52 journaled in a relatively stationary bearing 53 which may well constitute an integral part of the frame 31. A spring pressed detent 54 (Figs. 8 and 10), having a removable head 55, provided with a notch 56, from the edges of which there extends a pair of guiding cam surfaces 57, is carried by the head 50 and is intended for holding engagement with a boss 58 or similar projection at some point about the margin of the bottom of the bottle B in order that the part of the decoration first applied to the bottle and occupying a definite position with respect to the boss 58, may occupy the same relative position in the article holding unit when the second or additional color or portion of the decoration or design is subsequently applied to the bottle. To further insure accurate setting of a bottle and chucks 40 and 48 making up a single holder, preparatory to application of the second color or portion of the design, the head 50 is connected through a shaft 59 to a pinion 60, the latter including a hub 61, which in cross-section is in the form of a Geneva gear, rotatively engaging the outer end of the bearing 53. The hub 61 is frictionally held against relative rotation with respect to the bearing member 53 by means of a friction element in the form of a spring pressed ball 62 carried by the hub and riding in a circular path on the surface of the stationary bearing member 53. A plurality of recesses 63, 64, 65 and 77 (Fig. 7), formed in the bearing member 53, are positioned in the path of the spring pressed ball 62 and provide seats for this element that determine definite angular locations of the head 50 and article supported thereby.

The machine is designed to receive the bottles or other articles at station C adjacent the right-hand end of the same as seen from Fig. 1, and in placing the articles in position between the head chuck 40 and the base chuck 48, the operator, by engaging the head chuck 40 with the head of the bottles B, causes the slide 41 to be moved outwardly to permit the base of the bottles to

clear the base chuck 48 for positioning thereon. In individually positioning the articles between the head chuck 40 and the base chuck 48, it is not necessary for the operator to effect immediate, accurate, interlocking engagement between the boss 58 and the spring pressed detent 54. Such interlocking engagement may be accomplished after the articles are placed between the head and base chucks 40 and 48 by rotating the articles on the base chuck relative to the base chuck until the boss 58 engages either of the guiding cam surfaces 57 and depresses the detent 54 to permit the boss to enter the notch 56. In so positioning the articles, the base chuck 48 is frictionally held against rotation in the bearing 53 by means of the spring pressed ball 62 which occupies a position in the recess 65.

A removable stationary rack 66, positioned adjacent the receiving station C, and between this station and the decorating station D, is designed to be tractionally engaged by the pinion 60 as the conveyor 15 carries the article holding units 17 therebeneath. The number of teeth on the rack 66 are calculated so that tractional engagement between the rack 66 and pinion 60 causes rotation of the base chuck 48 throughout an arc of 90° in the direction indicated by the arrow in Fig. 7. Such rotation of the base chuck brings the boss 58 to its bottommost position in the machine with the diametrically opposed region of the bottle in an elevated position and thus the bottle is passed to the decorating station D in contact with the underneath side of the stencil screen 18 to receive the color impression therefrom. During such rotation, the spring pressed element 62 is dislodged from the depression 65 and moves in an arcuate path to enter the next adjacent depression 63.

As each unit 17 approaches the decorating station D, the rollers 34 and 35 ride upon the elevated tracks 37 and 38 respectively in the manner previously described to elevate the opposite ends of the bottle and thus bring the entire bottle into engagement with the stencil screen 18.

Referring now to Figs. 1, 7 and 8, an elevated guide 70 is positioned above the tracks 37 and 38 between the receiving station C and the decorating station D and is designed for cooperation with one flat side 72 of the Geneva-shaped hub 61 to insure exact orientation of the bottles in their approach to the decorating station. Thus, any discrepancy in orientation of the articles that might ordinarily occur after the articles leave the receiving station C by virtue of the spring pressed friction member 62 failing to find its proper position within the depression 65 is automatically corrected.

A second stationary rack 74 is positioned on the underneath side of the stencil frame 25 and is designed for tractional engagement with the pinion 60, to cause the bottles to engage the underneath side of the stencil screen 18 by a rolling contact in order that the design may be applied by the traveling squeegees 24 progressively to the surface of the same. The number of teeth provided on the rack 74 is calculated to impart rotation to the base chuck 48 throughout an arc of 180°, a portion of which rotation occurs simultaneously with the application of the design by the squeegee elements 24.

Upon leaving the decorating station D, the base chuck 48, having been rotated throughout an arc of 90° by the rack 66 and an arc of 180°

by the rack 74, occupies an angular position 270° removed from its original position at the receiving station C. In this position the spring pressed friction element 62 has entered and occupies the depression 64 adjacent the face 72 of the Geneva-shaped hub 61.

The decorated or partially decorated bottles are removed from the machine at an unloading or discharging station E and the empty units 17 are returned to the receiving station C along the underneath side of the conveyor. In order to restore the base chuck 48 to its bottle receiving position, a stationary rack 75, adjustably positioned as at 76 to a portion of the frame 16 for movement into or out of the path of the moving pinions 60, tractionally engages the pinions 60 of each unit as they pass along the underneath side of the conveyor and cause them to be rotated throughout an arc of 90°, thus causing the spring pressed elements 62 to again enter the depressions 65.

In use, a single machine may, by substitution of the stencil pattern, be employed for the application of two or more of the component colors of a design to the articles. For convenience and economy of operation, however, the use of separate, substantially identical machines, one for each color or component part of the design, is contemplated. In the latter instance, an initial application is made on the articles by the first machine in one color in the manner described above, and the articles are removed from the machine, dried, and passed to the next machine for application of the second color or component part of the design. Because of the fact that in each machine the stationary racks 66, 74 and 75 combine in their tractional engagement with the pinions 60 to impart to the base chucks 48 rotational movement throughout a complete cycle or 360°, proper insertion of the articles in the various machines that may be employed, will insure application of the component parts of the design at the same corresponding position on the bottles, as clearly shown in Figs. 2 and 3.

In certain instances it may be desired to apply single colored or multi-colored designs to the articles in adjacent quadrants on the circumferential surface thereof. In such cases, the initial design may be made on the articles in one machine in the manner previously described. The second design or color may be applied by a second machine which has been modified by removing the rack 66 and substituting in its stead the rack 73 shown in Fig. 12. The teeth of the rack 73 are calculated to impart rotational movement to the articles throughout an arc of 180° during their movement from the receiving station C to the decorating station D. Thus, the articles arrive at the decorating station D in a relative position advanced ninety degrees from the position they assumed at the same relative station in the preceding machine.

In proceeding from the receiving station C to the decorating station D, the spring pressed friction element 62 moves from the notch 65 which it occupied upon arrival at the receiving station C to a notch 77 diametrically opposed on the face of the Geneva-shaped hub 61. In thus moving from the notch 65 to the notch 77, one face 78 of the Geneva-shaped hub 61 is brought into position for engagement with the elevated guide 70 to arrest rotation of the articles and insure accurate orientation thereof upon commencement of the decorating operation.

During the application of the design to the articles at the decorating station D, the stationary rack 74 will cause further rotation of the base chuck 48 through an arc of 180°. The base chuck 48 is thus restored to the relative position it occupied initially at the receiving station C with the spring pressed element 62 received in the depression 65. In order that the rack 75 will not function to destroy the orientation thus attained by the articles, an adjustment may be made at 76 to lower the rack on the frame 16 to an inoperative position.

In Figs. 13, 14 and 15, instrumentalities are shown in the form of machine elements designed for substitution in a single machine or in a pair of machines to effect decoration of the articles at adjacent sextants on the surface thereof. In so decorating the articles, where two machines are employed, the racks 66, 74, and 75 are removed from the machine and in the place of each is substituted a rack 80 (Fig. 13) designed to impart angular movement to the base chucks 48 through an angle of 120°. The pinions 60, having the Geneva-shaped hubs 61, are removed from the machine and in their stead are substituted similar pinions 81 (shown in Fig. 15), having hubs 82 provided with a surface 83 designed for engagement with the rack 70 for accurate orientation of the articles during movement from the receiving station C to the decorating station D. A pair of depressions 84 and 85 are provided in the stationary bearing member 53 and these depressions are positioned in the path of the spring pressed element 62 at points spaced apart one hundred and twenty degrees. Thus, in moving from the receiving station C to the decorating station D, the base chuck 48 is rotated through an angle of 120°, and in so rotating, the spring pressed element 62 moves from the depression 63 to the depression 85.

During the decorating operation at the station D, the base chuck 48 is rotated through an angle of 120° by virtue of tractional engagement between the pinion 81 and the second rack 80, at which time the spring pressed element moves to the depression 84. During the return of the empty units 17 to the receiving station, an additional angular rotation of 120° is imparted to the chucks 48 by the third rack 80, during which the spring pressed element 62 returns to the depression 63, and thus the chucks are restored to their initial position upon their return to the receiving station.

After the articles have been removed from the first machine and dried, they are introduced into a second machine in which the first rack 80 adjacent the receiving station C has been removed and replaced by the rack 87 shown in Fig. 14 which is designed to initially impart rotational movement to the articles throughout an angle of 240°. Thus the articles arrive at the decorating station at a relative position advanced 120° from the position they occupied in the first machine in order that the decoration or one component color thereof may be applied to the articles in the next adjacent sextant to the one already decorated. The second rack 80 positioned at the decorating station D serves to impart rotational movement to the articles during the decorating thereof through an angle of 120° to restore the base chuck to its original position before return to the receiving station C. A third rack 80 is thus rendered unnecessary in the second machine and consequently it is removed therefrom.

Modifications may be resorted to within the spirit and scope of the appended claims.

I claim:

1. In an apparatus for decorating articles, a plurality of bodily movable and freely rotatable chucks for conveying articles to be decorated from a receiving station to a decorating station, cooperating means on said articles and chucks for holding the articles in similar relative fixed positions at said receiving station, and means operable during the travel of said chucks and articles carried thereby from the receiving station to said decorating station adapted to successively and tractionally engage said chucks and rotate the same about their respective axes throughout a predetermined degree to orient the articles so as to present corresponding selected peripheral areas of the same for decoration at the decorating station.
2. In an apparatus for decorating articles, a plurality of bodily movable and freely rotatable chucks for conveying articles to be decorated from a receiving station to a decorating station, cooperating means on said articles and chucks for holding the articles in similar relative fixed positions at said receiving station, and means positioned between said stations adapted to successively and tractionally engage said chucks and rotate the same throughout a predetermined degree during the travel of said articles from the receiving station to the decorating station to orient said articles and present corresponding selected peripheral areas of the same for decoration at the decorating station.
3. In an apparatus for decorating articles, an endless conveyor for conveying the articles to be decorated from a receiving station to a decorating station, and means positioned between said stations and cooperating with the conveyor for causing corresponding selected peripheral areas of said articles to be presented for decoration at said decorating station.
4. In an apparatus for decorating articles, a plurality of article holding units having rotary chucks between which said articles are supported, means for continually moving said units past receiving, decorating and discharging stations, means positioned between the receiving and decorating stations in the path of said units and adapted to engage said chucks to impart rotation to the same through a predetermined angle before arrival of the units at said decorating station, means positioned at the decorating station in the path of said units and adapted to engage said chucks to impart further rotation to the same during the decoration of said articles, and means positioned between the discharging and receiving stations in the path of said units for engaging said chucks and restoring the same to their initial position before their return to the receiving station.
5. In an apparatus for decorating articles, a plurality of article holding units having rotary chucks between which said articles are received, means for continuously moving said units past receiving, decorating and unloading stations in the order named, and tractional means positioned between said two first mentioned stations, at said second mentioned station, and between said two last mentioned stations, and between said articles, for engaging said chucks and rotating the same through an angle of 360°.
6. In an apparatus for decorating bottles, a stencil screen and squeegee assembly for applying a design to said bottles during the decoration

thereof, a plurality of bottle holding units for presenting selected areas of said bottles to said stencil screen to receive the design, means for holding said bottles in the same relative initial position in said units, means for moving said units bodily into bottle decorating position, and means interchangeably positioned in the path of movement of said units for causing different degrees of axial rotation of said units to vary the selected areas of the bottles which are presented for decoration.

7. In an apparatus for decorating bottles, a stencil screen and squeegee assembly for applying a design to said bottles, a plurality of bottle holding units for presenting selected areas of the bottles to said stencil screen to receive the design, during the decoration thereof, means for holding said bottles in the same relative initial position in said units, means for moving said units bodily into bottle decorating position, and cooperating means positioned in the path of movement of said units for causing axial rotation of said bottles through a predetermined angle before presentation of the same to said screen.

8. In an apparatus for decorating bottles, a stencil screen and squeegee assembly for applying a design to said bottles, a plurality of bottle holding units for presenting selected areas of the bottles to said stencil screen to receive the design, means for holding the bottles in the same relative initial position in said units, means interchangeably positioned in the path of movement of said units for causing different degrees of axial rotation of said units to vary the selected areas of the bottles which are presented for decoration.

9. In an apparatus for decorating articles, a plurality of article holding units having rotary chucks between which said articles are received, means for continually moving said units past receiving, decorating and discharging stations in the order named, means positioned between said receiving station and said decorating station in the path of said units and adapted to engage said chucks to impart rotation to the same through a predetermined angle before arrival of said units at said decorating station, and means positioned at said decorating station and in the path of said units and adapted to engage said chucks to impart further rotation to the same during the decorating operation to restore said chucks to their original relative positions in their respective units.

10. In an apparatus for decorating articles, a plurality of article holding units having rotary chucks between which said articles are received, means for continually moving said units past receiving, decorating and discharging stations in the order named, means operable during the travel of said units from said receiving station to said decorating station for rotating said chucks to orient said articles so as to present corresponding selected area of the same for decoration at said decorating station, means for rotating said chucks during travel of the units past said decorating station, and means operable during the travel of said units from said discharging station to said receiving station for restoring said chucks to their initial position in said units at said receiving station.

11. In combination, an apparatus for decorating bottles by a stenciling process, a stencil screen and squeegee assembly for applying a design to said bottles, a head chuck and a base

chuck adapted to support a bottle therebetween, a spring pressed detent carried by one of said chucks and normally projecting outwardly therefrom, a notch formed in the projecting end of said detent, and a projection integrally formed on the bottle and designed for cooperation with said notch for maintaining a desired orientation of said bottle and said specified chuck.

12. In combination, an apparatus for decorating bottles by a stenciling process, a stencil screen and squeegee assembly for applying a design to said bottles, a head chuck and a base chuck adapted to support a bottle therebetween, yieldable means normally urging said head chuck toward said base chuck, a spring pressed detent carried by said base chuck and normally projecting outwardly therefrom in the direction of said head chuck, a notch formed in the projecting end of said detent, and a projection integrally formed on the bottle and designed for cooperation with said notch for maintaining a desired orientation of said bottle on said base chuck.

13. The method of presenting a selected area on the exterior of a bottle having a locating mark thereon to a stencil screen in the decoration thereof which comprises, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to said stencil screen, moving said bottle and the supporting means therefor bodily toward said stencil screen, and interposing in the path of movement of said bottle and supporting means a traction device adapted to be engaged by said supporting means and which by rolling contact therewith causes the latter to be rotated throughout a predetermined angular degree prior to presentation of said bottle to said stencil screen.

14. The method of applying differently colored pigments to selected areas on the exterior surface of a bottle or similar container having a locating mark thereon which comprises, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to a stencil screen, moving said bottle and the supporting means therefor bodily toward said stencil screen, effecting rotation of the bottle throughout a predetermined degree of angularity prior to presentation of said bottle to said stencil screen, establishing tangential rolling line contact between the exterior surface of said bottle and the stencil screen, and forcing coloring material through said screen and onto a selected area of the exterior surface of said bottle.

15. The method of applying differently colored pigments to selected areas on the exterior surface of a bottle having a locating mark thereon which comprises, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to a stencil screen, moving said bottle and the supporting means therefor bodily toward said stencil screen, effecting rotation of the bottle throughout a predetermined degree of angularity prior to presentation of said bottle to said stencil screen, establishing tangential rolling line contact between the exterior sur-

face of said bottle and the stencil screen, forcing coloring material through said screen and onto a selected area of the exterior surface of said bottle, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to a second stencil screen, moving the bottle and the supporting means therefor bodily toward said last mentioned screen, effecting rotation of the bottle throughout a predetermined degree of angularity prior to presentation of said bottle to said last mentioned stencil screen, establishing tangential rolling line contact between the exterior surface of said bottle and said last mentioned stencil screen, and forcing coloring material onto a selected area on the exterior surface of said bottle.

16. The method of applying differently colored pigments to selected areas on the exterior surface of a bottle having a locating mark thereon which comprises, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to a stencil screen, moving said bottle and the supporting means therefor bodily toward said stencil screen, interposing in the path of movement of said bottle and supporting means a traction device adapted to be engaged by said supporting means and which by rolling contact therewith causes the latter to be rotated throughout a predetermined angular degree prior to presentation of said bottle to said stencil screen, establishing tangential rolling line contact between the exterior surface of said bottle and the stencil screen, forcing coloring material through said screen and onto a selected area on the exterior surface of said bottle, supporting said bottle for free rotation about its own axis and assigning to said bottle a predetermined angular position as determined by the orientation of said mark with respect to a second stencil screen, moving said bottle and the supporting means therefor bodily toward said last mentioned screen, interposing in the path of movement of said bottle and supporting means a second traction device adapted to be engaged by said supporting means and which by rolling contact therewith causes the latter to be rotated throughout a predetermined angular degree prior to presentation of said bottle to said last mentioned stencil screen, establishing tangential rolling line contact between the exterior surface of said bottle and said last mentioned stencil screen, and forcing coloring material through said last mentioned stencil screen and onto a selected area on the exterior surface of said bottle.

17. In an apparatus for decorating articles, a plurality of article supporting units for rotatably supporting and conveying articles to be decorated from a receiving zone to a decorating zone, means operable during the travel of the articles from said receiving zone to said decorating zone for successively rotating the articles about their respective axes, and means for arresting such rotation when the articles have attained a predetermined orientation in their respective supporting units.

CARROLL CONE.