Jan. 12, 1932. J. E. QUIGLEY 1,840,466

GLOBE STAMPING APPARATUS

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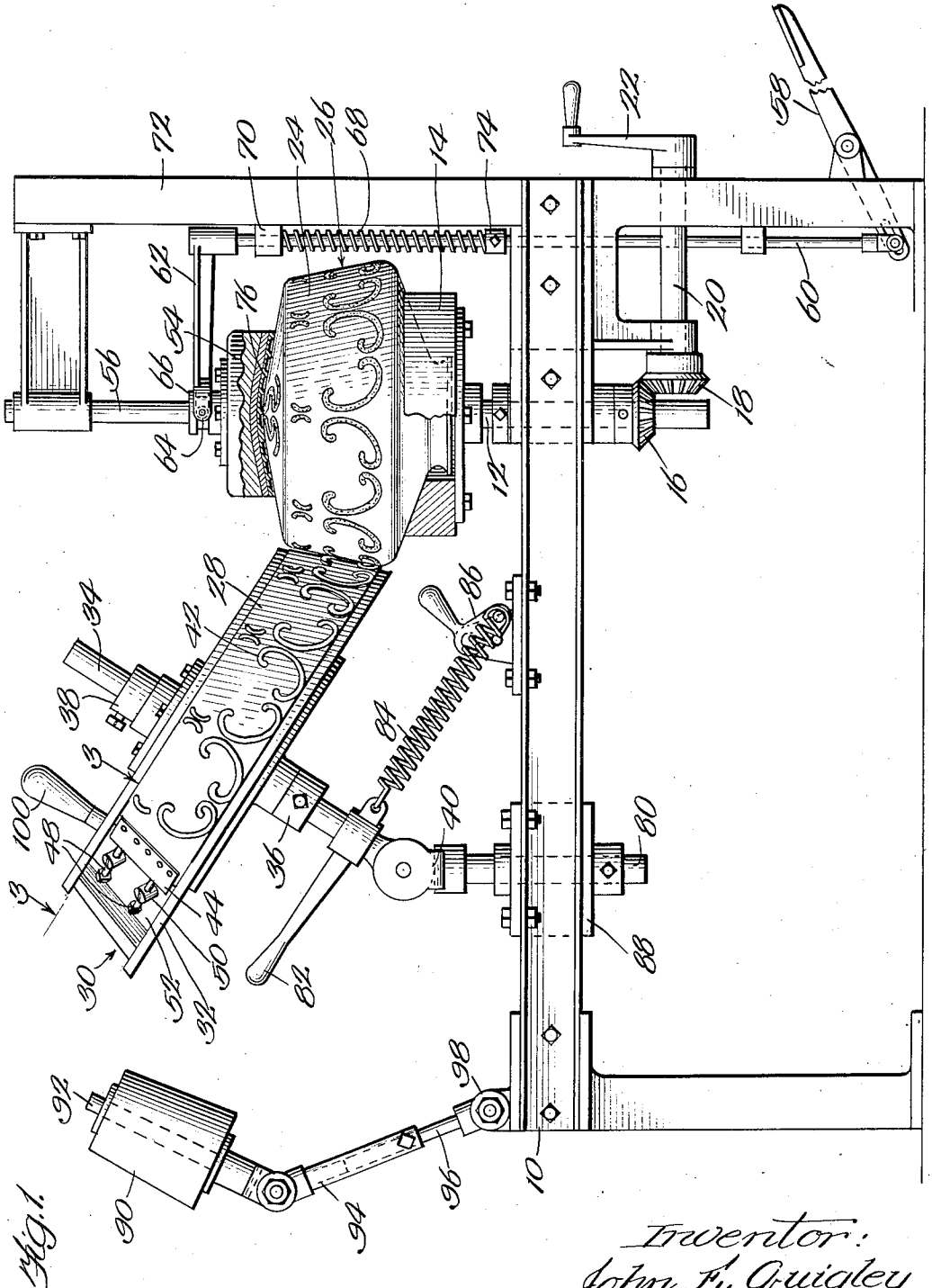


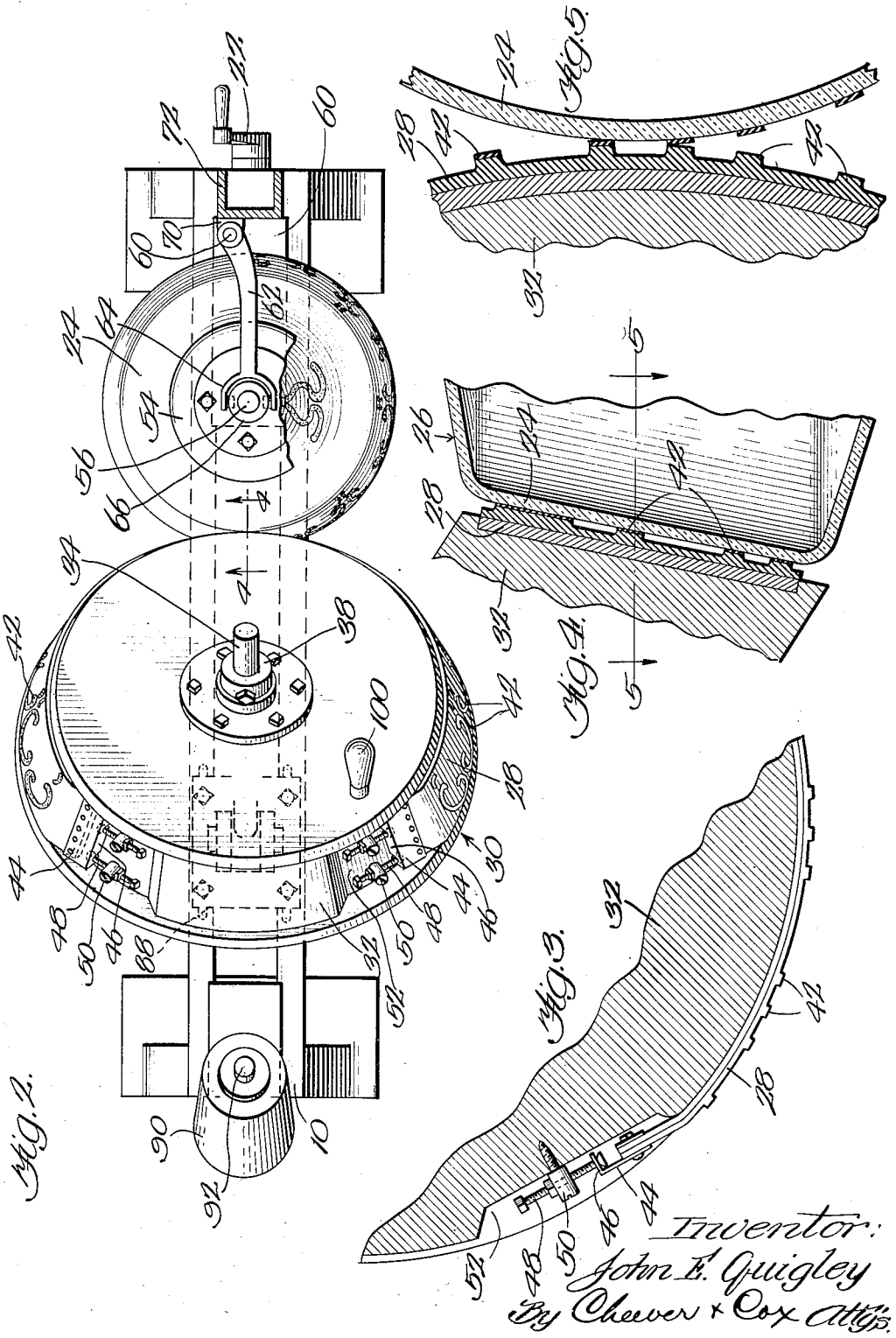
Fig. 1.

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GLOBE STAMPING APPARATUS

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Patented Jan. 12, 1932 1,840,466

UNITED STATES PATENT OFFICE

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GLOBE STAMPING APPARATUS

Application filed May 28, 1928. Serial No. 281,067.

My invention relates to stamping apparatus and particularly to stamping apparatus of a rotary type for continuously applying a design upon the exterior of glass globes and articles of like nature.

The uniformity, continuity and distinctiveness of designs applied to glass globes and the like are the factors which to a large extent determine the salability of such articles, and in general an object of my invention is to provide a stamping apparatus of simple and durable construction which is designed to accurately and continuously apply a design to the exterior surface of a globe which will have sharp and distinct marginal characteristics.

More specifically it is an object of my invention to provide an apparatus of the instant nature having a rotary platen, the peripheral surface of which is adapted to engage an adjacent outer surface of a rotatably mounted globe, the rotation of the platen with the globe serving to effectively stamp said globe with a suitable design.

My invention further contemplates the provision of a globe stamping apparatus which includes a rotary platen having a resilient printing strip detachably secured along the peripheral surface thereof, said strip adapted to be adjustably positioned along said peripheral surface.

A further object of my present invention is to provide an efficiently operable globe stamping apparatus having a rotary platen for continuously applying a design to the outer surface of a rotatably mounted globe or bowl, and in association therewith I propose to employ a second stamping device for applying a design upon the end portion of a globe, said stamping device being movable axially of the globe and serving as a tailstock to retain the axial alignment of the globe during the association therewith of the rotary platen.

In addition to the above mentioned advantageous features, my invention contemplates the provision of an apparatus of the nature set forth in which the rotary platen is rotatable upon a pivotally mounted shaft, said pivotally mounted shaft being adjustable to facilitate the swinging of the platen between the globe surface and a roller which is provided with a coating of the material which is applied to the globe by the rotary platen.

More specifically, a further object of my invention resides in the provision of a globe stamping apparatus having a rotary platen which is rotatably and adjustably mounted upon a pivotal shaft, said pivotal shaft also being adjustable axially and laterally, said adjustable features serving to render the pivotal shaft capable of supporting the rotary platen in a very accurate or exact position with respect to the surface of the globe to be stamped, thereby enabling the stamping apparatus to be used for stamping globes of varied designs and shapes.

These and other objects will be more apparent from the following detailed description when considered in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of a stamping apparatus which is representative of one embodiment of my invention, certain portions of the globe supporting parts being broken away for the purpose of more clearly illustrating the functional characteristics thereof;

Figure 2 is a plan view of the device shown in Figure 1;

Figure 3 is a fragmentary sectional view of a peripheral portion of the rotary platen taken along the line 3—3 of Figure 1;

Figure 4 is an enlarged fragmentary vertical sectional view of the engaging portions of the rotary platen and globe taken substantially on the line 4—4 of Figure 2; and

Figure 5 is a horizontal sectional view of the engaging portions of the rotary platen and the globe as viewed along the line 5—5 of Figure 4, the material which is applied to the globe by the rotary platen being shown as having considerable thickness for the purpose of more clearly illustrating the stamping action of the platen.

Referring now to the drawings wherein like numerals have been employed to designate similar parts through the various figures, it will be observed that an apparatus

embodying features of my invention includes a suitable frame or bed 10 and near one extremity of this bed I mount a vertical shaft 12, Figure 1, which supports a bowl mounting 14 at its upper extremity. The lower extremity of the shaft 12 carries a bevel gear 16 which meshes with a companion bevel gear 18 mounted upon a shaft 20 and it will be apparent that when rotation is imparted to the shaft 20 through the agency of a suitable handle 22, rotation will be experienced by a globe or bowl 24 carried by the mounting 14. The peripheral surface 26 of this globe 24 is adapted to be engaged by certain elevated portions of a resilient printing strip 28 of a rotary platen indicated generally by the numeral 30.

This platen 30 comprises a body portion 32 constructed of any suitable material such as wood or the like and is rotatable upon a shaft 34. The platen 30 may be adjusted axially of the shaft 34 through the agency of positioning collars 36 and 38 and by reason of the fact that the shaft 34 is pivotally mounted at its lower extremity upon a head 40, the platen may be swung into and out of engagement with the surface 26 of the globe 24. The aforementioned raised portions of the resilient printing strip 28 present a definite configuration or design 42 and it will be apparent that if these raised surfaces are supplied with a coating of printing material, and then moved into engagement with the surface of the globe 24, said design will be applied to said globe surface when the handle 22 is actuated so as to rotate the globe.

In order to retain the printing strip 28 in proper position upon the periphery of the platen, it will be observed that I provide the extremities of said strip with clamping plates 44 which are secured to said strip by means of rivets or the like. Each of the bent portions 46 of the clamping plates are provided with a number of slots designed for association with clamping pins or keepers 48. These keepers or pins 48 are adjustably threaded within the heads of screws 50 secured to the platen, and it will be observed that I provide recesses 52 within the peripheral portion of the platen to receive said keepers and clamping strips, as clearly shown in Figures 1 to 3 inclusive. By having the clamping pins or keepers 48 adjustable within the heads of the screws 50, I am able not only to securely retain the printing strip 28 tightly stretched around the platen, but I am able to accurately adjust the printing strip along the platen surface when the occasion demands. The practical value of this construction will be more apparent when it is understood that by reason of this adjustable characteristic the design 42 upon the printing strip may be slightly stretched or changed to account for variations in the size of the globe to be printed. In other words, a globe of one size, as for example the globe 24 shown in Figure 1, when moved through one complete revolution in contact with the platen printing strip 28, will receive the design in such a manner that the point where said design is initially and last applied upon the globe will be in proper alignment or uniformly contiguous. If however, a globe which is slightly larger than the globe 24 is stamped with the same strip 28, obviously an irregularity or non-uniform continuity will appear at the place where the design begins and ends because the length of the active portion of the strip will not correspond with the circumferential length of the globe. To meet such conditions, I employ the adjustable keepers or pins 48. It will thus be apparent that in order to enable the use of the same printing strip 28 for stamping a design on a globe which is slightly larger in diameter than the globe 24, said strip must be slightly stretched and I accomplish this by manipulating the adjustable pins 48. Likewise, if only certain of the globe diameters vary slightly from the standard diameter, the pins 48 may be adjusted so as to slightly stretch the strip 28 along its upper or lower margins so as to accommodate the variation in the globe diameter. By clamping the extremities of the printing strip 28 in the manner described, a very convenient means is presented for mounting said strip upon the platen and for adjustably positioning said strip in accordance with the particular type of globe which is to be stamped.

In order to retain a globe in a fixed position upon the mounting 14 during the stamping operation, I provide a tailstock member 54 which is vertically slidable upon a shaft 56, the vertical movement of said tailstock 54 being accomplished through the agency of a foot pedal 58 pivotally mounted upon the lower portion of the machine frame 10, Figure 1. The inner extremity of this foot pedal 58 has a slotted engagement with a vertical actuating rod 60, the upper end of which carries a horizontally disposed arm 62 and this arm 62 has a yoke connection 64 with a grooved collar 66 which supports the tailstock 54. A coil spring 68 which encircles the rod 60 and is interposed between a lug 70 fixed to an upright frame member 72 and a collar 74 secured to the rod 60, serves to normally urge said rod downwardly, thereby causing the lower surface of the tailstock 54 which carries a resilient printing sheet 76 to engage the end surface of the globe 24. By depressing the foot pedal 58, the tailstock 54 will be moved upwardly so as to permit the removal and insertion of a globe. It will be observed that this tailstock 54 not only serves as a means for maintaining the proper position of the globe, but also serves as a means for applying or stamping a design upon the end surface of said globe. Obviously the

lower portion of the tailstock may be shaped in accordance with the particular type of globe to be stamped and in the event that no design is desired to be applied to the end of the globe, the resilient material 76 will merely serve as an effective means for frictionally engaging the globe surface so as to maintain the same in proper axial alignment.

As already described, the shaft 34 which rotatably supports the platen 30 is pivotally mounted upon the head 40 which is carried at the upper extremity of a vertical shaft 80. In order to facilitate swinging the platen upon the head 40, a suitable manipulating handle 82 is provided which extends laterally from the lower portion of the shaft 34, and in order to maintain the proper constant pressure of the printing strip 28 against the globe 24, a suitable coil spring 84 is employed which is connected between the lower portion of the shaft 34 and a pivoted arm 86. When the pivoted arm 86 occupies the position shown in Figure 1, the coil spring 84 is rendered effective, but when said arm is swung in a counter-clockwise direction through an angle of 180 degrees, the tension in said spring is relieved so as to permit the platen to be freely swung away from the globe. The shaft 80 is vertically adjustable within a block 88 which is horizontally slidable within the frame or machine bed 10. From the foregoing it is to be understood that by having this block 88 horizontally adjustable, the shaft 80 vertically adjustable therein, and the platen axially adjustable upon the shaft 34, adjustments may be made to properly position the printing strip of the platen with respect to the surface of the globe to be stamped. This adjustable feature is in addition to the adjustable feature above referred to in connection with the description of the clamping pins or keepers 48. It will be seen that by having this adjustable arrangement, variations in the surface inclination of the globe may be compensated for and my improved stamping apparatus is adapted to be used for stamping globes which vary between a wide range of sizes and shapes.

At one extremity of the bed 10, to the left Figures 1 and 2, I provide a supply roll 90 which is rotatably carried upon a shaft 92, which has a pivoted connection with the upper extremity of a sleeve 94. This sleeve 94 is slidable upon a rod 96 which is pivotally supported at 98 upon the bed 10. I provide the surface of this roll 90 with a supply of printing or stamping material, and in order to supply said material to the printing strip 28, it is only necessary to swing the platen to the left, Figure 1, so as to carry the strip into engagement with the surface of the roll 90 and by manipulating a handle 100 extending upwardly from the platen, the entire surface of the stamping strip may be supplied with printing material. The manner in which the supply roll 90 is mounted serves to enable the positioning of said roll in accordance with the position of the printing strip carried by the platen.

In the operation of my improved stamping apparatus, the roll 90 is first supplied with printing material and the arm 86 is swung to the left, Figure 1, so as to release the spring 84 to permit the platen to be swung to the left so as to carry the printing strip into association with the supply roll. By depressing the foot pedal 58, the tailstock 84 is raised sufficiently to allow the globe to be positioned within the mounting 14 and if it is desired to stamp a design upon the end surface of the globe, printing material may be applied to the surface of the resilient plate 76. Upon releasing the foot pedal 58, the coil spring 68 causes the tailstock to be lowered against the globe, thereby securing said globe in proper axial alignment within the mounting 14. After the proper adjustments have been made, such as by varying the position of the block 88, the shaft 80 or the axial position of the platen upon the shaft 34, said platen may be swung to the right so as to carry the proper portion of the printing strip 28 into engagement with the surface 26 of the globe and the arm 86 is then moved in a clockwise direction to place the coil spring 84 under tension. The handle 22 is then actuated to impart a complete rotation to the globe and upon making this complete rotation, the platen may be moved away from the globe, and the foot pedal depressed, to permit said globe to be replaced by another. In the event that it is necessary to slightly shift the design in order to effect the uniform continuity at the beginning and end portions of the design, it is only necessary to adjust the clamping pins or keepers 48 as above described.

From the foregoing it will be understood that my invention provides a stamping device which is adapted to efficiently apply designs upon glass globes and the like which are clear and distinct and which are uniformly contiguous at the place where the design upon the globe begins and ends. The importance of obtaining this uniform continuity will be readily appreciated in instances where the design is not composed of separated configurations but comprises lines or figures which extend continuously around the surface of the globe. In such instances if the design does not start and finish at exactly the same position upon the globe surface, the irregularity or non-uniformity which is presented seriously impairs the ornamental appearance and hence materially affects the salability of the globe. It will also be seen that my device is easily operable and serves to greatly accelerate the speed with which globes may be stamped. The tailstock device which I employ serves as a very effec-

tive means for retaining a globe in position and at the same time provides a very satisfactory means for applying a design upon the end surface of the globe. The adjustable features which have been described are very important from the standpoint of rendering the invention adaptable for use in connection with handling globes which vary between wide ranges of sizes and shapes and the ease and speed with which my improved machine may be operated are factors which enable the economical manufacture of stamped globe units.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In apparatus of the class described for stamping globes and articles of like nature, a globe support, a globe stamping means, means for effecting a relative movement between the stamping means and the support to thereby cause the continuous stamping of a design to the outer surface of a supported globe, and another stamping means designed for cooperation with the support to maintain the proper position of a globe in said support.

2. An apparatus for stamping globes and articles of like nature, including a resilient stamping strip, means providing a backing for said stamping strip, a support for properly positioning the outer surface of a globe with respect to the resilient stamping strip, means for causing relative movement between the stamping strip and the outer surface of a supported globe, and means for adjustably flexing the resilient strip to thereby facilitate the uniform stamping of a continuous design upon the supported globe.

3. An apparatus for stamping glass globes and articles of like nature, including a resilient stamping strip, a backing therefor, means for supporting a globe with the outer surface thereof in proper position to be stamped, means for causing relative movement between the stamping strip and the outer surface of a supported globe, and means for stretching the resilient stamping strip so as to alter the stamping surface thereof sufficiently to produce a design upon the outer surface of a supported globe having uniform continuity.

4. An apparatus for stamping the outer surface of glass globes and the like, including a cylindrical platen, a resilient stamping strip peripherally engaging the platen, means adapted to frictionally engage the outer surface of a glass globe for supporting said globe in a position for the outer surface thereof to be stamped, and means engaging the opposite extremities of the resilient strip for adjustably positioning said strip upon the platen to alter the stamping surface sufficiently to produce a design for the outer surface of the supported globe having uniform continuity.

5. In globe stamping apparatus of the class described, a rotary stamping means comprising a resilient stamping strip, a pivotal support therefor, a rotary globe support adapted to clampingly engage the outer surface of a globe for properly positioning said outer surface of the globe in frictional contact with the stamping strip, means for rotating the globe support to effect rotation of said stamping means and the continuous stamping of a design upon the outer surface of a supported globe and means to adjustably stretch the stamping strip.

6. In globe stamping apparatus of the class described, a rotary stamping means comprising an elastic stamping strip, a rotary supply member, a rotary support adapted to engage the external surface of a glass globe for properly positioning the outer surface of said globe with respect to the stamping strip, a pivotal support for the stamping means which is designed to permit said stamping means to be swung between the globe engaging position and the proper position of engagement with the rotary supply member and means to adjustably stretch the stamping strip.

7. In apparatus for stamping glass globes and articles of like nature, a rotatable globe support, a stamping means disposed opposite said support which is designed to frictionally engage and position a supported globe, means for vertically moving said stamping means, and a rotary stamping means for applying a design to the outer surface of the supported globe.

8. In apparatus of the class described for stamping globes and articles of like nature, a rotary globe supporting device, a stamping means movable axially with respect to a supported globe and designed to cooperate with the globe support for maintaining a globe in proper position, resilient means for normally urging the stamping means into engagement with a supported globe, and a rotary stamping device for continuously applying a design to the outer surface of a supported globe.

9. In apparatus of the class described for stamping globes and articles of like nature, a rotary stamping means including a resilient strip mounted upon the peripheral surface of a cylindrical backing member, a rotary means for positioning a globe with the outer surface thereof in position to be engaged by the resilient stamping strip, another stamping means for engaging the end portion of a globe carried by the support which serves as a tail-stock to maintain the proper position of a supported globe, an adjustable pivotal mounting for the rotary stamping means, and means for imparting rotation to the globe support to effect the continuous stamp-

ing of a design upon the outer surface of a supported globe.

10. In apparatus of the class described, a rotatable support for an article to be stamped, stamping means comprising a resilient stamping strip and a support therefore, means for shifting the support to cause the resilient stamping strip to move along the surface of the article being stamped and means to adjust the stamping strip on its support to vary the configuration of the design being pressed upon the article being stamped.

11. In apparatus of the class described, a revolvable support having an article to be stamped, means to clasp the article on the support and stamping means comprising a stretchable stamping strip, a support for said strip, means to vary the length of the stretchable strip on said support in order to vary the configuration of the design stamped on the article, means to move the strip support toward and away from the article being stamped in order to contact the stretchable strip therewith and means to drive at least one of said supports in order to cause the stamping strip to roll upon the surface of the article being stamped.

In witness whereof, I have hereunto subscribed my name.

JOHN E. QUIGLEY.