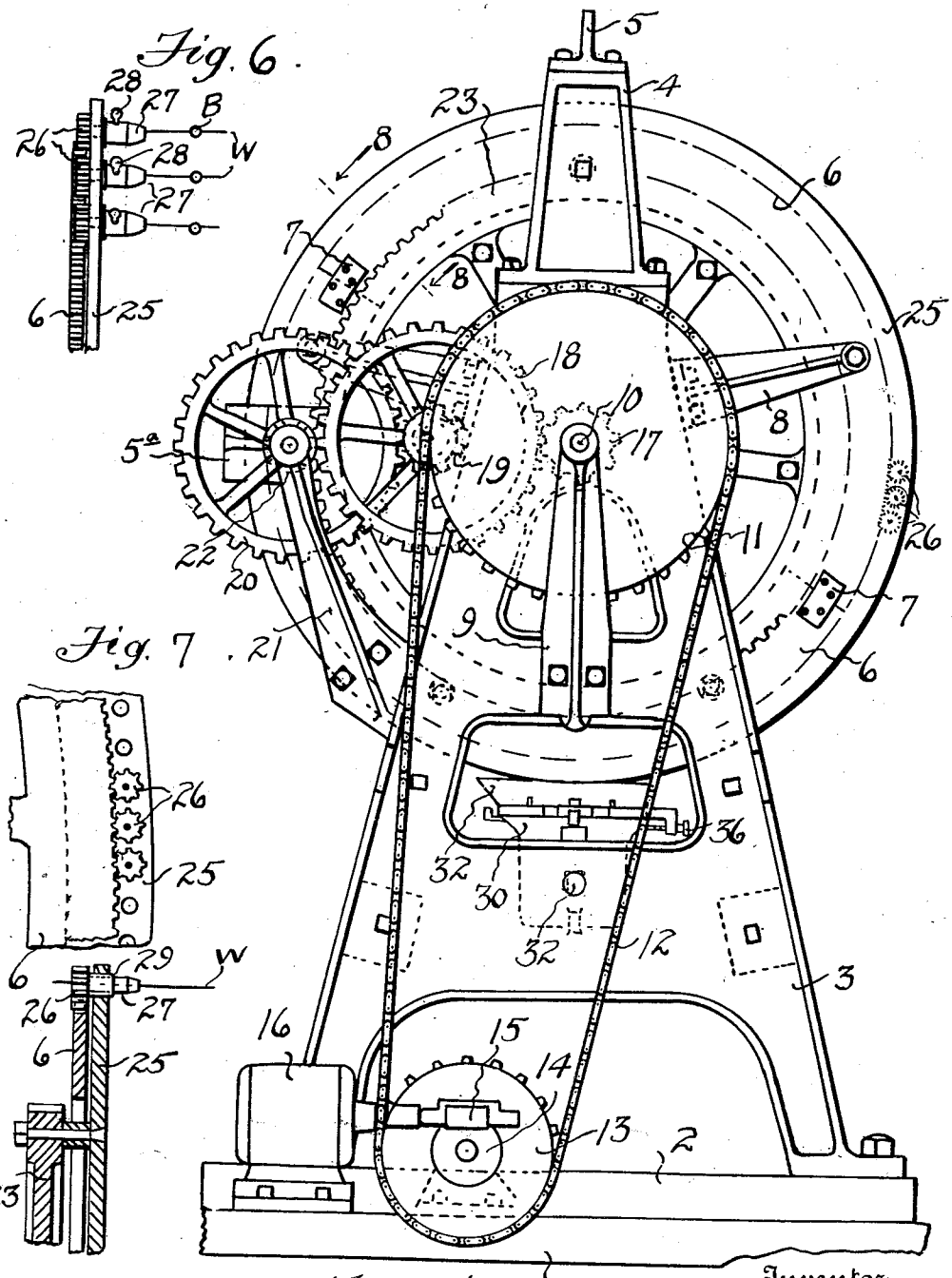
March 22, 1932. M. C. MEYER 1,850,409

METHOD OF COATING AND MACHINE

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METHOD OF COATING AND MACHINE

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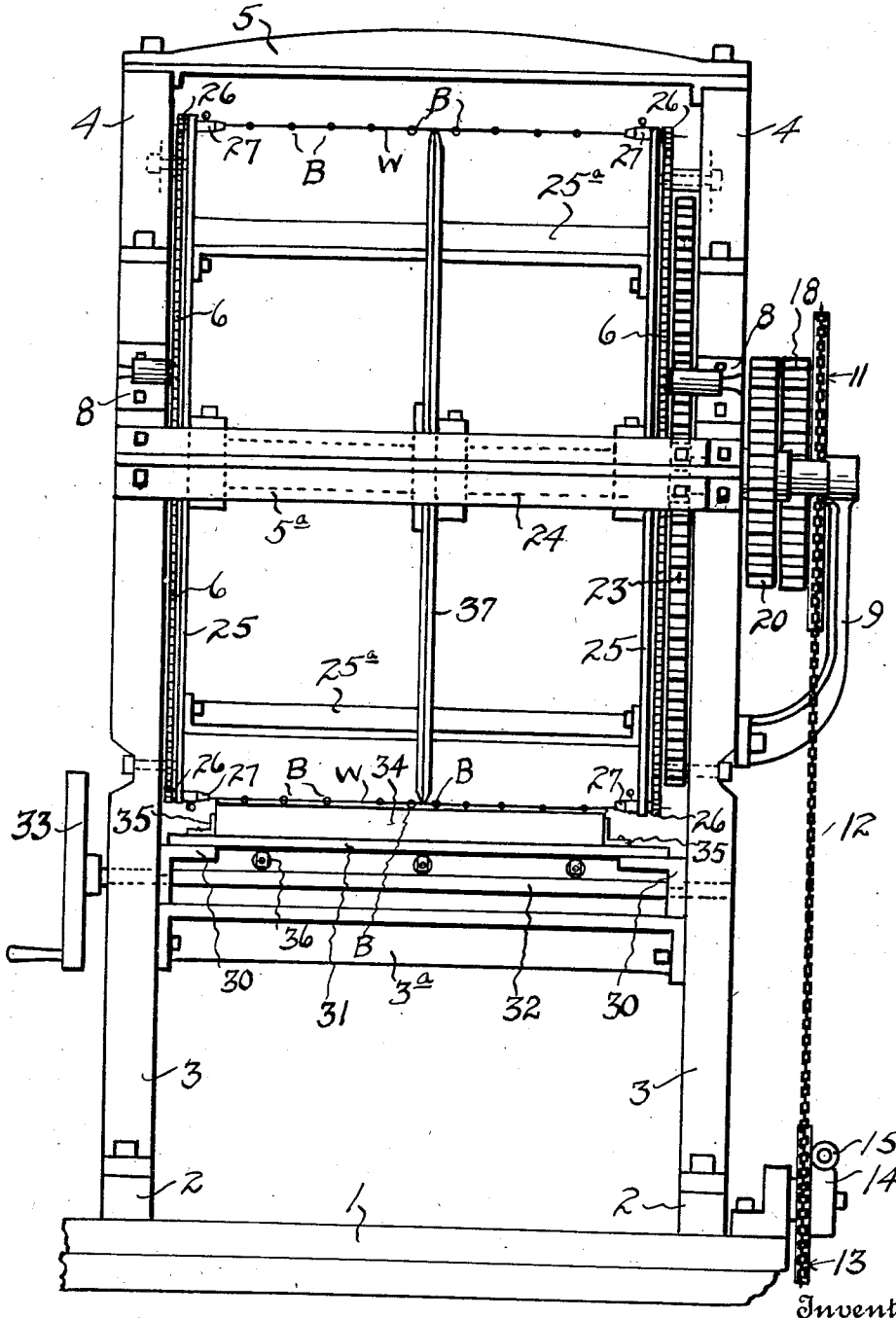


Fig. 2.

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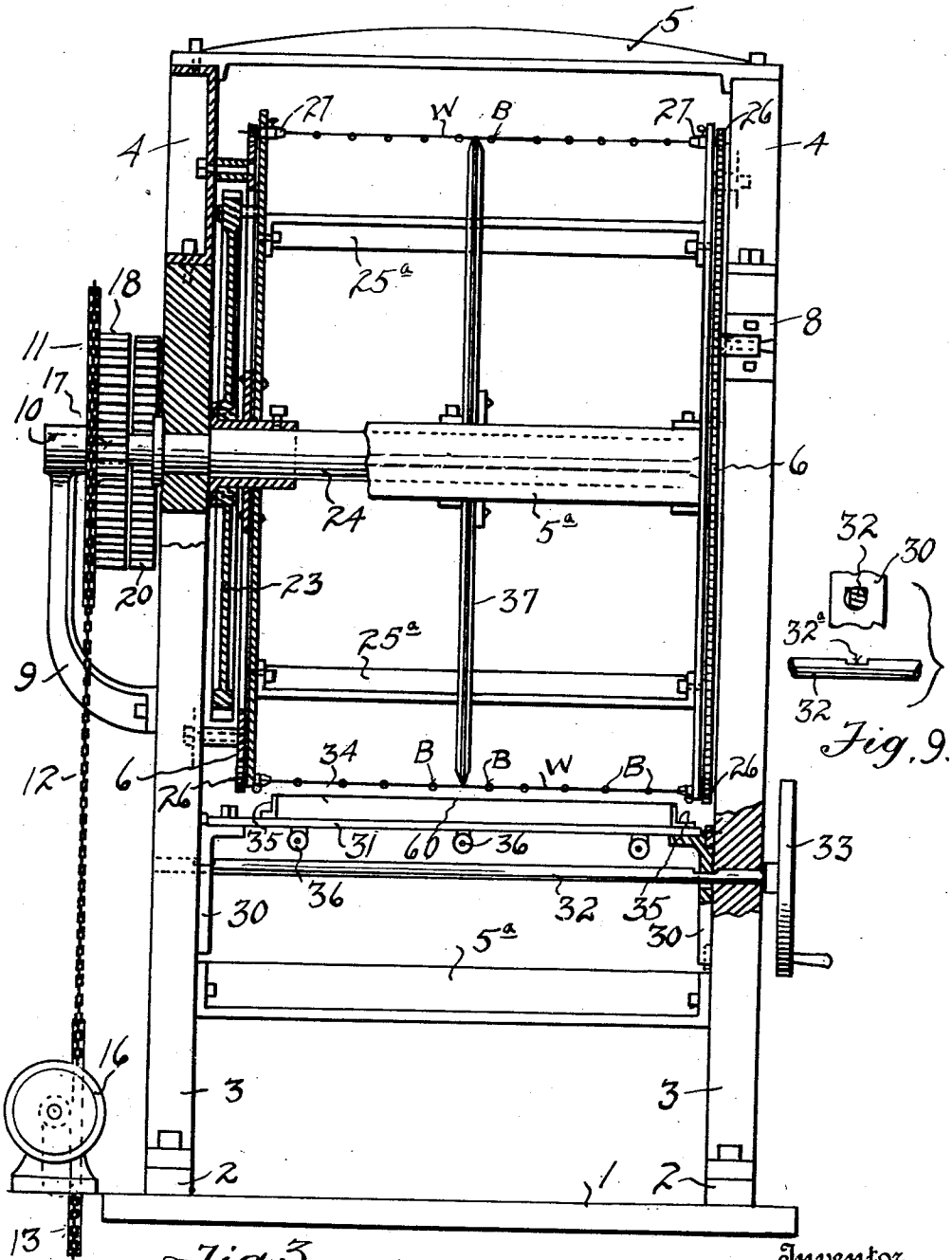


Fig. 3.

Fig. 9.

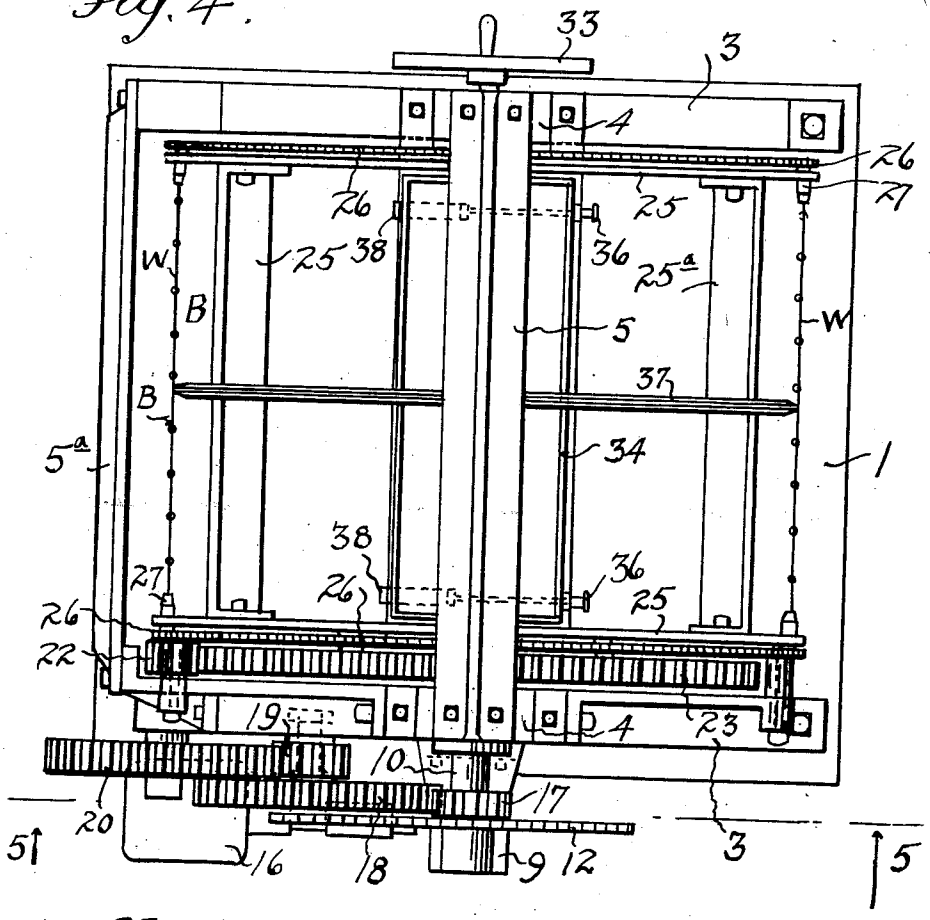
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Fig. 4.



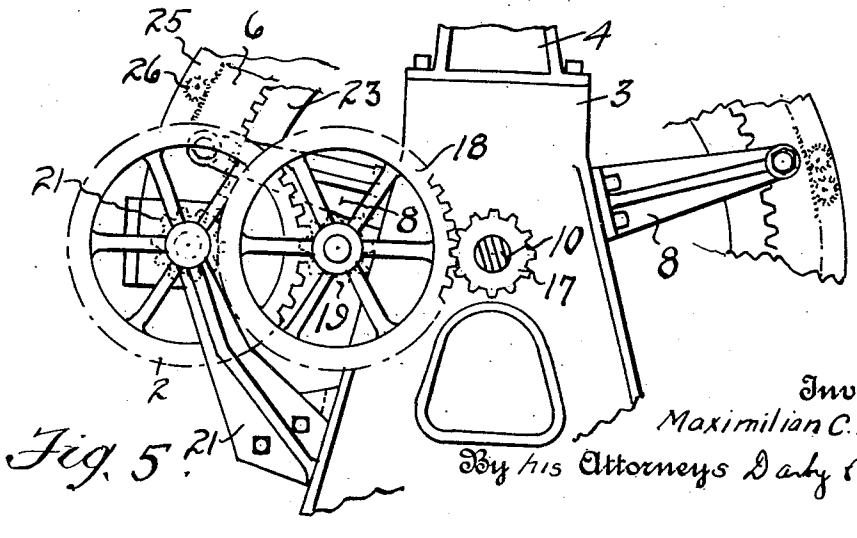


Fig. 5.

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Fig. 13.

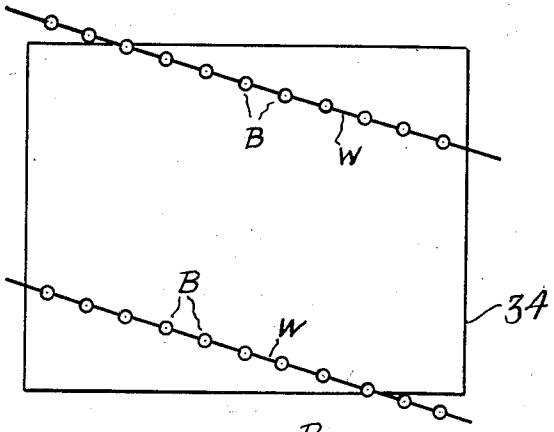


Fig. 14.

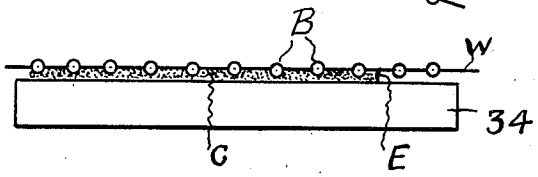


Fig. 15.

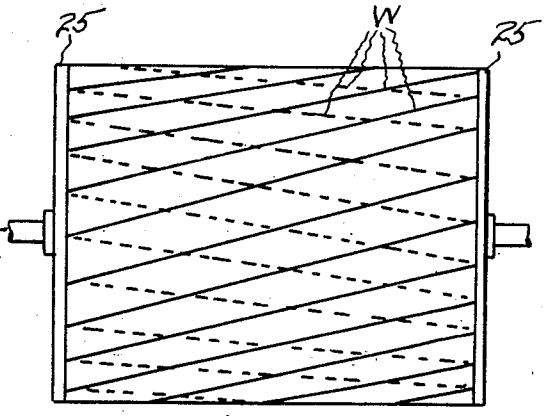
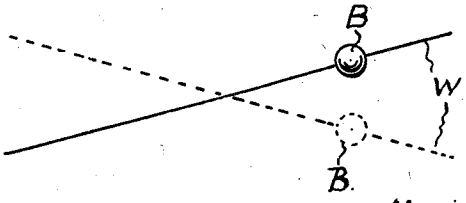


Fig. 16.



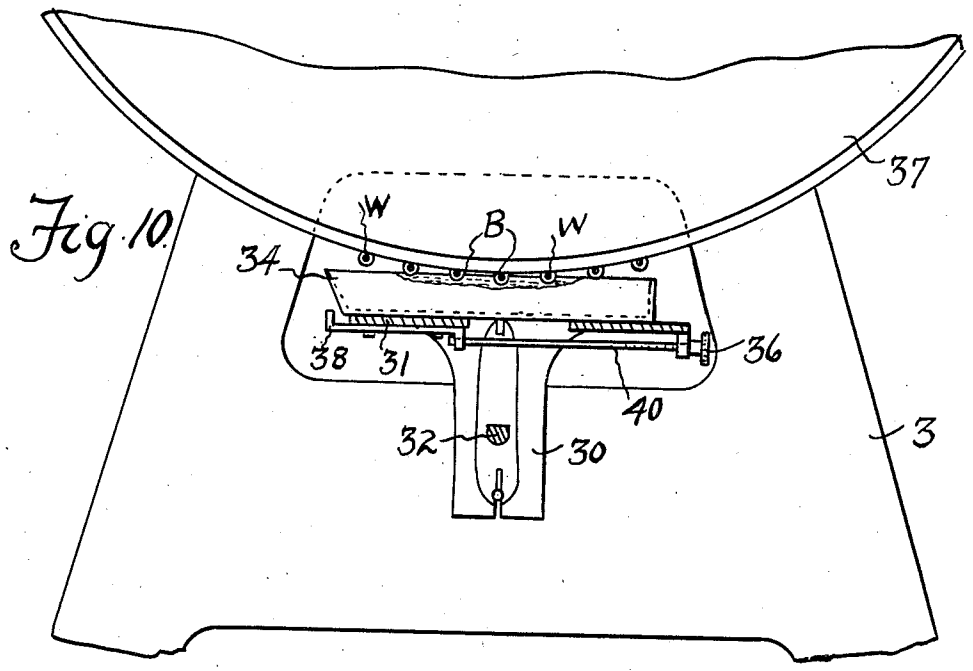
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Fig. 10.



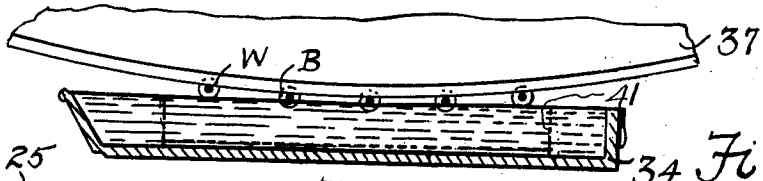


Fig. 11.

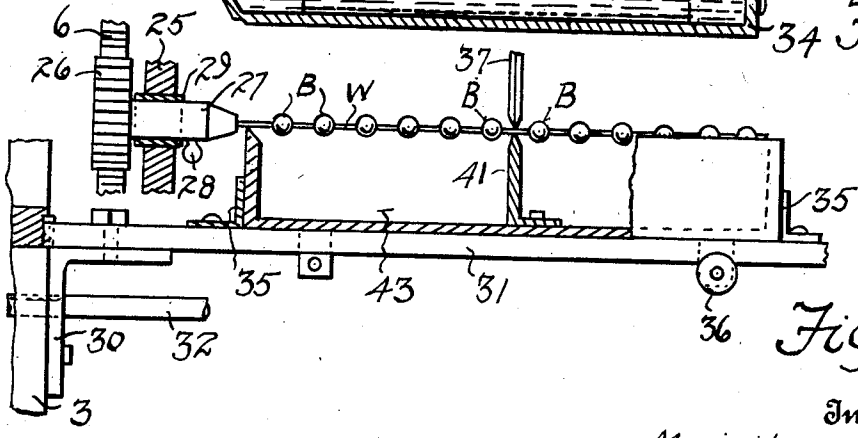


Fig. 12.

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Patented Mar. 22, 1932 1,850,409

UNITED STATES PATENT OFFICE

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METHOD OF COATING AND MACHINE

Application filed November 10, 1928. Serial No. 318,333.

This invention relates in general to a method of coating and machine for coating objects of jewelry, as for instance imitation pearl beads.

One of the objects of this invention is the provision of a method and machine for coating imitation pearls and the like by means of which a large number may be rapidly treated to produce a high-grade product.

A further object of this invention is the provision of an apparatus of the above type by means of which imitation pearl beads and the like may be coated to give them a mother-of-pearl appearance without the necessity of manual manipulation thereof, thereby reducing the number of rejects and producing a more uniform product.

Another object of this invention is the provision of an apparatus by means of which the objects to be coated are moved through the coating liquid and continuously revolved about their axes as they move therethrough.

A still further object of this invention contemplates means by which the excess coating material may be attracted from or removed from the surface of the object being coated without leaving marks or ridges in the finished product.

Another object, especially in the treatment of round imitation pearl beads, is to move them through the coating liquid so that only the lower half of the beads is submerged and at the same time the beads are rotated upon their axes of support so that as they move through the liquid their entire surface comes in contact therewith.

A still further object of this invention contemplates the method of coating objects of this nature.

These and other objects, as will appear from the following disclosure, are obtained by means of this invention.

This invention resides substantially in the combination, construction, arrangement, relative location of parts, steps, and combinations of steps, all as will be set forth in great detail below and defined in the appended claims.

Referring to the drawings—

Figure 1 is an end elevational view of the machine of this invention;

Fig. 2 is a rear elevational view of the machine;

Fig. 3 is a front elevational view with some parts in cross section;

Fig. 4 is a top plan view of the machine;

Fig. 5 is an enlarged side elevational view of the driving gears employed, taken on the line 5—5 of Fig. 4;

Fig. 6 is an enlarged detail view showing the mechanism for rotating the beads' supports;

Fig. 7 is a view similar to Fig. 6 at right angles thereto;

Fig. 8 is a cross sectional view taken on the line 8—8 of Fig. 1;

Fig. 9 is an enlarged detail view of the shaft by means of which the liquid containing pan is raised and lowered;

Fig. 10 is an enlarged detail view showing more clearly the path of the beads through the coating compound;

Fig. 11 is an enlarged cross sectional view through the pan for holding the coating liquid showing the relative position of the beads with respect to the liquid;

Fig. 12 is a similar view taken at right angles to that of Fig. 11 also showing the relationship between the beads and the coating liquid;

Figs. 13 and 14 are diagrammatic views showing the movement of the beads with respect to the pan;

Fig. 15 is a diagrammatic illustration of the drum illustrating the way the wires are supported thereon; and

Fig. 16 is a diagramamtic view showing the position of the wires and beads as they ascend and descend on the rotation of the drum.

At the present time it is the customary and usual practice in the manufacture of imitation pearl beads and similar objects in which a glass bead core is coated with a solution containing fish scale essence to dip the glass core in the coating combination by hand either one at a time or a number at a time. The beads in this process are attached to short straight pins or toothpicks and dipped either one at a time or a number at a time and

kept in motion by setting them upright and turning them upside down from time to time in order to produce an even distribution of the coating material on the glass core as they dry. Great skill and care are necessary in order to produce a uniform product by this method and even under the best conditions there is a great waste of material due to an inferior product. The general purpose of this invention is to provide a machine and process by means of which the glass or paste core forming the nucleus of the beads may be rapidly and uniformly coated in quantities without the intervention of an excessive amount of manual manipulation.

A better understanding of the invention will be had by reference to the drawings. The machine is shown comprising a supporting base 1 having parallel beams 2 secured thereto upon which rests the spaced upright standards 3, supporting in turn the upright brackets 4. The brackets 4 are united by the transverse bar 5 and the standards 3 are united by the transverse bar 5ª. These parts are all made heavy so as to provide a rigid strong frame which is relatively free from vibration during the operation of the machine. Supported on each standard 3 is a large stationary ring comprising the arcuate sections 6 united together by plates 7. The periphery of the composite ring is provided with teeth as clearly shown in the drawings. The composite ring is rigidly secured to the standard 3, bracket 4, and arms 8. Supported on one of the standards 3 is an arm 9 providing one journal for the rotatable shaft 10 on which is mounted for free rotation the spur gear 17 and the sprocket wheel 11. These two gears are connected together to be rotated simultaneously by means of the chain driven from the electric motor 16 through a worm 15, worm wheel 14, and sprocket wheel 13. Spur gear 17 meshes with gear 18 which drives spur gear 19 meshing with gear 20. Spur gear 22 is driven by means of the gear 20, both of which are supported on the bracket 21. The spur gear 22 meshes with the large gear 23 which is attached to and supported upon the large disc 25. A similar disc 25 is provided which is united to the other disc 25 by means of the cross brace 25ª. A large disc 37 having a chamfered edge is also mounted on shaft 10 and has a diameter equal to the distance between the centers of any two chucks diametrically opposite each other on discs 25. These two discs with their cross braces provide a large drum which is mounted upon the rotatable shaft 10 and secured thereto for rotation therewith. The diameter of the discs 25 is somewhat greater than the diameter of the composite ring 6 and has mounted near the periphery thereof and extending entirely therearound a plurality of small spur gears 26 which mesh with the teeth on the periphery of the composite ring 6. These spur gears 26 are attached to a short round rod 27 which has holes therethrough and set screws 28 to provide in effect small chucks. Small bushings 29 are provided (Fig. 8) in which the chucks 27 rotate. On the inner surface of each standard 3 is an L-shaped bracket 30 through which a shaft 32 passes having a notch 32ª near each end at the point where the shaft passes through the brackets 30. These brackets support the platform 31 on which the pan 34 for holding the coating material rests. The hand wheel 33 is provided for rotating the shaft 32. Angle irons 35 attached to platform 31 are spaced apart so that the pan will just slide between them. This serves as a centering means for the pan. As clearly shown in Fig. 10, movable stops 38 are provided which may be moved back and forth through the agency of rods 40 and thumb nut 36. By means of these stops and the angle bars 35 the pan may be exactly centered.

Figs. 10, 11 and 12 show more clearly the pan construction. The pan 34 is provided with a vertical plate 41 which extends to the same height as the sides of the pan so that the top edges of the sides of the pan and the vertical plate 41 lie substantially in the same plane. The wires W as they approach the lowest point in their travel at the time the beads are in the liquid contact with these edges which support them and prevent stretching of the wires W.

In the best and preferred form of the apparatus and method of procedure the supporting wires W instead of extending across the drum perpendicularly to the ends thereof are placed at an angle with respect to the ends, as clearly shown in Fig. 15. In other words, instead of placing the two ends of a supporting wire in the chucks directly opposite each other one end is advanced one or more chucks so that the supporting wires extend at an angle with respect to the axis about which the drum rotates. The advantage of so mounting these wires is highly important and will be described in detail later.

In the operation of the machine and the process hand wheel 33 is rotated so that the notches 32ª in shaft 32 are upwardly. As a result the vertically slidable brackets 30 are able to descend to the lowermost limit of their movement. The pan is then placed on the platform 31 and properly centered by means of the thumb nuts 36. The coating compound is then flowed into the pan until it comes right up to the top edges of the pan. The beads B or objects to be coated are strung upon wires indicated by the legend "W". They are spaced apart from each other the proper distance and held there by means of any suitable adhesive. In the best practice of this invention the beads do not need to be cemented to

the supporting wire since with the parts properly adjusted and the coating compound of the proper height in the pan the wires will just touch the top of the liquid during the first revolution of the drum when the beads receive their first coating. The result is a sufficient amount of the coating compound gets on the wire to hold the beads securely thereto. Furthermore, a little of the coating compound will run down from the bead to the wire to help fasten it in place. Of course, it is important that only a very minute quantity of the coating compound should collect around the hole in the bead through which the wire passes otherwise an inferior product will be produced. The wires with the beads strung thereon in spaced relation and secured thereto are then secured in the chucks 27. The wires are drawn as tightly as possible and the parts are so proportioned that the wire just rests upon the periphery of the disc 37. Although it is possible to get a fairly good product by supporting the wires on the drum parallel to the axis of rotation it is by far best to incline them at an angle, as described above and shown in Fig. 12. I intend, however, that either method of supporting the wires shall be construed within the scope of my invention.

It is, of course, understood that chucks are provided around the entire edge of discs 25 so that a very large number of wires carrying beads can be handled at the same time.

Motor 16 is then started and the drum is rotated in the following manner. It is pointed out that the gear reduction is such that it takes about five minutes for a complete rotation of the drum. Spur gear 17 is driven from the motor by means of worm 15, worm wheel 14, sprocket wheel 13, chain 12, and sprocket wheel 11. Spur gear 17 cooperates with gear 18 to drive spur gear 19 which in turn cooperates with gear 20 to drive spur gear 22. Spur gear 22 meshing with the large gear 23 causes it to rotate very slowly. The movement of gear 23 carries with it, since it is attached to one of the discs 25, the drum comprising discs 25, cross braces 25a, and disc 37. As the drum rotates the small spur gears 26 meshing with the fixed teeth on the composite ring are caused to revolve very slowly and as a result the beads on the wire rotate slowly upon their axes.

The pan 34 is filled with the coating compound up to the very top edge thereof. Hand wheel 33 is then revolved to cause the notched portion of shaft 32 to turn downwardly and the semi-circular portion thereof taking its place. This causes the brackets 30 to raise upwardly carrying the pan 34 up very close to the periphery of the drum.

As clearly shown in Figs. 10, 11 and 12 in the proper relation of the parts the wires W supporting the beads contact with or very nearly contact with the upper edge of the pan and wall 41. As the drum carrying the strings of beads slowly rotates each wire and its beads slowly descend into the liquid through the various stages. The wires W supporting the beads as they get near the liquid contact with the transverse wall 41 and top edges of the side walls of the pan, the purpose of which is to relieve the strain on the wires W so that they do not sag and dip the beads too far into the coating compound. As the objects contact with the liquid they are slowly revolving through the agency of spur gears 26 so that although only a portion of them is submerged the entire surface of the beads is coated due to the fact that they actually revolve in the coating compound.

The importance of supporting the wires on the drum at an angle to the axis of rotation will now be clearly disclosed. Reference is made to Figs. 13 and 14 of the drawings in which a top and edge view of the pan are respectively shown. Assuming that the drum rotates in a clockwise direction when viewed from the right hand end, the wires W shown in Fig. 13 will be moving toward the observer. As the upper wire W approaches the pan, it being understood that it is also descending since it is traveling in a circular path, the first bead to touch the coating compound will be the right hand bead, as viewed in the figure. The other beads then dip into the coating compound one after the other proceeding from the right to the left. The beads at the lowest point of their descent are submerged so that the lower half or a portion of the lower half of the bead is dipped into the coating compound. It is to be remembered that the supporting wires W are rotated upon their axes of support at the same time as they advance so that the entire surface of the bead is covered. One of the advantages which distinguishes the method of advancing the wire at an angle with respect to the pan for advancing it parallel thereto will become apparent upon examining Fig. 14. Just as the first bead on the right is the first one to enter the liquid, so it is the first one to leave the liquid. As a result the capillary attraction between the beads and the coating compound attracts first at the right hand bead as the wire advances towards the observer and begins to rise after reaching the lowest point in its descent as the drum rotates. The beads then leave the coating solution one after the other proceeding from the right to the left and as a result the wall of coating liquid, which has been indicated at C, recedes from the right towards the left, the receding edge being indicated at E. The wall of coating liquid having a considerable capillary attraction from the excess coating liquid on the beads draws this excess off with it as the wall C recedes to the left. The net result of this operation is that the beads are completely coated over their entire sur-

face and by excess coating liquid is removed. The rotation of the beads about their axes of support also acts to effect a more complete removal of the excess coating liquid by the receding wall. Thus, by effecting the movement of the wire with respect to the pan so that one end of the wire enters and leaves the coating solution before the other end, advantage is taken of the capillary attraction of the wall of coating solution thus formed to cause a complete removal of the excess coating solution from the beads. It has been found in practice that the first complete rotation of the drum to give the beads their first coating results in a lowering of the liquid surface in the pan by reason of a removal of a portion of the liquid so that upon the next rotation of the drum the supporting wires do not touch the liquid and no further liquid is, therefore, taken up by them. The result is that the beads are very nicely secured to the wire in spaced relation with the following operations. It is, of course, understood that to produce a high grade bead it is necessary to apply a number of coatings thereto. Between each coating the beads are permitted to dry for approximately one hour after each coating is applied to the beads. The pan is lowered and the drum is permitted to rotate for approximately twenty minutes until the coating compound sets. The machine may then be stopped and the beads permitted to completely dry for the remainder of the hour.

Another important advantage of mounting the wires on the drum at an angle with respect to its axis of rotation will now be set forth. When the wires are mounted parallel to the axis of rotation of the drum the coating compound before it sets has a tendency to flow to the point of greatest diameter of the beads as they revolve slowly on their axes resulting in the production of a coating film which is thicker at the point of greatest diameter of the bead than at the other points. This results in an inferior product. By referring to Figs. 15 and 16 the method of overcoming this by mounting the wires at an angle will be apparent. The full lines indicated by W, as shown in Fig. 15, represent the wires on the front of the drum which would be rising as viewed by the observer when the drum rotates in a clockwise direction, as viewed from the right. When the wires shown in full lines reach a position on the opposite side of the drum indicated by the dotted lines they are inclined in the opposite direction so that the right hand ends of the wires which were higher than the left hand ends as the wires ascend are now lower as the wires descend.

The advantage of this is apparent from Fig. 16 in which the wire shown in full lines with the bead B thereon when rising as it would on the front surface of the drum causes the right hand end of the bead to be higher than the left hand end, while the wire when descending on the rear surface of the drum would be in the position shown by the dotted line and the right hand end of the bead will be lower than the left hand end. At the same time the beads are revolving about their axes of support, which is the wire, so it is at once apparent that the coating compound so long as it is fluid enough to flow will be continually distributed over the surface of the bead and when the coating compound sets sufficiently to prevent no further flow thereof the bead will be evenly coated over the entire surface. All during this operation it will be remembered that the beads are being slowly rotated upon their axes so that as the coating compound dries it is evenly distributed over the bead. In the best practice the wires W should not get into the coating compound, except as described, which is prevented by the tightness with which they are held in the chucks and by the wall 41. With the parts properly adjusted the beads are evenly coated without the concentration of the coating compound at the point where the wire passes through the bead. By means of this arrangement a very fine product is produced. After all the beads on the drum have passed through the liquid for any one coating the pan is lowered and the drum stopped for about one hour so that the coating may properly dry. The drum is then started and the pan raised and the second coating applied. This is continued until the proper number of coats are applied, depending upon the quality of bead desired.

The length of time required for each coating to set and dry can be fixed by varying the amount of amylacetate which is the solvent employed for the coating compound, as is well known in this art. Thus, as the quantity of solvent is increased the time required for each layer of coating to set and dry is increased and the opposite effect is secured when the amount of solvent is decreased. By properly preparing the coating compound and varying the speed of operation of the machine when used in accordance with the principles of this invention it is possible to produce coated beads of a very high quality much more easily, cheaply and rapidly than is now possible by means of skilled hand labor.

I am, of course, well aware that many changes in the details of construction and procedure will readily occur to those skilled in the art and I do not, therefore, desire to be strictly limited to the disclosure given for purposes of illustration but rather to the apparent principles involved in this invention and the broad method of carrying them out. I have sought to define the scope of my invention in the appended claims setting forth the important features thereof.

What I seek to secure by United States Letters Patent is:

1. The method of coating beads and the like which comprises stringing a plurality of bead cores upon a supporting wire in spaced relation, moving the wire through a coating compound and revolving the wire so that the beads rotate on their axes as they move through the coating compound.

2. The method of coating beads and the like comprising supporting a plurality of bead cores in spaced relation, moving said bead cores through a coating compound and revolving the bead cores on their axes as they move through the coating compound.

3. The method of coating beads and the like which comprises supporting a plurality of bead cores in spaced relation, immersing the bead cores in a coating compound so that a small portion only of the bead cores is covered, and rotating the bead cores about their axes to cover their entire surface as they move through the coating compound.

4. In an apparatus of the type described for coating bead cores and the like, the combination comprising a supporting member, means for securing a plurality of bead cores in said supporting member, means for containing a coating compound, and means for moving said supporting member so that the bead cores advance through the coating compound in a continuous movement.

5. In an apparatus of the type described for coating bead cores and the like which comprises a rotatable drum, means on said drum for supporting a plurality of wires, said wires having a plurality of bead cores thereon in spaced relation, means for containing a coating compound, and means for revolving said drum so that the bead cores move through the coating compound in a continuous movement.

6. In an apparatus as described for coating bead cores and the like, the combination comprising a rotatable drum, a plurality of chucks on said drum for holding wires therein on which are strung a plurality of bead cores, means for containing a coating compound, and means for revolving said drum to move the bead cores in a steady continuous movement through the coating compound.

7. In an apparatus of the type described for coating bead cores and the like, the combination comprising a rotatable member comprising two spaced plates, a plurality of chucks secured near the periphery of said plates, each chuck on one plate being in alignment with a chuck on the other plate, means for revolving said rotatable member, means for revolving said chucks when said rotatable member rotates, and means for supporting the coating compound in close proximity to the moving beads whereby they are partially immersed in the coating compound as the rotatable member revolves so that the beads both continuously revolve in and through the coating compound.

8. In an apparatus of the type described for coating bead cores, the combination comprising a rotatable member, a plurality of chucks supported on said member, means for rotating said chucks as said drum rotates, said chucks being intended to support wires on which a plurality of bead cores are secured in spaced relation, means for containing the coating compound, and means for moving said means in close proximity to the periphery of said rotatable member whereby the bead cores are partially immersed in the coating compound and revolved upon their axes as they move slowly therethrough.

9. In an apparatus of the type described for coating bead cores and the like, the combination comprising a rotatable member, a plurality of chucks supported on said rotatable member in spaced relation and in alignment with each other, said chucks being adapted to hold wires on which the bead cores are mounted in spaced relation, means for continuously revolving said rotatable member, means for revolving said chucks as said rotatable member continuously revolves, a pan for holding a coating compound, and means for moving said pan in close proximity to the periphery of said rotatable member whereby the bead cores are partially immersed in the coating compound as the rotatable member revolves and rotated upon their axes of support.

10. In an apparatus of the type described for coating bead cores and the like, the combination comprising a rotatable member, a plurality of chucks supported on said rotatable member in spaced relation and in alignment with each other, said chucks being adapted to hold wires on which the bead cores are mounted in spaced relation, means for continuously revolving said rotatable member, means for revolving said chucks as said rotatable member revolves continuously, a pan for holding a coating compound, and means for moving said pan in close proximity to the periphery of said rotatable means whereby when the rotatable means revolves the bead cores are partially immersed in the coating compound and caused to revolve about their axes of support.

11. In an apparatus of the type described, the combination comprising a rotatable member, means on said member for supporting a plurality of wires upon which a plurality of wires upon which a plurality of beads are supported in spaced relation, means for continuously rotating said rotatable member, and means for supporting a pan in close proximity to said rotatable member.

12. In an apparatus of the type described, the combination comprising a rotatable member, means on said member for supporting a plurality of wires upon which a plurality

of beads are supported in spaced relation, means for continuously rotating said rotatable member, and means for rotating said means for supporting the wires as said rotatable member revolves.

13. In an apparatus of the type described for coating bead cores, the combination comprising a rotatable member, supporting means on said member, means for rotating said rotatable member and supporting means continuously as said rotatable member rotates, and a pan supported adjacent said rotatable member.

14. In an apparatus of the type described, means for supporting a plurality of wires upon which a number of beads are secured in spaced relation, means for supporting a coating compound adjacent said means for supporting a plurality of wires, means for continuously moving said means for supporting a plurality of wires adjacent said means for supporting a coating compound, and means on said means for supporting a coating compound for contacting with the wires as they move through the coating compound.

15. The method of coating beads and the like which comprises placing a plurality of them upon a straight support in spaced relation and moving the support and beads along an arced path with respect to a body of coating compound in a manner so that the beads enter the coating compound one at a time.

16. The method of coating beads and the like which comprises placing a plurality of them upon a support in spaced relation, moving the support and beads at an angle with respect to a body of coating compound in a manner so that the beads enter the coating compound one at a time, and simultaneously rotating the beads about their axes of support as they move through the coating compound.

17. The method of coating beads and the like which comprises providing a body of coating compound, supporting a plurality of beads in spaced relation, moving said beads to and into the coating compound so that the lower portion of the beads contacts with the coating compound and only one bead enters and leaves the compound at a time whereby the wall of coating compound formed by the capillary attraction between the beads and coating compound recedes from bead to bead as they leave the compound and sucks off any excess coating compound from each bead.

18. The method of coating beads and the like which comprises a body of coating compound, supporting a plurality of beads in spaced relation, moving said beads to and into a coating compound so that the lower portion of the beads contacts with the coating compound and only one bead enters and leaves the compound at a time whereby the wall of coating compound formed by the capillary attraction between the beads and coating compound recedes from bead to bead as they leave the compound and sucks off any excess coating compound from each bead, and simultaneously rotating said beads about their axes of support.

19. The method of drying a plurality of beads which are supported in spaced relation and have been coated with a coating compound which comprises alternately raising and lowering the respective ends of the beads during the drying operation while they are revolving.

20. The method of drying a plurality of beads which are supported in spaced relation and have been coated with a coating compound which comprises alternately raising and lowering the respective ends of the beads during the drying operation, and simultaneously rotating the beads about their axes.

21. The method of coating beads which comprises supporting a plurality of beads in spaced relation, providing a body of coating compound, and moving said beads towards and into the coating compound along a circular path and in a manner whereby the beads contact with the coating compound one after the other.

22. The method of coating beads which comprises supporting a plurality of beads in spaced relation, providing a body of coating compound, moving said beads towards and into the coating compound along a circular path and in a manner whereby the beads contact with the coating compound one after the other, and continuing the movement of the beads with respect to the coating compound along a circular path in a manner to cause the beads to leave the solution one after the other whereby the wall of coating compound raised by the capillary attraction between it and the beads recedes from one bead to the following beads as they leave the coating compound to effect a complete removal of the excess coating compound from the beads by the capillary attraction between the wall of coating compound and the excess coating compound on the beads.

23. The method of coating beads which comprises supporting a plurality of beads in spaced relation, providing a body of coating compound, moving said beads towards and into the coating compound along a circular path and in a manner whereby the beads contact with the coating compound one after the other, continuing the movement of the beads with respect to the coating compound along a circular path in a manner to cause the beads to leave the solution one after the other whereby the wall of coating compound raised by the capillary attraction between it and the beads recedes from one bead to the following beads as they leave the coating compound to effect a complete removal of the excess coating compound from the beads by the capillary attrac-

tion between the wall of coating compound and the excess coating compound on the beads, and simultaneously rotating the beads about their axes of support.

24. The method of coating beads which comprises stringing a plurality of beads in spaced relation upon a supporting wire, providing a body of coating compound, and advancing the supporting wire toward the coating compound along a circular path with one end of the wire in advance of the other whereby the beads enter the coating compound one after the other.

25. The method of coating beads which comprises stringing a plurality of beads in spaced relation upon a supporting wire, providing a body of coating compound, advancing the supporting wire toward the coating compound along a circular path with one end of the wire in advance of the other whereby beads enter the coating compound one after the other, and simultaneously rotating the supporting wire about its axis.

26. The method of coating beads which comprises stringing a plurality of beads in spaced relation upon a supporting wire, providing a body of coating compound, advancing the supporting wire toward the coating compound along a circular path with one end of the wire in advance of the other whereby beads enter the coating compound one after the other, and continuing the movement of the supporting wire along a circular path until the beads leave the solution, one end of the wire still in advance of the other end whereby the wall of coating compounds recedes from one bead to the next following bead as they leave the solution to suck off excess coating compound from the beads.

27. The method of coating beads which comprises stringing a plurality of beads in spaced relation upon a supporting wire, providing a body of coating compound, advancing the supporting wire toward the coating compound along a circular path with one end of the wire in advance of the other whereby beads enter the coating compound one after the other, and continuing the movement of the wire and beads along a circular path until they have traveled through a number of complete circles with one end of the wire in advance of the other so that the beads have their respective ends alternately raised and lowered to cause the coating compound to flow evenly over the surface of the beads.

28. The method of coating beads which comprises stringing a plurality of beads in spaced relation upon a supporting wire, providing a body of coating compound, advancing the supporting wire toward the coating compounds along a circular path with one end of the wire in advance of the other whereby beads enter the coating compound one after the other, continuing the movement of the wire and beads along a circular path until they have traveled through a number of complete circles with one end of the wire in advance of the other so that the beads have their respective ends alternately raised and lowered to cause the coating compound to flow evenly over the surface of the beads, and simultaneously rotating the wires and beads about their axes.

29. The method of coating beads which comprises providing a body of coating compound, stringing a plurality of beads in spaced relation upon a supporting wire and moving the supporting wire with respect to the body of the coating compound so that one end of the wire is in advance of the other whereby the beads enter and leave the coating compound one after the other with a movement having two components.

30. The method of coating beads which comprises providing a body of coating compound, stringing a plurality of beads in spaced relation upon a supporting wire, moving the supporting wire with respect to the body of the coating compound so that one end of the wire is in advance of the other whereby the beads enter and leave the coating compound one after the other, and simultaneously rotating the wire and beads about their axes.

In testimony whereof I have hereunto set my hand on this 7th day of November, A. D. 1928.

MAXIMILIAN C. MEYER.