

A. L. BAUSMAN.
DECORATING DEPOSITOR.
APPLICATION FILED JAN. 8, 1916.

1,243,668.

Patented Oct. 16, 1917.

4 SHEETS—SHEET 1.

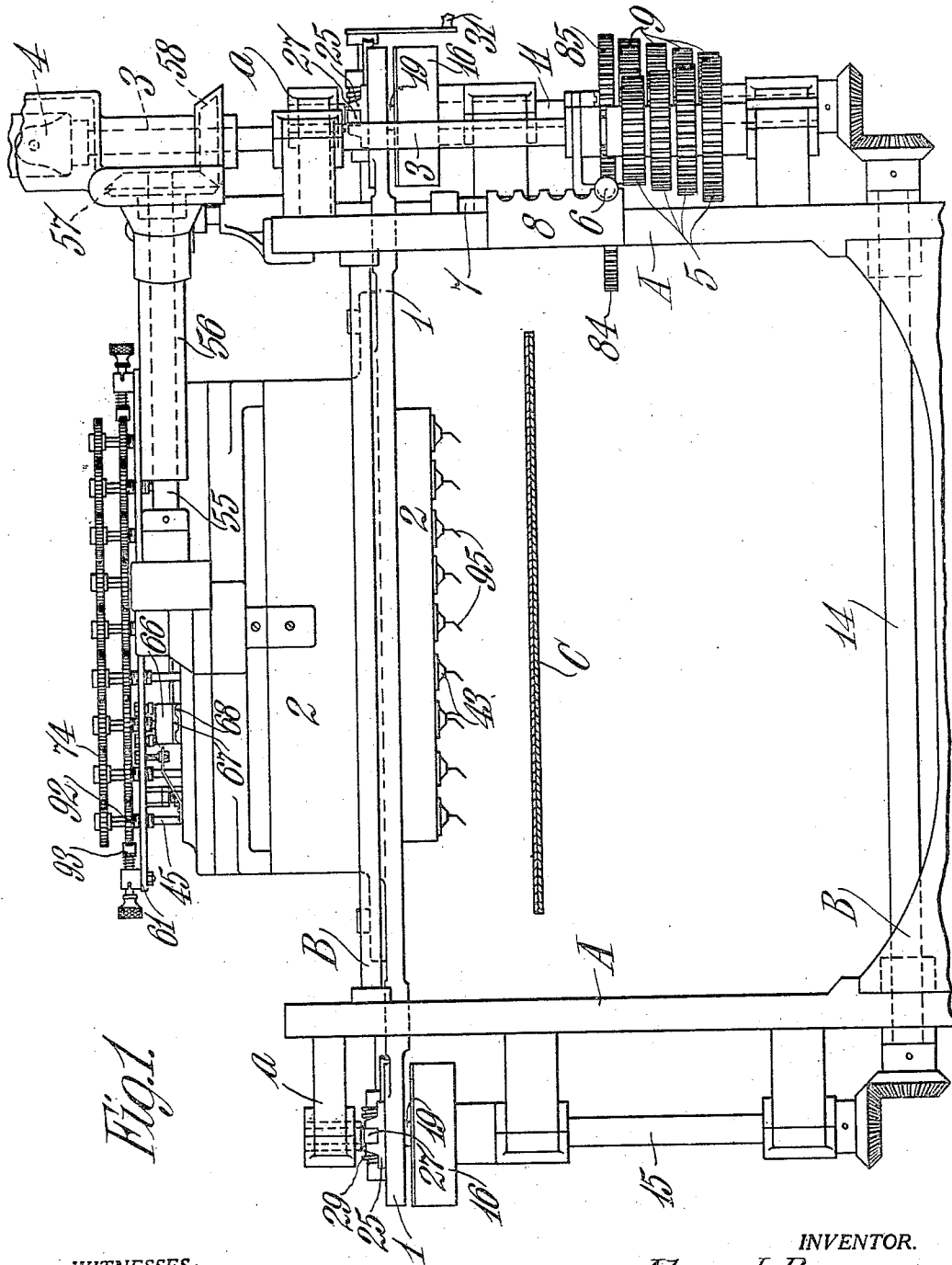


Fig. 1.

WITNESSES:

A. E. Hartwell.

INVENTOR.

Alonzo L. Bausman.

BY

Chapman & Neal.

ATTORNEYS.

1,243,668.

Patented Oct. 16, 1917.
 4 SHEETS—SHEET 2.

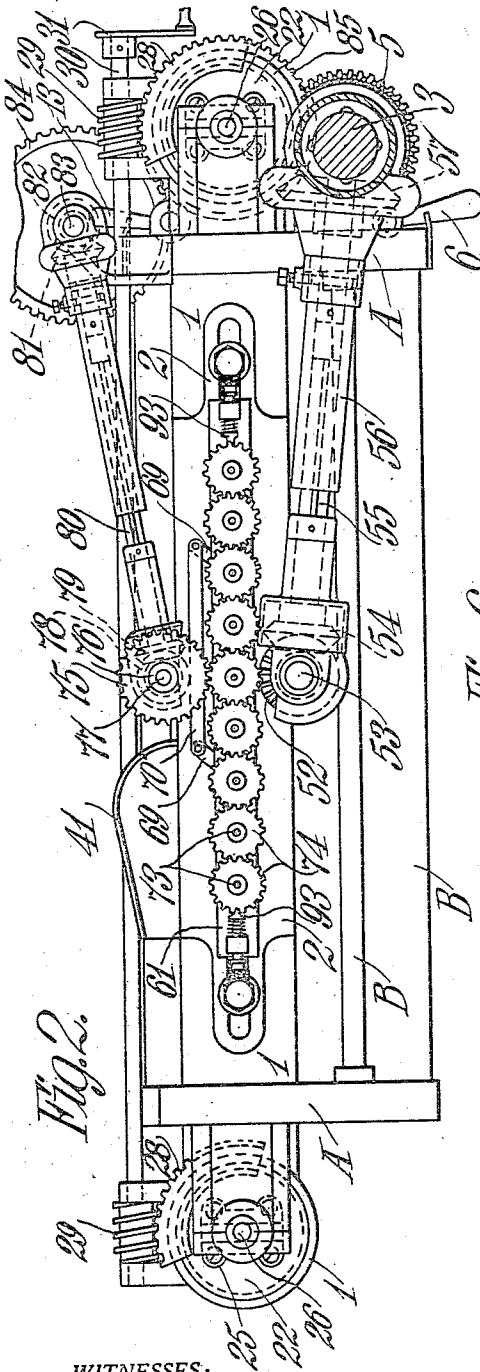


Fig. 2.

WITNESSES:

F. E. Fortwell.

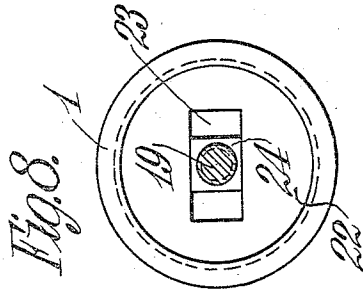


Fig. 8.

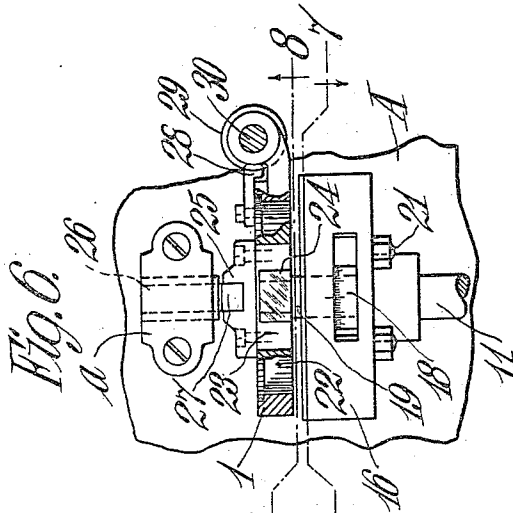


Fig. 6.

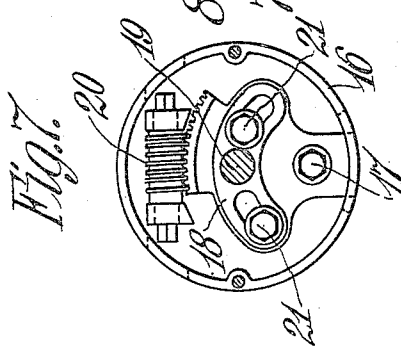


Fig. 7.

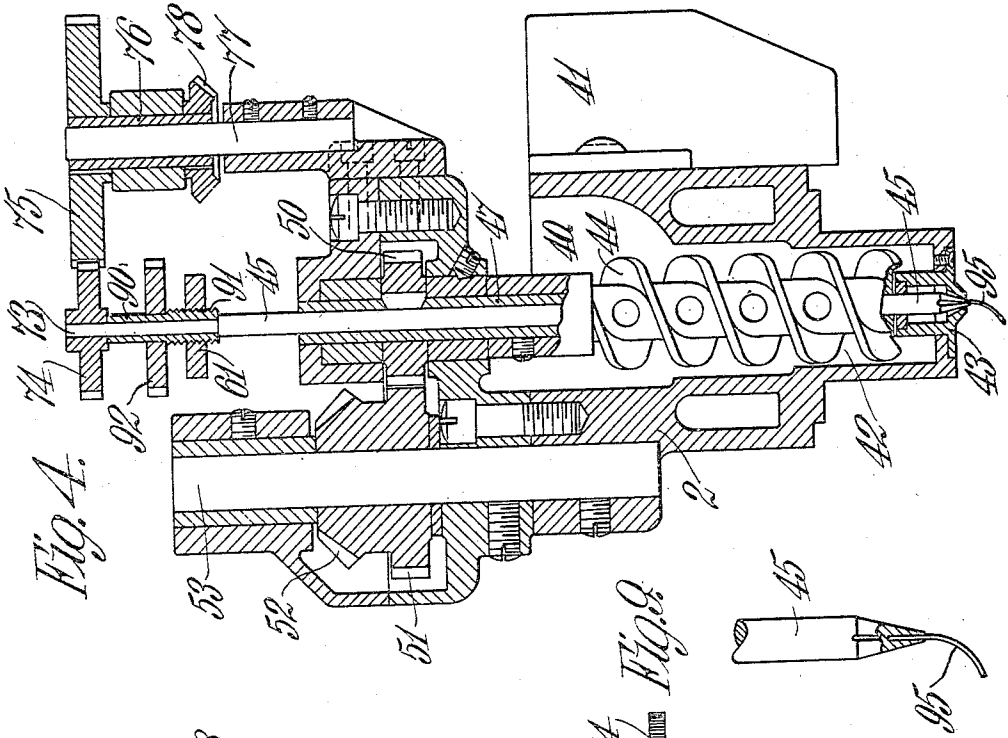
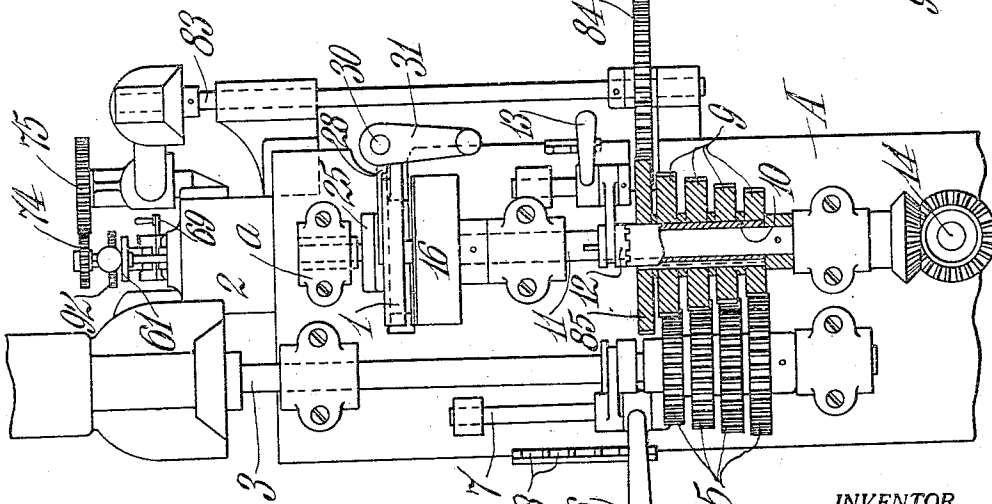
INVENTOR.
Alonzo L. Bausman.
 BY *Chapin & Neal.*
 ATTORNEYS.

A. L. BAUSMAN.
 DECORATING DEPOSITOR.
 APPLICATION FILED JAN. 8, 1916.

1,243,668.

Patented Oct. 16, 1917.

4 SHEETS—SHEET 3.



WITNESSES:
H. E. Hartwell.

Fig. 3.

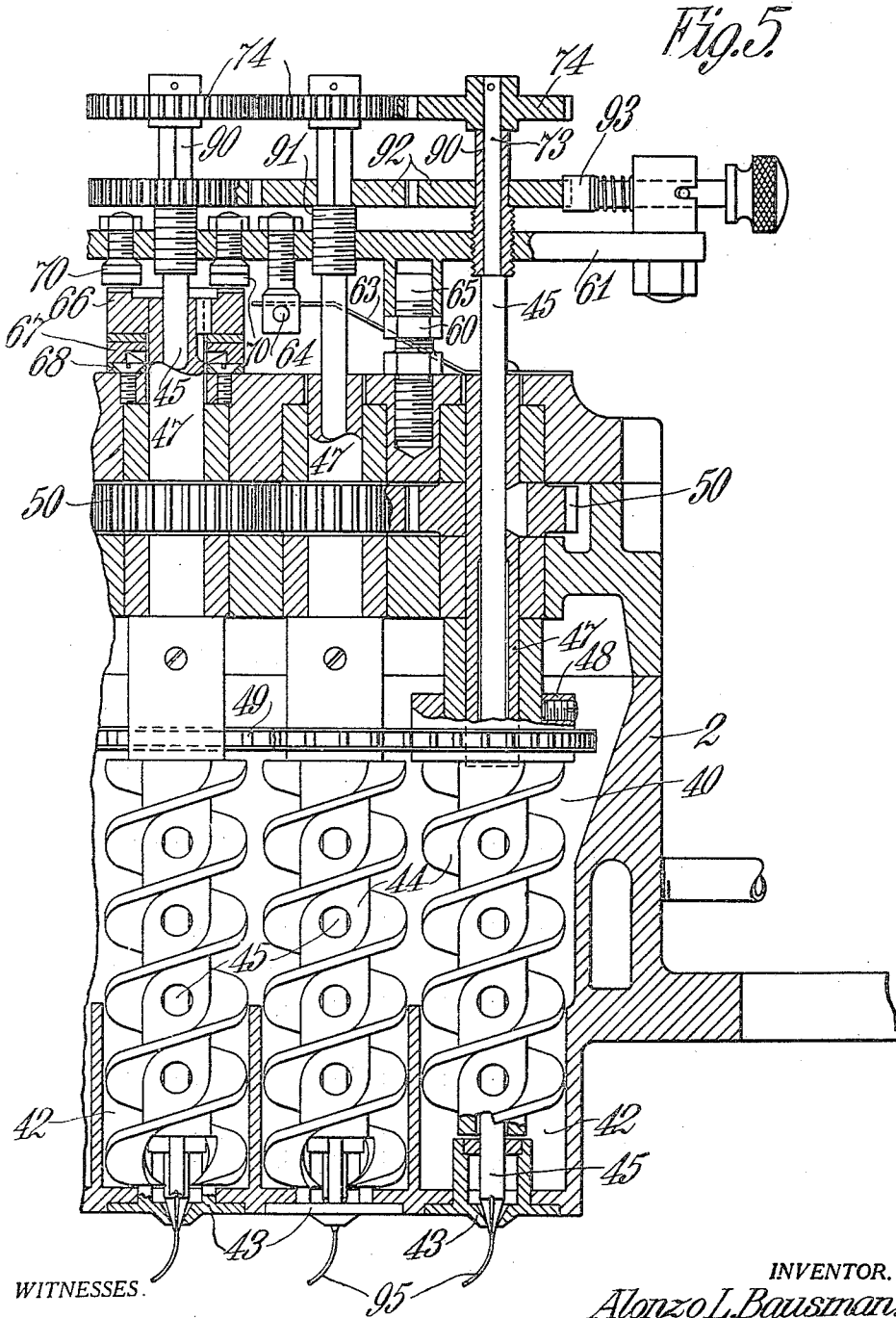
INVENTOR.
Alonzo L. Bausman.
 BY *Chapin & Neal.*
 ATTORNEYS.

A. L. BAUSMAN.
DECORATING DEPOSITOR.
APPLICATION FILED JAN. 8, 1916.

1,243,668.

Patented Oct. 16, 1917.

4 SHEETS—SHEET 4.



WITNESSES.

H. E. Karttveit.

INVENTOR.
Alonzo L. Bausman.
BY *Chapman & Neal.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALONZO LINTON BAUSMAN, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO NATIONAL EQUIPMENT COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF MASSACHUSETTS.

DECORATING-DEPOSITOR.

1,243,668.

Specification of Letters Patent.

Patented Oct. 16, 1917.

Application filed January 8, 1916. Serial No. 71,074.

To all whom it may concern:

Be it known that I, ALONZO LINTON BAUSMAN, a citizen of the United States of America, residing in the city of Chicopee, county of Hampden, and State of Massachusetts, have invented certain new and useful Improvements in Decorating-Depositors, of which the following is a specification.

This invention relates to improved mechanism for automatically decorating or depositing material in decorative form. It relates particularly to improved mechanism for decorating confections, candies, cake, and the like as they move on a conveyer through the improved machine. In some aspects of the invention it is an improvement on the machines shown and disclosed in the U. S. Letters Patent No. 1,208,328 and No. 1,210,946, granted to Theodor Kihlgren on Dec. 12, 1916 and Jan. 2, 1917, respectively. The said applications illustrate the art prior to this invention.

In machines of a character for decorating of which this is an improvement, it has heretofore been proposed to move a receptacle in various paths whereby the "string" leaving the outlet is laid in decorative form. This is illustrated in the Kihlgren applications referred to above. It has also been proposed to provide a rubber or other flexible tube connected to the outlet of the receptacle so that the latter may remain stationary while the tube is moved as desired to lay the string. Where articles to be decorated move on a conveyer under the outlet of the receptacle or tube the desired effects on small articles are obtained with difficulty. In the first case because the receptacle must be moved as a whole with considerable rapidity and in the second case because the material to feed properly through a tube cannot always be of the desired consistency to form a proper "string" especially where chocolate is used. The present invention provides means to direct the string in a desired path after it is ejected from the receptacle, that is, after the string of desired consistency is formed and in condition to be laid, and if desired while the receptacle is stationary. This means pref-

erably comprises a bent wire extending through the outlet of the receptacle and over which the chocolate flows. Means are provided to move this wire with respect to the receptacle and by this means the string is laid on the articles either without any movement of the receptacle or with movements thereof as desired. In any case certain movements of the receptacle are avoided and by moving both the receptacle and the wire resultant movements are obtained which were not heretofore considered possible in machines of this character.

The increase in the number of different configurations possible by the use of the present invention is important for the reason that in the art of candy making particularly there is a great demand for novelties and the new decorative effects make possible a greater variety of differently decorated pieces of candy and all by the use of an improved machine which can produce any of the pieces in a better way, that is, with fewer movements of the bulk of the machine (the receptacle).

One object of the invention is to combine in one machine means for depositing a string of decorating material such as chocolate for example, in a greater variety of configurations than has been heretofore accomplished in machines of this character. This has been accomplished by mechanism whereby the outlet for the decorating string may be moved in any straight line desired and at any desired speed within satisfactory limits and means to direct the string after it leaves the outlet in another of a number of directions as desired whereby a straight line movement and a circular movement may be combined to give the desired effects.

Another object of the invention is to provide means to direct the string of material in a curved path as it is ejected from the outlet of a receptacle and without moving the receptacle or confining the string.

Another object of the invention is to provide an improved machine for decorating articles passing therethrough on a conveyer whereby the movement of the latter may be

neutralized and the decorating string laid on the article in curved or circular form. This is preferably accomplished by moving the receptacle having an outlet with the

5 conveyer for a short distance and providing means to lay the string as it is ejected through the outlet on the article carried by the conveyer during the said movement of the receptacle.

10 Another object of the invention is to provide improved means for controlling the manner in which the decorating string is laid on the articles to be decorated.

Other objects of the invention will appear 15 in the following detailed description and annexed claims.

With these objects in view, a single embodiment of the invention is shown, for illustrative purposes, in the accompanying 20 drawings, in which—

Figure 1 is a side elevational view of the stringer;

Fig. 2 is a plan view thereof;

Fig. 3 is an end elevational view;

25 Fig. 4 is a central cross-sectional view of the chocolate receptacle;

Fig. 5 is a partial longitudinal section thereof drawn to an enlarged scale;

30 Fig. 6 is a detail view partly in section of the operating device for moving the receptacle;

Fig. 7 is a sectional plan view taken on the line 7—7 of Fig. 6 and looking in the direction of the arrows;

35 Fig. 8 is a sectional plan view taken on the line 8—8 of Fig. 6 and looking in the direction of the arrows; and

Fig. 9 is a detail view of one of the spindles.

40 Referring to these drawings, the stringer comprises in general a pair of spaced vertically arranged side frames A, tied together by any suitable members B; a movable bar 1 slidably mounted in the frames A and 45 supporting a chocolate receptacle 2; a conveyer C, passing between the frames A below the receptacle 2 and arranged to carry the candies or articles to be decorated; and operating mechanism for these devices.

50 The receptacle carrying bar 1 is arranged to move in a rectilinear path, the angularity of which relative to the conveyer C may be varied as well as the extent of its movement. The mechanism to move the bar 1 55 will now be described. Mounted in suitable bearings on one of the frames A is a vertically arranged shaft 3, which may be driven from suitable connections through the medium of a universal joint 4. Mounted on 60 the shaft 3 (see Fig. 3) is a graded set of gears 5, any one of which may be connected to the shaft 3 by a selective key device. The latter is too well-known in the art to require an extended showing, and, for the 65 present purposes, it will suffice to state that,

by moving a lever 6 upwardly along a rod 7, a key is brought into engagement with each gear 5 successively. The lever 6 is arranged to rest in notches 8, and, when in the upper notch thereof, none of the gears 5 are driven. In mesh with the latter is another graded set of gears 9 keyed to a sleeve 10 which is loosely mounted on a shaft. Slidably keyed to this shaft is a clutch element 12 which is movable by a lever 13 to 70 connect and disconnect the sleeve 10 from the shaft 11 in an obvious manner. The lever 13 is held in position as desired by a suitable bracket as shown in the drawings. This shaft 11 drives through bevel gears a 75 horizontally arranged shaft 14 which in turn drives by bevel gears a vertically arranged shaft 15, as clearly shown in Fig. 1.

The shafts 11 and 15 are symmetrically arranged in parallel relation and each drives 80 a cup-shaped member 16, which is best shown in Figs. 6 and 7. Pivotaly mounted within each member 16 at 17 is a segment 18, which has an upstanding crank pin 19, rigidly secured thereto. The segment 18 has 85 a toothed portion adapted to mesh with a worm 20, which is rotatable from without the member 16 by means of a socket wrench. By turning the worm 20, the pin 19 may be moved to various positions of eccentricity 90 relative to the member 16, and the pin 19 may be secured in its various positions of adjustment by clamping bolts 21. Seated in each end of the receptacle supporting bar 1 and directly over each member 16 is a 95 flanged disk 22 (see Fig. 6), and formed in the latter is a rectangular opening 23. Slidably arranged in this opening is a block 24 which is loosely mounted upon the upper end of the crank pin 19, all as clearly shown 100 in Figs. 6 and 8. Secured to the upper face of the disk 22 is a member 25 having a slot therein arranged at right angles to the opening 23 and rotatably mounted in a bracket α above the member 25 is part 26, which has 105 an integral rectangular lower part 27 arranged always to ride in the slot in the member 25. Fixed to the disks 22 are segmental worm wheels 28 and in mesh with the latter are worms 29. The latter are secured to 110 shaft 30 which is mounted in lugs on the bar 1 and is operable by the crank-handle 31. Thus, by turning the latter, each disk 22 may be equally and simultaneously turned to change the angularity of the slotted members 25 relatively to the line of travel of 115 the conveyer C. It will be obvious that the driving device shown in Figs. 6 and 8 permits rectilinear motion only of the bar 1 and that the direction of this motion is that 120 of the longitudinal axis of the slotted part 25. The device shown in Fig. 7 constitutes a variable throw eccentric whereby the extent of movement of bar 1 may be varied within limits, and the worm wheel 28 and 125 130

worm 29 permit the direction of the linear movement of bar 1 to be varied at will. Thus, it will be seen that the receptacle 2 is reciprocable at variable speeds through variable distances in a straight line path, the angularity of which is also variable.

The chocolate receptacle 2 is adjustably secured to the bar 1, as indicated in Figs. 1 and 2, a portion of the bar being cut out to permit the lower portion of the receptacle to extend therethrough, and within this receptacle is the stringer mechanism proper, which will next be described with particular reference to Figs. 4 and 5. The member 2 is formed with a chamber 40 therein to receive chocolate, and this chamber is provided with a suitable overflow plate 41. The lower portion of the chamber is formed into a series of cylindrical wells 42, which are closed at the bottom by outlet plates 43, having conical depressions leading to a small outlet aperture, as clearly shown in Figs. 4 and 5. Concentrically arranged in each well 42 is a double helical bladed sleeve 44 which closely fits its well 42. Loosely mounted within each sleeve 44 is a spindle 45 having a tapered lower end to engage the conical outlet in its plate 43. These spindles by a vertical reciprocatory motion act positively to eject the chocolate from the apertures in plates 43, and the helical bladed members 44 act to force the chocolate downwardly toward the outlets and keep the chocolate thoroughly stirred.

Each bladed screw 44 is secured by the set screws shown to a sleeve 47 which latter is rotatably journaled in the upper closed portion of the member 2. Secured to the first and last screw 44 of the series are sprockets 48 which drive a chain 49, whereby the chocolate in the receptacle is thoroughly stirred. Keyed to the sleeves 47 are gears 50 which intermesh to form a train and are driven by a centrally located gear 51 (see Fig. 4). Integral with the latter is a bevel gear 52 which is loosely mounted on a stud shaft 53 fixed as shown in Fig. 4 to the receptacle 2. In mesh with gear 52 is a bevel gear 54 which is fixed to a shaft 55 (see Fig. 2). The shaft 55 is slidably keyed to a sleeve 56 which bears a bevel gear 57 in mesh with a gear 58 on the main shaft 3. This driving connection is telescopic and is freely rotatable on its axes 3 and 53, so that the bar 1 is free to move in any direction. Thus, the bladed screws may be driven at constant speed from the main shaft 3.

Supported in spaced parallel relation with the top of member 2 is a plate 61 which is adjustably held by a pair of spaced nuts 60 mounted on posts 65 secured to member 2. Springs 63 secured to the latter act against pins 64 attached to plate 61 yieldingly to hold the latter against the stops 60. Two of the sleeves 47 in spaced relation are ex-

tended upwardly above the receptacle and slidably keyed thereto are ratchets 66, one of which is clearly shown in Fig. 5. Fixed to plate 61 above each ratchet are a pair of pawls which are adapted to engage the ratchet when the latter is raised by means to be described. Below each ratchet and fixed to the upper face of the receptacle by the screws shown in Fig. 5 is an annular cam plate 68 and between the latter and ratchet 66 is a cam plate 67 which is loose on sleeve 47 and is adapted to mate with plate 68. Projecting from each plate 67 is an arm 69 (Figs. 2 and 3), and these arms are connected together by a link 70'. The latter is adapted to be moved manually to shift both cams 67 relatively to stationary cams 68 whereby both ratchets 66 may be raised simultaneously to engage the pawls 70. It will thus be seen that the plate 61 may be given a rapid vertical vibratory motion.

The spindles 45 have upper portions of reduced diameter and pinned thereto are gears 74, which intermesh to form a train. The central gear of the train is driven by a gear 75 (see Fig. 4) fixed to a sleeve 76 which is loosely mounted on a shaft 77 fixed to the frame of the receptacle. Mounted on sleeve 76 (see Fig. 2) is a bevel gear 78 which meshes with a gear 79 fixed to a telescopic shaft 80, similar to that already described. This shaft is driven by bevel gears 81 and 82 from a vertical shaft 83 which bears at its lower end a gear 84 in mesh with a gear 85 keyed to the sleeve 10 already described. Thus, the spindles 45 may be constantly rotated at various speeds from the selective gear transmission previously described.

Referring now to Fig. 4, sleeves 90 having squared outer portions are loosely mounted on the upper portions 73 of the spindles 45 and are held axially between flanges on the spindles and the gears 74. The lower ends of these sleeves have threaded engagement with the plate 61 and slidably mounted on the squared portions are gears 92 which intermesh one with another. The end gears of this train are removably held in position by a retractable stop 93. Thus, when these stops are retracted, by turning one gear 92 by hand, all of the sleeves 90 may be turned, which acts to raise all the spindles 45 relatively to the plate 61. It is to be noted that, by raising a single gear 92 from its mating gears, independent adjustment of any one spindle 45 is possible.

It will be seen from the foregoing description that mechanism has been provided to move the receptacle 2 in various rectilinear paths, whereby, when chocolate is expelled in a string from the outlets by means described, various decorations involving straight line movements may be made upon

candies traveling on conveyer C in under the receptacle 2. When it is desirable to produce configurations involving circular movements, the device shown in Fig. 9 is used. This consists simply of a wire 95 which is removably seated in the lower end of each spindle 45. These wires do not interfere with the valve action of the tapered ends of the spindles and their conical seats as the spindles extend partially through the plates 43, as clearly shown in the drawings. The ends of the wires 95 are bent at an angle, and the chocolate as it is expelled from the receptacle passes along the wires 95 and drips from the ends thereof. Thus, the wires guide the path of the chocolate and obviously, since the spindles 45 are continuously rotated, the chocolate will be moved in a circular path relative to the receptacle, whereby looped configurations may be placed upon the goods. When circular movement alone is desired, the clutch 12 is withdrawn, and the bar 1 is thereby disconnected and remains stationary. The desired configurations are then obtained by the use of wires 95 and, since the gears 5 and 9 permit variable speed drive, the speed of the circular movement of the expelled chocolate may be varied within limits relative to that of the conveyer C to vary the configurations. If straight line configurations only are desired, the wires 95 are removed, and the clutch 12 moved to the position shown in Fig. 3. Obviously, by using the wires 95 and the straight line movement of bar 1 together, other varied configurations involving a combination of circular and rectilinear movement may be produced.

By the foregoing description the invention in one of its preferred forms has been clearly disclosed. The scope of the invention and its various improved combinations are pointed out in the following claims.

What I claim is:

1. In a decorating depositor, a receptacle having one or more outlets, mechanism for ejecting material through said outlets in a continuous manner, means for reciprocating the receptacle to lay the material on articles passing under the outlets, a conveyer for said articles, and means in part outside of the receptacle and movable relatively thereto to guide the material in a curved path, whereby the material is laid on the objects in a line resulting from the movements of the objects, the receptacle, and the last mentioned means.

2. In a decorating depositor, a receptacle having restricted outlets, means to force material through the outlets in the form of strings, guiding means passing through the outlets and movable with respect thereto whereby said strings may be guided in accordance with the movement of said means.

3. In a decorating depositor, a receptacle

having a series of restricted outlets, spindles mounted one in each outlet to eject the material therefrom, a guiding wire mounted in the end of each spindle and arranged to pass through its outlet, the end of each wire being offset from the axis of the spindle, means to rotate the spindles and wires, whereby the material ejected from the outlets may follow the wires and be laid in a curved path by the guiding action of the said wires.

4. In a decorating depositor, a receptacle having a series of restricted outlets, spindles mounted one in each outlet to eject the material therefrom, a guiding wire mounted in the end of each spindle and arranged to pass through its outlet, the end of each wire being offset from the axis of the spindle, variable speed driving means to rotate the spindles and wires, whereby the material ejected from the outlets may follow the wires and be laid in a curved path by the guiding action of the said wires.

5. In a decorating depositor, a receptacle having a series of restricted outlets, spindles mounted one in each outlet to eject the material therefrom, a guiding wire mounted in the end of each spindle and arranged to pass through its outlet, the end of each wire being offset from the axis of the spindle, variable speed driving means to rotate the spindles and wires, whereby the material ejected from the outlets may follow the wires and be laid in a curved path by the guiding action of the said wires, and means to move the receptacle to further control the laying of the material ejected from the outlets.

6. In a decorating depositor a receptacle having an outlet in the bottom thereof, a vertically mounted spindle means to vibrate the end thereof in said outlet to eject material therefrom, a removable guiding wire mounted in the end of the spindle and extending from the outlet to a point at the side thereof below the receptacle, and means to rotate the spindle and wire whereby the latter directs the material from the outlet in a curved path.

7. In a decorating depositor, a receptacle having a series of restricted outlets, a worm feed for each outlet to agitate and push the material to the outlet, a spindle for each outlet to keep it clear and eject the material therefrom, a wire mounted in the end of each spindle and passing through the outlet to a point below and at the side thereof, means to continuously rotate the worms, variable speed driving means to continuously rotate the spindles and wires therein, means to move the receptacle in a straight line and mechanism to render said last mentioned means operable and inoperable as desired.

8. In a decorating depositor, a receptacle having one or more outlets, mechanism for

ejecting material through said outlets in a continuous manner, means to move the receptacle in a straight line path to lay the material on articles passing under said outlets, a conveyer for said articles, means to vary the angularity of said path relatively to the travel of the conveyer, means in part outside the receptacle and movable relatively thereto to guide the material in a curved path, whereby the material may be laid on the articles in a line resulting from the movements of the objects, the receptacle and said last-named means. 10

ALONZO LINTON BAUSMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

It is hereby certified that the residence of the assignee in Letters Patent No. 1,243,668, granted October 16, 1917, upon the application of Alonzo Linton Bausman, of Chicopee, Massachusetts, for an improvement in "Decorating-Depositors," was erroneously given as "Springfield, Ohio," whereas said residence should have been given as *Springfield, Massachusetts*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 20th day of November, A. D., 1917.

[SEAL.]

R. F. WHITEHEAD,

Acting Commissioner of Patents.