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F. WESTERMAN

DEPOSITING MACHINE

Filed Jan. 3, 1922

4 Sheets-Sheet 1

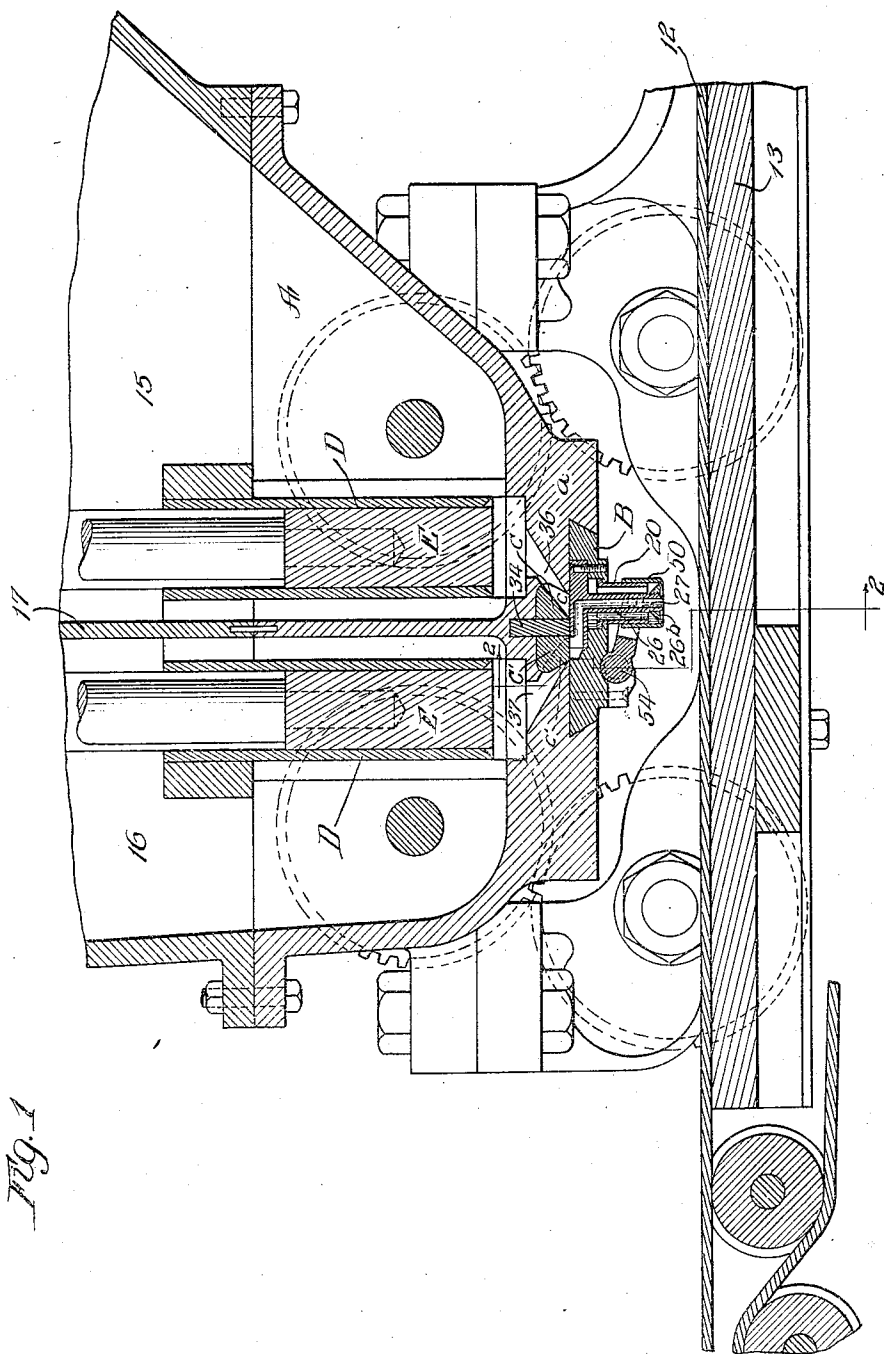


Fig. 1

Inventor:
Frederick Westerman
By: Fisher Ford Clapp & Soans
Attys.

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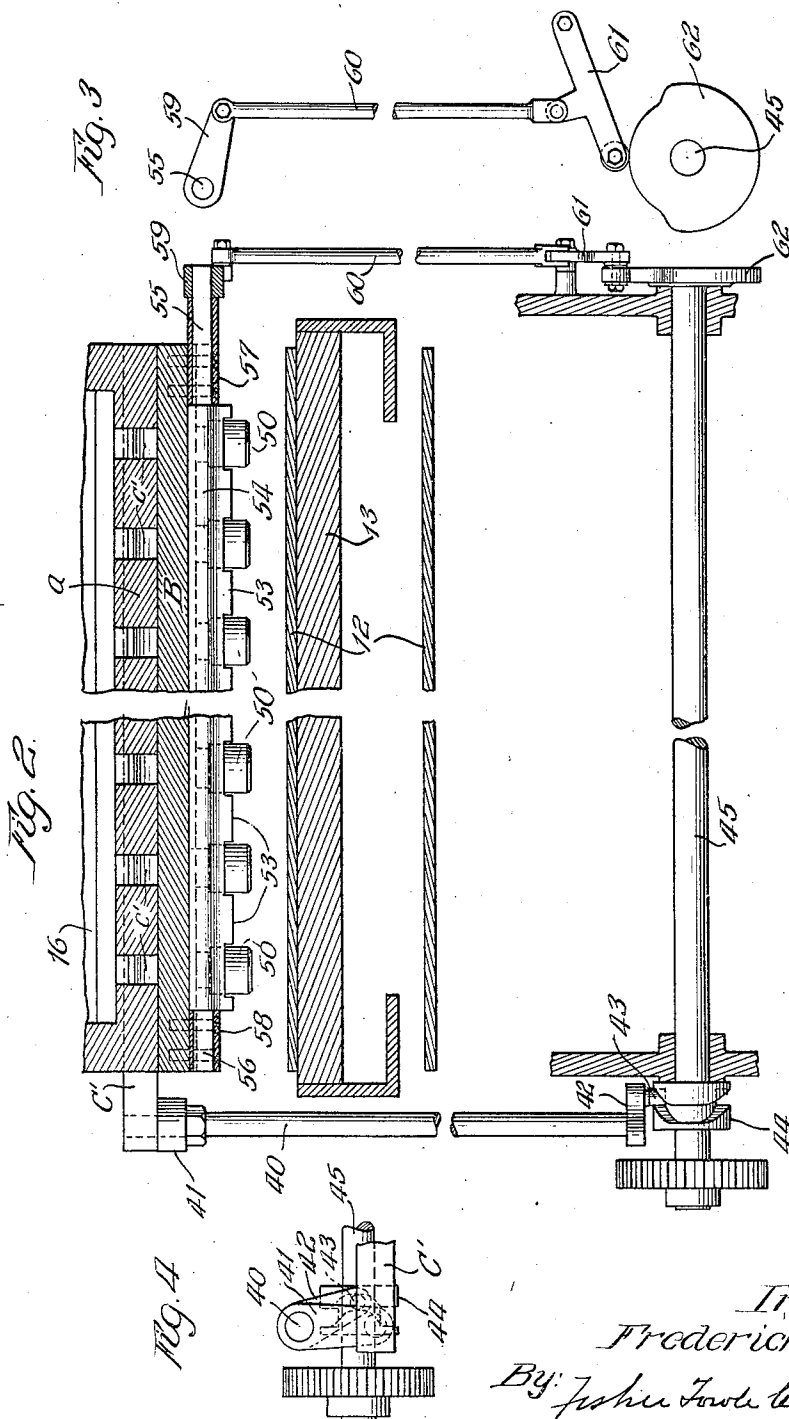
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F. WESTERMAN

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Inventor:
Frederick Westerman
By: Fisher Fowler & Sons
Atty's.

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F. WESTERMAN

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Fig. 5

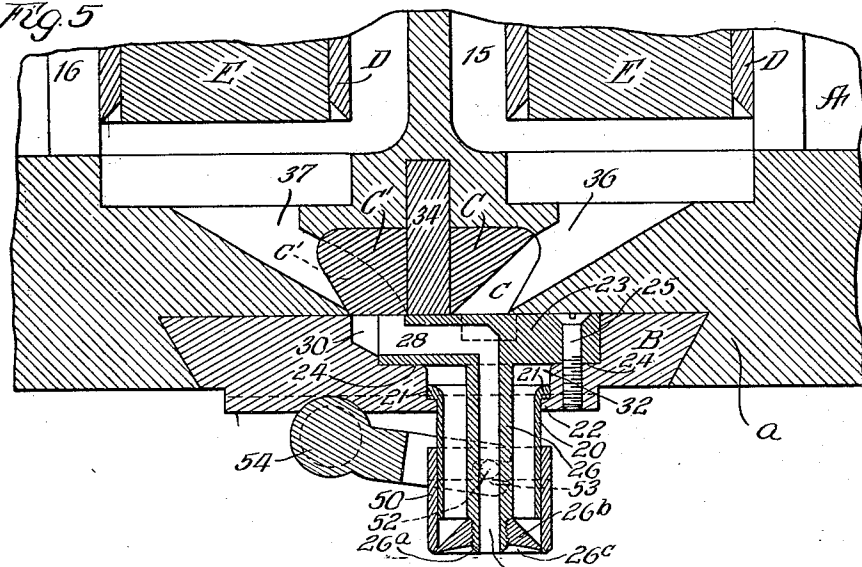
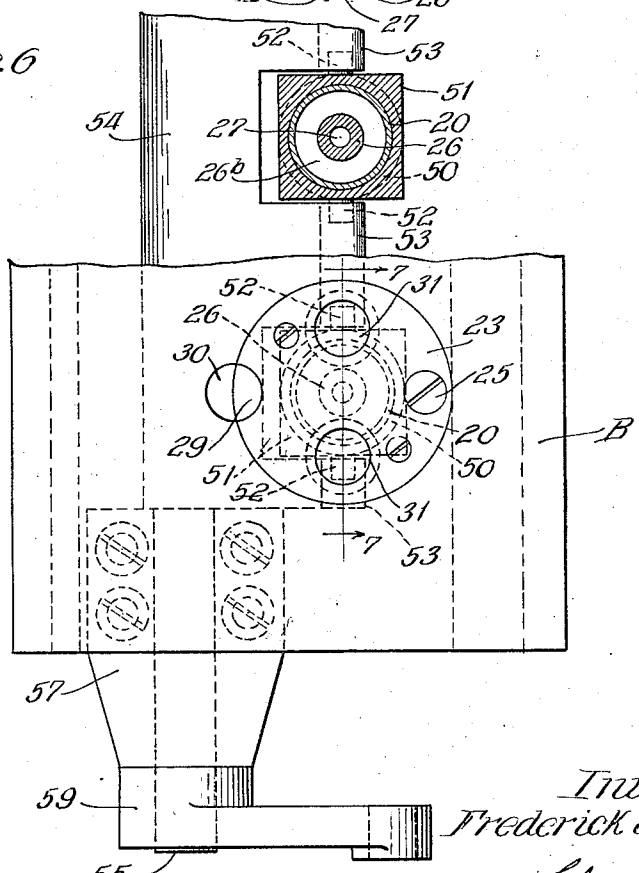


Fig. 6



Inventor:
Frederick Westerman
By: Fisher Fowle Clapp & Soans
Attys.

Aug. 21, 1923.

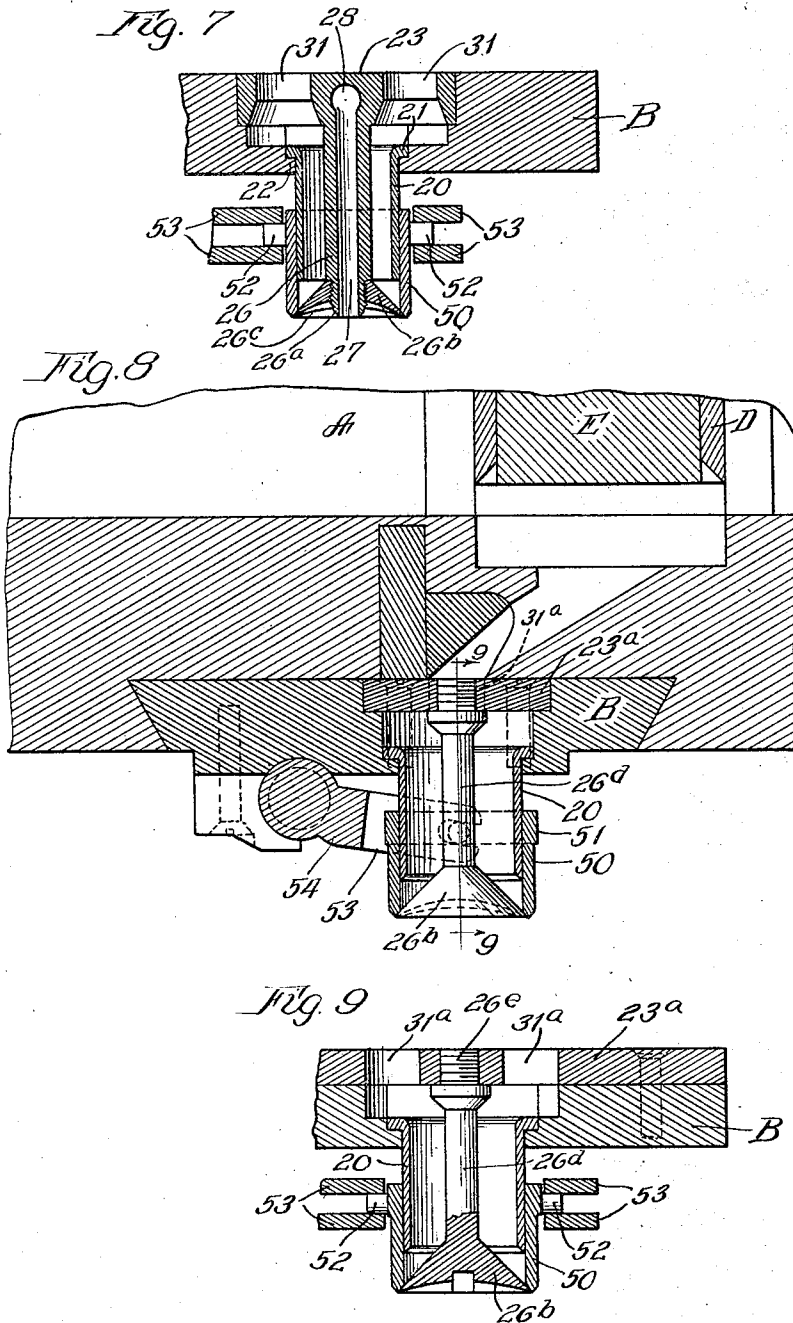
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F. WESTERMAN

DEPOSITING MACHINE

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4 Sheets-Sheet 4



Inventor:
Frederick Westerman
By: Fisher Fowle Clapp & Son
Attys.

Patented Aug. 21, 1923.

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UNITED STATES PATENT OFFICE.

FREDERICK WESTERMAN, OF CHICAGO, ILLINOIS.

DEPOSITING MACHINE.

Application filed January 3, 1922. Serial No. 526,498.

To all whom it may concern:

Be it known that I, FREDERICK WESTERMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Depositing Machines, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention has relation to depositing machines of that type in which confections such as marshmallow, chocolate, jelly or the like, are deposited upon the surfaces of cakes that are advanced in successive rows beneath the depositing mechanism. This type of machine is set forth in Letters Patent No. 1,121,434, granted to me December 14, 1914, and No. 1,392,034, granted to me September 27, 1921. As the present invention relates particularly to the means employed for depositing the confection upon the surfaces of the cakes and as such means is applicable to machines such as are set forth in my aforesaid patents, I have not deemed it necessary to illustrate in detail the main frame of the machine, the mechanism for feeding the rows of cakes to the depositing mechanism nor the other parts which are found in my prior patented machines and which will be readily understood by those familiar therewith.

The present invention consists in the features of novelty hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the claims at the end of the specification.

Figure 1 is a view in central vertical section through the hopper or receptacle for containing the confections to be deposited, and through the parts associated therewith, certain parts being shown in elevation. Figure 2 is a view in vertical section on line 2—2 of Fig. 1, certain parts being shown in elevation. Figure 3 is a detail view showing the mechanism for operating the cut-off valves of the depositing mechanism. Figure 4 is a detail view showing a portion of the means for operating the slide valves beneath the bottoms of the confection chambers. Figure 5 is a view in vertical section upon an enlarged scale through one of the depositing nozzles and parts associated therewith. Figure 6 is a plan view of a portion of the nozzle-carrying plate,

parts being broken away. Figure 7 is a detail view of one of the nozzles and parts associated therewith, this section being taken on line 7—7 of Fig. 6. Figure 8 is a view similar to Fig. 5 but showing a modification of the invention. Figure 9 is a view in vertical section on line 9—9 of Fig. 8.

In the machine about to be described, as in that set forth in my Patent No. 1,392,034, there is provided a suitable receptacle A for the confection or confections to be deposited upon rows of cakes that will be advanced successively beneath the depositing mechanism preferably by means of an endless carrier belt 12 that passes over a vertically movable table 13, as set forth in my said Patent No. 1,392,034. As shown, the receptacle A consists of upper and lower portions bolted together, the receptacle being preferably divided into two separate compartments 15 and 16, and by a vertical diaphragm or partition 17, so that confections of different kinds may be employed for coating the cakes. The bottom α of the receptacle A is formed with a channel extending from end to end thereof to receive a die-carrier plate B that carries the dies or nozzles, this die-carrying plate being preferably formed with beveled side walls to engage the corresponding beveled walls of said channel. The die-carrying plate B is formed with a series of openings corresponding in number to the dies or nozzles employed and through each of these openings projects one of the die nozzles 20. Each of the nozzles 20 is shown as formed at its upper end with a flange 21 (see Fig. 5) adapted to rest upon an annular shoulder 22 of the die-carrying plate B. The upper part of each of the openings in the die-carrier plate B is formed with an expanded portion to receive a disk or plate 23 that rests upon the shoulder 24 of the die-carrier plate B and is held in position by means of the screw 25. From the disk or plate 23 depends a hollow post 26 having a vertical channel 27 formed therein, the upper end of this vertical channel 27 connecting with the cross channel 28 that communicates with an opening 29 in the top of the disk or plate 23 and preferably also with a semi-cylindrical cutaway space or channel 30 in the die-carrier plate B (see Figs. 5 and 6). Through the disk or plate 23 are also formed the holes or ports 31 that communicates with the chamber 32 of the die-carrier plate

immediately above the flanged top of the die or nozzle 20. When in position for use, the disks or plates 23 are in line with the upper surface of the die-carrier plate B.

5 Above the die-carrier plate B, with its disks or plates 23, extends the partition plate or diaphragm 34 and on the opposite sides of this diaphragm 34 are arranged the slide valves C and C' that control the flow of the
10 confections from the compartments 15 and 16 of the receptacle A. The construction of the slide valves C and C' is substantially the same as in my before mentioned Letters Patent and these slide valves are provided
15 with a series of passages through which the confections will pass. The passages *c* in the valve C will correspond in arrangement and number with the ports or passages 31 in the plates 23 (see Fig. 6), while the passages
20 *c'* in the valve C' will correspond in number and arrangement with the channels 29 and 30 through which material will pass from the compartment 16 of the receptacle A. The receptacle A will be provided with suitable
25 mechanism, such as valves or casings D and long plungers E inclosed therein; but as these form no part of the present invention and are fully set forth in my said Letters Patent No. 1,392,034, they need not be
30 more particularly described herein. The valves C, C' are reciprocated longitudinally by suitable connections attached to one end thereof, such for example as the vertical
35 shaft 40 (see Figs. 2 and 4) the upper end of which is connected by an arm 41 to the valves C and C', while its lower end is provided with an arm 42 carrying a pin 43 that engages a cam wheel 44 on the cross shaft
40 45, as in my before mentioned Letters Patent.

The tubular post 26 is provided at its lower end with a reduced screw-threaded portion 26^a upon which is mounted a correspondingly threaded conical valve seat 26^b,
45 the bottom of which is preferably concave, as at 26^c, for a purpose to be presently stated.

Around each of the die nozzles 20 fits a vertically reciprocating tubular valve or sleeve 50 having a flange 51 at its upper end
50 from which flange project the lugs or trunnions 52 that will be engaged by the yoke-shaped arms 53 that project from a rocking plate 54. The rocking plate 54 is provided at its ends with reduced circular portions 55
55 and 56 that are journaled in suitable bearings 57 and 58 secured to the under side of the die-plate carrier B (see Figs. 1 and 2). To the end of rocking plate 54 is connected a rock arm 59 that is united by a link 60 to
60 a pivoted rock arm 61 (see Fig. 3) that carries at one end a roller adapted to travel upon and be actuated by the cam wheel 62. The mechanism for operating the rocking plate 54 is substantially the same as in my
65 before mentioned Letters Patent and need

not be more particularly described, as it forms no part of the present invention.

The lower end of each of the tubular valves or sleeves 50 is preferably beveled as shown, so as to more effectively cooperate
70 with the conical seat 26^b and thus effect a sharper cutting off of material delivered through the die nozzle 20 and insure a more effective deposit of the confection onto the
75 cakes to be coated. It will be observed also that the lower end 26^a of the tubular post 26 is also beveled and extends approximately to the plane of the periphery of the seat 26^b.

When a row of cakes has been brought by the carrier belt 12 beneath the dies or nozzles
80 and has been lifted by the table 13 (in manner well understood), the valve D in the compartment 15 of the receptacle A will descend and cut off the passage of marshmallow, and the long plunger E in the valve D
85 will then descend and force the marshmallow beneath it down and through channels 36, channels *c*, valve C and ports or channels 31 (see Fig. 6), it being understood that at
90 such time the valves 50 will be lifted to permit the passage of the marshmallow over the valve seats 26^b on to the cakes. Preferably, however, the valves 50 are not lifted until
95 a slight pressure is created within the nozzles 20, as this insures a quick and compact discharge of the marshmallow from the nozzles onto the cakes. At the time that the
100 marshmallow is being thus forced onto the cakes, the valve D in the compartment 16 of the receptacle A will move downward and close against its seat so as to cut off the supply of jelly or like confection at such
105 point, and the long plunger E in the compartment 16 will then descend and force the jelly through the channels 37, the ports *c'* of the valve C', the channels 30 and 28 into
110 and through the vertical channel 27 of the hollow posts 26. The operation of the valve D and plunger E is preferably so timed that the beginning of the discharge of marshmallow onto the cakes through the nozzles
115 20 will occur slightly before the plunger in the compartment 16 of the receptacle A descends to expel the jelly or like confection through the tubular posts 26. When the
120 marshmallow and jelly have thus been deposited onto the cakes, the valves 50 will be closed and the slide valves C and C' will be shifted to cut off the flow of confections through the channels 36 and 37, after which
125 the row of cakes will be lowered and the carrier belt 12 will be advanced in manner well understood, to present the next succeeding row of cakes beneath the row of dies or
130 nozzles.

In the form of the invention illustrated in Figs. 8 and 9 of the drawings, the apparatus is designed for depositing one kind of confection only upon the surface of the
135 cakes; hence, in this form of the invention,

each of the valve seats 26^b is shown as formed integral with a post 26^a and the upper end of each of the posts 26^a has a reduced screw-threaded portion 26^c (as shown in Figs. 8 and 9) to enter corresponding seats in a plate 23^a that is provided with ports or holes 31^a for passage therethrough of confection. The plate 23^a may be a continuous plate extending above all the dies or nozzles, and in such case the die-carrier plate B will be formed with an appropriate channel to receive such plate.

I am aware that machines for dropping dough or batter into pans have heretofore been constructed, in which the die nozzles were provided with valve seats and valves; but in such prior machines, the operation of the valves that control the flow of material through the nozzles was effected by and depended upon the lifting of the table whereon the pans rested. With my present invention, the valves that control the flow of marshmallow through the nozzles are actuated by mechanism independent of the table by which the cakes to be coated are lifted towards the dies or nozzles; and hence not only may a more rapid and effective discharge of the confections onto the cakes be secured, but the operation of these valves can be so timed that the flow of marshmallow shall not begin until the cakes are at exactly the right elevation and the flow can be cut off independently of the downward movement of the table and as quickly as desired to make sharp and clean deposits.

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

1. In a depositing machine, the combination with a receptacle for confection mounted upon the main frame of the machine, of a recessed die carrier plate having an opening therein provided with a flange, a tubular nozzle the upper end of which is provided with a flange to engage the flanged opening of the die carrier plate, a plate within the recess of the die carrier plate perforated to permit confection to pass therethrough, a post depending from said plate, an outwardly flaring valve seat on the lower end of said post, a tubular valve surrounding said nozzle and free to slide thereon, and means for shifting said tubular valve to and from said valve seat.

2. In a depositing machine, the combination with a receptacle for confection mounted upon the main frame of the machine, of a die carrier plate provided with an opening having a flange, a tubular nozzle provided at its upper end with a flange resting upon the flange of said opening, an outwardly flaring valve seat arranged beneath the lower end of said nozzle, a post at the lower end of which said valve seat is fixed, a tubular valve surrounding said nozzle and

free to slide thereon to and from said valve seat, a rock arm engaging said valve and supported by said die carrier plate, and means for shifting said rock arm to actuate said valve.

3. In a depositing machine, the combination with a receptacle for confection mounted upon the main frame of the machine, of a die carrier plate having an opening therein, a tubular nozzle depending from the opening in said die carrier plate, an outwardly flaring valve seat arranged beneath said tubular nozzle, a post arranged within said tubular nozzle for supporting said valve seat, a tubular valve surrounding said tubular nozzle and free to slide thereon, a rock arm engaging said valve and mounted beneath and outside said die carrier plate, and means for imparting motion to said rock arm.

4. In a depositing machine, the combination with a receptacle for confection mounted upon the main frame of the machine, of a recessed die carrier plate having an opening therein, a nozzle having its upper end communicating with the opening of said die carrier plate, a perforated plate arranged within the recess of said die carrier plate, a post extending downwardly from said plate and provided at its lower end with a valve seat extending outwardly from said post beyond the lower end of said nozzle, a tubular valve surrounding said nozzle and free to slide thereon, and means for shifting said valve to and from said valve seat.

5. In a depositing machine, the combination with a receptacle for confection mounted upon the main frame of the machine, of a recessed die carrier plate, a plate removably mounted in the recess of said die carrier plate, a post depending from said plate and carrying at its lower end an outwardly projecting valve seat, a tubular nozzle surrounding said post and removably connected to said die carrier plate, a tubular valve surrounding said nozzle and arranged to slide thereon, and means for shifting said valve on said nozzle.

6. In a depositing machine having a plurality of separate compartments, the combination of a die-carrier plate, a plate supported by said die-carrier plate provided with openings for the passage of confection, said openings communicating with the separate compartments of said receptacle, a tubular nozzle arranged beneath said plate for the passage of confection from one of said compartments, a valve seat beneath the bottom of said nozzle, a tubular post extending upward from said valve seat and communicating with the other of said compartments for the passage of confection through said post, a valve concentric with said nozzle, and means for moving said valve towards and from said seat.

7. In a depositing machine, the combina-

tion with a receptacle for confection mounted upon the main frame of the machine, said receptacle having a plurality of separate compartments, of a die carrier plate having an opening therein, a tubular nozzle having its upper end communicating with the opening of said die carrier plate and adapted for the passage of confection from one compartment of said receptacle, a tubular post communicating with the other compartment of said receptacle, said post being arranged within said tubular nozzle and being provided at its lower end with an outwardly projecting valve seat extending beneath said nozzle, a tubular valve surrounding said nozzle and free to slide thereon, and means arranged beneath and on the outside of said die carrier plate for shifting said valve.

8. In a depositing machine, the combina-

tion with a receptacle for confection mounted upon the main frame of the machine and having a plurality of compartments, of a recessed die carrier plate having an opening therein, a tubular nozzle communicating with one compartment of said receptacle and having a flange at its upper end to engage a flange surrounding the opening of said die carrier plate, a tubular post communicating with the other compartment of said receptacle and extending through said nozzle, an outwardly flaring valve seat mounted on the lower end of said post, a valve surrounding said nozzle above said valve seat, and means arranged beneath and outside said die carrier plate for moving said valve towards and from said seat.

FREDERICK WESTERMAN.