Oct. 16, 1928. 1,688,149

J. MASSARELLA

CONFECTIONERY COATING MACHINE

Filed Oct. 2. 1926

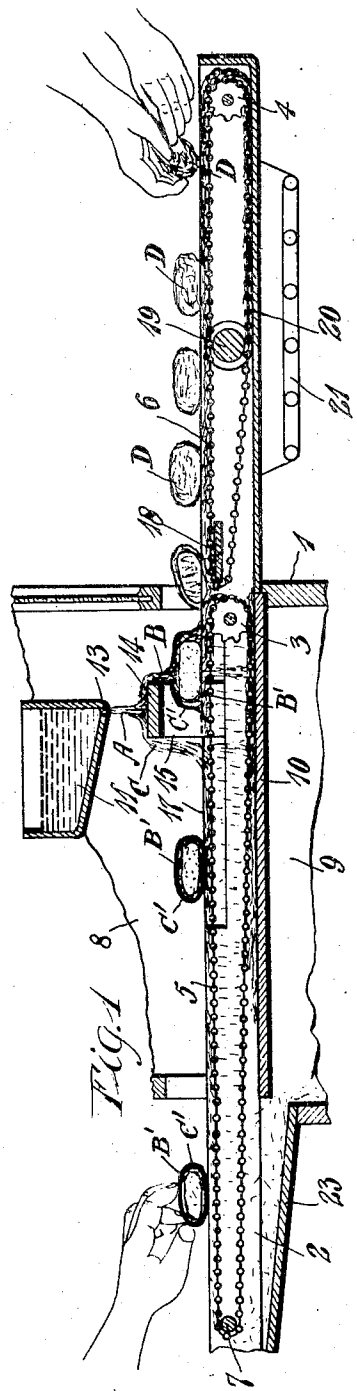


Fig. 1

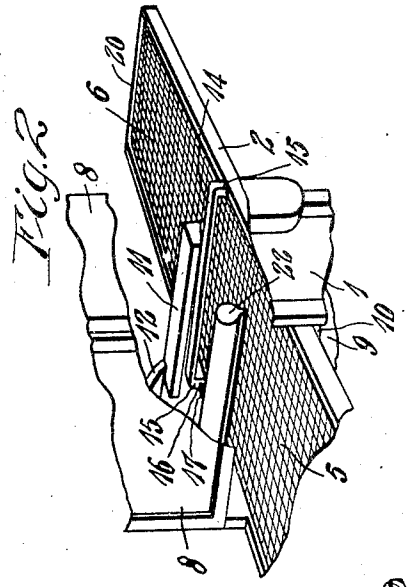


Fig. 2

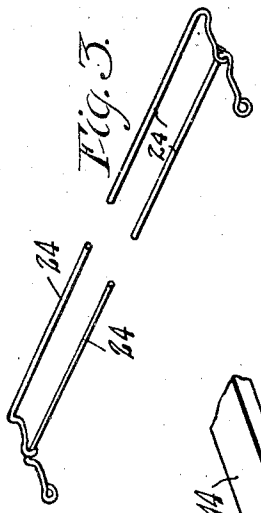


Fig. 3

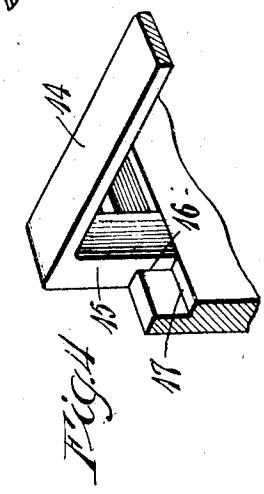


Fig. 4

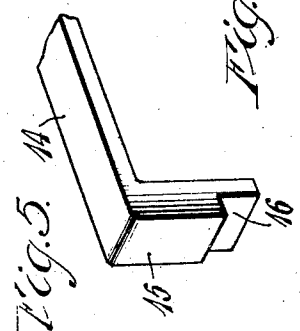


Fig. 5

Inventor

John Massarella

By Clarence Forden

Attorney

Patented Oct. 16, 1928. 1,688,149

UNITED STATES PATENT OFFICE.

JOHN MASSARELLA, OF CINCINNATI, OHIO.

CONFECTIONERY-COATING MACHINE.

Application filed October 2, 1926. Serial No. 139,191.

My invention relates to the manufacture of coated confections, and its object is to produce confections having the characteristics of hand-made confections, in conjunction with the use of a coating machine, whereby the hand-made appearance of the confection is produced, but with the rapidity of machine production. Another object of my invention is to apply the coating material in the machine, in successive coats, whereby the machine coating is made more in conformity with the previous hand coating. Other objects will appear in the course of the ensuing description.

I attain these objects by the device illustrated, for example, in the accompanying drawing, in which—

Figure 1 is a longitudinal vertical section of part of a coating machine with my improvement incorporated therein;

Fig. 2 is a partial perspective view of the same;

Fig. 3 is a detail perspective view of parts of the conveyor web;

Fig. 4 is a partial detail perspective view of the flow-dividing element and its support; and

Fig. 5 is a similar view of said element, looking from the opposite side thereof.

The coating machine partly illustrated in Figs. 1 and 2 is of construction known in the art, comprising a frame 1 supporting a conveyor frame 2 in which are journaled two shafts with sprocket wheels 3 and 4, respectively, journaled thereon, around which pass pervious conveyor webs 5 and 6, respectively. The web 5 passes around a round rod 7 at the left end of the machine, exteriorly of the enclosure 8 formed by the frame 2 over the tank 9 which is under the right hand portion of this web 5, with a plate 10 under this portion, very close to which the lower stretch of this web 5 passes in passing onto and up around its driving sprocket wheel 3. Suitable elevating means, not shown but well known in the art, carries coating material of readily flowing consistency up to the fountain 11 into which it discharges through a spout 12 (Fig. 2) and from which fountain 11 the material runs through a suitable long slot 13, in a curtain A entirely across the width of the web 5. Such mechanism is fully shown in my prior Patent No. 1,417,086 of May 23, 1922, and in my co-pending application Serial No. 549,151, filed April 3, 1922.

The curtain of coating material flows onto the flow-dividing element 14, which is a flat bar supported by legs 15 at its ends. These legs have their lower ends rabbeted at 16 (Fig. 5) to fit rabbeted edges 17 of the conveyor frame sides 2 (Fig. 4) so that this element 14 may be slid along the frame 2 in either direction parallel with the travel of the conveyor. This element 14 divides the flow or curtain A into two flows or curtains B and C. A device of this kind is shown in my co-pending application Serial No. 78,673, filed Dec. 31, 1925, but it is fixed, and not adjustable along the conveyor. By this adjustment herein shown, the flow C may be made heavier than the flow B, or vice versa.

The right hand conveyor section or web 6, running around the driving sprocket wheel 4 at the right and around the broad flat bar 18 at the left end, with its upper stretch traveling to the left, to deliver to the section or web 5, passes very close to this web 5 in passing down around the bar 18. The lower stretch, passing to the right, passes down under a roller 19 journaled in the conveyor frame 2 about midway of the length of the section, so that, from this roller 19 to its passage up around the driving sprocket wheel 4, this lower stretch of the web 4 passes very closely along the flat upper surface of the bottom of the pan 20. The roller 19 also supports the upper stretch of the web against sagging. A suitable heater 21 is mounted under the pan 20, and may be a gas, electric, or other suitable heater.

As is usual in coating machines, a blower 22 is provided, inside the frame enclosure (Fig. 2) over the left hand section 5, to act on the conveyed coated articles after they have passed under the fountain 11, for removing surplus coating from the articles. Also, a trough 23, under this section 5 outside the enclosure, catches drippage, and slopes toward and into the tank 9 to return this drippage. Only the upper rim of this tank 9 is shown (Fig. 1) and the driving connections for the conveyor driving sprocket wheels 3 and 4 are not shown, but these may be of any suitable kind, as for example

as shown in my patent or my application above mentioned. Also, it will be understood that each conveyor web 5 or 6 may have a number of the sprocket wheels 3 or 4, in a gang on the same shaft, at intervals across the width of the web, as shown in the above prior devices; and the webs preferably are made up of a succession of thin transverse rods or wires 24, formed and connected together as a very much widened ladder chain, as indicated in Fig. 3, and as fully disclosed in my prior application above mentioned.

Operation: The confections D are taken by the operator and worked with the hands, as seen at the right in Fig. 1, on the conveyor 6, to apply a fairly thick coating thereon, this coating being taken from this conveyor 6 as brought up from the bottom of the pan 20, where the material was allowed to cool to the thick consistency required for hand operation, as compared with its consistency when taken by this conveyor 6 from the other conveyor 5, inside the frame enclosure, where the coating material is melted by the regular heating apparatus of the machine so as to run freely from the fountain 11 onto the goods and through the pervious conveyor 5 onto the plate 10, from which it is picked up and applied to the conveyor 6 by the conveyor 5.

The uncoated confections may be brought to the conveyor 6 by hand, or by any suitable conveyor; and in any event, the operator is supplied with the thick coating material automatically by the conveyor 6, at the rate of machine operation, and after the operator has worked the coating onto the confection, it may be dropped onto the conveyor 6, which will at once carry it to the conveyor 5, which carries the confections under the element 14 to receive successive coatings B′ and C′ from the two parts B and C into which this element divides the fountain discharge A. Then, these confections, which thus have been first hand-coated and then machine-coated, pass out of the frame enclosure, another operator picks them up and transfers them to plaques or trays to be carried away for cooling and packing; or any suitable conveyor may be provided to receive the confections from the operator thus picking them from the conveyor 5. The working by hand at the beginning, and the final disposition by hand, gives to the goods the individually distinctive appearance of hand-made goods, yet the work is done at the rate of machine operation, and the machine coating gives a smoothness to the coating, and, by the application of the warm melted coats to the first hand coat, properly tempers the entire coating, affording the mechanical advantages of machine coating, in goods having all the essential character of hand-made goods, at less cost of production than all-hand-made goods, where the operators have to make many more motions in the work than if aided by the machine as herein set forth.

The heater 21 under the pan 20 may be controlled so as to maintain the supply for hand coating at the right coolness and thickness; and the element 14, if adjusted to the left, tends to throw more of the melted coating A toward the right end of the conveyor 5, so that the conveyor 6 will receive a heavier supply of the coating, which has run down to the plate 10 very close to this conveyor 6. It will be understood that the plate 10 has its edges spaced away from the sides of the frame 1 and tank 9, so that the coating material not picked up by the conveyor 5 runs back into the tank 9, as fully disclosed in my patent and application before mentioned. Coating material not taken from the upcoming conveyor web 5 by the web 6 is carried along on the upper stretch of the web 5, and the goods coming from the conveyor 6 are deposited on this carried coating, receiving their bottom coatings from this. Of course, as the fountain 11 is made in practice well known in the art, its outlet may be adjusted to vary the entire supply of coating material for all of these purposes.

The bar 18, in addition to affording a support and guide for the web 6, acts as an intermediate heat absorbent, between the warm interior of the machine and warm conveyor 5, and the cool exterior conveyor 6; making these two sections more distinct, thermally, than were merely a thin bar employed at this place.

Modifications may occur in practice, and it will be understood that I am not limited to the specific example herein set forth, but having thus exemplified my invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination, an endless web conveyor, means for depositing coating material on said conveyor, a second endless web conveyor delivering articles to the first conveyor, and means whereby the first conveyor applies a substantial part of said coating material to said second conveyor.

2. In combination, an endless web conveyor, means supplying a stream of coating material to said conveyor, a second endless web conveyor delivering articles to the first conveyor, means whereby the first conveyor applies a substantial part of said coating material to said second conveyor, and means for dividing the flow of said stream into a plurality of parts, one of which parts is nearer said second conveyor than another of said parts.

3. In combination, an endless web conveyor, means supplying a stream of coating material to said conveyor, a second endless web conveyor delivering articles to the first

conveyor, means whereby the first conveyor applies a substantial part of said coating material to said second conveyor, and means adjustable toward or away from said second conveyor, dividing the flow of said stream into a plurality of parts, one of which parts is nearer said second conveyor than another of said parts and is increased or decreased in volume as said means is adjusted away from or toward said second conveyor.

4. In combination, two pervious endless web conveyors, one receiving articles from the other, means discharging coating substance onto articles on the one conveyor, and a plate under this one conveyor catching coating substance from said conveyor and reapplying the caught substance to said conveyor, said other conveyor running close to that part of the one conveyor passing from said plate, so as to receive part of said reapplied substance to be carried by this other conveyor into position for application of this received substance by hand to the articles on this other conveyor, as a hand coating previous to the coating applied on the one conveyor.

5. In combination, two pervious endless web conveyors, one receiving articles from the other, means discharging coating substance onto articles on the one conveyor, a plate under this one conveyor catching coating substance from said conveyor and reapplying the caught substance to said conveyor, said other conveyor running around a narrow edge of a flat bar guide close to that part of the one conveyor passing from said plate, so as to receive part of said reapplied substance, means having a flat surface under this other conveyor, a roller causing this other conveyor to pass, with its received substance, close along said surface, and means whereby this other conveyor carries this received substance up from said surface into position for application of this received substance by hand to the articles on this other conveyor, as a hand coating previous to the coating applied on the one conveyor, said means having a flat surface subjecting said substance, while traveling therealong, to conditions adding to its thickness of consistency relative to the consistency said substance had as discharged onto the one conveyor.

6. The method of coating confections which consists of working a coating of thick consistency onto the confection by hand, depositing the thus coated confection on a pervious carrier having a coating of thick consistency, to bottom the confection, then passing the thus coated and bottomed confection to a pervious carrier having a supply of coating material of thinner consistency and moving said carrier to pass said confection through a stream of said coating material of thinner consistency, then finally disposing of the confection by hand, to allow hardening of the coatings.

JOHN MASSARELLA.