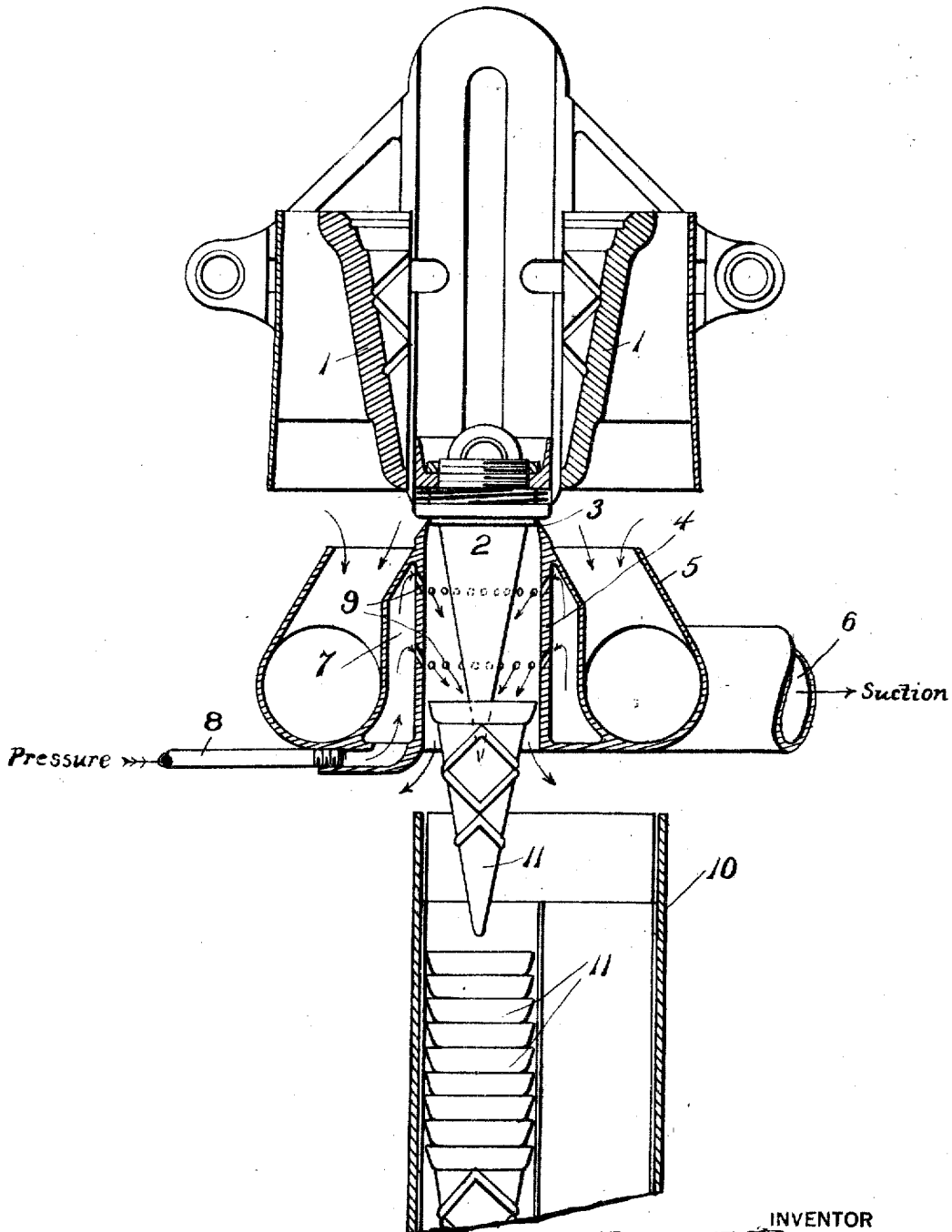


A. E. DIETERICH.
CUP PASTRY MAKING MACHINE.
APPLICATION FILED JULY 10, 1918.

1,294,635.

Patented Feb. 18, 1919.



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ALBERT E. DIETERICH, OF WASHINGTON, DISTRICT OF COLUMBIA.

CUP-PASTRY-MAKING MACHINE.

1,294,635

Specification of Letters Patent.

Patented Feb. 18, 1919.

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To all whom it may concern:

Be it known that I, ALBERT E. DIETERICH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Cup-Pastry-Making Machines, of which the following is a specification.

My invention, which relates to the art of cup pastry making and especially to that branch of the art having for its purpose the production of ice cream cones and similar articles, has for one of its objects to provide certain improvements in the trimming and delivery mechanism whereby provision is made for separately collecting the article and trimmings and conveying the same to their destination by air currents. Another object of the invention is to provide means whereby the trimmed article will be cooled during the period of ejection from the machine.

More specifically the invention provides a trimming tube through which the article is passed to effect a separation of the excess batter from the article, the trimmings being collected and removed by a suction mechanism whereby the same may be kept clean and sanitary and in condition for further use if desired, while means are provided for passing the article through the trimming tube by pneumatic action and delivering it from the machine either into the boxes or receptacles therefor or onto a table or other receiver, and preventing the article from being pushed up out of the trimming tube on the recession movement of the pusher. In addition to the cooling of the article and passing it through the trimming tube, the air currents also serve to keep the trimming tube cool so that its knife edge will not lose its temper.

In its more detailed nature, the invention is a modification of the trimming and delivery structure found in my copending application filed October 1, 1917, Serial No. 194,194.

In the drawing the figure is a vertical section of a molding unit and the trimming and delivering mechanism located at the extracting station, the article having been forced into the trimming tube and brought under the influence of the ejecting air currents, while the pusher (core) is ready to be withdrawn from the trimming tube.

In the drawing, 1—1 represents the female mold sections and 2 indicates the core of a

molding and baking unit such as is shown in my copending application aforesaid. 4 represents the trimming tube whose knife edge 3 cuts the excess batter from the article as the article is pushed through the mouth of the tube, the trimmings falling into the receiver 5 and being withdrawn therefrom and delivered to a definite location by suction applied through the duct 6 in any approved and usual way.

7 is an air pressure chamber into which compressed air is delivered by a pipe 8 from any suitable source. The wall of the throat of the trimming tube has one or more annular series of ports 9 downwardly and inwardly directed toward the axis of the tube whereby the air from the chamber 7 will be delivered in a conical jet-sheet, the focal point of which lies preferably along the axis of the trimming tube. It will be noticed that the jet-sheet first impacts the outside of the article 11 and holds it against following or sticking to the core 2 when the same is used as the pusher and then as soon as the mouth of the article passes the uppermost set of ports 9, the jet-sheet will be focused into the article and cause it to pass out of the throat or duct 4 and be delivered into the box 10, or other suitable receptacle provided therefor. Thus, it will be seen that the air jet in the throat or duct of the tube 4 first is blown on the outside of the article 11 and is then directed on the inside of the same, thus tending to cool the article throughout as well as serving to prevent the article from following the pusher core 2 out of the tube 4.

Of course, the pressure of the air in the chamber 7 will be suitably regulated so as not to injure the article or deliver it with too much force, a lighter pressure, of course, being required where gravity is used to assist delivery than would be the case were the delivery made horizontally or at an upward inclination as may be desirable when it is desired to deliver the article onto a table or in a box laid on the side at some distant point from the trimming tube, it being obvious that the duct 4 can be made any length desired and extended in any direction necessary and the number of jet ports 9 can be correspondingly increased as may be necessary to effect delivery of the article at the place desired.

From the foregoing description taken in connection with the accompanying drawing it is thought the complete construction, op-

eration and advantages of my invention will be clear to those skilled in the art and I desire it understood, however, that modifications of the invention and slight changes in the details of construction, arrangement and proportion of parts may be readily made by those skilled in the art without departing from the invention as set forth in the appended claims.

10 What I claim is:—

1. In a machine of the class described wherein is provided sectional molds and cores therefor, and a trimming tube into which the article is delivered by the core; the combination with the trimming tube and the core, of means distinct from the cutting edge of the trimming tube for holding the article against core-following movement after being trimmed.

20 2. In a machine of the class described wherein is provided sectional molds and cores therefor, and a trimming tube into which the article is delivered by the core; the combination with the trimming tube and the core, of pneumatic means for restraining the article from pulling back out of the trimming tube on the recession movement of the core.

3. In a machine of the class described wherein is provided sectional molds and cores therefor, and a trimming tube into which the article is delivered by the core; the combination with the trimming tube and the core, of means for directing a current of air inside the trimming tube in a direction away from the entrance of the same to deliver the trimmed article through the tube.

4. In the art of cup pastry manufacture, a trimming tube into which the article to be trimmed is placed, means for pushing the article into the tube to remove the excess material from the article, a suction device for conveying the trimmings from the tube and pneumatic means for delivering the trimmed article from the tube.

5. In a machine of the class described wherein is provided molding and baking units, and a trimming tube into which the molded and baked article is delivered from the molding and baking units; the combination with the trimming tube, means for passing the article through the mouth of the tube to detach the excess batter, means for separately collecting the trimmings and the trimmed article and delivering the same from the machine and cooling the trimming tube and the trimmed article.

6. A trimming tube having a mouth with a trimming edge, a trimmings collecting pan embracing the tube, means for producing a downwardly directed coniform air jet within the tube to force the article through the tube.

7. A trimming tube having a mouth with a trimming edge, a trimmings collecting pan embracing the tube, means for producing a downwardly directed coniform air jet within the tube to force the article through the tube, and means for sucking the trimmings from the pan and simultaneously causing a flow of air around the outside of the mouth of the trimming tube.

8. A trimming tube having a mouth with a trimming edge and having downwardly and inwardly directed air ports in its wall below the mouth of the tube, and means for delivering air under pressure through said ports into the tube.

9. A trimming tube, an air pressure chamber around the tube, and ports for delivering the air from said chamber into the tube.

10. A trimming tube, an air pressure chamber and a trimmings collecting pan outside said tube, means for conveying the trimmings from said pan, means for delivering the air from said chamber into the tube in the form of a conical jet-sheet directed toward the exit end of the trimming tube.

11. A trimming tube, an air pressure chamber and a trimmings collecting pan outside said tube, means for conveying the trimmings from said pan, means for delivering the air from said chamber into the tube in the form of a conical jet-sheet directed toward the exit end of the trimming tube and focalized along the axial line of the trimming tube.

12. A trimming tube, an air pressure chamber and a trimmings collecting pan outside said tube, means for conveying the trimmings from said pan, means for delivering the air from said chamber into the tube adjacent to the entrance thereof to impact the outside of an article resting on the mouth of the trimming tube.

13. A trimming tube, an air pressure chamber and a trimmings collecting pan outside said tube, means for conveying the trimmings from said pan, means for delivering the air from said chamber into the tube in the form of a conical jet-sheet directed toward the exit end of the trimming tube and sufficiently close to the entrance end of the trimming tube to impact the outside of an article held in the mouth of the tube and to engage the article on the inside when the same has been trimmed and has passed by the top of the jet-sheet.

14. In combination with the trimming tube in which the article to be trimmed is placed, means for pushing the article into the tube to remove the excess material from the article, and pneumatic means for delivering the trimmed article through the tube.

ALBERT E. DIETERICH.