

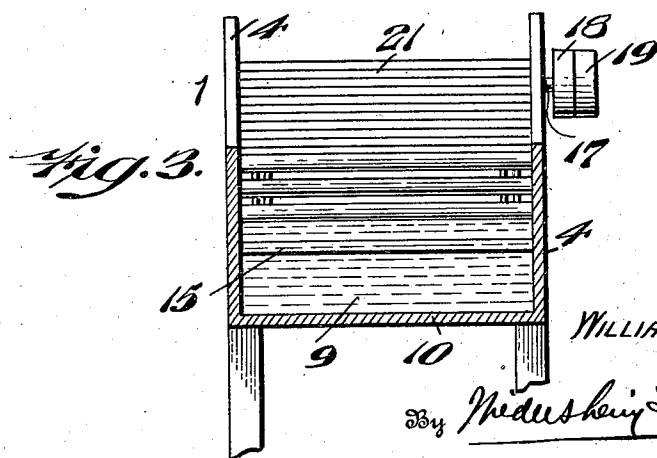
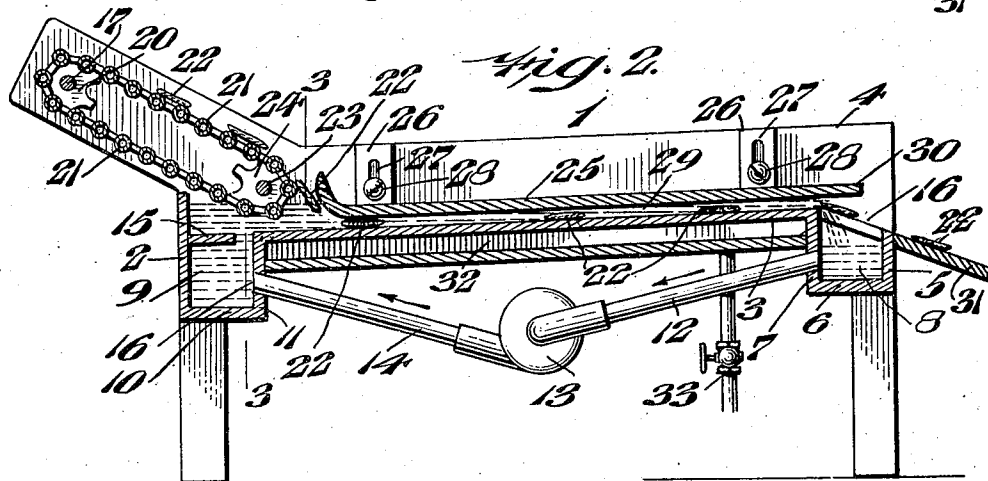
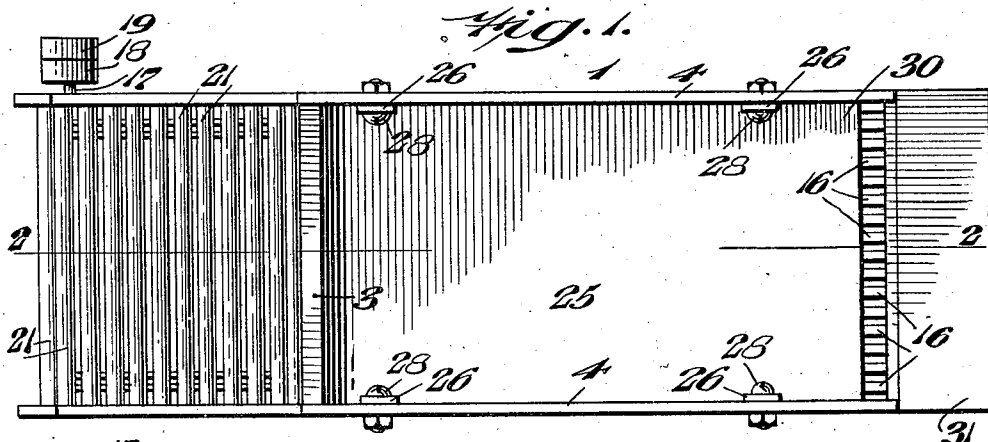
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PRETZEL COOKING APPARATUS

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PRETZEL-COOKING APPARATUS.

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My invention consists of a novel construction of a pretzel cooking apparatus, wherein I have reduced the number of parts to a minimum and have provided novel means for guiding the pretzels during their cooking in the heated solution of soda and water, so that pretzels of different thicknesses can be readily cooked in my novel apparatus by adjusting vertically an upper pretzel guiding member, which can be done in a few seconds time without the employment of skilled labor.

It further consists of a novel construction of a pretzel cooking tank having a front well provided with a baffle plate in its upper portion which prevents undue disturbance of the heated soda and water solution, said front well being adapted to coact with a rear well into which the heated soda and water solution is received from a tank having a bottom which inclines upwardly from front to rear, such solution being continuously and slowly pumped from the rear well to the front well as will be hereinafter explained.

It further consists in providing an adjustable pretzel guiding member with a rearward extension which overhangs the rear well and serves to deflect the cooked pretzels, across a series of inclined bars arranged over the top of the rear well, containing the water and soda solution.

It further consists of a novel construction of a feed conveyor, an adjustable pretzel guiding device, a tank having its bottom slightly inclined upwardly from the front to rear, a front and rear well, a baffle plate in the front well, guiding devices controlling the exit of the pretzels and a solution circulating device for pumping the solution from the rear well to the front well.

It further consists of other novel features of construction and advantage, all as will be hereinafter fully set forth and pointed out in the claims appended hereto.

For the purpose of illustrating my invention, I have shown in the accompanying drawings several forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the pre-

cise arrangement and organization of the instrumentalities as herein shown and described.

Figure 1, represents a plan view of a pretzel cooking apparatus embodying my invention.

Figure 2, represents a longitudinal sectional view on line 2-2, Figure 1.

Figure 3, represents a vertical sectional view on line 3-3, Figure 2.

Similar numerals of reference indicate corresponding parts.

In carrying out my invention I provide a suitable tank 1, having the front end 2, the bottom 3, which inclines upwardly from the front to the rear, side walls 4 and the rear end wall 5. The rear well or trough-like member 8 is formed between the rear end wall 5 the bottom 6 and the upright wall 7 and the sides 4. A front well or trough 9 is formed between the front wall 2, the bottom 10, the upright wall 11 and the sides 4. 12 designates a pipe leading from the rear wall 7 to the centrifugal or other pump 13, which is provided with a discharge pipe 14, which discharges at the point 16 into the front well 9. 15 designates a baffle plate which is located above the discharge opening 16 of the pipe 14 and prevents any undue disturbance of the solution in the front trough or well 9 as it is pumped thereinto through the pipe 14. 16* designates a series of inclined bars at the top of the rear well 8 over which the pretzels travel in their exit from the cooking apparatus. 17 designates a shaft at the front of the apparatus which carries the tight and loose pulleys 18 and 19, said shaft 17 carrying the sprocket wheels 20 over which passes the inclined sprocket chain, apron or feed conveyor 21 of any suitable construction which constitutes the feeding device for the pretzels. 22 designates a shaft carrying the sprocket wheels 24 over which passes the lower portion of the inclined endless feed conveyor 21 just referred to. 25 designates the pretzel guide plate, which is provided on each side with the upright lugs 26, which engage the inner surfaces of the vertical walls 4 and have the slots 27 therein, through which pass the screws or bolts 28, whereby the height of the pretzel cooking chamber 29 or space between the plate or partition 25 and the bottom 3 may be adjusted according to requirements. The rear end of the guide

plate 25 has the extension 30, which projects part way over the bars 16 in order to guide the pretzels after cooking upon the plate 31. The bottom 3 of the tank containing the soda and water solution may be kept heated by any suitable means as a steam jacket 32, into which steam may be introduced by the steam pipe 33, seen in Figure 2.

The operation of the device.

The pump 13, connected to the well 8 by means of the pipe 12, forces the cooking solution through the pipe 14 in the direction of the arrow, into the well 9, thereby slightly lowering the level of the cooking solution in the well 8 and raising it in the well 9. The cooking solution, seeking its own level, is forced to flow rearwardly through the cooking chamber 29 between the upper adjustable plate 25 and the bottom 3, back into the well 8, in a current, the volume and speed of which can be regulated at will, by adjusting the speed of the pump 13 and the position of the guide plate 25. As the current of cooking solution flows through the chamber 29, the pretzels are fed and dropped into the same from sprocket chain conveyor 21 as will be understood from Fig. 2. The pretzels, having a lower specific gravity than that of the cooking solution, will float therein and partly due to the momentum imparted thereto when the same are dropped off the conveyor 21, and partly due to the strength of the current flowing in the cooking chamber 29, the pretzels are carried with the current until they emerge at the rear end of the cooking chamber 29, where, being deflected by the rear extension 30 of the guide plate 25, the pretzels fall on the slanting grill formed by the bars 16, as will be understood from Figure 2. The current of cooking solution in which the pretzels were carried through the cooking chamber 29, drains through the bars 16 and flows back into the well 8, whence it is again pumped into the well 9 in the manner above described.

The cooking chamber 29 and the cooking solution flowing therethrough are kept at the desired temperature by means of the heating jacket 32, supplied with live steam or other heating medium by means of the pipe or conduit 33. The baffle wall 15 in the well 9 serves to eliminate any agitation that may result in the cooking solution from the action of the pump 13 and thus produces a steady, continuous flow of the cooking solution. Thus, the pretzels 22, dropped or fed in at the front end of the cooking chamber 29, are cooked as they move with the heated current of cooking solution and emerge at the rear end thereof in a cooked condition ready for the subsequent salting and drying operations.

The level of the cooking solution or fluid is constantly slightly higher in the well 9

than it is in the well 8, due to the action of the pump 13, thereby creating the backward flow or current of the solution through the cooking chamber 29, back to the well 8, by the force of gravity. The relative sizes and positions of the well 8 and 9, are shown only diagrammatically in the drawings, and can of course be varied to secure the best practical results.

It will be noted that the bottom 3 is forwardly inclined, that is, it is higher at its rear than at its front end, which, in addition to retarding the flow of the cooking solution, also prevents the same from spilling or overflowing at the rear end.

The amount of time necessary for the proper cooking of the pretzels to float the same can be regulated or controlled by the rate of speed of the pump 13, the difference in relative height of the tanks 8 and 9, the length of the cooking chamber 29 and the height of the adjustable guide plate 25, with respect to the bottom 3, the illustration shown in the drawings being merely diagrammatic and being merely illustrative of the general principle of cooking pretzels in a continuous, automatic and economical manner. Thus, instead of merely having a pot or pan filled with the heated cooking solution and dropping therein a number of pretzels, leaving the same there for the requisite period and then withdrawing the same by means of a strainer or the like, I provide a continuous cooking process, in which the pretzels are automatically fed into the cooking chamber and from which they emerge automatically, thus producing a more uniform grade of pretzels, eliminating all unnecessary handling and effecting a great saving in time and material.

What I claim is:

1. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor, which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution; means for conveying uncooked edible articles to said chamber; and means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall.

2. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor, which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, a baffle plate for said front well for preventing undue disturbance of a solution, circulating means common to said wells for effecting a continuous circulation of a cooking solution; means for conveying uncooked edible articles to said chamber; and means including a vertically adjustable member for

guiding said articles through said chamber and along said bottom wall.

3. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor, which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution, means for conveying uncooked edible articles to said chamber, means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall, and laterally disposed, spaced, inclined bars arranged above said rear well and over which said edible articles pass in their discharge from said chamber.

4. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor, which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution, means for conveying uncooked edible articles to said chamber, and means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall, said vertically adjustable member having its rear end extended partially over said rear well.

5. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution, means for continuously conveying uncooked edible articles to said chamber, and means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall.

6. Apparatus of the character stated comprising a cooking chamber, a bottom wall therefor which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said receptacle, means connecting said wells for effecting a continuous circulation therebetween, means for conveying an uncooked edible article to said receptacle and through said circulating solution.

7. In a pretzel cooking apparatus, a cooking chamber, side and bottom walls therefor, a front well and a rear well, in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution and a vertically adjustable member above said bottom wall for guiding articles of varying thicknesses through said chamber

and along said bottom wall during the cooking operation.

8. In a pretzel cooking apparatus, a cooking chamber, side and bottom walls therefor, a front well and a rear well, in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution and a vertically adjustable member above said bottom wall for guiding articles of varying thicknesses through said chamber and along said bottom wall during the cooking operation, said vertically adjustable member having its rear end extended over said rear well.

9. In a device of the character stated, a cooking chamber, a bottom wall therefor, a guide plate above said cooking chamber, means for adjusting said guide plate vertically with respect to said bottom wall, and means for creating a circulation between the rear and front ends of said cooking chamber.

10. In a device of the character stated, a cooking chamber, a bottom wall therefor, a guide plate above said cooking chamber, means for adjusting said guide plate vertically with respect to said bottom wall, and means for creating a circulation between the rear and front ends of said cooking chamber, in combination with means for heating said cooking chamber.

11. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, circulating means common to said wells for effecting a continuous circulation of a cooking solution, means for conveying uncooked edible articles to said chamber, and means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall, in combination with means for heating the bottom wall of said cooking chamber.

12. Apparatus of the character stated, comprising a cooking chamber, a bottom wall therefor which inclines upwardly from front to rear thereof, a front well and a rear well in communication with said chamber, a baffle plate for said front well for preventing undue disturbance of a solution, circulating means common to said wells for effecting a continuous circulation of a cooking solution, means for conveying uncooked edible articles to said chamber, and means including a vertically adjustable member for guiding said articles through said chamber and along said bottom wall, in combination with means for heating the bottom wall of said cooking chamber.

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