O. B. GILMAN.

MACHINE FOR TREATING CRACKERS.

APPLICATION FILED FEB. 28, 1910.

1,019,630. Patented Mar. 5, 1912.

Fig. 1.

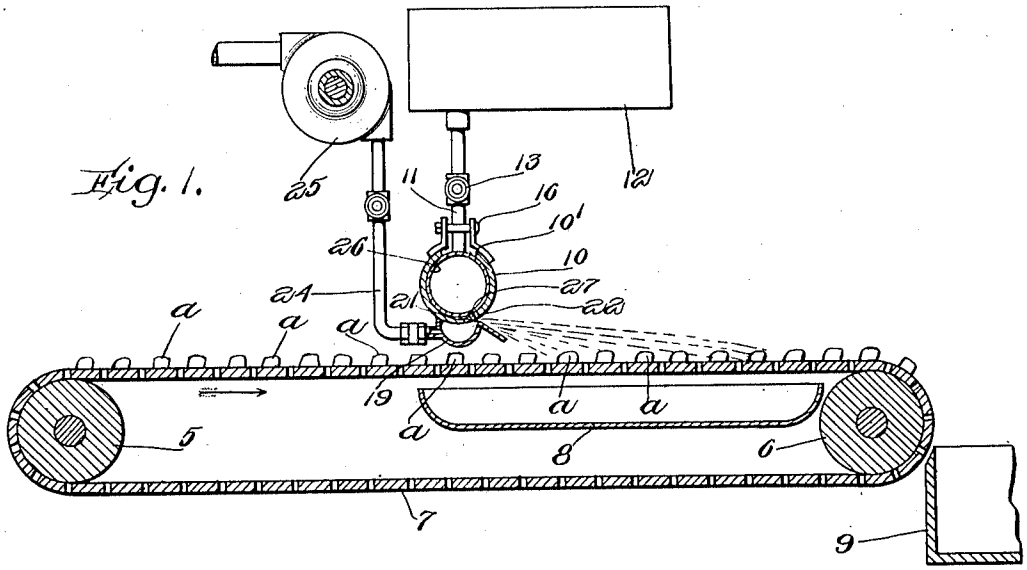


Fig. 2.

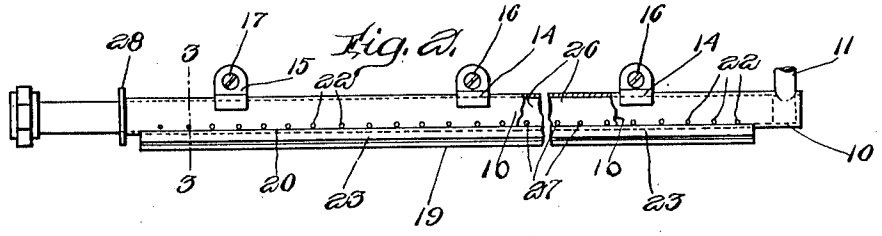
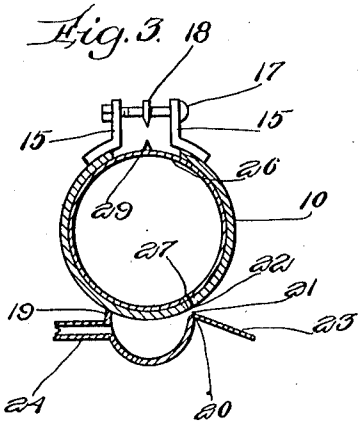


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TREATING CRACKERS.

1,019,630. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed February 28, 1910. Serial No. 546,516.

To all whom it may concern:

Be it known that I, OSMON B. GILMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Machine for Treating Crackers, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to an improved machine for treating crackers and similar food products whereby, as one of the final steps in the manufacture of crackers or similar articles of food, said crackers or articles, while still warm, and in the absorptive and expansive state caused by the heat of the baking oven thereon, are subjected to butter oil held in suspension, in atomized condition, in air, in order that said oil may be absorbed by the crackers or articles before the slight contraction, in cooling, effects the closing of the pores in the outer surface. Such application of butter oil to the heated cracker or article being adapted to give a peculiar toasted flavor to the cracker while the contraction of the cracker or article after the application of the butter oil effects the drawing or absorption of the oil away from the surface, leaving said surface dry.

One object of this invention is to so apply butter oil to crackers and similar articles of food that said oil may be distributed evenly throughout all of said crackers or articles.

Another object of the invention is to apply said oil to said crackers economically and in such manner that the surplus oil may be saved.

Other objects of the invention will appear from the following description.

The invention consists in such novel features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1, represents a vertical sectional view of the improved machine for treating crackers and other food products. Fig. 2, represents an elevation of the improved oil atomizer or sprayer removed from the machine, parts thereof being broken away. Fig. 3, represents a cross sectional view of the oil atomizer taken on line 3—3, Fig. 2.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings, in its preferred form, 5 and 6 represent rollers on which the perforated or open belt 7 is movably mounted. Any usual and well known mechanism may be utilized to effect the driving of said belt 7 through the rotation of one of said rollers 5 or 6. Below the upper reach of the belt 7 is located the oil receiving pan 8 and at the end of the machine is placed the receptacle 9 adapted to receive the articles after they have been subjected to this process. Above the upper reach of belt 7 is located the oil atomizing and spraying device which comprises the cylindrical shell 10 having at one end the oil supply pipe 11 which extends to the oil reservoir 12 and is furnished with the valve 13 of any usual construction. This shell 10 is formed as a tubular slotted structure or bearing open between its edges 10′, 10′ which are furnished with upwardly extending ears 14, 14 and 15, provided with clamping screws 16, 16 and 17, of which the latter has the point 18, shown in Fig. 3. The lower portion of said shell 10 has the longitudinally extending air chamber 19, between one edge (20) of which and the wall of said shell is formed the air slot or outlet 21, communicating with which is the series of perforations 22, 22 formed in the wall of said shell 10 and extending in a direction to deliver oil to the upper portion of the inclined plate or deflector 23 extending from the edge 20 of the air chamber 19. Air is supplied to the chamber 19 by the pipe 24 leading from the fan chamber 25 or other source of air pressure supply.

Within the shell 10 is mounted the tube 26, open at its inner end, which is free to slide and rotate in said shell under frictional contact therewith for adjustment to bring its series of perforations 27, 27 into registry with the perforations 22, 22 of the shell 10, such inward sliding movement of this tube 26 being limited by its flange 28 when said flange is intercepted by the end of said shell 10 while the rotative movement of this tube 26, to bring its perforations 27, 27 partly or wholly into registry with the perforations 22, 22 is gaged by the position of the point 29 of said tube with relation to the point 18 and when so adjusted said tube 26 is secured against movement by the tightening of the clamping screws 16, 16 and 17.

In the operation of this improved machine for treating crackers, I supply the reservoir 12 with butter oil made in any

usual and well known manner and, upon the opening of valve 13, said butter oil flows through pipe 11 into one end of the shell 10 and thence through the open end of the tube 26 to the interior of said tube from whence said oil passes through the perforations 27, 27, and 22, 22, respectively of said tube 26 and shell 10, and drops toward the upper portion of the inclined plate 23. In their movement across the air outlet 20 the drops of oil are to a large extent atomized and the atomized particles thereof are carried forward in suspension, by the air and, as the pressure of the air decreases, fall toward the belt 7 as an oily vapor. In the meantime crackers have been prepared for treatment by preparing dough, forming the dough into crackers and baking the crackers in an oven in the usual manner. Upon the removal of the crackers *a*, *a* from the oven they are placed upon the belt 7 while still hot and, preferably before their pores have had opportunity to close, are carried forward by said belt through the cloud of oily vapor formed by the atomized butter oil whereby the heated crackers are supplied with atomized butter oil while the surplus oil passes through the openings or perforations in the belt 7 and is received in the pan 8. By the time the belt 7 begins to curve downward, following the periphery of roller 6, the crackers *a*, *a* have cooled sufficiently to effect the partial closing of the pores in their crusts and said crusts are dry and practically free from oil, which is attracted by the still warm center.

It is, of course, obvious that many other articles than crackers can be treated by this machine with good results.

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

In a machine for treating crackers and similar articles with oil, an oil spraying mechanism comprising a slotted shell having a longitudinally extending series of perforations and an exterior air chamber having an outlet in line with said perforations and a deflector plate, means mounted on said shell for contracting the diameter of said shell, a tubular valve rotatable and slidable within said shell and having a line of perforations adapted to be brought into registry with the perforations of said shell, said valve having means adapted to be intercepted by said shell to limit the sliding movement of said valve in one direction, substantially as described.

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