

F. E. MORRIS.
COOKING APPARATUS.
APPLICATION FILED JAN. 19, 1921.

1,401,945.

Patented Dec. 27, 1921.

FIG. I.

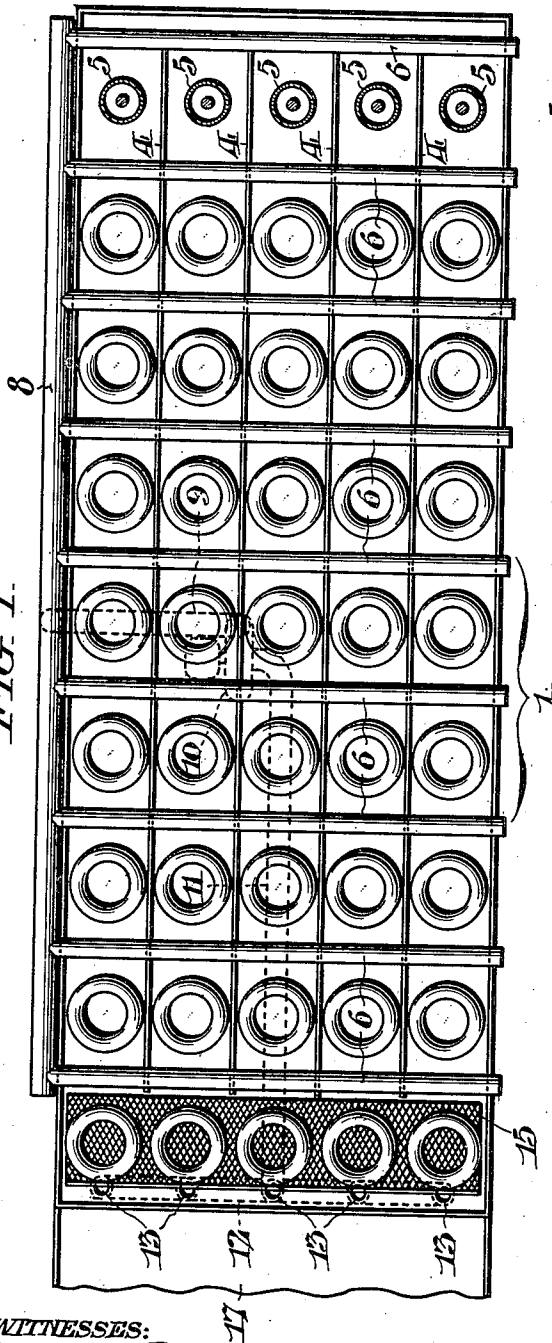
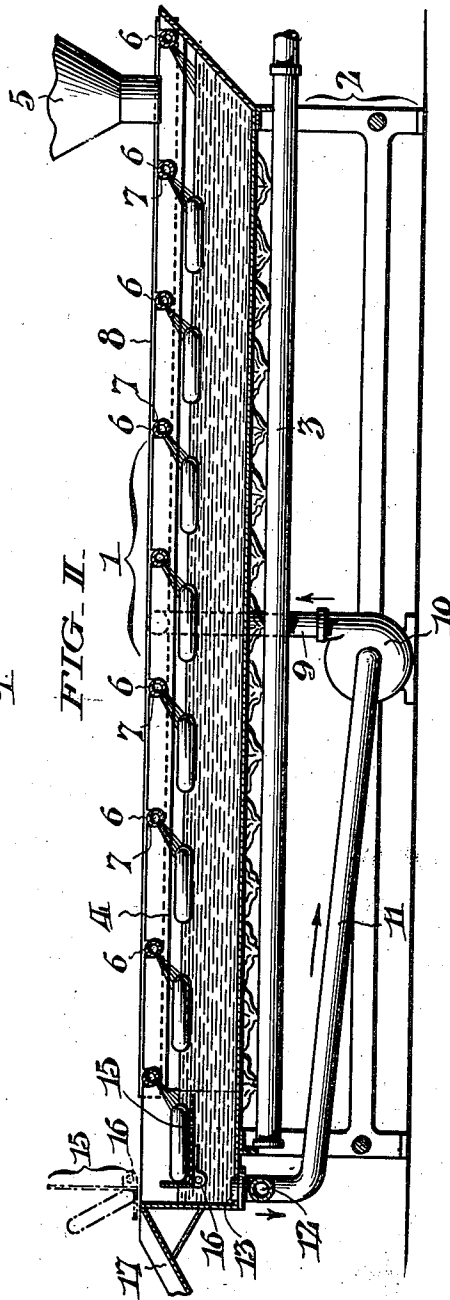


FIG. II.



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COOKING APPARATUS.

1,401,945.

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To all whom it may concern:

Be it known that I, FRANK ELLIS MORRIS, a citizen of the United States, residing in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cooking Apparatus, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates generally to cooking apparatus of the type wherein hot liquor is employed for cooking, and more specifically to apparatus especially useful in cooking or frying pastries, such for example, as doughnuts, crullers and the like.

The object of my invention is to effect positive progression of the articles being cooked through the apparatus to the exclusion of any possibility of their becoming distorted or deformed. Such progression I accomplish by means of jets of the cooking liquor directed at an inclination upon the articles afloat in the retaining receptacle. Moreover, I prefer to constantly draw the supply for the spray system from the discharge end of the retaining receptacle, so as to effect movement of the liquor in a direction which will assist progression of the articles as above noted.

Other objects and advantages of my invention will become apparent from the detailed description which follows:

In the drawings, Figure I is a plan view of a cooking apparatus conveniently embodying my invention; and

Fig. II is a longitudinal sectional elevation of the same.

The organization as herein shown comprises a comparatively long, shallow, rectangular trough or receptacle 1 which serves as a container for the cooking liquor conventionally represented in Fig. II, and is supported upon a suitable frame 2. The liquor in the receptacle is maintained at an appropriate cooking temperature by means of one or more gas burners such as shown at 3 in Fig. II. In order to afford a series of separate channels for guiding the progression of the doughnuts individually while afloat in the cooking liquor, the tank is subdivided by means of a number of equally spaced, longitudinally extending partitions 4-4.

The doughnuts may be introduced in any approved manner into the guide channels

in one end of the receptacle and, after being progressed slowly through the latter (to permit lapse of the proper cooking period) may be ejected from the opposite end in a manner which will be presently suggested. One way in which introduction may be effected is by means of a row of transversely arranged forming or cutting devices diagrammatically represented at 5-5 in the drawings, one of such devices being suspended above the center of each of the guide channels at the right-hand or charging extremity of the receptacle. In practice, these devices are simultaneously operated so as to drop, at each actuation, a transverse row of doughnuts into the receptacle. Progression of the floating doughnuts through the several guide channels, is brought about by impingement of angularly directed spray jets of cooking liquor issuing from a series of laterally extending perforated pipes 6-6, which are disposed at intervals lengthwise of the receptacle, and rest in appropriate retaining notches 7 in the top edges of its side walls. These spray pipes are connected to a longitudinally extending manifold 8 which communicates, by means of a branch 9, with a pump 10. The latter draws from a pipe 11 connected to a manifold 12 which extends transversely beneath the left-hand or discharge end of the receptacle, and communicates with the interior of the same through a number of distributed outlets 13-13. The pump 10 may be actuated by any suitable power means to circulate the liquor through the spray system in the direction of the arrows shown in Fig. II. The movement induced in the liquor within the receptacle by constantly drawing the supply for the spray system from its discharge end, it will be noted, is in the same direction as that set up by the jets so that progression of the doughnuts will, in this manner, be substantially assisted.

After having traversed the full length of the trough or receptacle 1, the doughnuts are discharged from the same preferably by means such as shown at 15 in the drawings. This means which I will term for convenience, an ejector, comprises a foraminated plate or screen which extends the full width of the receptacle and normally occupies a horizontal position below the surface of the cooking liquor so that the doughnuts may

float over the top of the same. The ejector is adapted to be periodically elevated and tilted about a pivot 16 to the position shown in dot and dash lines in Fig. II, so as to discharge, at each actuation, a row of doughnuts to a delivery chute represented at 17. Any appropriate mechanism may be installed for actuating the ejector as just described, but since such mechanism forms no part of the present invention, illustration thereof has been purposely omitted.

Spraying of the doughnuts with the hot liquor in the course of their passage through the apparatus obviously causes the cooking of their exposed sides simultaneously with the opposite sides which are submerged in the body of the liquor in the receptacle. This not only obviates turning as ordinarily practised in cooking doughnuts first on one side and then on the other, but also proportionately shortens the cooking period.

Having thus described my invention, I claim:

1. An apparatus of the character described comprising a trough or receptacle containing hot liquor into which the articles to be cooked are introduced; in combination with a spray system by which cooking liquor is directed in the form of jets to impinge at an inclination upon the articles for the purpose of progressing them while afloat in the receptacle.

2. An apparatus of the character de-

scribed comprising a comparatively long trough or receptacle containing hot liquor into which the articles to be cooked are introduced at one end; in combination with a spray system including a series of perforated pipes disposed transversely across the top of the receptacle at intervals lengthwise of the same, the jets issuing from the perforations in said pipes being directed to impinge at an angle upon the articles for the purpose of progressing them while afloat in the receptacle.

3. An apparatus of the character described comprising a trough or receptacle containing hot liquor into which the articles to be cooked are introduced; in combination with a spray system by which cooking liquor is directed in the form of jets to impinge at an inclination upon the articles for progressing them while afloat in the receptacle, the supply for the spray system being continuously drawn from the discharge end of the receptacle so as to induce movement of the liquor in a direction tending to assist progression of the articles through the apparatus.

In testimony whereof, I have hereunto signed my name at Albion, Michigan, this 3rd day of January, 1921.

FRANK ELLIS MORRIS.

Witnesses:

ERA COLEMAN,

CHAS. L. VANCERDER.