June 29, 1954 R. B. POLLARD 2,682,390

APPARATUS FOR PREPARING FOODSTUFFS

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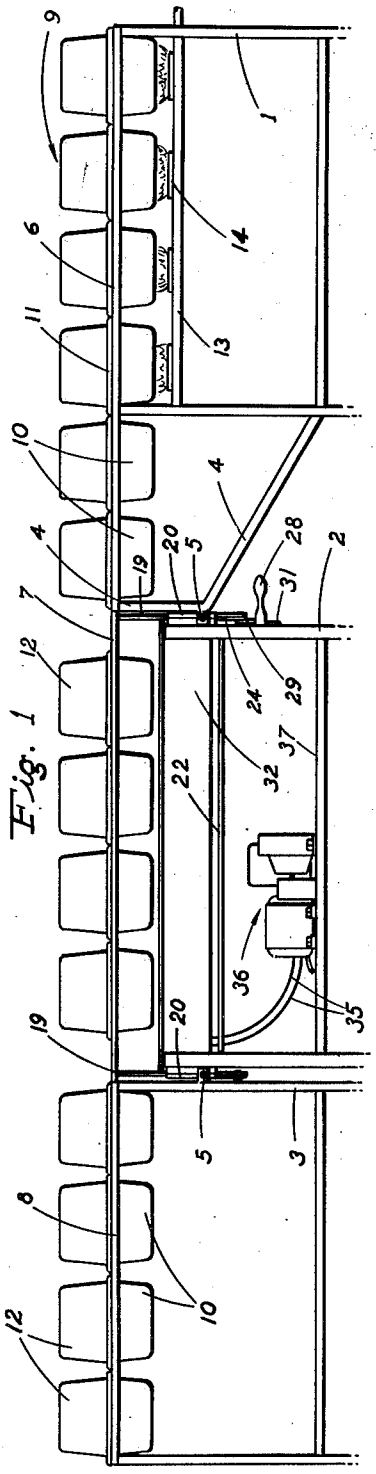


Fig. 1

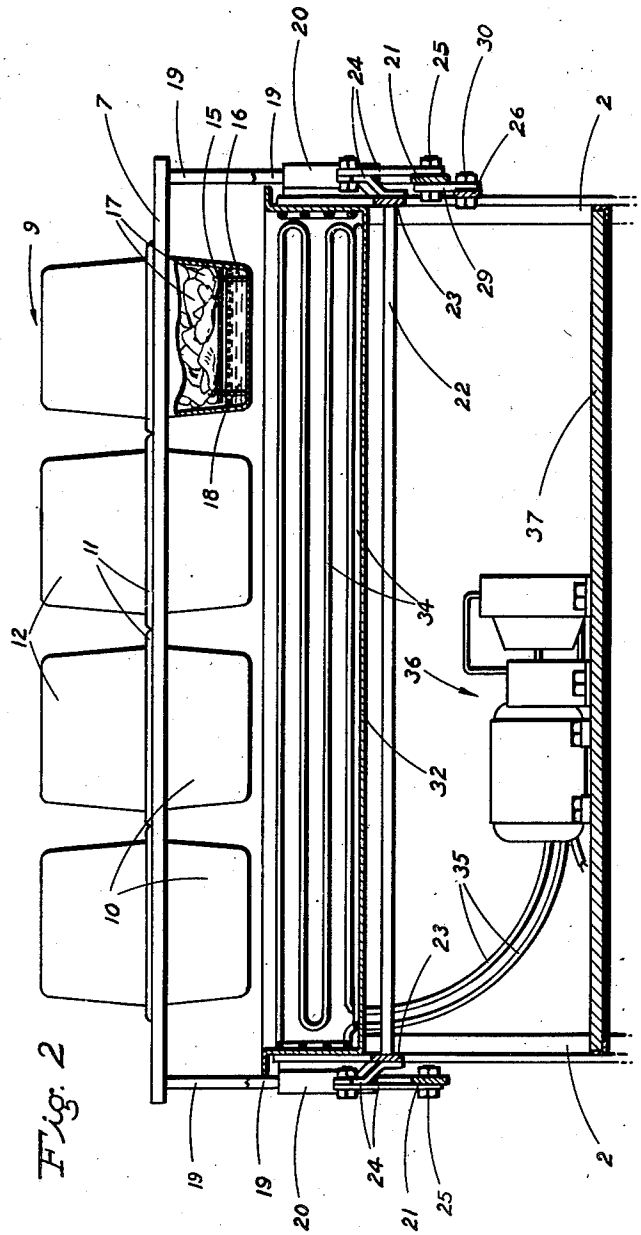


Fig. 2

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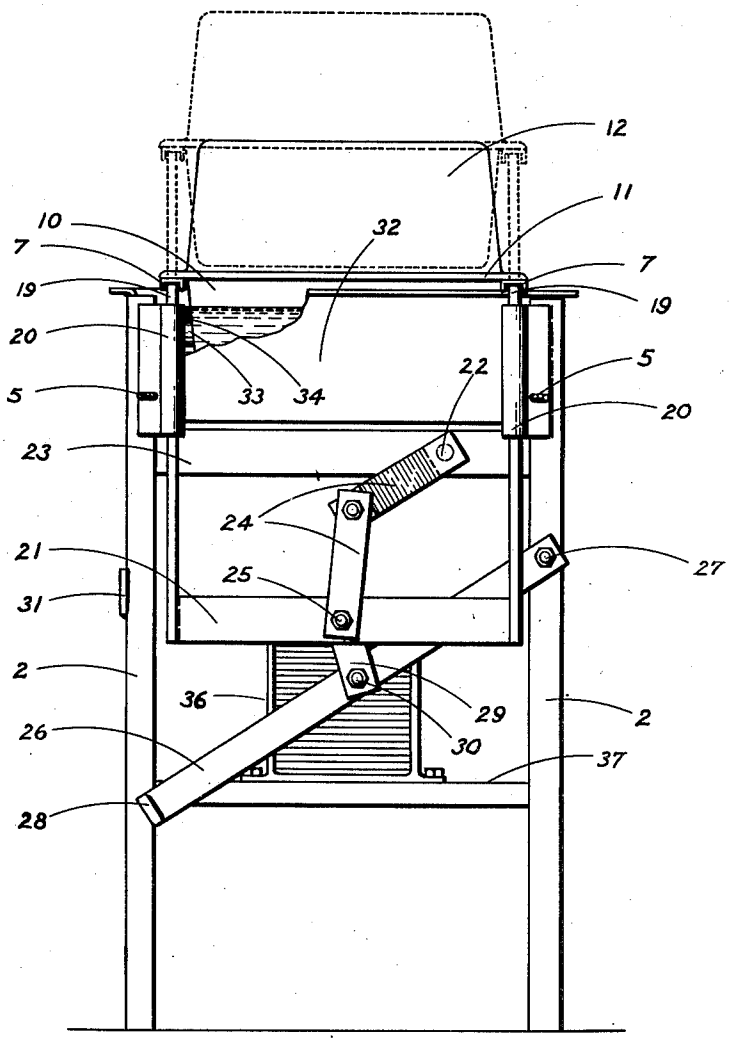
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Fig. 3



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APPARATUS FOR PREPARING FOODSTUFFS

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Application November 10, 1951, Serial No. 255,771

1 Claim. (Cl. 257—22)

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It is a major object of this invention to provide novel apparatus for cooking and precooling foodstuffs preparatory to packaging and quick-freezing the same; the apparatus being especially designed—but not limited—for use in connection with the preparation of precooked, quick-frozen chicken.

In the processing of chicken for quick-freezing it is contemplated that the chicken be steam cooked with the resultant broth retained separately in the cooking pan, and that both the chicken and broth be chilled before the packaging step; one purpose being that the chilled broth becomes gelled and in this condition is used in a quantity in the package to form a protective cover or seal about the chicken whereby to preserve its flavor and minimize dehydration when quick-frozen.

It is therefore another important object of the invention to provide novel apparatus to process a foodstuff, such as chicken, for packaging in the manner contemplated in the preceding paragraph.

An additional object of the invention is to provide apparatus, for the purpose described, which includes a novel unit for fast cooling the precooked chicken and broth while the same remain separated in the cooking pan; the pans being rail-supported for sliding motion from a cooking unit to said fast cooling unit which is disposed in adjacent relation.

A still further object of the invention is to provide apparatus, as in the preceding paragraph, wherein the fast-cooling unit includes a pan supporting rail section above a tank containing a coolant, and such rail section being mounted for lowering, from a normally raised position, whereby to partly submerge the supported pans in said coolant.

It is also an object of the invention to provide apparatus which is designed for ease and economy of manufacture.

Still another object of the invention is to provide practical and reliable apparatus for preparing foodstuffs, and one which is exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a somewhat diagrammatic side elevation of the apparatus.

Fig. 2 is an enlarged side elevation of the fast cooling unit detached from the remainder of the apparatus, and being shown partly in section.

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Fig. 3 is an end elevation of the fast-cooling unit detached from the remainder of the apparatus.

Referring now more particularly to the characters of reference on the drawings, the apparatus comprises an elongated frame assembly including three upstanding rectangular frames, indicated at 1, 2, and 3, disposed in end to end alinement. The frame 1 is formed, at its inner end, with a frame extension 4 which abuts the adjacent end of the frame 2, and the opposite end of the latter abuts the inner end of the frame 3. The frame extension 4 and the frame 3 are connected to adjacent ends of the frame 2 by tie bolts 5, thus forming a unitary or continuous frame assembly. Such frame assembly is fitted on top and for the full length with transversely spaced rails; such rails being in longitudinal sections, the section on the frame 1 being indicated at 6, the section on the frame 2 being indicated at 7, and the section on the frame 3 being indicated at 8. In their initial or normal positions the sections 6, 7, and 8 of the transversely spaced rails are all in alinement.

The rails of the respective sections, as above, are mounted, in connection with the corresponding frames, so that a continuous row, indicated generally at 9, of pans 10 may be supported by said rails with the pans depending between such rails and to a point some distance therebelow; the pans 10 being of a type which include side flanges 11 which rest on the rails in slidable relation. Additionally, each pan 10 includes a removable cover 12.

The frame 1 is fitted, some distance below the rail section 7, with a longitudinal support 13 on which a plurality of burners 14 are fixed in spaced relation; the present embodiment showing four burners longitudinally spaced in a manner to heat the contents of four pans supported by the rail section 7.

Each pan 10 is provided therein with a horizontal, perforate rack 15 supported by legs 16 some distance above the bottom of the pan; the chicken pieces 17 resting on the rack, while the broth resultant from steam cooking of the chicken accumulates in the bottom of the pan, as at 18.

The pans 10, with the rack supported pieces of chicken therein, are progressed on a predetermined time basis along the cooking unit comprised of the frame 1, rail section 7, and burners 14; the pans thence being advanced to stand for a time on the portion of the rail section 7 carried by the frame extension 4, so as to permit of initial atmospheric cooling of the pans and contents.

Thereafter, the pans 10 are advanced onto the rail section 7, which section is adapted to support four of such pans; such rail section 7 being mounted for lowering motion—with the pans thereon—in the following manner:

Each of the transversely spaced rails of the section 7 is secured at the ends to posts 19 which extend downwardly in slidable relation in guide sleeves 20 on the frame 2; such posts projecting a distance below the sleeves 20, and at the lower end being connected by bottom cross bars 21.

A cross shaft 22 is journaled in connection with and extends between fixed cross bars 23 at opposite ends of the frame 2 below the top thereof but above the bottom cross bars 21. Articulated actuating linkage 24 is fixed to each end of the cross shaft 22 and connects to the corresponding cross bar 21 by a pivot bolt 25. At one end of the frame 2 there is a forwardly projecting, vertically swingable lever 26 pivoted at its rear end, as at 27, to the adjacent member of frame 2, and formed at the forward end with a laterally projecting handle 28.

A link 29 is pivoted, as at 30, to the lever 26 intermediate its ends and thence extends upwardly and is connected with the pivot bolt 25. With this arrangement vertical swinging of the lever 26 effects corresponding vertical motion of the guided posts 19, whereby the rail section 7 may be raised or lowered. The lever 26 normally is maintained in a raised position by a catch 31, and in this position the rail section 7 is alined with the rail sections 6 and 8. For each fast cooling operation, of the pans and contents supported by the rail section 7, the lever 26 is released and swung downwardly, which results in lowering of the posts 19 and rail section 7 with the pans thereon; the latter, as they lower, entering part way into a rectangular open-topped cooling tank 32 mounted in the frame 2.

The structure including the frame 2, vertically adjustable rail section 7, and the tank 32 with coolant therein, may be termed the fast-cooling unit of the apparatus.

The tank 32 includes a quantity of a liquid coolant 33 capable of being maintained at low temperature without freezing. The low temperature of the coolant 33 is produced by refrigeration coils 34 mounted on the sides and ends of the tank, as well as in the bottom thereof. Such coils are connected by conduits 35, with an electric motor-driven compressor unit 36 mounted on a platform 37 in the lower portion of the frame 2.

When the pans 10 supported by the rail section 7 are lowered into the tank 32, such pans and their contents are fast-cooled; the covers 12 remaining on the pans. With such fast cooling of the pans and contents, the broth 18 in the pans is cooled to the extent that it gells. After the chicken pieces 17 and broth 18 are fast-cooled, as above, the rail section 7 is raised to its normal position and the pans are then advanced from said rail section 7 to the rail section 8 carried by the frame 3.

From the rail section 8 the pans are removed from the apparatus; the precooked fast-cooled chicken pieces 17 are removed and placed in packages; and finally the gelled broth 18 is removed and placed in the packages about the

chicken pieces to preserve their flavor and to provide a seal thereabout.

The method for which the present apparatus is especially adapted for use in performing is described in greater detail in my copending application, Serial No. 254,973 filed November 5, 1951.

With the described apparatus, foodstuffs—such as chicken—can be processed in a production-line manner, progressing from a cooking unit to a fast-cooling unit, and thence moving to an end unit from which the pans are removed. With the apparatus, a cooking method of the type described can be carried out in a practical and expeditious manner.

From the foregoing description it will be readily seen that there has been produced such an apparatus as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the apparatus, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

In a food preparing apparatus which includes a plurality of top-flanged cooking pans, transversely spaced rails to slidably receive the pan flanges from one end of the rails and so that the pans depend therefrom, a coolant tank under the rails and below the normal bottom level of supported pans, posts depending from the rails at both ends adjacent but beyond the tank, fixed guide sleeves in which the posts are slidable, cross bars connecting the posts below the sleeves, a shaft extending lengthwise of the rails and mounted in connection with and under the tank above the cross bars and laterally offset relative to the center of length of such bars, arms projecting radially from the shaft substantially in the vertical plane of the cross bars, links connecting the arms and cross bars at points centrally of the length of the latter, a transverse hand lever pivoted at one end in connection with the tank adjacent one side of the same and adjacent the vertical plane of one cross bar, said lever extending under the tank, to the other side thereof for operation, and a link connected to the lever intermediate its ends and to said one cross bar in common with the connection of the corresponding one of the first named links therewith; there being releasable holding means to retain the lever against movement in a rail lowering direction.

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