

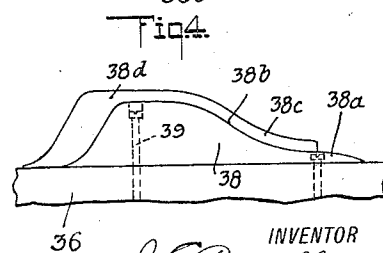
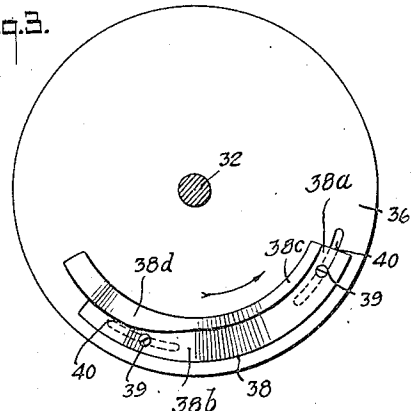
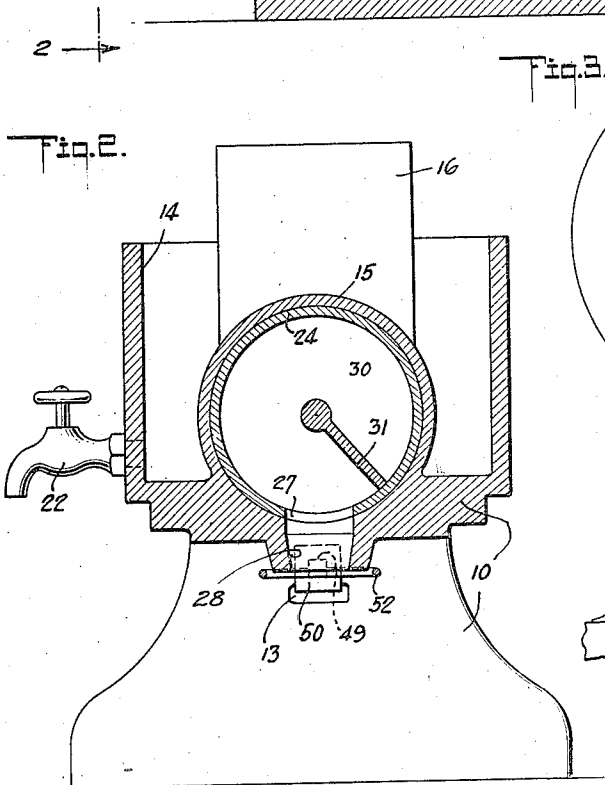
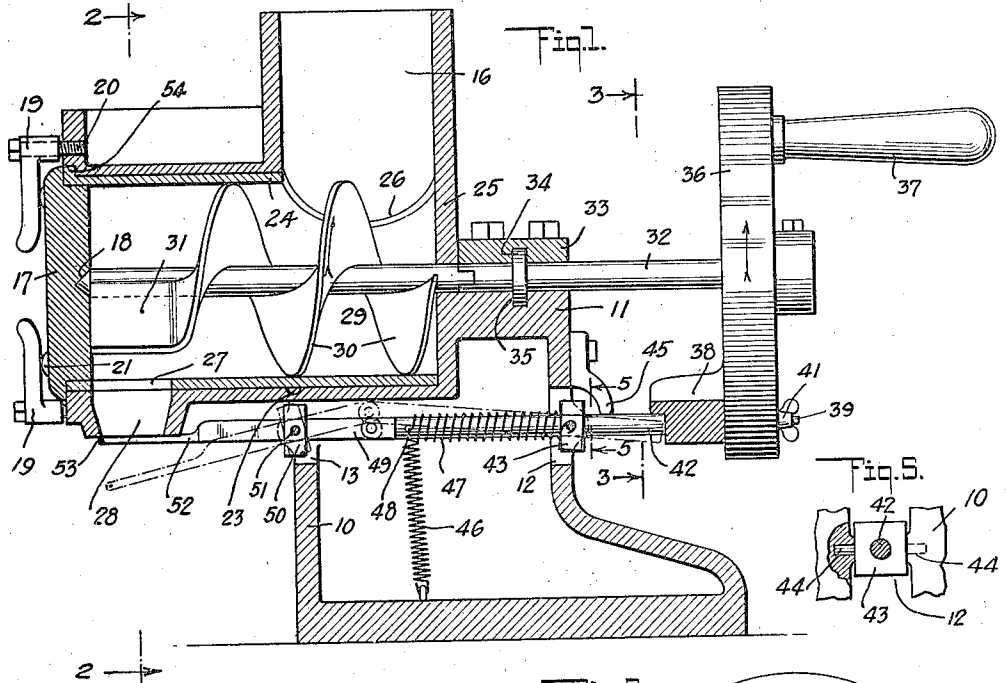
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BUTTER CUTTING MACHINE

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BUTTER-CUTTING MACHINE.

Application filed July 1, 1921. Serial No. 481,888.

To all whom it may concern:

Be it known that I, JOACHIN LEON PAISOLLI, a citizen of the United States, residing at Copiague, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Butter-Cutting Machines, of which the following is a specification.

This invention relates to machines for serving or cutting butter or like commodities into uniform pieces or blocks, and has for its objects the provision of a machine of a simple and sanitary construction, one that is not only easy to keep clean but is easy to operate; a machine that will produce blocks or pieces of butter for individual service that are of satisfactory appearance and uniform size; to produce a machine that is practically noiseless in operation, and to generally improve this class of devices with respect to simplicity and effectiveness of operation.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a vertical longitudinal section showing a preferred embodiment of the invention.

Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1.

Fig. 3 is a transverse section on the line 3—3 of Fig. 1 and indicating the fly wheel and its cam in elevation.

Fig. 4 is a bottom plan view of the cam.

Fig. 5 is a transverse sectional detail on the line 5—5 of Fig. 1.

In the practice of this invention it will of course be understood that not only any suitable materials may be employed but also the machine may be made in any desired size or dimensions according to the commodity to be treated thereby. Also while I refer to the cutting of butter as the primary object in view it will be understood that it may be used for cutting or shaping cheese, cakes, or other commodities to be cooked or eaten, as well as for the formation into units of any plastic material such as

bricks, tiles, or other articles of a ceramic nature.

Referring now more specifically to the construction illustrated the main body portion 10 consists of a casing which may be of cast metal, drop forging, or the like and having formed at 11 the lower member of a bearing and being provided with front and rear passageways 12 and 13 below the bearing 11. The casing includes an upwardly projecting portion comprising a receptacle 14 for ice, along the horizontal center of which is formed a shell 15 and with the end of which communicates an upwardly projecting mouth or hopper 16. The rear end of the casing shell is provided with a detachable closure plate 17 which may be substantially disk shaped and having a rabbeted periphery. On its inner face the plate is provided with a conical bearing pit 18 in alignment with the axis of the bearing 11.

The plate 17 is easily removable from the main portion of the casing but normally held in tight engagement therewith by means of a plurality of turn buttons 19 each journaled upon an adjustable bolt 20 screw threaded into the main portion of the casing. Each turn button has frictional contact with a cam 21 formed on the outer face of the plate 17, and by tightening or loosening the bolt 20 the turn button will always be afforded proper co-operation with its cam and yet provide for quick detachment of the plate when necessary.

The space surrounding the shell 15 is used for holding broken ice for keeping the interior of the shell and hopper cool. The drip water may be drained off through one or more cocks 22. I show only one and with a by-pass 23 leading toward the same from the opposite side of the casing. Any suitable cover, not shown, may be employed over the casing.

The shell 15 is bored cylindrically concentrically with the axis of the bearings 11 and 18, and into the cylindrical hole thus formed is inserted a lining sleeve 24 extending all the way from the plate 17 to the front wall 25 of the casing. At the front upper side of the shell, however, is formed an opening 26 registering with the bottom of the hopper 16. The lower rear end of the sleeve is provided with a discharge opening 27 registering with an opening 28 formed in the casing and constitut-

ing a die to determine the cross sectional shape of the butter or the like being delivered from the machine. The lower end of the die opening 28 lies preferably in a horizontal plane but may obviously be of any other desired shape according to the shape of the output desired.

Any suitable means may be provided to feed or force the butter, received through the hopper, through the sleeve and delivery openings 27 and 28. The feeder shown consists of a screw 29, the thread 30 of which is spiral from the front end but terminates at its rear end in a flat or broadened paddle 31 adapted to sweep directly over the opening 27 and so force the butter ahead of it down through the discharge openings. Immediately, however, after the paddle passes the opening 27 there is a brief cessation of forcing action therefrom. The front end of the screw is journaled in the bearing 11 while the rear end thereof is pointed and projects into the bearing pit 18.

As a suitable means to rotate the feeder 29 I provide a crank shaft 32 journaled likewise in the bearing 11 and held in place by a removable cap 33 and from endwise displacement by means of a collar 34 formed on the shaft and projecting into a groove 35 routed into the bearing. The front end of the screw shaft and the rear end of the crank shaft have pin and socket connection whereby rotation of the crank shaft will cause rotation of the screw but through which connection the screw is directly detachable from the crank shaft after the plate 17 is removed from the casing.

The crank for rotating the shaft 32 is indicated in the nature of a fly wheel 36, to the front face of which is fixed a handle 37 and to the rear face of which is fixed a peculiar form of cam 38, the same being preferably adjustable circumferentially of the axis of the shaft so as to determine the proper effective position thereof with respect to the position of the paddle portion of the feeder. The means indicated for effecting the adjustable connection between the cam and the crank includes a pair of bolts 39 extending forward from the cam through arc shaped slots 40 formed through the wheel or crank. Any suitable means such as thumb nuts 41 may be employed on the front ends of the bolts to fix them in the desired position.

It will be understood that the handle will be turned in a clockwise direction as indicated by the arrows to cause the feeding action of the member 29. The leading edge or end 38^a, therefore, of the cam is thin or shallow, but the surface of the cam merges into a throw or rise 38^b spaced rearward from the crank, determining what I would call the plunger cam. Projecting over this cam is a flange or lip 38^c which is practical-

ly coextensive in length circumferentially with the plunger cam but at the rear end of this lip is formed a downward offset 38^d effective at right angles to the action of the plunger cam, and constituting what I term a trip cam. The plunger cam operates parallel to the shaft, and the trip cam operates parallel to the crank and perpendicular to the shaft.

Any suitable cutting apparatus may be provided to sever the plastic material forced through the die opening 28 from the bulk thereof following it. The means I show for this purpose comprises a plunger 42 mounted for reciprocations in a block 43 having laterally projecting trunnions 44 journaled in the opening 12 of the main casing, the axis of the trunnions being horizontal and perpendicular to the axis of the plunger. The front end of the plunger co-operates directly with both cams 38^b and 38^d, and this end of the plunger is held from movement upward above the horizontal as by means of a stop 45 carried by the frame or casing. The mounting of the block 43 as indicated permits, however, the front end of the plunger to move downward under the action of the trip cam and against the force of a spring 46 attached to the rear end of the plunger. A spring 47 acts upon the plunger tending to hold it forward toward or against the rear face of the crank or fly wheel 36 until the leading end or edge 38^a of the cam engages it. Connected by a horizontal pivot 48 to the rear end of the plunger is a shank 49 mounted slidably in a bearing block 50 supported in the opening 13 by transverse trunnions 51, this arrangement being similar to that in the opening 12 except that the shank 49 is preferably square in cross section while the plunger is round. The form of the shank prevents rotation thereof around its axis, while the round formation of the plunger prevents any possible cramping thereof in practice. The rear end of the shank carries a fork 52 straddling the die opening 28 and operating normally in the plane of the delivery end thereof. Stretched across between the ends of the fork fingers is a wire 53 constituting the cutting element. By variation in attachment the functions of the springs 46 and 47 might be combined in a single resilient member.

From the foregoing specific description of the mechanism, its mode of operation will be appreciated and briefly summarized as follows: The plunger and cutter are indicated in Fig. 1 as occupying their position as determined by the end of the throw of cam 38^b but just before the cam 38^d has acted. In the next moment the second cam will be effective to depress the front end of the plunger as indicated in dotted lines causing the tilting of the plunger and

shank around their respective trunnions and the dropping of the cutter 53 quickly downward well below the delivery or die opening 28. In this position of the plunger, while it is still held by the trip cam, the end of the plunger cam is reached and the spring 47 will snap the plunger forward, the cutter moving thus back to its normal position ready for the next stroke. The sleeve 24 may either be fixed in position in the casing or readily removable for cleansing. In either event it may be held from rotation in operation by any suitable means such as a key or lug 54 co-operating with a notch in the casing. In place of having the cam adjustable on the crank, it might be sufficient in some instances to adjust the crank with respect to the shaft 32 and fix the cam to the crank wheel without providing adjustment for it.

I claim:

1. In a butter cutter, the combination of a casing, means including a movable member to feed butter through the casing, said member being a crank wheel, a cutting member movable in a straight path while

acting to sever portions of the butter from the bulk as it is fed from the casing, and means carried by the movable member aforesaid to cause a successive movement of the cutting member along a different path, the means for actuating the cutting member being a double cam carried by said crank wheel and acting in succession to move the cutting member in different directions.

2. In a butter cutter, the combination of a casing, rotating means to force butter therethrough and including a paddle movable around the axis of the movable member, a cutting member acting to sever predetermined portions of the butter as they are forced successively from the casing by the paddle, and means to actuate the cutting member according to the position of the paddle.

3. A device as set forth in claim 2 in which means is provided to variably time the action of the cutting member with respect to the position of the paddle.

In testimony whereof I affix my signature.

JOACHIN LEON PAISOLLI.