

This invention relates to the formation of butter and like material into pats, small cakes and the like and it has for its object to provide a new or improved method of and means for this purpose by which the pats, small cakes and the like may be produced with greater precision and rapidity than has heretofore been possible.

The method of forming butter and like materials into pats, small cakes and the like according to the present invention consists in extruding the material through an orifice of an area smaller than that of the pat or cake, compressing the portion extruded so as to flatten the same into the shape and area required and severing the pat, cake or the like so formed from the extruded column of the material.

An apparatus according to this invention for forming butter and like materials into pats small cakes and the like may be said to comprise broadly an orifice or nozzle through which the material is extruded vertically, means for forcing the material through said orifice or nozzle a plunger opposing the mouth of the orifice or nozzle and adapted to compress or flatten the extruded column of material into the size and shape required, means for severing the formed pat or the like from the column of material at a point just above the orifice or nozzle means for displacing the severed pat or the like beneath the compressing or flattened plunger and means for conveying said pat or the like to a position convenient for removal.

In order that the invention may be clearly understood an embodiment of the same will now be described by aid of the accompanying drawings in which:-

Fig. 1 is a somewhat diagrammatic part sectional elevation of the apparatus according to the embodiment to be described.

Fig. 2 is an enlarged detail of the nozzle, plunger and the severing and displacing mechanism .

Fig. 3 is a similar view of the same shewing a modified arrangement.

In the apparatus illustrated the butter or other material is contained in a cylinder a the upper end b of which is formed or otherwise provided with an extruding orifice c of a predetermined diameter and length the sides of the cylinder merging gradually into the sides of the orifice so as to offer as little resistance as possible to the expulsion of the material which may be effected by means of a piston d sliding in the cylinder behind the mass of material.

Mounted directly above the extruding orifice is a vertically reciprocable plunger or stamper e the lower end of which is fitted or otherwise provided with a platen e¹ which may be either plain or embossed with a particular pattern. This plunger or stamper is periodically reciprocated by means of a crank pin f on a cam f¹ so as to compress the column of material previously forced through the extrusion orifice and flatten the same into a pat or cake of the desired thickness, the diameter of the flattened pat or cakes being determined by the height and diameter of the extruded column.

Adjacent the mouth of the extruding orifice is mounted a horizontal reciprocable frame-like member

g having a wire h stretched transversely across its forward end constituting a cutting device for severing each pat or cake from the column as it is formed, the rear side g¹ of the frame member being adapted to engage the completed and severed pat or cake and push the same on to a conveniently situated conveyor such as a moving band i on which may be laid a sheet of paper j, or the pats may be received by a stationary or other tray or receptacle.

In operation the butter or the like is ejected through the orifice in the upper end of the cylinder intermittently and to a predetermined height above the top surface of the orifice.

Immediately following each ejection the plunger or stamper moves downwards and flattens out the protruding column of butter. The plunger is then withdrawn when the cutter device is moved to sever the formed pat or cake and push it onto the surface of the conveyor. By withdrawing the plunger or stamper previous to cutting off the pat or cake the plunger is prevented from adhering to the pat or cake. When the surface of the conveyor is below the level of the top surface of the orifice as in Figs. 1 and 2 the cutter device may move in a horizontal path. Where, however, the surface of the conveyor is level with the top surface of the orifice as in Fig. 3 the cutter device may be guided in cam grooves k of such a shape as to pivot the cutter device upwards so as to clear the pats or cakes previously deposited on the conveyor.

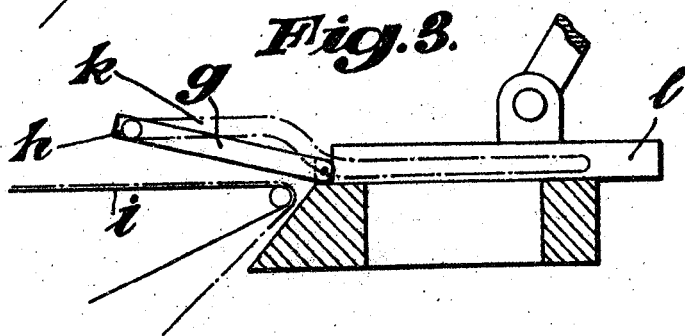
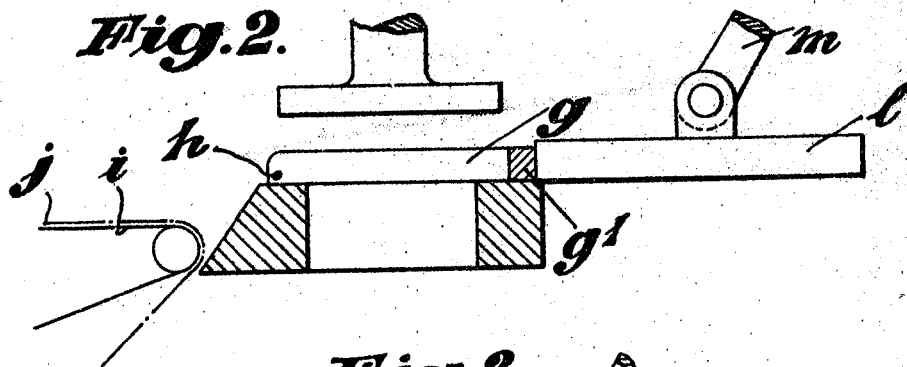
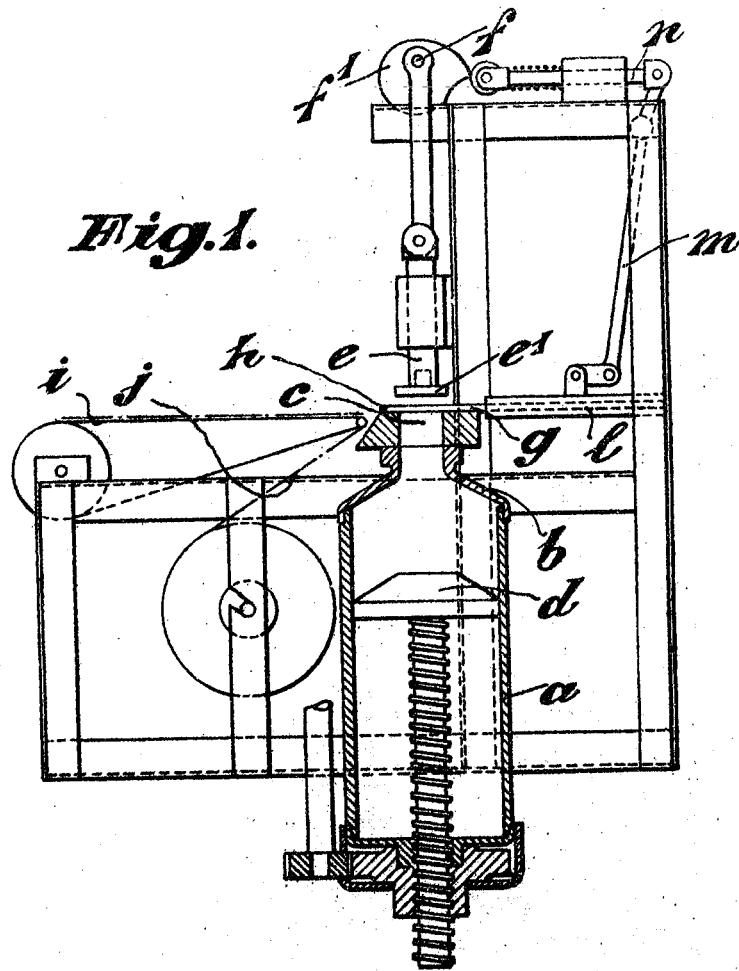
The cutter device in the embodiment illustrated is reciprocated by means of a pusher l which in turn is reciprocated through a lever m by means of a

spring controlled plunger n the inner end of which bears against the surface of the cam f¹.

It will of course be understood that an apparatus according to this invention may comprise more than one extruding orifice and associated mechanism whilst any suitable type of cutter mechanism may be used and any suitable convenient means for forcing the material through the extruding orifice or orifices.

Further, in view of the importance of keeping the butter or other material at a suitable temperature and consistency means may be provided for this purpose such as cooling jackets not shown surrounding the cylinder and extruding orifice.

Means such as a water spray not shown may also be provided for lubricating the stamper and pusher to prevent any possibility of the material adhering to the surfaces of the stamper or pusher.



INVENTOR

W. G. Knibbs

by Egerton R. Case
Atty.

Certified to be the drawings referred to
in the specification hereunto annexed.
Toronto, Oct. 26th, 1925.