L. L. KNOX.

PORTIONING MECHANISM.

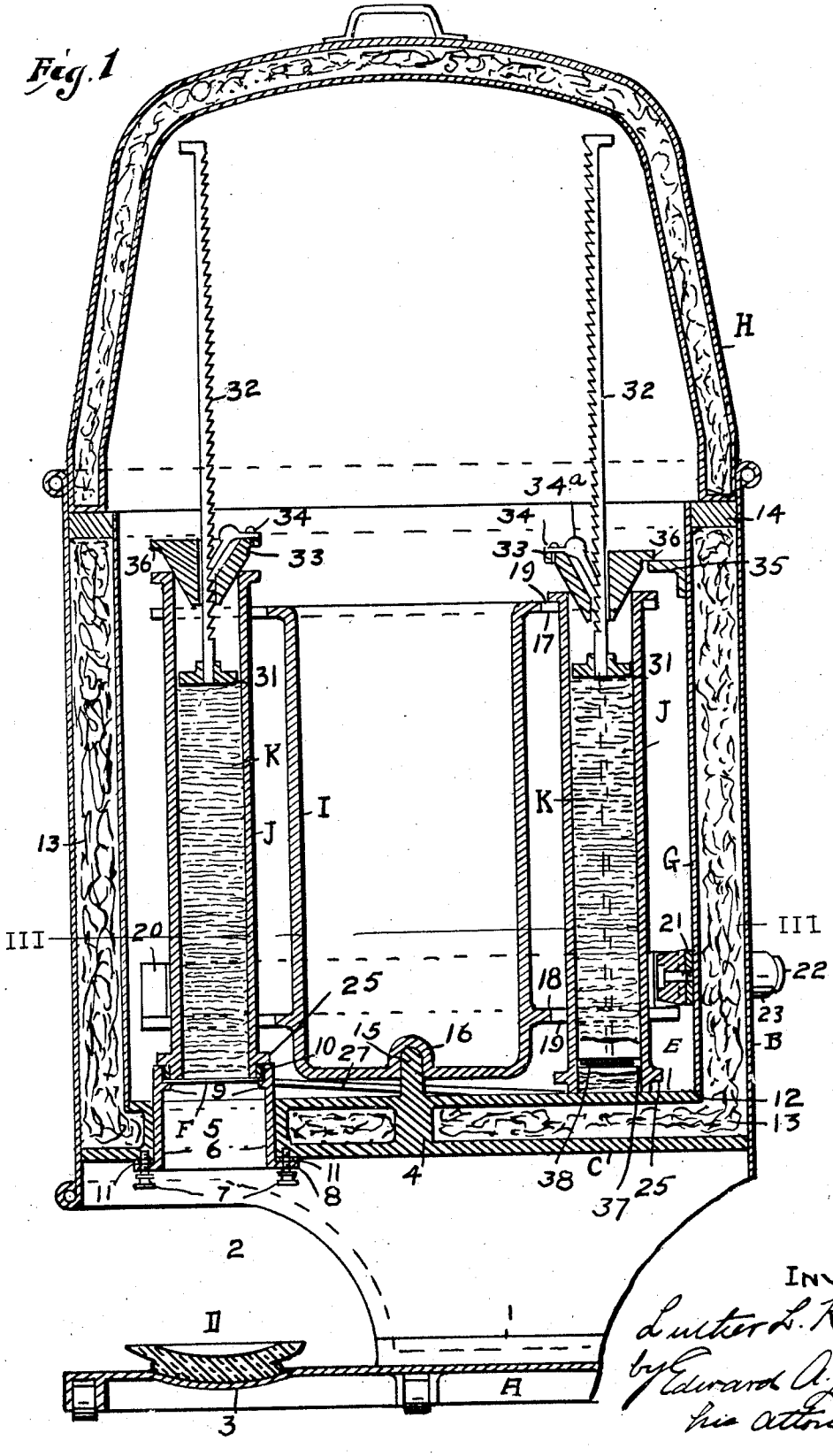
APPLICATION FILED NOV. 27, 1920.

1,407,759.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 1.

Fig. 1



INVENTOR

Luther L. Knox,

by Edward A. Lawrence

his attorney.

L. L. KNOX.

PORTIONING MECHANISM.

APPLICATION FILED NOV. 27, 1920.

1,407,759.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 2.

Fig. 2

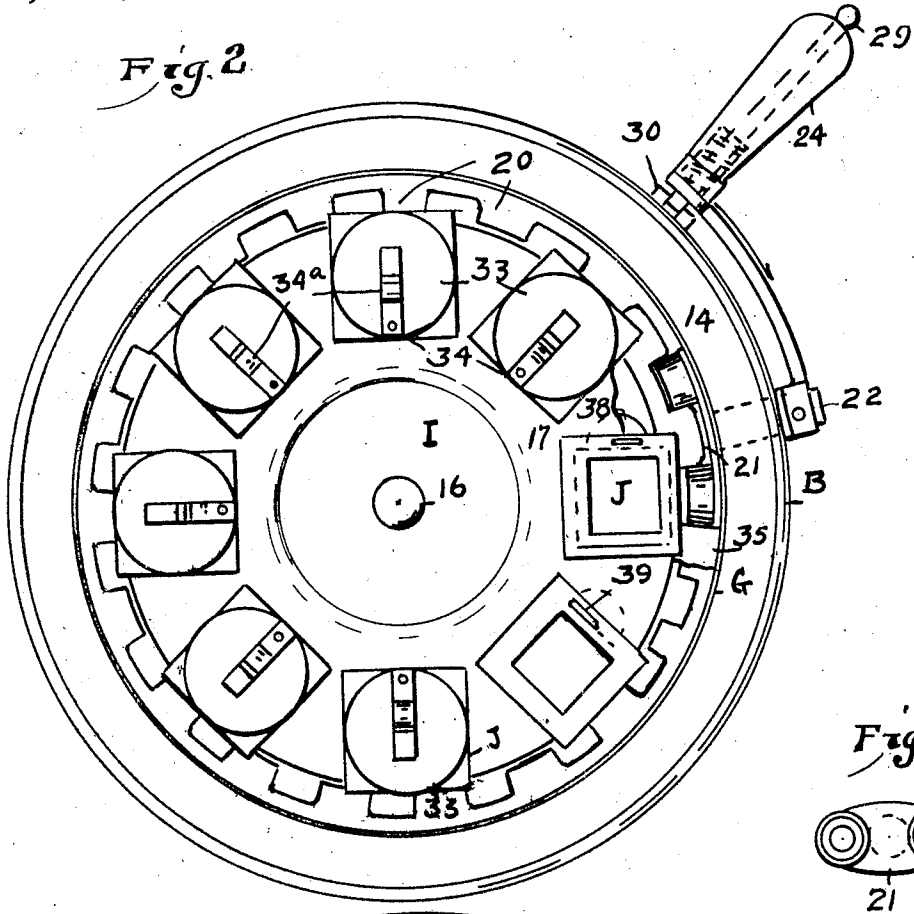
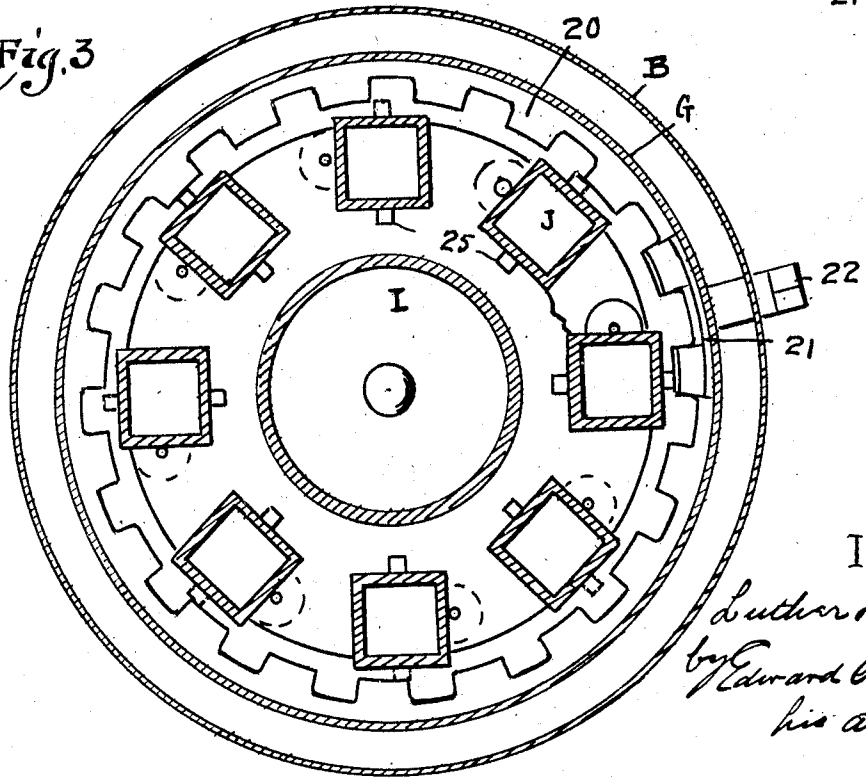


Fig 6

Fig. 3



INVENTOR

Luther L. Knox,

by Edward A. Lawrence

his attorney.

L. L. KNOX.

PORTIONING MECHANISM.

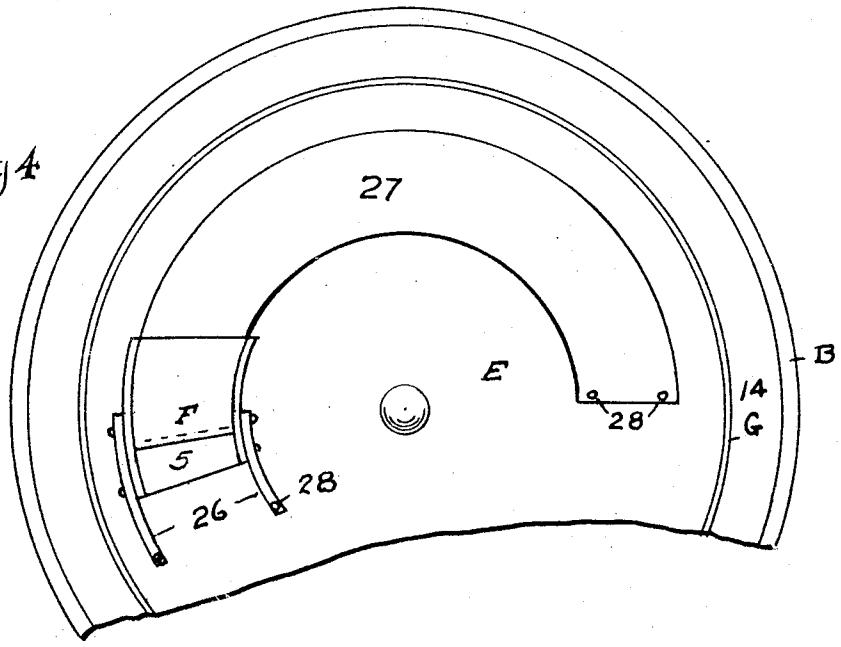
APPLICATION FILED NOV. 27, 1920.

1,407,759.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 3.

Fig 4



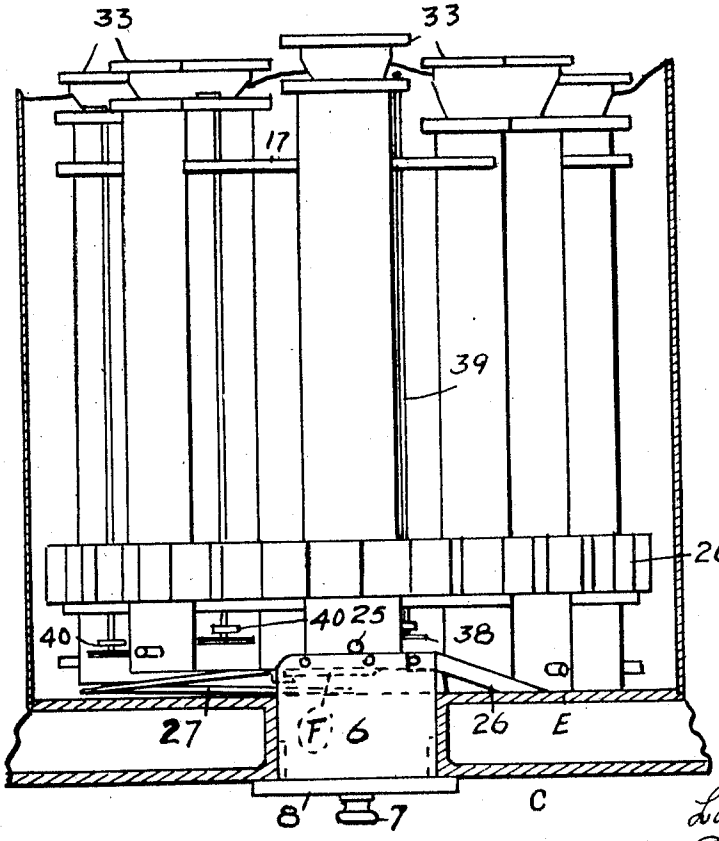


Fig 5

INVENTOR

Luther L. Knox

by Edward A. Laurence

his attorney

L. L. KNOX.

PORTIONING MECHANISM.

APPLICATION FILED NOV. 27, 1920.

1,407,759.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 4.

Fig. 7

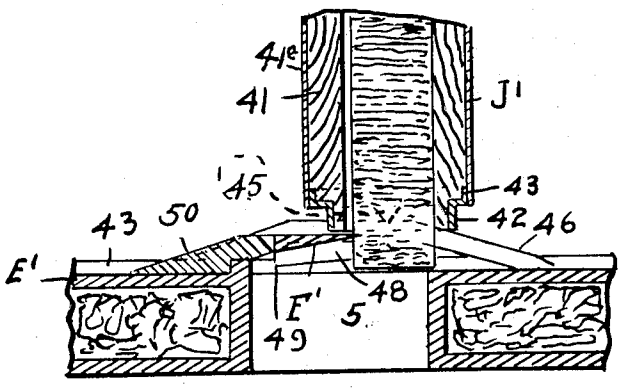


Fig 8

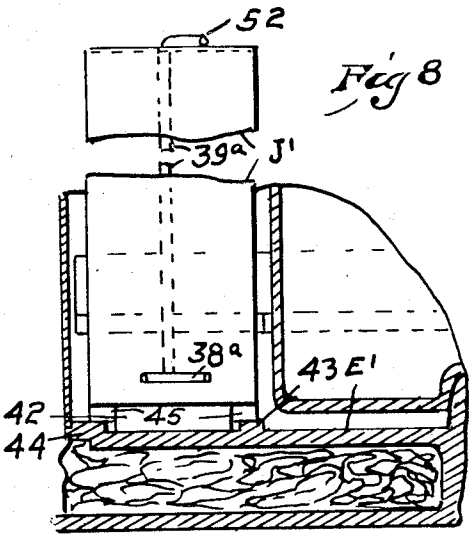


Fig 9

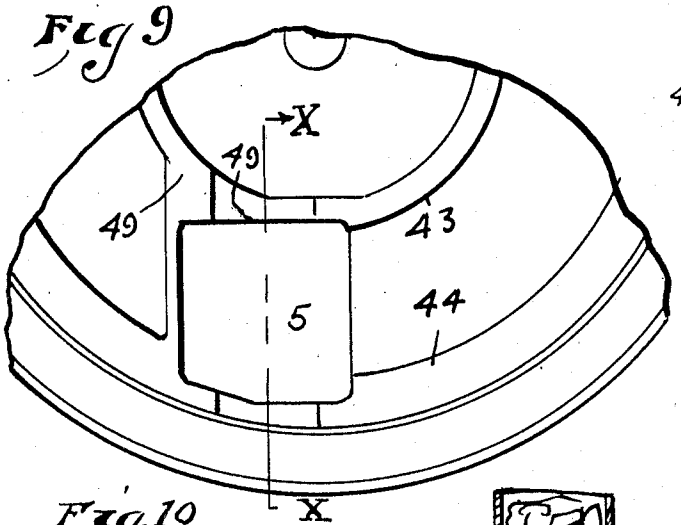


Fig 11

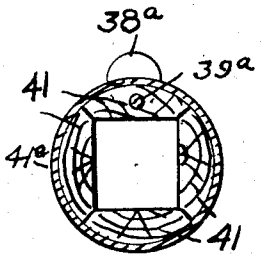
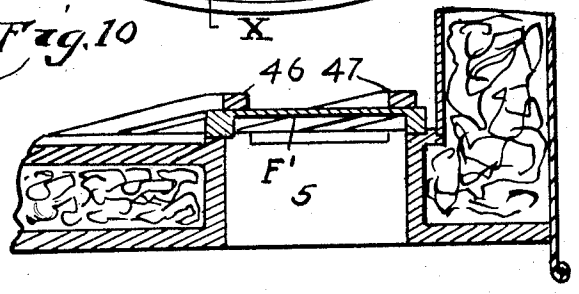


Fig. 10



WITNESS

T. F. Dilworth

INVENTOR

Luther L. Knox,

by Edmund A. Lawrence

his attorney.

UNITED STATES PATENT OFFICE.

LUTHER L. KNOX, OF BELLEVUE, PENNSYLVANIA.

PORTIONING MECHANISM.

1,407,759. Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed November 27, 1920. Serial No. 426,705.

To all whom it may concern:

Be it known that I, LUTHER L. KNOX, a citizen of the United States, and residing in the borough of Bellevue, in the county of Allegheny and State of Pennsylvania, have invented or discovered the new, useful, and Improved Portioning Mechanism, of which the following is a specification.

My invention consists in certain new and useful improvements in machines for dispensing butter and other substances in the form of individual portions.

More particularly it relates to the type of machines wherein the butter in the form of rods or bars is contained in one or more dispensing tubes or containers from which the butter is caused to protrude, the protruding portion being sliced off to form the individual portion, said operation being repeated intermittently as portions are required.

A serious problem in connection with such machines is to provide for and control the protrusions of the butter. In some machines the butter is forced out by means of a manually operated piston working in the tube or container, but this results in compressing the butter, expelling the liquid elements therefrom, and thus reducing its volume and weight. Such reduction makes the patron's portion look scanty and also renders the butter harder to spread. The result is a demand for double portions, and an unnecessary increase in the consumption of an expensive and valuable product.

In the case of other machines the protrusion is caused by gravity through the intermittent removal of a support beneath the butt of the bar of butter. In such machines the butter sometimes adheres to the wall of the dispensing tube, preventing or impairing the protrusion, even when riding weights are used to stimulate the movement of the butter in the tube.

With these difficulties in view I have invented a new and improved machine in which the protrusion is effected by moving the dispensing tube, thus partially stripping the same from the bar of butter contained therein and thereby causing the end of the latter to protrude to the proper degree; means being provided for slicing off the protruding part of the butter to form the individual portion. To insure the proper partial stripping of the tube from the butter, I prefer to provide means for preventing the butter from moving with the tube.

In the embodiment of the principles of my invention which is illustrated in the drawings, I cause the vertically disposed dispensing tube, containing the bar of butter, to move in a plane transverse to its axis, the bar being sustained in the tube by any convenient form of support upon which the lower end of the bar rests. At a point in its travel the tube is elevated longitudinally, the butter remaining stationary, means being preferably provided for preventing the butter from following up with the tube, thus causing the butter to protrude from the tube. The protruding end of the butter is then sliced off, preferably by the travel of the end of the tube over a stationary knife, and the severed portion drops down, owing to the absence of the support which is omitted, apertured, or removed at the proper point. It is evident that the thickness of the portion severed may be regulated by adjusting the degree of movement imparted to the tube and the position of the knife. The tube with the shortened bar of butter encased therein is then moved around to again confront the knife, said tube being meanwhile lowered to its original level and the shortened bar of butter being held in the tube by said support.

The machine shown in the drawings is provided with a plurality of dispensing tubes vertically disposed around a rotary carrier, which is preferably in the form of an ice tank for the purpose of refrigerating the contacts of the tubes. Means are provided for imparting intermittent rotation to the carrier. The lower ends of the tubes travel over a substantially horizontal, annular sealing floor or surface which supports the bars of butter in the tubes, and at one point in their travel said tubes are in turn elevated and caused to pass over a fixed knife blade beneath which the floor is apertured, so that the butter is caused to protrude from the lower end of the tube and is sliced off to form a portion which drops down through the aperture in the floor. To prevent the butter following up with the tube I prefer to provide automatic means engag-

ing the top of the bar which prevent its movement with the tube. By adjusting the elevation of the knife and the upward movement of the tube the thickness of the portion severed is regulated. After the slicing operations the tubes with the shortened bars of butter encased therein are lowered to the normal plane of the sealing floor for a repetition of the operation just described.

I also show a new and improved form of dispensing tube built up of wooden sections incased in a metal tube.

Other novel features of construction and arrangement of parts will appear from the following description.

In the accompanying drawings, which are however merely intended for the purpose of illustrating the principles of my invention without limiting the scope thereof to the construction shown, Fig. 1 is a vertical, diametric section of a butter dispensing machine embodying the principles of my invention; Fig. 2 is a top plan view of the said machine with the cover removed; Fig. 3 is horizontal section of the same taken along the line III—III in Fig. 1; Fig. 4 is a view similar to Fig. 2 but with the tube carrier and the tubes removed to show parts; Fig. 5 is broken elevation looking toward the right in Fig. 1 and illustrating the rotary travel of the tubes, the casing walls being omitted; Fig. 6 is an end view of the fork used for rotating the tube carrier intermittently; Fig. 7 is a detail in vertical section showing a modified form of dispensing tube, elevating and cutting means; Fig. 8 is a detail showing one of said dispensing tubes in broken elevation, the floor and rotary carrier being shown in vertical sections; Fig. 9 is a broken plan view of the form of sealing floor also illustrated in Figs. 7 and 8; Fig. 10 is a sectional view taken along the line X—X in Fig. 9, and Fig. 11 is a horizontal section of the modified form of tube.

The following is a detailed description of the drawings, reference being first had to Figs. 1 to 6, inclusive.

A is the base which is preferably a circular casting having screw feet by means of which the base may be solidly supported and leveled on a counter or other support. 1 is a vertical flange on base A spaced slightly from the edge of the latter and running around the rear half of the base. B is the outer wall of the machine casing which fits down outside of said flanges 1 and may be soldered or welded in place.

C is a horizontal floor fixed within the wall B some distance above the base A and the front half of said wall B is cut away, as at 2, under the floor so that access may be gained to place butter plates D on the base to receive the portions as they are severed and dropped through the floor C, as will hereafter be explained. The upper surface of the base A is preferably provided with a seat or depression 3 to facilitate the proper spotting of the plates.

E is a second horizontal floor spaced slightly above the floor C but of less diameter so as to leave an annular space between the perimetral edge of the floor E and the wall B of substantially the same width as the distance between the floors C and E. The floor E is supported by the floor C, and I prefer to cast said floors in one piece connected by the axial, integral column 4. At the front of the machine said floors are apertured, one above the other and an integral wall connects said floors together around the edges of said aperture to form a walled port 5, down through which the butter portions drop onto the butter plates in seat 3. The material of floor E is preferably nickel which is given a smooth polished top surface for a purpose to be described.

6 represents a pair of bracket plates extending up through the port 5, and held in position by means of set screws 7 extending through the horizontal bottom flanges 8 of said plates into threaded holes in the bottom of the floor C. The upper ends of said plates protrude above the level of the floor E and are provided slightly below their top edges with inwardly extending shelf flanges 9 for the support of the horizontally supported knife blade F which may be held in position by means of small screws 10 extending through said blade into threaded holes in the flanges 9. It is evident that the elevation of the knife F may be adjusted by means of filler strips 11 of different thicknesses introduced between the bottom flanges 8 and the floor C. The perimeter of the floor E is overcut, as at 12 to receive the lower edge of the inner casing wall G which is thus supported by the floor E concentrically with the wall B. The wall G is soldered or welded to the floor E. The upper end of the wall G stops short of the upper edge of the wall B, and the spaces between the floors C and E, and between the walls B and G are packed with cork 13 or some other non-conductor of heat. The top edges of the walls B and G are connected by a metal filler ring 14 soldered in place.

H is a double walled, insulated cover, preferably domed, as shown in Fig. 1 whose lower edge fits down within the wall B onto the filler ring 14.

I is a tube carrier, preferably in the form of an ice bucket rotatably mounted in the outer container or casing, as by means of an axial stud 15 on the floor E engaging an axial socket 16 in the bottom of the carrier I. Said carrier is exteriorly provided with upper and lower annular flanges or heads 17 and 18, which may be cast integral with the carrier or may be fixed thereon. Said heads are apertured, as at 19

for the downward insertion of the dispensing tubes J. Said tubes may be of any desired cross-sectional shape to conform to the cross-sectional shape of the bars of butter to be inserted therein. In the drawings said tubes are shown as rectangular. Said tubes are preferably not vertically supported by the carrier I but simply carried around by the rotation of the carrier, the support being afforded by the floor E. The tubes may be freely lifted out of the machine from above. K in Fig. 1 represents the bars of butter in the tubes J.

The bars K are supported with the tubes J by the top surface of the floor E as the tubes J traverse the same.

The head 18 of the bucket I is provided with an annular series of cog teeth 20 which are engaged by the rotator fork 21 on the inner end of a shaft 22 which is horizontally journaled in a sleeve bearing 23 extending through the casing walls B and G and is provided on its outer end with a crank handle 24. It is evident that by turning the handle 24 the bucket may be rotated in the proper direction which is clockwise in the drawings. The rotator fork and the cog teeth are properly proportioned so that each complete revolution of the crank handle 24 will cause the tubes to travel a distance equal to the distance between the axes of adjacent tubes.

The tubes are provided near their bases with a pair of opposed, horizontally disposed rounded projections or pins 25, and 26 represents rails which have their forward ends resting on the floor E while their rear ends are pivotally secured to the upper outside faces of the brackets 6.

Thus, as a tube J approaches the position of the knife F the pins 25 engage and ride up on the rails 26, thus elevating the tube until its bottom edge nicely clears the top surface of the knife F, the pins passing on along the top of edges of the bracket plates 6 and thus supporting the tube in its elevated position with its base just clearing the knife, until it has traversed the said knife. Pivotally attached to the other ends of the brackets 6 is the inclined false floor 27 whose lower end rests on the floor E. The rails 26 and the false floor 27 are curved to conform to the path of the tubes as shown in Fig. 4. If desired, the lower ends of the rails 26 and the floor 27 may be fixed in place by small set screws 28 extending up through the floor E, on either side of the path of the tubes J, and screwed into threaded holes in the lower face of said rails and false floor. It is evident that the elevation of the knife may be adjusted, as described, to give the desired thickness to the portions to be severed, and that the rails 26 and false floor 27 will automatically adjust themselves accordingly, a plurality of holes for the screws 28 being provided in the floor E so that said rails and false floor may be held rigidly in their adjusted positions.

The knife F covers substantially the rear half of the port 6 only, so as to give proper clearance for the butter protruding from bottom of the tube and insuring its dropping down through the port 6 when severed by the knife.

The movements of the tubes are so regulated that when a revolution is given to the handle 24, a tube is caused to traverse the port 6 for the slicing off of the protruding butter butt. To prevent an over revolution of the handle 24, I prefer to provide the same with a suitable spring latch 29 which is adapted to engage a notched projection 30 on the machine casing, thus preventing the handle from being turned until said latch is retracted and automatically halting the movement of the handle when a full revolution has been completed, by the re-engagement of the latch with the projection.

I prefer to provide means for insuring the protrusion of the lower ends of the butter bars as the tubes are elevated. This may be conveniently accomplished by holding the butter bars against vertical movement as the tubes move upwardly. Thus I have provided as a convenient method of accomplishing said result the following mechanism.

31 represents a foot plate of proper size to fit loosely in the tube J and ride on top of the bar of butter K. Said foot plate is attached to the lower end of a rack bar 32 which extends upwardly through a loosely fitting bore in the weight 33 which is conically tapered so as to sit in the upper end of the tube. 34 represents a spring finger whose upper end is attached to the top of the weight 33 while the outer end depends in an enlargement of the bore of weight 33 and engages the teeth of the rack bar to hold the same and its foot plate depressed, but at the same time permitting the foot plate and rack bar to follow down on top of the bar of butter as the same is lowered relative to the tube before each slicing operation. Thus the rack bar and foot plate are free to drop relative to the corresponding weight but cannot rise relative to the same unless the finger 34 is disengaged from the rack.

Before each tube in turn passes through the portion slicing operation, the corresponding weight 33 is raised, on its rack bar, above the end of the tube for a distance of one or more notches or teeth, so that as the tube starts to rise, the burden of the weight is exerted on the top of the bar of butter, thus holding the butter against movement with the tube thereby breaking any adhesions of the butter to the tube. If desired the weight may be raised to a degree equal to the desired protrusion of the bar from the lower end of the tube when the cut is made.

Any convenient means for raising the weight may be used. Thus 35 is a riding flange mounted on the inner face of casing wall G and inclined upwardly in the direction of movement of the tubes. As the tubes move around the lower end of said flange engages in turn the underside of the top lips 36 of the weights 33 so that the movement of the tubes and the upward inclination of the flange elevates the weights 33 which rise, without raising with them their rack bars and foot plates, which latter remain resting on top of the butter bars. As the lips 36 of the weights 33 ride off the elevated rear end of the flange 35, the weights remain elevated, since the spring fingers 34 will not permit the weights to slip down on their rack bars. Thus, when the tubes are in turn started upwardly as they approach the knife F, the bars of butter contained therein are held down by the weights so that any adhesions are broken, and the tubes rise while the butter bars maintain their levels, so that their butts protrude and are sliced off and drop down through the port 6 onto the butter plates D. As the tubes in turn pass off the knife F the shortened bar of butter is supported by the false floor 27 with its bottom flush with the bottom of the tube and said tube and the bar of butter encased therein are restored to their level by the inclination of said false floor which delivers said tubes at its end to the floor E. As the tubes again approach the knife F, their weights are again raised above the top of the tubes to permit the proper elevation of the tubes without elevating the bars of butter encased therein.

It is preferable to raise the weights just sufficiently to insure the loosening of the bars of butter from the tubes as the latter begin their rise, the weight being picked up by the upper ends of the tubes as they continue to rise, thus preventing undue compression of the butter. The foot plates and rack bars will of course remain on the top of the bar, the weight sliding up on the rack bar. Thus after the tube has passed through the portion slicing operation and is again moving along over the floor E, the foot plate will be resting on top of the bar of butter while the weight rests on the top of the tube. The weight riding on top of the tube as it passes through the slicing operation insures the descent of the tube to its former level with its lower end on the floor E.

In Fig. 1 I have shown the weight lifting flange 35 opposite the cutting position but it is the entrance of said flange which is there shown, and its higher end is not more than ninety degrees from the cutting position and may be just short of the front ends of the rails 26.

To prevent a foot plate 31 from encountering the knife F when butter has been portioned out of its tubes I hook the end of the rack bar 32 so that it will engage the top of the weight 33 and limit the descent of the foot plate in the tube.

To enable me to lift the tubes J out of the machine without danger of the butter slipping down out of the tubes, I prefer to slot the side of each tube, as at 37 near its bottom so that a small blade 38, mounted on the lower end of a rock shaft 39 vertically journaled in brackets 40 on the side wall of the tube, may be swung into position to dig into the side of the bar of butter and support it while the tube is being withdrawn. Said blades 38 may also be used to hold bars of butter in loaded tubes while they are being inserted in the machine.

When necessary the weights 33, the rock bars 32 and the foot plates 31 may be dismounted from the tubes by simply lifting them from place. The spring fingers 34 are provided with intermediate enlargements 34ª against which the finger may be pressed to disengage the finger from the rock bar so that the foot plate may be sufficiently elevated to rest on top of the butter bar in a freshly loaded tube.

If desired I may apply my mechanism for insuring the proper protrusion of the butter in dispensing machines wherein the butter is protruded by dropping in the dispensing tube instead of the tube being raised in relation to the unelevated butter. My adjustable weight mechanism may be equally well applied to machines of that type; and I include such use of the same within the scope of my present invention.

In Figs. 7 to 11 inclusive I show certain modifications in the structure of the machine.

Thus I show the dispensing tubes J′ formed of four wooden strips 41 whose outer perimeters are curved to complete a circle while their inner faces are flat to form the square interior of the tube. If desired the interior of the tube as well as its exterior may be of any desired form, such as curved or angular. The abutting edges of the wooden strips 41 are bevelled to fit together. The edges of the strips may be glued together but I prefer to incase the built up wooden tubes in a tightly fitting outer casing or tube 41ª of suitable metal such as aluminum or nickel. The circumferential heads 17 and 18 are of course apertured to fit the tubes J′.

The lower extremities of the tubes J′ are reduced in diameter and reinforced by the metal collars 42 which are provided with annular top flanges 43 whose edges are soldered to the bottom edges of the tubes 41ª.

The floor E′ is shown provided with an inner raised rim 43 and an outer raised rim 44, the lower, reduced ends of the tubes J′ extending down between said rims to just

clear the floor E′ or to be in sliding contact therewith. 45 represents a pair of opposed contact bosses integral with the collars 42 which, if the ends of the tubes J′ clear the rims 43 and 44, slide on said rims 43 and 44, and which, if the ends of the said tubes slide on the floor E, may either clear said rims or slide thereon.

The aperture 5 extending up through the floor E′ cuts away portions of the opposed sides of said rims 43 and 44, and 46 and 47 represent removable track members attached on the inner and outer rims 43 and 44 and spanning the sides of the aperture 5, said track members being curved to conform to said rims. Said track members may be attached in place by any convenient means, such as small screws. Said track members are provided with inclined fronts and rears and horizontal intermediate portions of the proper height to obtain the desired elevation of the tubes relative to their contents. When a tube approaches the aperture 5 in the floor E′, the bosses 45 ride up the inclined approaches or front portions of the tracks 46 and 47, thus elevating the tube to its desired level, when it rides over the aperture 5 on the horizontal portions of the tracks. As the tube passes the aperture 5, the bosses 45 ride down the inclined rear ends of the tracks, lowering the tube to its former level at the floor E′.

F′ represents the knife blade mounted over the rear portion of the aperture and provided with depending edge flanges 48 which fit into the notches 49 cut in the rims 43 and 44. The knife is held in position under the horizontal portions of the track members 46 and 47.

The knife is preferably provided with a rearwardly and downwardly inclined bottom face to better disengage the butter portion and direct it downwardly toward the waiting butter plate.

The floor E′ is provided with a cross flange 49 at the rear edge of the aperture 5, preferably of the same height as the rims 43 and 44.

50 is a block undercut to fit on the floor E′ in the rear of the flange 49 and to project over the aperture 5 to impinge against the rear edge of the knife F′. The top surface of the block 50 is formed to receive the butt of the shortened butter bar from the knife and lead it down over the inclined top surface of the block to the level of the floor E′, simultaneously with the lowering of the tube, thus supporting the bar of butter in its tube as both are lowered to the floor E′ after a portion cutting operation.

The material of the tubes J′ are vertically bored to receive the rock shafts 39ª whose lower ends are bent horizontally and flattened to form the blades 38ª which move, with the rocking of the shafts 39ª, to swing in horizontal slots in the tubes J′ so, when required, to be introduced into the interior of the tubes and by digging into the bars of butter support the same in said tubes, for the insertion of a loaded tube into the machine. The upper ends of the shafts 39ª protrude above the tubes J′ and are bent to form cranks 52 by means of which the shafts 39ª may be turned.

I prefer to boil the wooden strips, of which the tubes F′ are made, in a paraffine solution, thus preventing material expansion or contraction of the wood, and facilitating the relative movement of the butter and the tube.

I prefer to make the tubes large enough to loosely fit around the bars of butter, as shown in Fig. 7, thus minimizing the chance of the butter adhering materially to the tube.

With the use of wooden dispensing tubes, I do not regard the use of superimposed weights as necessary.

My machine is simple in operation, requiring merely the rotation of the crank handle, so that only one hand is needed. It is positive in its action as the butter cannot stick to or refuse to protrude from the tube at the proper point in the travel of the latter. It may be easily loaded or unloaded, and lends itself readily to frequent and complete cleansing.

It contains no parts likely to get out of order or readily wear out.

Although, for the sake of clearness, I have minutely described the practical embodiment of the principles of my invention illustrated in the drawings, I do not wish to limit myself thereby, but claim broadly:—

1. In a portioning machine, the combination of a support having a plane surface, a dispensing tube adapted to contain a bar of the substance to be portioned and movably mounted in such a manner relative to said support that said plane surface normally prevents the protrusion of the bar from the discharge end of the tube, means for moving the tube along said surface, means for moving the tube away from said surface while the bar retains its position relative to said surface, and means for slicing off the end of the bar thus exposed to form a portion.

2. In a portioning machine, the combination of a support having a plane surface, a dispensing tube adapted to contain a bar of the substance to be portioned and movably mounted in such a manner relative to said support that said plane surface normally prevents the protrusion of the bar from the discharge end of the tube, means for moving said tube along said surface, means for moving the tube away from said surface, means for preventing the movement of the bar away from said surface with said tube whereby the end of the bar is caused to protrude from the discharge end of said tube, and means for slicing off

the protruding end of said bar to form a portion.

3. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, the bar meanwhile retaining its position toward said surface, whereby the end of the bar is caused to protrude from said tube, and means for slicing off the protruding end of said bar to form a portion.

4. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface so that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, means for preventing the vertical movement of said bar with said tube whereby the end of said bar is caused to protrude from said tube, and means for slicing off the protruding end of the bar to form a portion.

5. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, while the bar retains its position relative to said surface, whereby the end of the bar is caused to protrude from said tube, and means actuated by the subsequent horizontal movement of said tube for slicing off the protruding end of said bar to form a portion.

6. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, while the bar retains its position relative to said surface, whereby the end of the bar is caused to protrude from said tube, means actuated by the subsequent horizontal movement of said tube for slicing off the protruding end of said bar to form a portion, and means for subsequently lowering said tube into its original relation to said surface.

7. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, means for preventing the vertical movement of said bar with said tube whereby the end of said bar is caused to protrude from said tube, and means actuated by the subsequent movement of said bar for slicing off the protruding end of said bar to form a portion.

8. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, means for preventing the vertical movement of said bar with said tube whereby the end of said bar is caused to protrude from said tube, means actuated by the subsequent movement of said bar for slicing off the protruding end of said bar to form a portion, and means for lowering said tube into its original relation to said surface.

9. In a portioning machine the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, while the bar retains its position relative to said surface, whereby the end of the bar is caused to protrude from said tube, and means actuated by the subsequent horizontal movement of said tube for slicing off the protruding end of

said bar to form a portion, said surface being provided with an aperture to permit the severed portion to be discharged down through the same.

10. In a portioning machine the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, while the bar retains its position relative to said surface, whereby the end of the bar is caused to protrude from said tube, means actuated by the subsequent horizontal movement of said tube for slicing off the protruding end of said bar to form a portion, said surface being provided with an aperture to permit the severed portion to be discharged down through the same, and means for lowering said tube into its original relation to said surface.

11. In a portioning machine the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, means for preventing the vertical movement of said bar with said tube whereby the end of said bar is caused to protrude from said tube, and means actuated by the subsequent movement of said tube for slicing off the protruding end of said bar to form a portion, said surface being provided with an aperture to permit the severed portion to be discharged down through the same.

12. In a portioning machine the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, means for moving said tube vertically away from said surface, means for preventing the vertical movement of said bar with said tube whereby the end of said bar is caused to protrude from said tube, means actuated by the subsequent movement of said tube for slicing off the protruding end of said bar to form a portion, said surface being provided with an aperture to permit the severed portion to be discharged down through the same, and means for lowering said tube into its original relation to said surface.

13. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, a cutting member in the path of said tube above said surface, and means for elevating said tube as it approaches said cutting member to clear the latter, whereby the subsequent horizontal movement of said tube causes the protruding end of said bar to be sliced off to form a portion.

14. In a portioning machine, the combination of a support provided with a plane horizontal surface, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned and mounted in such a manner relative to said surface that its discharge end is normally sealed by said surface thus preventing the protrusion of the bar, means for moving said tube horizontally so that its discharge end traverses said surface, a cutting member in the path of said tube above said surface, means for elevating said tube as it approaches said cutting member to clear the latter, whereby the subsequent horizontal movement of said tube causes the protruding end of said bar to be sliced off to form a portion, and means for subsequently lowering said tube into its first mentioned relation to said surface.

15. In a portioning machine, the combination of a movable carrier, a plurality of vertically disposed dispensing tubes carried by said carrier and each adapted to contain a bar of the substance to be dispensed, means for supporting said bars in said tubes, means whereby the tubes moving with said carrier are in turn elevated relative to the latter to expose the lower ends of said bars, and means for slicing off said exposed ends to form portions.

16. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be dispensed and mounted to move in unison, means for supporting said bars in said tubes, means whereby said tubes are in turn elevated relative to their contents, means for preventing the bars from elevation with their respective tubes whereby the butts of said bars are exposed, and means for slicing off said exposed butts to form portions.

17. In a portioning machine, the combi-

nation of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, means for supporting the bars in said tubes, cutting means disposed transversely to the path of said tubes and elevated above the normal level of the lower end of the latter, and means for elevating said tubes in turn as they approach said cutting means whereby the butts of the bars are exposed and said butts are sliced off to form portions.

18. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be dispensed, and movable about a common center, means for supporting the bars in said tubes, cutting means disposed transversely to the path of said tubes and elevated above the normal level of the lower end of the latter, means for elevating said tubes in turn as they approach said cutting means, and means for preventing said bars from elevation with said tubes whereby the butts of said bars are exposed and sliced off to form portions.

19. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, means for preventing said bars from dropping down in said tubes, cutting means disposed transversely to the path of said tubes and elevated above the normal level of the lower ends of the same, and means for elevating said tubes in turn as they approach said cutting means whereby the lower ends of said bars are exposed and sliced off to form portions.

20. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, means for preventing said bars from dropping down in said tubes, cutting means disposed transversely to the path of said tubes and elevated above the normal level of the lower ends of the same, means for the elevation of said tubes in turn as they approach said cutting means, and means for preventing said bars from elevation with said tubes whereby the butts of said bars are caused to protrude and be sliced off to form portions.

21. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, a support having a plane surface over which the ends of said tubes move whereby the bars are supported in said tubes, cutting means disposed transversely to said surface and elevated above the same, and means for elevating said tubes in turn as they approach said cutting means to clear the same, whereby the butts of said bars are exposed and sliced off to form portions.

22. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, a support having a plane surface over which the ends of said tubes move whereby the bars are supported in said tubes, cutting means disposed transversely to said surface and elevated above the same, means for elevating said tubes in turn as they approach said cutting means to clear the same, and means for preventing said bars from elevation with said tubes whereby the butts of said bars are sliced off to form portions.

23. In a portioning machine the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, a support having a plane surface over which the ends of said tubes move whereby the bars are supported in said tubes, cutting means disposed transversely to said surface and elevated above the same, and means for elevating said tubes in turn as they approach said cutting means to clear the same, whereby the butts of said bars are exposed and sliced off to form portions, said surface being apertured beneath said cutting means to permit of the discharge of said portions.

24. In a portioning machine, the combination of a plurality of vertically disposed dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, a support having a plane surface over which the ends of said tubes move whereby the bars are supported in said tubes, cutting means disposed transversely to said surface and elevated above the same, means for elevating said tubes in turn as they approach said cutting means to clear the same, and means for preventing said bars from elevation with said tubes whereby the butts of said bars are sliced off to form portions.

25. In a portioning machine, a vertically disposed dispensing tube adapted to contain a bar of the substance to be portioned, means for providing relative movement between said tube and said bar whereby the butt of the latter is caused to protrude from the bottom of said tube, means for slicing off said protruding bar to form a portion, a weight mounted on the upper end of said tube, and means whereby when said relative movement occurs the burden of said weight is shifted to the upper end of said bar to facilitate said protrusion.

26. In a portioning machine, a plurality of vertically disposed dispensing tubes, each

adapted to contain a bar of the substance to be portioned, and movable about a common center, means for providing relative movement at a point in their travel between each tube and its bar whereby the butt of said bar is caused to protrude, cutting means for slicing off said protruding butt to form a portion, a weight normally riding on the upper end of each tube, and means whereby when said relative movement occurs the burden of said weight is shifted to the upper end of corresponding bar to facilitate protrusion.

27. In a portioning machine, a support, a vertically disposed tube mounted on said support, a rod journaled on the exterior wall of said tube and longitudinally of the latter, and a stop member mounted on the lower end of said rod and adapted to be swung by the rotation of said rod into position to support the contents of said tube.

28. In a portioning machine, a support, a vertically disposed tube mounted on said support and provided with an opening in its wall near its lower end, a rod journaled on the exterior wall of said tube and longitudinally of the latter, and a member mounted on the lower end of said rod and adapted to be inserted, by the rotation of said rod through said opening to support the contents of said tube.

29. In a portioning machine, a plurality of dispensing tubes, each adapted to contain a bar of the substance to be portioned, and movable about a common center, each of said tubes being provided with an aperture in its side, a member carried by each of said tubes and adapted to be introduced through said aperture into the bar to hold the same in said tube, and means operated from the tops of said tubes for inserting and withdrawing said members from said tubes.

Signed at Pittsburgh, Pa., this 26th day of Nov., 1920.

LUTHER L. KNOX.