No. 875,737. PATENTED JAN. 7, 1908.

C. E. & O. W. ROBERTS.

MACHINE FOR CUTTING BUTTER OR THE LIKE MATERIAL.

APPLICATION FILED FEB. 26. 1907.

3 SHEETS—SHEET 1.

Fig. 1.

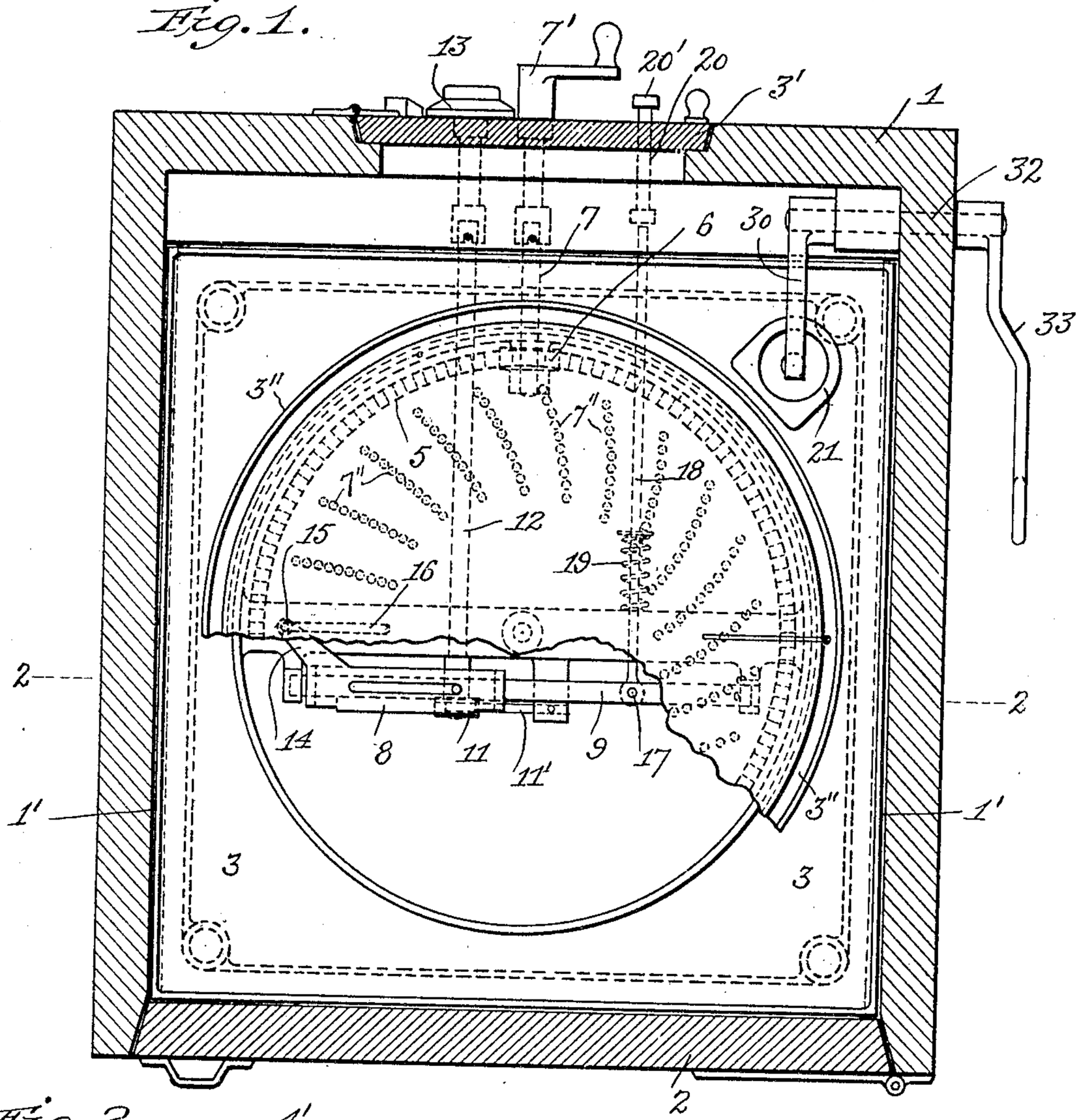
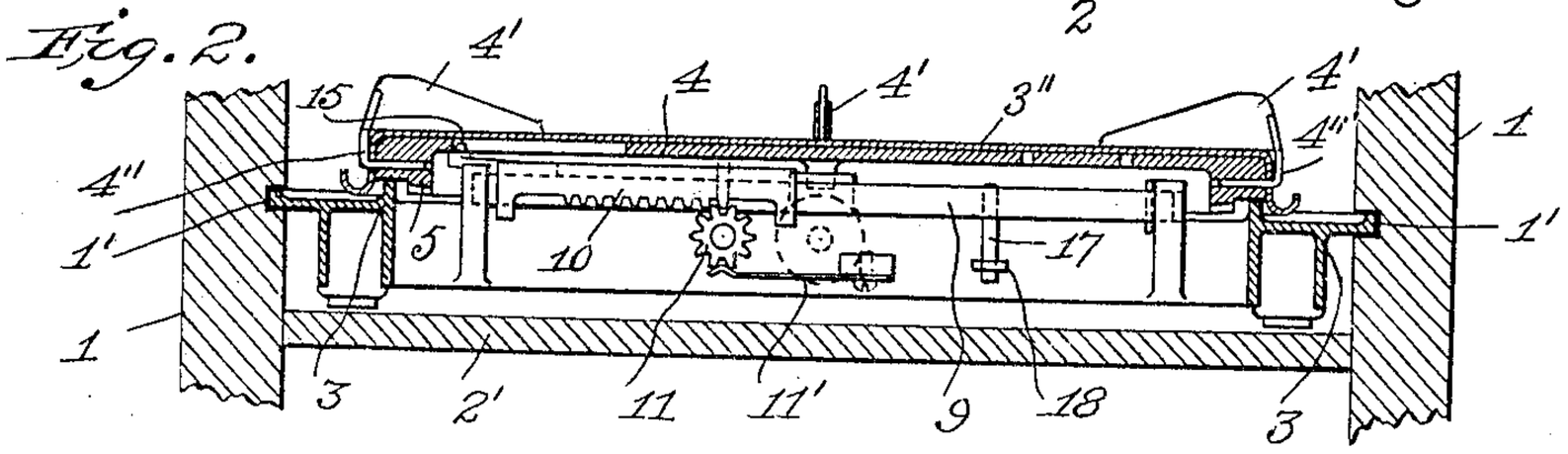


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 4.

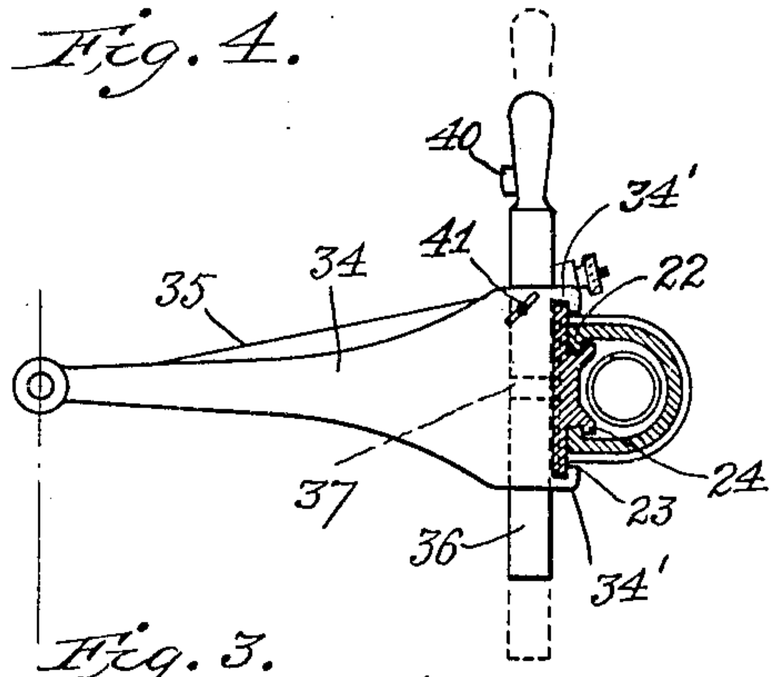

Fig. 5.

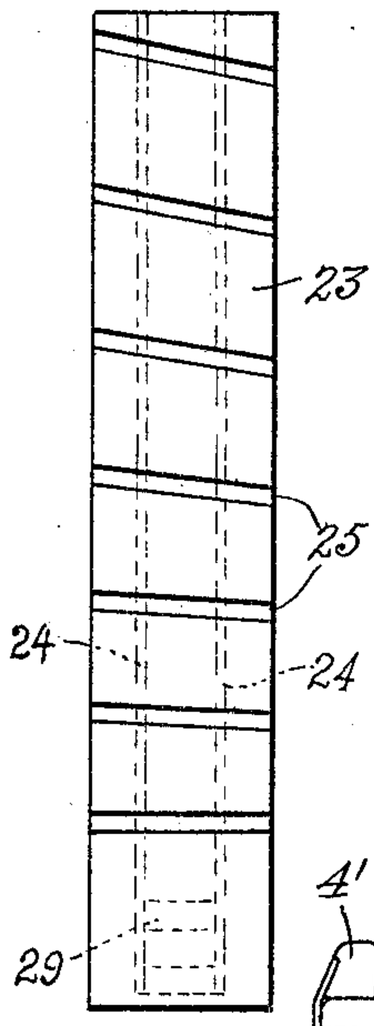

Fig. 3.

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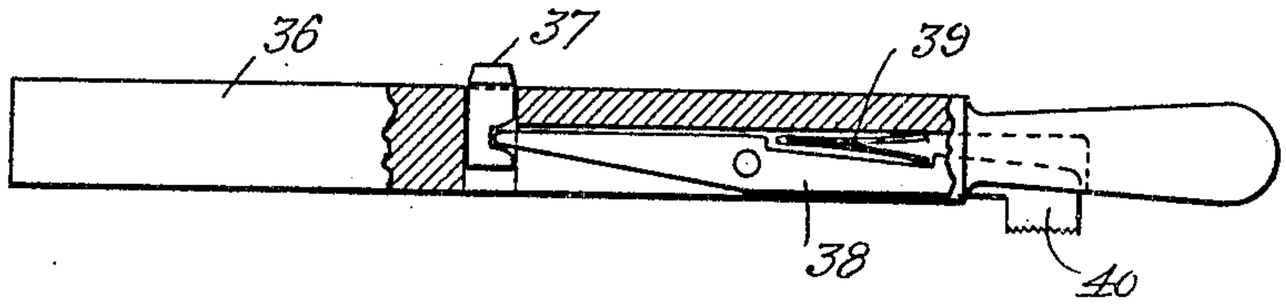
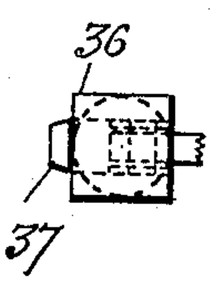
3 SHEETS—SHEET 3.

Fig. 6.





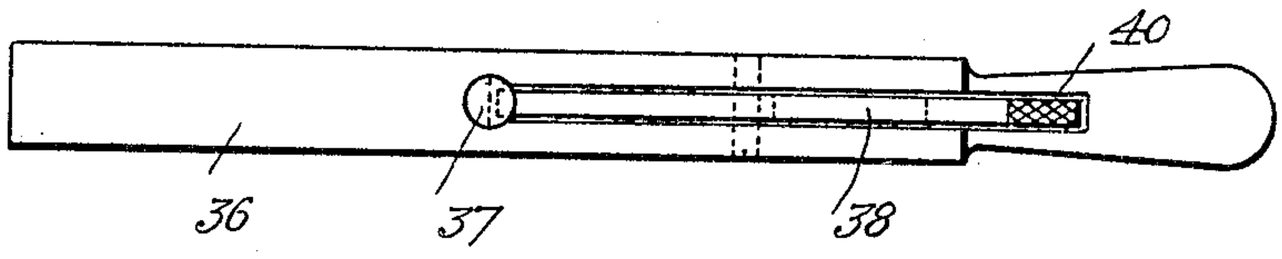


Fig. 7.

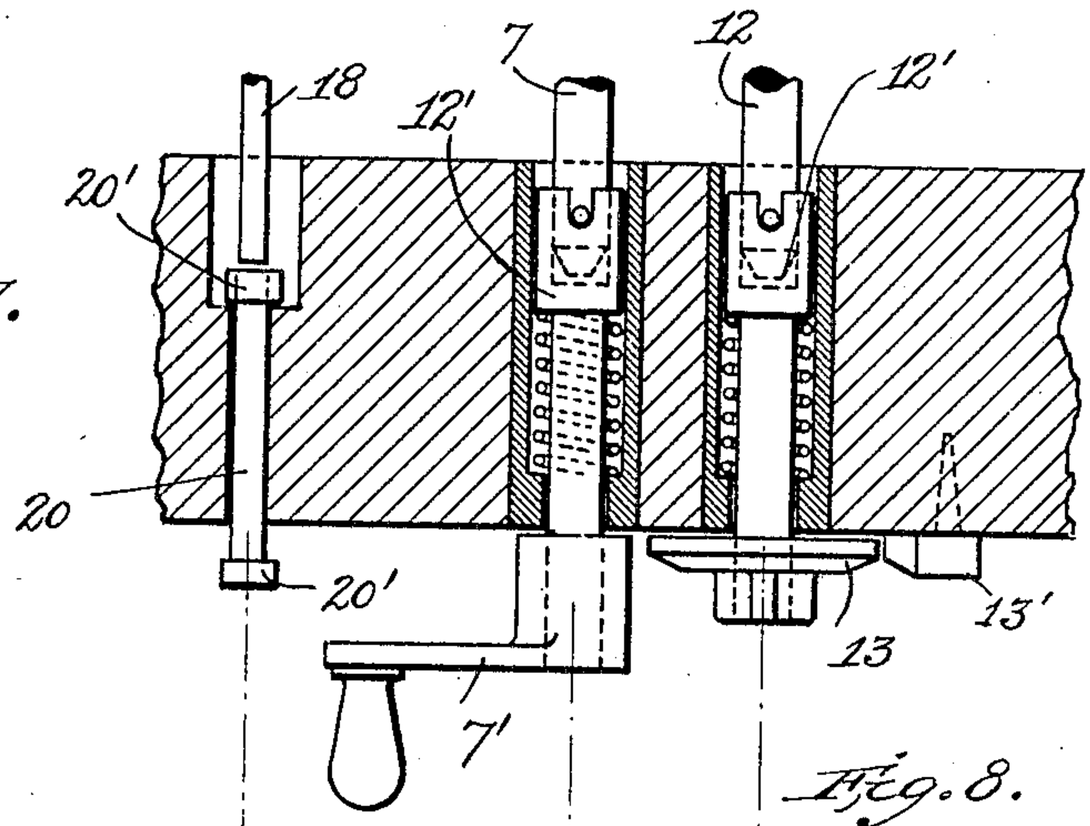


Fig. 9.

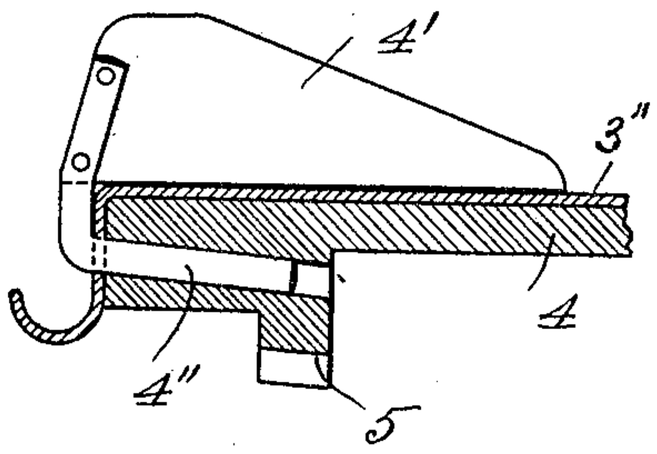
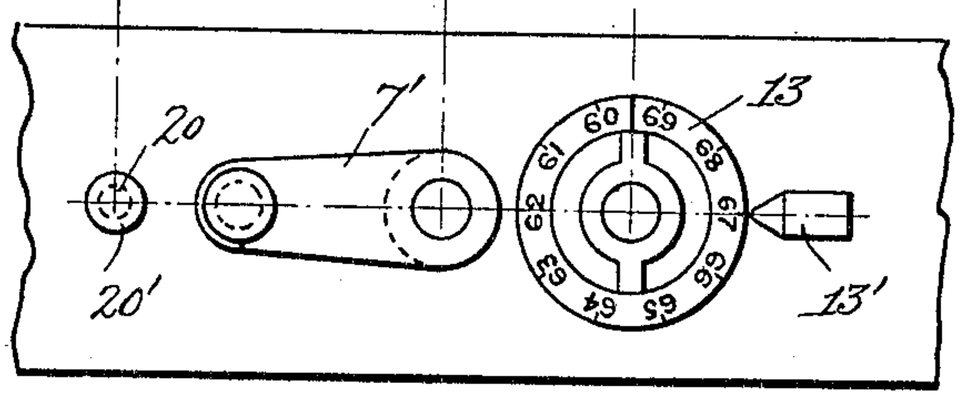


Fig. 8.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR CUTTING BUTTER OR THE LIKE MATERIAL.

No. 875,737. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed February 26, 1907. Serial No. 359,432.

To all whom it may concern:

Be it known that we, CHARLES E. ROBERTS and OWEN W. ROBERTS, citizens of United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting Butter or the Like Material, of which the following is a specification.

Our invention relates to machines designed to cut blocks of butter of predetermined weight from cakes of butter of frusto-conical or like form, and variable height and weight as obtained from the tubs used in commerce for packing and shipping butter. Our invention relates generally to a type of machine of this character shown in our U. S. Patent No. 841,818, January 22, 1907.

The invention in the present case consists: first: in an arrangement of parts whereby the machine with the cake of butter thereon may be placed in a refrigerator or other closed receptacle and operated to sever the blocks of butter as desired by manipulation from the outside of the refrigerator without the necessity of opening the same. Second: in an improved arrangement for the securing and adjusting the arm which carries the cutting wire.

Further features of invention in detail will appear from the following description and accompanying drawings wherein

Figure 1, shows a horizontal section through a refrigerator with our improved machine arranged for operation therein, a part of the pan of the machine being broken away to better show the operating parts underneath; Fig. 2, is a central vertical section through the machine, on the line 2—2, Fig. 1; Fig. 3, is a side view showing in vertical section the upright cutter carrying member, the cake of butter to be divided being shown upon the pan in dotted lines; Fig. 4, is a horizontal section showing the manner of attaching the wire carrying arm to the dividing plate on the upright; Fig. 5, is a front view of the dividing plate; Fig. 6, shows enlarged details of the side bar for adjusting the cutter carrying arm on the dividing plate; Figs. 7 and 8 show in horizontal section and elevation respectively, details of the operating shafts and spacing dial; and Fig. 9, shows in section a preferred means for attaching the removable wings to the butter holding pan.

As will hereinafter appear our improved machine may be used with equal facility either inside the refrigerator or otherwise, but to show an arrangement of convenience devices whereby it may be placed within a refrigerator and operated from without the same, we have illustrated a refrigerator 1 in section having a large front door 2 and a small back door 3′ from which latter severed blocks of butter may be extracted without opening the large door. The base of the machine is indicated at 3, and 4 is a turntable holding the butter carrying pan 3″ having suitable wings 4′ secured thereto as hereinafter described.

The turntable 4 is pivoted for rotation upon the base as in the patent above referred to and in the present instance carries upon its under surface a circular rack 5 adapted to be engaged by a pinion 6 which is driven by a shaft and crank 7 and 7′ which latter may be disposed outside the box. As hereinafter explained the rotary movement of the pan is designed to be limited to predetermined amounts, and to attain this result a number of circular series of equally spaced holes 7″ are made in the bottom of the turntable, such plural series being provided to accommodate the varying sizes of commercial cakes of butter.

A carriage 8 is mounted to slide upon a rod 9, suitably journaled in the base and rack teeth 10 are provided on the under surface of the carriage, an operating pinion 11 is secured upon a shaft 12 and arranged to engage said rack. The shaft 12 is likewise suitably journaled in the base and may be operated from without the box by a hand dial 13. The carriage 8 has at one end thereof the laterally projecting arm 14 carrying a pin 15 adapted to engage one of the series of holes in the bottom of the turn-table 4, or a radial slot 16 therein hereinafter referred to. The carriage 8 is mounted so as to rotate with the rod 9 and said rod 9 is arranged to be rotated through a small arc sufficient to release pin 15, by a radial extension 17 and a sliding rod 18 pivoted thereto. A compression spring 19 is arranged to act upon a collar on the sliding rod 18 so as to normally keep the pin 15 in engagement with one of the holes in the turn-table 4. An operating plunger section 20 may be arranged outside the box to coöperate with the rod 18 in releasing the pin 15. The dial 13 is provided with graduations corresponding to the number of lbs. of butter in the tubs of commerce and an indicator 13′ is disposed adjacent thereto to show

the point at which it is set. It will be apparent that manipulation of said dial will cause the carriage 8 to be traversed along the rod 9 and that thereby the pin 15 will likewise traverse the radial slot 16, the turn-table being initially in such position. A spring 11′ carrying a detent at the free end thereof may be arranged so that said detent by engaging the pinion 11 will prevent accidental movement of it and the carriage 10. It will be apparent that the graduations on the dial 13 should be so disposed relative to the indicator 13′ that they will show when the pin 15 is in alinement with the particular series of circular holes corresponding to the cake of butter in hand.

It will be noticed that the sliding rod 18, the shaft 12 and the shaft 7 are constructed in sections, the outer section thereof being mounted in the small door 3′. The rotary shafts 7 and 12, may be provided with spring clutch connections 12′ to insure proper driving engagement of the sections when brought together while the sliding rod 18 has its short section 20 provided with stop collars 20′ to prevent excess movement thereof.

It will be noticed that the removable wings 4′ are provided with prongs 4″ extending inward and slightly downward into corresponding apertures formed in the turn-table 4 thus forming a rigid and reliable securing means for the same.

The upright 21 is suitably bolted to the base 3 at one side of the turn-table 4 and as shown is provided with substantially U-shaped instanding flanges 22. A dividing plate 23 adapted to slide vertically along the front of said upright is provided with coöperating flanges 24, and inclined transverse slots 25 on the front thereof for a purpose hereinafter explained. A spiral spring 26 is secured to pins 27 and 28 near the top of the upright and bottom of the dividing plate respectively and hence exerts a constant upward tension on said dividing plate. A recess block 29 is likewise secured to the back of said dividing plate and a suitable lever arm 30 is arranged to coöperate with said block. The lever arm 30 may be secured to a shaft 32 journaled in the refrigerator casing and an operating handle 33 may be secured to the same outside the box. The cutting wire 35 is secured to a suitable rigid arm 34, said arm being mounted for sliding movement on the plate 23, the flanges 34′ serving to hold the same in place.

The cutter arm 34 is adapted to be secured in the desired vertical adjustment on the dividing plate 33 by means of the transverse slide bar 36 and locking pin 37 therein, (see Fig. 6); said pin 37 is normally held in engagement with a portion of one of the slots 25 by means of a lever 38 and spring 39 cooperating therewith; a thumb piece 40 is provided whereby the pin 37 may be withdrawn from a slot 25 and the cutter arm 34 freely adjusted on the dividing plate. As in the prior patent referred to, the transverse slots 25 are so disposed relative to each other and to the base that when the cutter arm is adjusted successively thereto and the device operated as hereinafter described, the frusto-conical cake of butter will be divided into sections of equal weight through a different height as indicated by dotted lines in Fig. 3.

In operation the front and side wings 4′ are removed and the cake of butter positioned centrally upon the pan, said wings are then inserted and driven home thereby securely holding the cake in place. The cutter arm 34 is placed upon the dividing plate 23, the locking bolt 37 engaging the highest point of the uppermost slot 25. The sliding bar 36 is then manipulated so that the wire 35 engages the top of the butter cake. The slide bar is then locked to the cutter arm 34 by a small set screw 41, next the locking pin 37 is released from the first groove 25 by pressing upon the thumb latch 40, said pin being permitted to engage the second groove in the plate in the transverse position corresponding to the one it occupied in the first groove as the cutter arm is lowered. A manipulation of the dividing plate 23 directly or by means of a lever 33 as described, will cause the cutting wire to pass into the butter to the proper depth for the first section to be cut as indicated in dotted lines. Having determined the net weight of the cake of butter on the pan 3″, the dial 13 is turned until the number on said dial corresponds with the indicator 13′. The turning of the dial 13 adjusts pin 15 with respect to the proper openings 7″ in bottom of turn table for the determined weight of cake of butter. The button 20′ is then pushed and the crank 7′ simultaneously turned the movement thereof being continued until the pin 15 snaps under the first hole of the series under the influence of the spring 19. The cutter arm 34 is then elevated to its initial position by manipulation of the lever 33 when a one-half pound cut will have been made from the cake of butter. This operation is continued until the first layer is removed after which the small door may be opened, the thumb latch 40 pressed and the cutter arm 34 lowered so that the locking pin 37 will engage the next groove in the dividing plate. This operation may be repeated until all the butter is removed.

The butter cutter is inserted into the inclosing casing through the door 2 and the outer edges of the base 3 are seated in the grooves 1′, 1′, in the sides 1, 1, of the casing, see Fig. 2. When the butter cutter is inserted into the casing as just indicated the rotary shafts 7 and 12 and rod 18 engage respectively, the crank 7′, dial 13, and plunger 20 which are attached to the door 3

of the casing and may be controlled from the outside for operating the butter cutter as already explained and clearly shown in Fig. 1.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is as follows:—

1. A device of the class described comprising a base, a turntable rotatable thereon, an upright secured to said base adjacent said table, a dividing plate slidable upon said upright, a cutter arm adjustable on said dividing plate, means for adjusting said cutter arm, predetermined amounts, vertically relative to said turntable.

2. A device of the class described comprising a base, a revoluble turntable pivoted thereon, an upright secured to said base adjacent said turntable, a dividing plate slidable along said upright, a cutter arm vertically adjustable on said dividing plate, and means to secure said cutter arm in predetermined adjusted position.

3. A device of the class described comprising a base, a turntable revoluble thereon, an upright secured to said base adjacent the turntable, a dividing plate slidable along said upright; a cutter arm vertically adjustable on said dividing plate, and means to secure said cutter arm in predetermined adjusted position, said means consisting of a separately adjustable member carrying a locking bolt, means to secure said member in adjusted position and spaced grooves on the dividing plate, coöperating with said locking bolt.

4. A device of the class described comprising a base, a turntable revoluble thereon, an upright secured to said base adjacent the turntable, a dividing plate slidable along said upright, inter-engaging flanges on said dividing plate and upright respectively, a rigid cutter arm vertically adjustable upon said dividing plate, a slidable bar mounted transversely in said cutter arm, a locking bolt adapted to extend outward from said bar, spaced grooves arranged in said dividing plate for coöperation with said bolt and means for normally projecting said bolt into one of said grooves.

5. A device of the class described comprising a base, a turntable revoluble thereon, an upright secured to said base adjacent said table, a dividing plate held for sliding movement on said upright, a rigid cutter arm adjustably secured to said plate, means for normally holding said plate and arm at the upper limit of their movement and means for manually depressing said parts at will.

6. A device of the class described comprising a base, a turntable thereon, an upright, a dividing plate slidable on said upright, a series of transverse inclined grooves in said plate, a rigid cutter arm, mounted for sliding adjustment on said plate, a member in said cutter arm transversely adjustable thereof and adapted to engage any one of said grooves, and means for locking said member in adjusted position.

7. A device of the class described comprising a base, a turntable thereon, an upright, a dividing plate slidable on said upright, a series of transverse inclined grooves in said plate, a rigid cutter arm, mounted for sliding adjustment on said plate, a transversely slidable bar in said cutter arm, a locking bolt therein adapted to engage one of said grooves, a spring normally holding said members engaged and means for disengaging the same at will.

8. A device of the class described comprising a base, a turntable and an upright mounted thereon, said upright being a substantially U form in cross section, a dividing plate slidable along the open side of said U member and adapted to adjustably support a cutter arm, a cutter arm secured thereto, a spring housed within said U member and secured at its ends to the plate, and upright respectively so as to exert an upward tension on the former and means for manually depressing said plate against the action of said spring.

9. A device of the class described comprising a base, a turntable rotatable thereon, an upright secured to said base adjacent said table, a dividing plate slidable upon said upright, a cutter arm adjustable on said dividing plate, means for adjusting said cutter arm, predetermined amounts, vertically relative to said turntable, means for rotating said turntable comprising an annular gear thereon, a pinion coöperating therewith and means for limiting the rotation of said table to certain predetermined amounts.

10. A device of the class described comprising a base, an upright secured thereto, a cutter arm mounted on said upright for vertical movement, a turntable revoluble on said base, means for rotating said turntable comprising an annular gear thereon, a pinion coöperating therewith and means for limiting the rotation of said table to certain predetermined amounts, said means consisting of plural series of index holes in said turntable, a pin adapted to be shifted transversely of said table, a sliding carriage on which said pin is mounted and means for shifting said carriage and pin a predetermined amount to cause said pin to assume a position for engaging successively a desired series of apertures.

11. A device of the class described comprising a base, an upright, a cutter arm movable on said upright, a turntable revoluble on said base, means for revolving said table and indexing means for determining the extent of rotary movement of said table, said means consisting of plural series of holes in said table, a carriage mounted for

sliding movement transversely of said table, a pin carried upon a laterally projecting arm of said carriage and adapted to engage successive holes of a selected series and a rack and pinion for shifting said carriage transversely of said table for the purpose described.

12. A device of the class described comprising a base, a turntable revoluble thereon, means for revolving said table and indexing means for limiting the extent of rotary movement said means consisting of plural series of apertures in said table, a carriage movable transversely of said table and carrying a lateral member adapted to engage successive apertures of a selected series, means for shifting said carriage transversely and means for tilting said carriage about its axis whereby said lateral member will be disengaged from an aperture.

13. A device of the class described comprising a base, a turntable revoluble thereon, means for revolving said table and indexing means for limiting the extent of rotary movement said means consisting of plural series of apertures in said table, a carriage movable transversely of said table and carrying a lateral member adapted to engage successive apertures of a selected series, a spring normally holding said lateral member in engagement with an aperture, a push rod for tilting said carriage to disengage said lateral member from said aperture.

14. In a device of the class described, an inclosing casing and a butter cutting apparatus contained therein the same comprising a base, a turntable revoluble thereon, an upright secured to said base adjacent the turntable, a vertically movable cutter supported on said upright, means to secure said cutter in predetermined vertically adjusted position, means for normally maintaining said cutter at the upper limit of its movement and means for depressing said cutter, said means having an element thereof extending without said casing and means for applying power to said element.

15. In a device of the class described, an inclosing casing and a butter cutting apparatus contained therein, the same comprising a base, a turntable revoluble thereon, an upright secured to said base adjacent the turntable, a vertically movable cutter supported on said upright, means to secure said cutter in predetermined vertically adjusted position, means for rotating said turntable, a part of said means extending without said casing and means for applying power to said extension.

16. In a device of the class described, an inclosing casing, and a butter cutting apparatus contained therein, the same comprising a vertically movable knife, a turntable, and means for indexing the rotatory movement of the same, and means for varying said indexing movement, said means having an element without said casing and an indexing dial on said extension.

17. In a device of the class described, an inclosing casing, and a butter cutting apparatus contained therein, the same comprising a vertically movable knife, a turntable, and means for indexing the rotatory movement of the same, said means composed of plural series of apertures in said turntable, a pin to coöperate therewith, means to move said pin radially of said turntable and means to withdraw said pin from engagement with said holes the same having an operating element extending without the casing.

18. In a device of the class described, an inclosing casing having door and a butter cutting apparatus therein, the same comprising a vertically movable cutter, means for operating the same, a turntable, means for rotating the same, means for variably indexing said rotary movement, means for disengaging said indexing means, and devices mounted in said casing door and having operating parts extending without the casing said devices having clutch connections arranged to coöperate with said turntable rotating, indexing, and disengaging means to operate the same.

19. An apparatus of the class described comprising a turntable adapted to hold a butter carrying pan, removable wings adapted to be secured to the periphery thereof and pins secured to said wings and extending inwardly and downwardly into suitable apertures in said turntable to hold said wings locked in position.

20. A butter cutting apparatus comprising a movable cutting element, a turntable arranged to coöperate therewith and adapted to hold a butter carrying pan, removable wings mounted on said turntable and members carried by said wings adapted to be driven into apertures in said turntable to lock the wings in place.

21. In a device of the class described, an inclosing casing having means on its inner sides for receiving and supporting a butter cutter, a removable door on one side of the casing for inserting the butter cutter into the casing, means attached to the other and opposite side of the casing and extending within the casing and adapted to engage the operative elements of the butter cutter.

In testimony whereof we affix our signature in presence of two witnesses.

CHARLES E. ROBERTS.
OWEN W. ROBERTS.

Witnesses:
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PETER J. HUECHTKER.