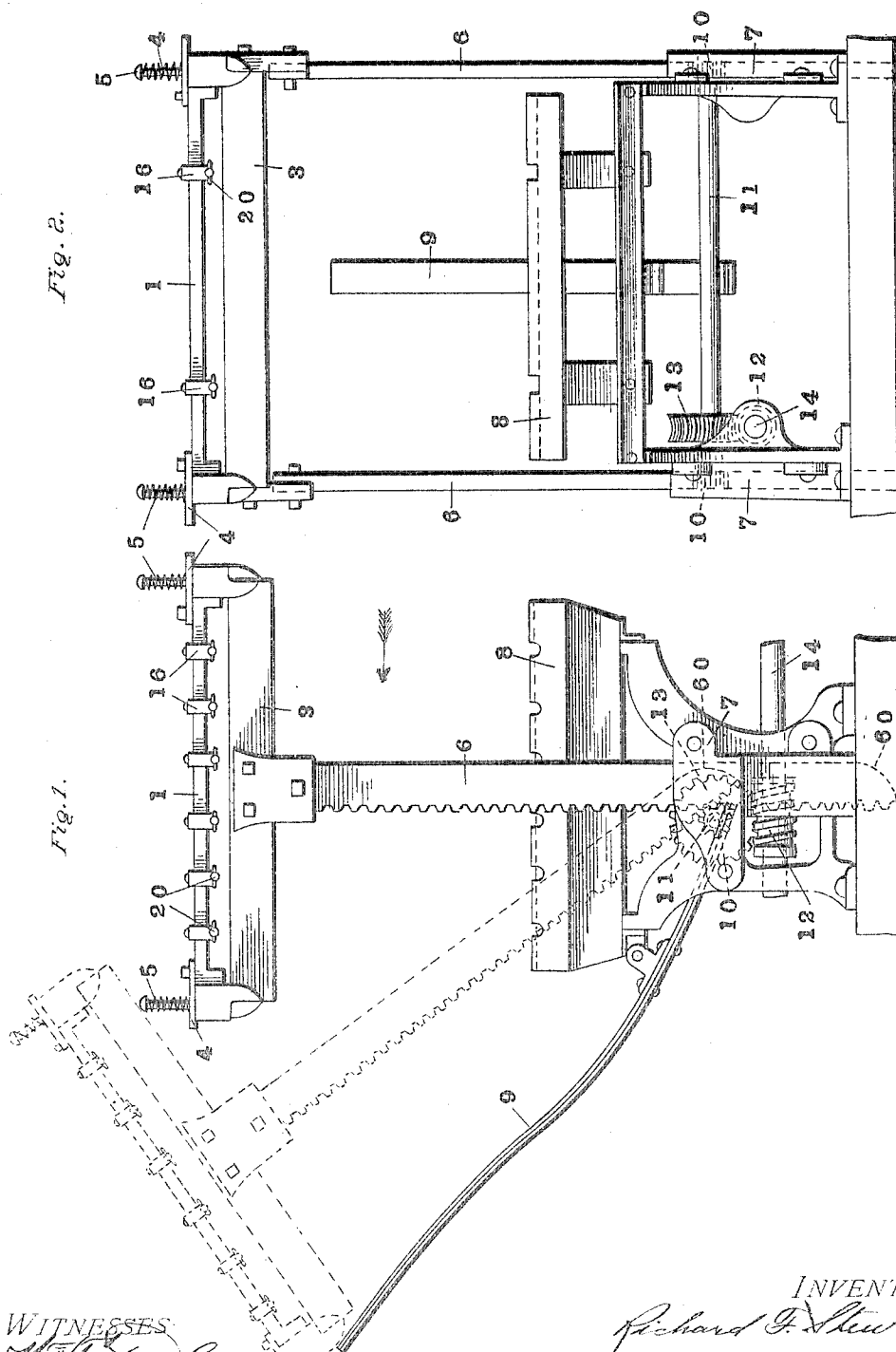


R. F. STEWART.
BUTTER CUTTING MACHINE.
APPLICATION FILED JULY 17, 1905.

2 SHEETS—SHEET 1.

Fig. 2.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

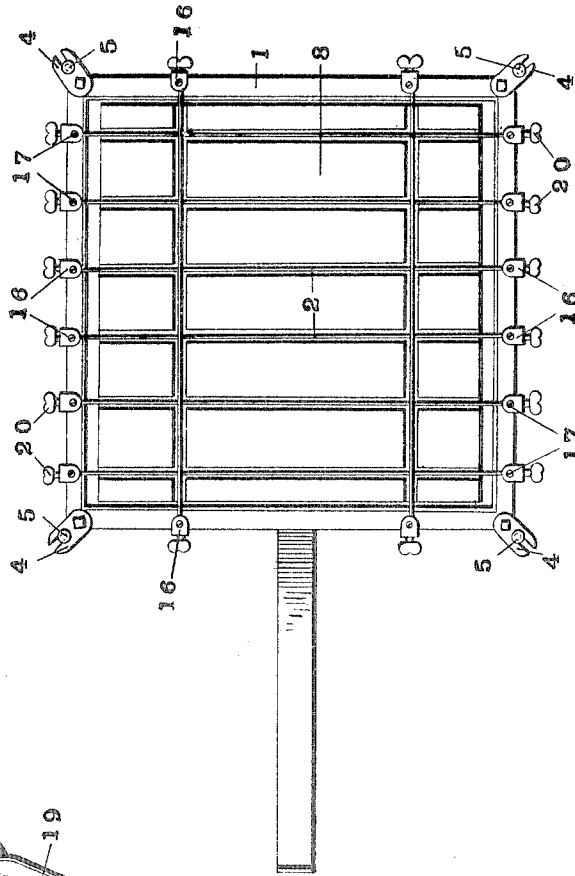


Fig. 4.

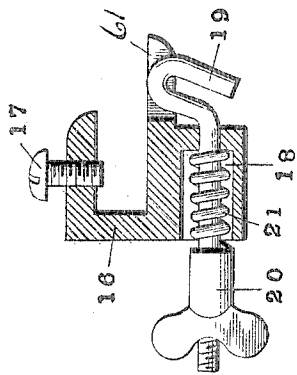
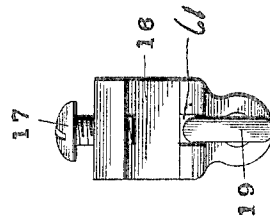


Fig. 5.



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UNITED STATES PATENT OFFICE.

RICHARD F. STEWART, OF POCANTICO HILLS, NEW YORK.

BUTTER-CUTTING MACHINE.

No. 804,566.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Original application filed September 10, 1904, Serial No. 223,982. Divided and this application filed July 17, 1905. Serial No. 269,950.

To all whom it may concern:

Be it known that I, RICHARD F. STEWART, a citizen of the United States, residing at Pocantico Hills, in the county of Westchester and State of New York, have invented new and useful Improvements in Butter-Cutting Machines, of which the following is a specification.

In an application for patent filed by me September 10, 1904, which application is serially numbered 223,982, I have shown and described an organized machine for forming prints of butter from the original package or mass, the object of that invention being to provide a machine by means of which tub-butter may be quickly and conveniently divided into prints without unduly crushing or disturbing the grain of the butter and without pressing out the juices therefrom. In that application there is shown and described a cutter for preliminarily dividing the package or mass of butter into slabs, which then pass to and through a mold-box, where they are brought to the proper size, and finally delivered to a final cutting mechanism, which divides the slabs into prints of the proper dimensions.

The present case is a division of the aforesaid application and is intended to cover the construction of the preliminary cutting apparatus, and as the construction and operation of this preliminary cutter will be clear from an illustration and description of that element apart from the organized machine I shall only show in the drawings of this application the said preliminary cutter and its coöperating elements.

In the drawings herewith, in which is illustrated one embodiment of my invention, Figure 1 is a view in side elevation of a part of the supporting-frame, the bed or table for the package of butter, and the preliminary slab-cutting instrumentalities and their operating mechanism. Fig. 2 is a view taken at right angles to the view shown in Fig. 1 looking in the direction of the arrow, Fig. 1. Fig. 3 is a plan view of the cutter shown in Fig. 1. Figs. 4 and 5 are sectional and end views, respectively, of the wire-holding clamps by means of which the cutting-wires are secured to the frame.

Briefly stated, my invention comprises any suitable table or bed to receive the package of butter, a cutter-frame mounted above said bed and provided with adjustable cutting-wires which form the slabs as they are drawn

through and divide the original package upon the bed, and mechanism for drawing the cutter downwardly, so as to force the cutting-wires through the package thereon.

Referring to the drawings by numerals, like numbers indicating like parts in the several views, 1 denotes the cutting-frame, which in the present case is shown as rectangular, but which of course may be of any desired outline or design. Across said cutting-frame are stretched the cutting-wires 2, Fig. 3, so adjusted and arranged as to cut the slabs of butter of a width and thickness to form blocks or prints of the size and weight desired. This cutting-frame 1 rests on and is attached to the supporting-frame 3 by means of slotted plates 4, which engage spring-posts 5, so that the cutting-frame may be readily removed and another frame having a different adjustment of cutting-wires substituted in its place when it is desired to alter the size of the cut slabs of butter. The spring-posts 5 hold the frame 1 in place and at the same time permit it to yield as it is drawn through the butter and relieve the cutting-wires of strain. The frame 3 is supported on the two upright side bars 6, which are preferably provided with racks, by which it is moved up and down and the cutting-frame drawn down through the block of butter. As will be seen from Figs. 1 and 2, the lower ends of the rack-bars are held in and pass up and down through guides 7 on the bed 8 of the machine, by which they are maintained and guided in an upright position as they move, and as the movement of the bar on each side is thus rendered regular and even the cutting-frame is held in a horizontal position as the cutting-wires are drawn through the butter. Supported on the main frame of the machine between the bars 6 is the support or table 8 on which the butter rests as it is cut, which table may be of any suitable or desired construction. To facilitate the placing of the block or package of butter on the bed or table 8, the rack-bars, together with the cutting-frames, when raised to their uppermost position may be tilted to one side, as shown in dotted lines in Fig. 1.

To permit the cutter-frame to be readily tilted without entirely removing it from the guides 7 or disengaging the driving connection between the rack-bars 6 and their driving-gears, (presently to be described,) the lower ends of the said bars 6 are cut away or rounded off, as at 60, (see Fig. 1,) so that

when the cutter-frame has been raised to its uppermost position the ends of the rack-bar 6 may turn without binding in the guides 7, the rack-bars and cutter-frame rocking on the driving-gears at their pivotal points, as will be apparent from the dotted-line position of the tilted cutter-frame shown in Fig. 1. When the cutter-frame is in tilted position, it rests against the spring brace or support 9, which is pivoted to the machine-frame, and the lower end of which extends beneath the table 8 and bears against the driving-shaft 11, on which are mounted the gears 10, which serve to actuate the side bars and raise and lower the cutter-frame. It will be seen that by means of this pivoted spring-brace a braking action is secured when the frame is in tilted position and resting against the upper end of the brace 9, for the weight of the tilted frame will cause the lower end of the brace 9 to bear against the driving-shaft 11 and prevent its rotation when the frame is in tilted position, so that danger of accidental rotation of the shaft 11 and throwing out of the cutter-frame from its guides 7 is eliminated. The bars 6, as has been stated, are raised and lowered and the cutting-frame drawn through the butter by the gears 10 on the ends of the shaft 11, journaled in the guides 7 on the machine-frame, which mesh into the racks on the bars. The shaft 11 is turned through the engagement of gears 12 and 13 by the shaft 14, which is operated by any suitable mechanism, such as a crank. (Not shown).

The cutting-wires are secured to the cutting-frame 1 by the adjustable supports or clamps 16, in which are mounted yielding keys or fastenings 19. (Illustrated in Figs. 4 and 5.) As there seen and as shown in Figs. 1, 2, and 3, these clamps 16 embrace the bars of the frame 1 and are adjustably secured to the latter by the screws 17. In the bottom of the supports or clamps 16 is a sleeve or recess 18, in which is the key or hook 19, to which the cutting-wire 2 is attached. This hook is threaded at its outer end and has thereon the thumb-nut 20. Surrounding the key or hook 19 and inclosed between the wall of the recess and the thumb-nut is a spring 21, which acts on the key or hook 19 so as to produce a yielding tension on the wire attached to the latter, as the frame and wire are drawn down through the butter, while maintaining the cutting tension of the wire. To vary the tension of the wire, the key or hook 19 is adjusted by the thumb-nut, as desired, and the wire tightened or loosened, without, however, twisting the wire, the hook or key 19 engaging a slot 61 in the clamp 16, so that rotary movement of the hook or key is prevented and twisting effect or disengagement of wire from the key is prevented. By this construction a yielding action of the individual cutting-wires is secured, and breakage of the cutting-wires

in passing through the butter is avoided. Furthermore, the tension of the wires accommodate each other, and where they cross one another should one wire have a greater tension than the wire below it the upper wire will yield or give and not injure the wire below.

From the foregoing it will be seen that I have provided a cutter for butter-packages which is simple in construction and effective in operation, in which the cutting-wires may be readily adjusted as to tension and position on their supporting-frame without danger of breakage to adapt them for cutting various sizes of blocks, and in which wire-holding frames having various arrangements of cutting-wires may be readily substituted for one another.

While I have shown and described a particular construction and that the best now known to me, it will be understood that the invention may be varied to a considerable extent within the range of mechanical skill without departing from the spirit of my invention, and I do not, therefore, limit myself to any of the details of construction shown and described, except so far as I am limited by the prior art to which this invention belongs.

Having described my invention, I claim—

1. In a machine for cutting up masses of butter, the combination with a suitable table or support, of a cutter-frame movable toward and from said table, a plurality of cutters on said frame, supporting and guiding means to hold said frame parallel to said table during its movement, and connections between said supporting means and said frame which permit said frame to be tilted when in its uppermost position.

2. In a machine for cutting up masses of butter, the combination with a suitable table or support, of a vertically-movable cutter-frame having a plurality of cutters, means for moving said frame toward and from said table, supporting-guides to hold said frame parallel to said table, connections between said guides and frame which permit said frame to be tilted when in its uppermost position, and a support against which said frame rests when in tilted position.

3. In a machine for cutting up masses of butter, the combination with a suitable table or support, of a vertically-movable cutter-frame having a plurality of cutters, means for moving said frame toward and from said table, supporting-guides to hold said frame parallel to said table, connections between said guides and frame which permit said frame to be tilted when in its uppermost position, and a spring-support against which said frame rests when swung to one side of the table.

4. In a machine for cutting up masses of butter, the combination with a suitable table or support, of a cutter-frame movable toward and from said table, and having a plurality

of cutters, depending side bars on said frame, guides to receive said side bars and hold said frame parallel to the table during its movements, and connections between said guides and bars which permit the frame to be tilted when in its uppermost position.

5 5. In a machine for cutting up masses of butter, the combination with a suitable table or support, of a cutter-frame movable toward and from said table and having a plurality of cutters, rack-bars depending from said frame and having their lower ends rounded off or cut away, guides to receive said rack-bars and hold said frame parallel to the table during its movements, connections between said guides and rack-bars whereby the frame may be tilted when in its uppermost position, and driving means engaging said rack-bars to raise and lower said cutter-frame.

10 6. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame movable toward and from said table, side bars depending from said frame, and guides to receive said bars and hold the frame parallel to the table during its movements, the ends of said side bars being rounded off to permit the frame to be tilted when in its uppermost position.

15 7. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame movable toward and from said table, side bars depending from said frame, guides to receive said bars and hold the frame parallel to the table during its movements, the ends of said side bars being rounded off to permit the frame to be tilted when in its uppermost position, and a spring-support mounted on the machine-frame to support the cutter-frame when in tilted position.

20 8. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame having a plurality of cutters, rack-bars depending from said frame, guides to receive said rack-bars and hold said frame parallel to the table during its movements, driving-gears engaging said rack-bars to raise and lower said frame, and connections between said guides and bars which permit said rack-bars to rock on their driving-gears when the frame is in its uppermost position, whereby the frame may be tilted.

25 9. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame having a plurality of cutters, rack-bars depending from said frame, guides to receive the rack-bars and hold said frame parallel to the table during its movements, a driving-shaft having gears engaging said rack-bars to raise and lower said frame, connections between said rack-bars and guides which permit said bars to rock on said gears when the frame is in its uppermost position, whereby the frame may

be tilted to one side of the table, and a brace or support for said frame when in tilted position.

10. In a machine for cutting up masses of butter and in combination, a table or support for the mass; a cutter-frame having a plurality of cutters; rack-bars depending from said frame; guides to receive said rack-bars and hold said frame parallel to the table during its movements, a driving-shaft having gears engaging said rack-bars to raise and lower said frame; connections between said rack-bars and guides which permit said bars to rock on said gears when the frame is in its uppermost position, whereby the frame may be tilted to one side of the table; and a brace to support the tilted frame, said brace having a braking action on the said driving-shaft when the frame is tilted.

11. In a machine for cutting up masses of butter and in combination; a table or support for the mass; a cutter-frame having a plurality of cutters; rack-bars depending from said frame; guides to receive said rack-bars and hold said frame parallel to the table during its movements; a driving-shaft having gears engaging said rack-bars to raise and lower said frame; connections between said rack-bars and guides which permit said bars to rock on said gears when the frame is in its uppermost position, whereby the frame may be tilted to one side of the table; and a brace against which the frame rests when in tilted position, the lower end of said brace bearing against the said driving-shaft and serving to prevent rotation of the same when the frame is in tilted position.

12. In a machine for cutting up masses of butter and in combination; a table or support for the masses; a cutter-frame having a plurality of cutters; rack-bars depending from said frame; guides to receive the rack-bars and hold said frame parallel to the table during its movements; a driving-shaft having gears engaging said rack-bars to raise and lower said frame; connections between said rack-bars and guides which permit said bars to rock on their gears when the frame is in its uppermost position, whereby the frame may be tilted to one side of the table; and a pivoted brace or support for the tilted frame which bears at its lower end against said driving-shaft and serves to prevent rotation of the shaft when the frame is in tilted position.

13. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame having a plurality of cutters, depending rack-bars on said cutter-frame, guides for said rack-bars, a gear-shaft engaging said bars to move said frame, connections between said guides and bars which permit the frame to be tilted when in its uppermost position, and means for locking said gear-shaft from rotation when the frame is tilted.

14. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame movable toward and from said table and having a plurality of cutters, side bars depending from said frame, guides to receive said side bars and direct the movements of said frame, connections between said guides and bars which permit said frame to be tilted when in its uppermost position, driving means engaging said bars to raise and lower the frame, and means for locking said driving means when the frame is in tilted position.

15. In a machine for cutting up masses of butter and in combination, a table or support for the mass, a cutter-frame movable toward and from said table and having a plurality of cutters, side bars depending from said frame, guides to receive said side bars and direct the movements of said frame, connections between said guides and bars which permit said frame to be tilted when in its uppermost position, driving means engaging said bars to raise and lower the frame, and means operated by the weight of the tilted frame for locking said driving means when the frame is in tilted position.

16. In a machine for cutting up masses of butter, and in combination, a table or support for the mass, cutting instrumentalities movable toward and from said table, means for guiding the cutting instrumentalities in their movements relative to said table, connections between said cutting instrumentalities and said guiding means which permit tilting of said cutting instrumentalities when in their uppermost position, means for driving said cutting instrumentalities, and means for locking said driving means when the cutting instrumentalities are in tilted position.

17. A butter-cutter, comprising a supporting-frame, an auxiliary cutter-frame mounted thereon, and a vertically-yielding connection between said frames.

18. A butter-cutter comprising a supporting-frame, an auxiliary cutter-frame mounted thereon, and spring-posts to form a vertically-yielding connection between said supporting-frame and said auxiliary cutter-frame.

19. A butter-cutter comprising a supporting-frame, spring corner-posts on said frame, and an auxiliary cutter-frame removably mounted on said supporting-frame and engaging said spring corner-posts, whereby a vertically-yielding connection between the said frames is secured.

20. A butter-cutter comprising a supporting-frame, an auxiliary cutter-frame removably mounted thereon, and cutting-wires adjustably mounted on said auxiliary frame.

21. A butter-cutter comprising a supporting-frame, an auxiliary cutter-frame removably mounted on said supporting-frame, and cutting-wires having yielding connections with said auxiliary frame.

22. A butter-cutter comprising a supporting-frame, an auxiliary cutter-frame, yieldingly mounted on said supporting-frame, and cutting-wires having yielding connections with said auxiliary frame.

23. A butter-cutter comprising a frame, cutting-wires spanning said frame, wire-holding keys on said frame, means for adjusting said keys longitudinally to change the tension of said wires, and means for preventing rotation of the keys and twisting of the wires during adjustment.

24. A butter-cutter comprising a frame, cutting-wires spanning said frame, spring-keys on said frame to which said wires are secured, means for adjusting said spring-keys to change the tension of said wires, and means for preventing rotation of said keys and twisting of the wires during adjustment.

25. A butter-cutter comprising a frame, cutting-wires spanning said frame, wire-holding keys transversely adjustable on said frame to vary the relative positions of the wires, means for adjusting said keys longitudinally to change the tension of the wires, and means for preventing rotation of the keys and twisting of the wires during adjustment.

26. A butter-cutter comprising a frame, adjustable clamps on said frame, adjustable keys carried by said clamps, and cutting-wires secured to said keys.

27. A butter-cutter comprising a frame, adjustable clamps on said frame provided with key-receiving slots, adjustable keys carried by said clamps and engaging said key-slots to prevent rotation of the keys during adjustment, means for adjusting said keys longitudinally to change the tension of the cutting-wires, and cutting-wires secured to said keys.

28. A butter-cutter comprising a frame, adjustable clamps on said frame provided with key-receiving slots, adjustable spring-keys carried by said clamps and engaging said key-slots to prevent rotation of the keys during adjustment, means for adjusting said keys longitudinally to change the tension of the cutting-wires, and cutting-wires secured to said spring-keys.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD F. STEWART.

Witnesses:

WILLIAM S. PRATT,

CAROLINE E. WILSON.