

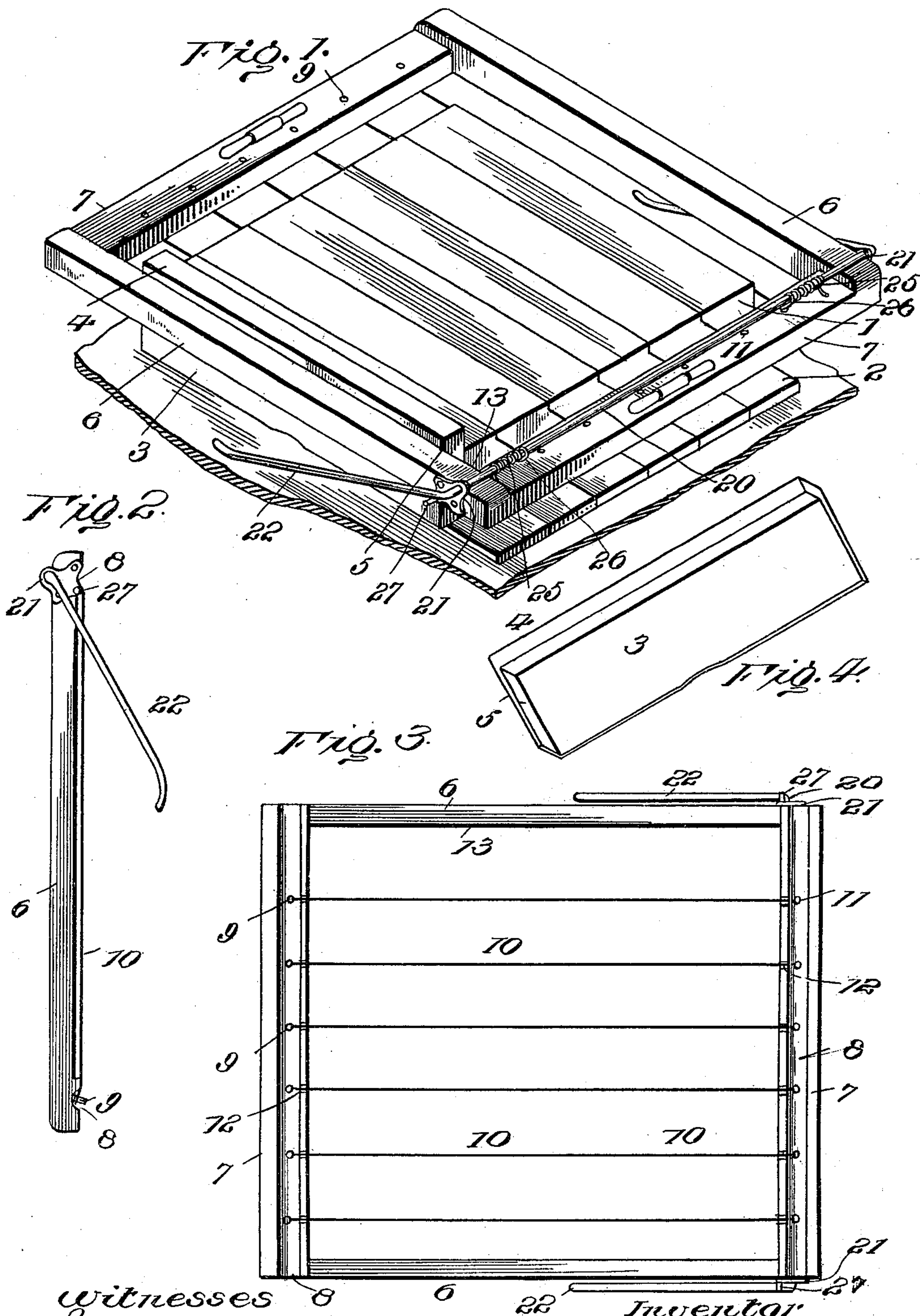
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R. A. SIMPSON.
BUTTER CUTTING APPARATUS.

(Application filed Mar. 11, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

RUFUS A. SIMPSON, OF FERNDALE, CALIFORNIA.

BUTTER-CUTTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 639,911, dated December 26, 1899.

Application filed March 11, 1899. Serial No. 708,744. (No model.)

To all whom it may concern:

Be it known that I, RUFUS A. SIMPSON, a citizen of the United States, residing at Ferndale, in the county of Humboldt and State of California, have invented certain new and useful Improvements in Butter-Cutting Apparatus, of which the following is a specification.

My invention relates to improvements in apparatus for cutting butter into blocks for the retail market, the object of my invention being to provide an apparatus of this character which shall be simple and economical in construction, easy to operate, accurate in its results, and which can be used independently of any special form of mold for packing the butter.

A further object of my invention is to provide an apparatus which can be easily moved to a rectangular mass of butter to cut the same into blocks and avoid the necessity of having to bring the butter to the apparatus.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved apparatus in operation. Fig. 2 is a side elevation of the cutting device proper. Fig. 3 is a bottom plan view of the same, and Fig. 4 is a perspective view of the under side of the guide for the cutting device.

Referring to the drawings, 1 represents a rectangular mass of butter supported on slats 2, the latter being of the same width as the blocks into which it is desired to cut the butter.

3 represents a guide-plate having an overhanging top 4 extending therefrom at right angles and adapted to rest upon the margin of the mass of butter and an end 5 also extending at right angles to the plate 3 and top 4 and adapted to abut against a vertical side thereof. The other end of the guide is open, so that the guide may be used for masses of butter of different sizes.

The cutting apparatus proper comprises a frame having side pieces 6 and end pieces 7, the latter being grooved on their under sides, as shown at 8, and having a line of perfora-

tions in each groove. In the perforations at one end are secured on the under side of the frame a line of keys 9, around which are wound the ends of wires 10, each wire passing from one key 9 to the other end of the frame, then through a perforation 11 at that end to the upper side of the frame, then through the adjoining perforation to the lower side, and then back to the other end of the frame, where it is wound around an adjoining key 9. The wires 10 are let into notches 12 in the edges of the end pieces over which they pass, and by setting the keys down into the grooves 8 said wires are drawn down tight into said notches, so that they are prevented from moving laterally on said edges. The keys are of the same general construction as those used for securing the wires of pianos, so that a high tension may be given to the wires by turning the keys. The wires 10 are spaced from each other a distance equal to the width of the blocks to be cut, but the first wire is spaced from the inner surface 13 of the adjacent side piece 6 a distance equal to said width plus the thickness of the guide-plate 3. Thus as said side piece is moved down along the guide-plate 3 the first wire will cut off a long block of the desired width.

Having pressed the frame downward, so that the several wires each make a cut through the butter in one direction, giving the frame a slight seesaw motion lengthwise of the wires to insure that the wires cut clear through the butter to the slats on which it rests, the frame is then withdrawn and given a quarter-turn and is next used to make similar cuts in a direction at right angles to the first cuts, first withdrawing the guide-plate 3 from its first position and placing it against an edge of the mass of butter at right angles to the edge on which it first rested. Thus the mass of butter is quickly cut into blocks of square cross-section and of any desired depth.

If in depressing the frame to make a cut the cutting-wires are not maintained at precisely the same level with each other during the operation, the cut will not be accurately vertical and the blocks will not be rectangular or all of the same size. To insure an accurately vertical cut, I provide an equalizing-yoke 20, pivotally mounted in bearings 21 on an end piece of the frame, the arms 22 of said

yoke extending forward from said bearings parallel with each other and of equal length. If care is taken that the ends of these arms both rest upon the table or other supporting-surface, the cutting-wires will all be level with each other and the cuts will be accurately vertical. Springs 25, secured by eyes 26 to the yoke and pressing against an end piece, tend to throw the arms of the yoke downward, thus assisting in maintaining the ends of said arms in contact with the table and also in raising the cutting-wires through the butter after the cut has been completed and the downward pressure has been removed. Lugs 27 limit the movement of said yoke under the action of said springs.

I have so constructed my cutting apparatus that it may be used for cutting blocks of two different sizes—as, for instance, two-pound blocks and one-pound blocks. It will be observed that of the outer wires of the series that on one side is much nearer the adjacent side piece of the frame than that on the other side. Thus if the distance between adjacent wires be three inches and the thickness of the guide itself is half an inch the distance of one outer wire from the side piece next it will be three and one-half inches and of the other from its adjacent side piece will be two inches. If the frame be so placed in cutting that the former wire will be next the guide 3, then every cut will be three inches wide; but if the frame be placed so that the latter wire is next the guide the first cut will be only one and one-half inches wide, while other cuts will be three inches wide, and if now the frame be turned half around and a second cut be made in the same direction as the former the mass of butter will be cut up into lengths each one and a half inches wide, which by turning the frame through a quarter-revolution and again cutting may be cut up into blocks of cross-section three inches by one and one-half inches. When the mass of butter has been cut up into blocks, each row of blocks will rest upon its own slat and may be readily removed separately.

I claim—

1. In butter-cutting apparatus, the combination of a guide comprising a broad overhanging top to rest upon a mass of butter, and a plate rigidly depending from said top to form a guiding-surface, the lower edge of said plate being free, a frame having a side piece of greater length than the guiding-plate and adapted to be moved along the outside of said guiding-plate and having stretched parallel cutting-wires, and means for maintaining the frame at right angles to said plate, while in motion therealong, substantially as described.

2. In a butter-cutting apparatus, the combination of a guide having a broad overhanging top adapted to rest upon a mass of butter, and a plate rigidly depending from said top to form a guiding-surface the lower edge of said plate being free, a frame having a side piece of greater length than the guiding-plate and adapted to be moved along the outside of said guiding-plate and having stretched parallel cutting-wires spaced at equal distances from each other and the wire next the side piece being spaced therefrom the distance between adjacent wires plus the thickness of said plate, and means for maintaining the frame at right angles to said plate while in motion therealong, substantially as described.

3. In a butter-cutting apparatus, the combination of a guide having a broad overhanging top adapted to rest upon a mass of butter, and a plate rigidly depending from said top to form a guiding-surface, the lower edge of said plate being free, a frame having side pieces either of which is adapted to be moved along the outside of said guiding-plate, and having stretched parallel cutting-wires spaced at equal distances from each other, the wire next one side piece being spaced therefrom the thickness of said plate plus the distance between adjacent wires, and the wire next the other side piece being spaced therefrom said thickness plus half said distance, and means for maintaining the frame at right angles to said plate while in motion therealong, substantially as described.

4. In butter-cutting apparatus, the combination of a frame having parallel stretched wires, and an equalizing-yoke pivotally mounted on said frame, substantially as described.

5. In butter-cutting apparatus, the combination of a frame having parallel stretched wires, and a spring-actuated equalizing-yoke pivotally mounted on said frame, substantially as described.

6. In butter-cutting apparatus, the combination of a frame having parallel stretched cutting-wires, and a device movably carried by said frame adapted to rest on the surface of a table or other support for the butter, and, when so resting, maintaining the cutting-wires level with each other, in their downward movement, substantially as described.

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

RUFUS A. SIMPSON.

Witnesses:

CHAS. W. SMYTH,
F. M. WRIGHT.