No. 695,501. Patented Mar. 18, 1902.

G. L. SMITH.

BUTTER CUTTING MACHINE.

(Application filed May 11, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

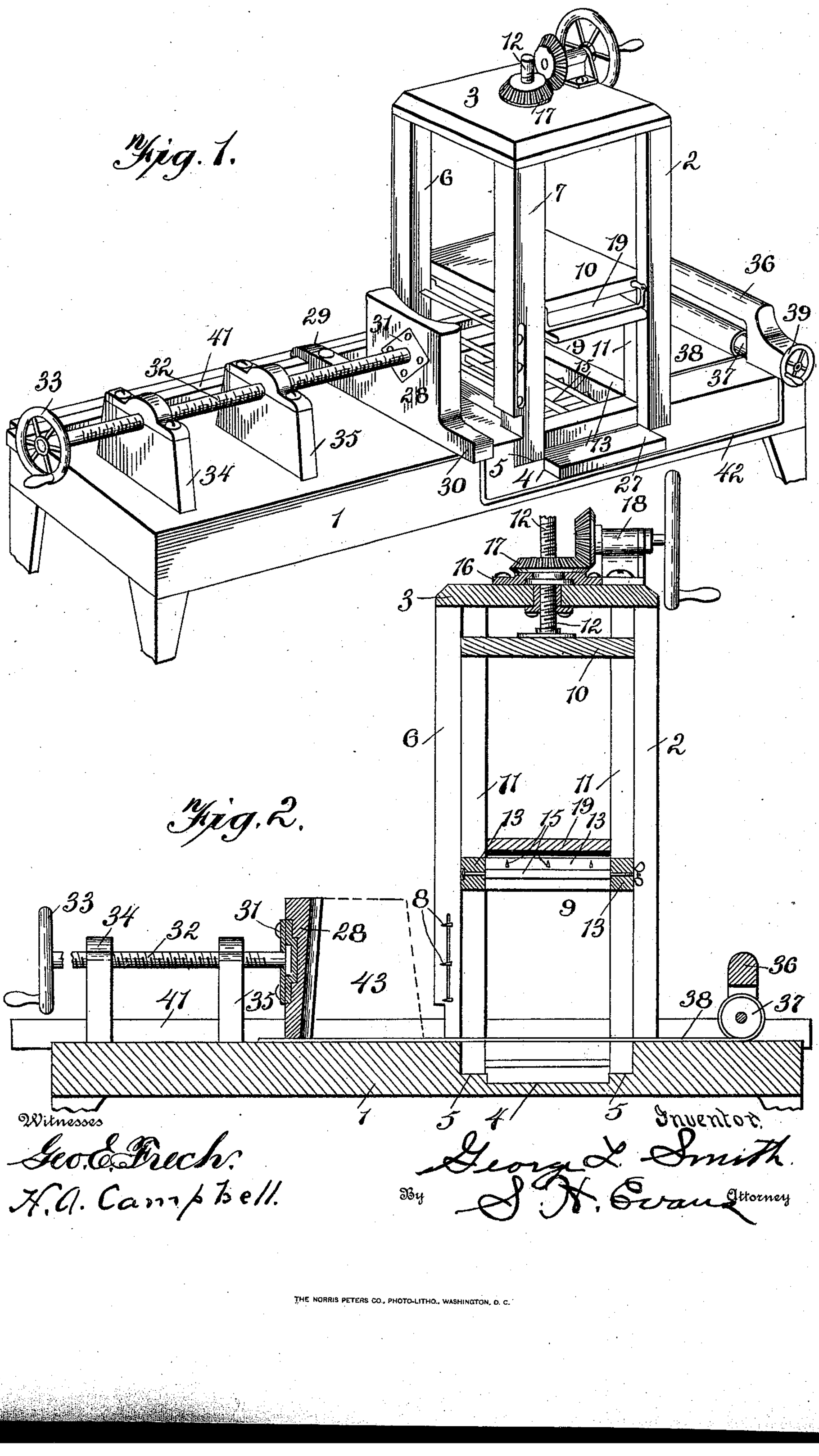

Fig. 2.

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Fig. 3.

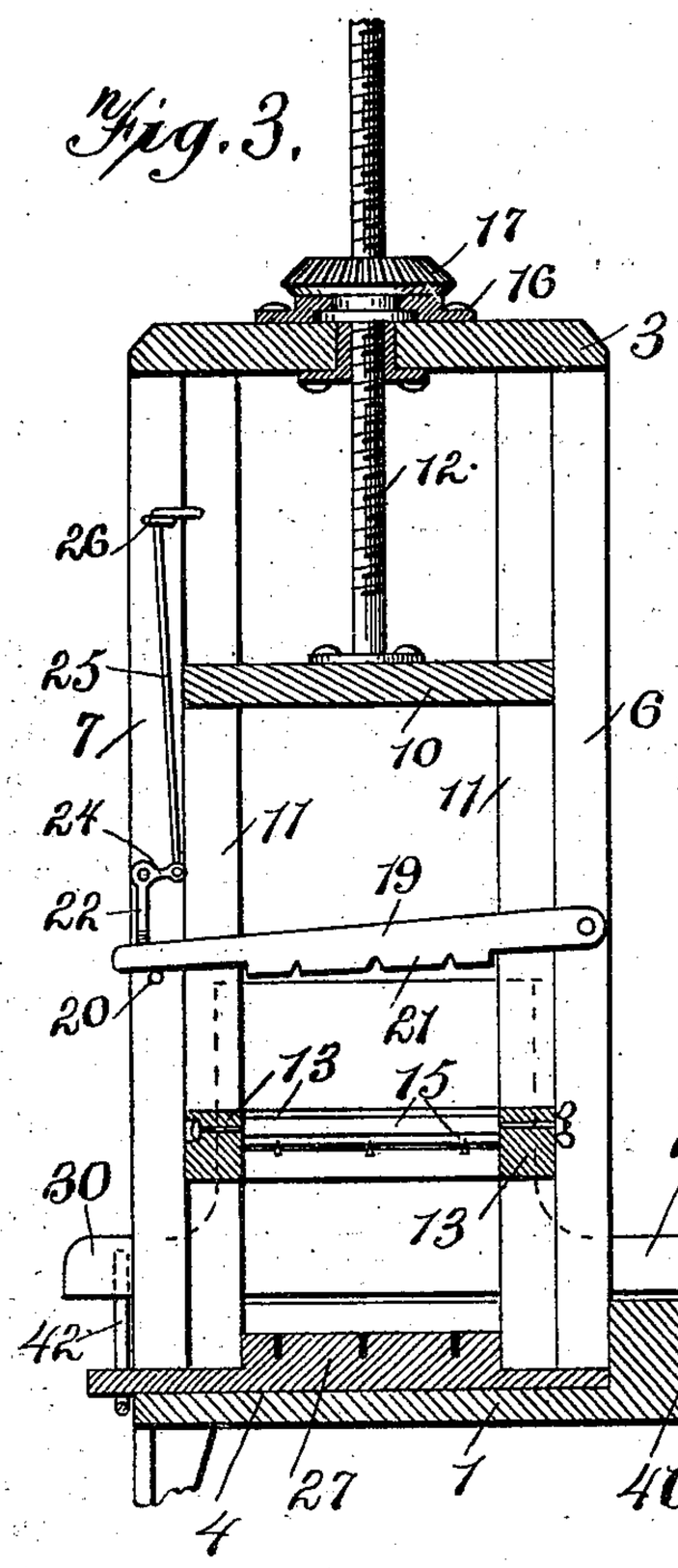


Fig. 4.

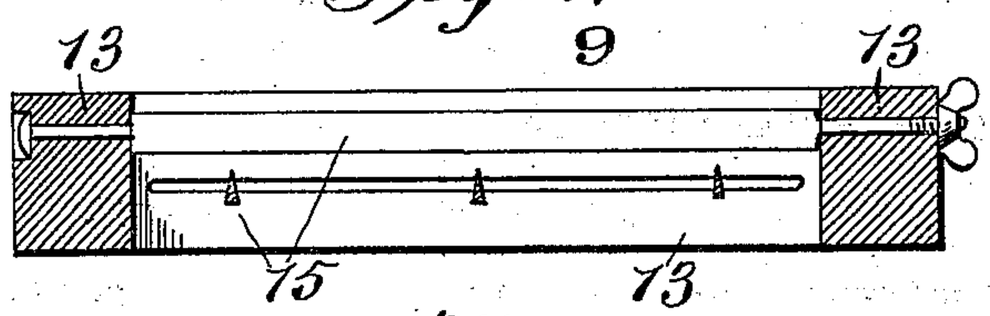


Fig. 5.

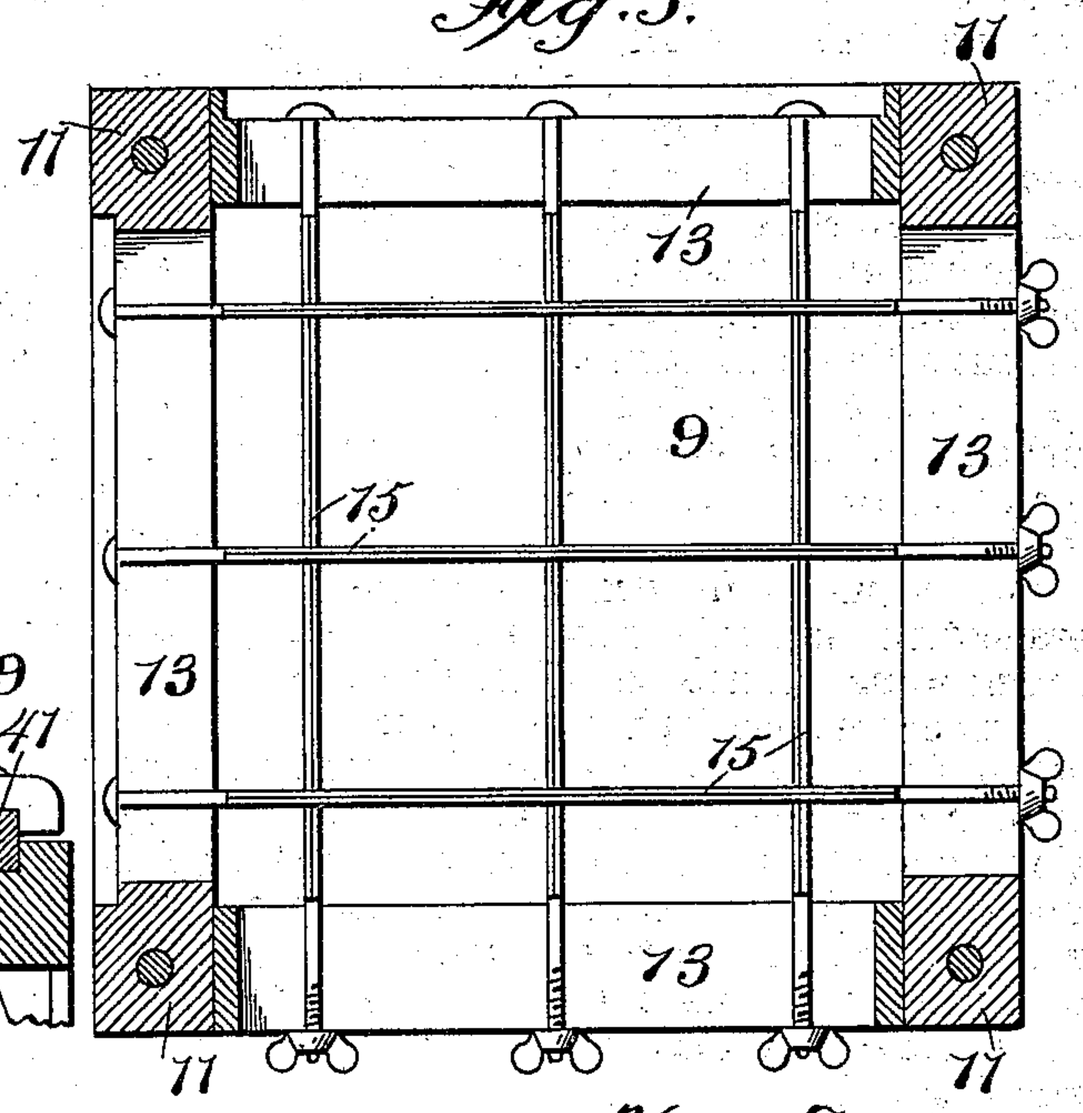


Fig. 6.

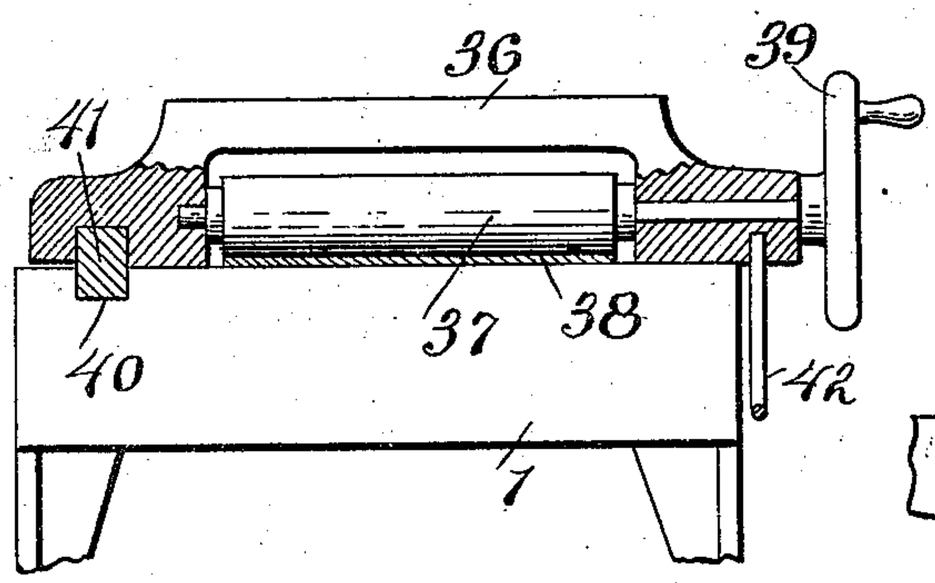
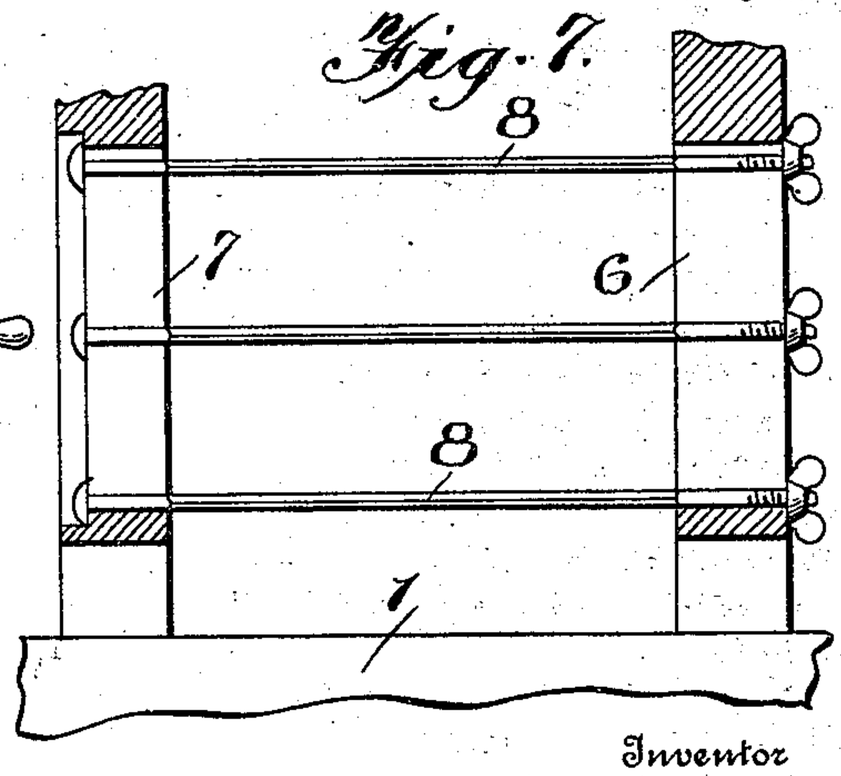


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE L. SMITH, OF GOOD GROUND, NEW YORK.

BUTTER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 695,501, dated March 18, 1902.

Application filed May 11, 1901. Serial No. 59,777. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. SMITH, a citizen of the United States, residing at Good Ground, in the county of Suffolk and State of New York, have invented new and useful Improvements in Butter-Cutting Machines, of which the following is a specification.

My invention relates to improvements in butter-cutting machines, and pertains to an apparatus which is adapted for cutting tubs of butter or material of a like nature into blocks or packages, all of which will be fully described hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a longitudinal vertical sectional view. Fig. 3 is a transverse sectional view. Fig. 4 is a detail sectional view of the movable cutting plate or frame. Fig. 5 is a plan view of the cutting-plate. Fig. 6 is a detail view of the apron-roller. Fig. 7 is an enlarged sectional view of the primary cutting-knives.

Referring now to the drawings, 1 indicates a longitudinal base plate or frame with supporting-legs.

2 is a vertical frame consisting of four standards, the upper ends of which are joined by a plate 3.

4 is a transverse opening corresponding in size with the vertical frame 2, and provided with shoulders 5, upon which rests the frame 2.

In the lower portion of the standards 6 and 7 I provide vertical grooves or slots in which are placed three primary cutting-knives 8. The number of knives or the space between them can be readily adjusted by means of thumb-screws, as clearly illustrated in Fig. 7, thus cutting the slices or layers of any desired thickness.

Within the frame 2 I provide a movable cutting-frame, consisting of two portions 9 and 10, which are rigidly connected by corner-posts 11. In the center of the upper portion or plate I connect an upwardly-extending screw-threaded rod 12. The lower portion or cutting-plate consists of four bars 13 13, each bar having a longitudinal groove or slot, as illustrated in Figs. 4 and 5. The cutting-knives 15, extending from the bars 13, can be adjusted laterally by releasing the thumb-screw with which each knife is provided for the purpose of regulating the size of the blocks or sections of butter.

In the center of the plate 3 I provide a bearing-plate 16, through which passes the screw-threaded rod 12 and forms a bearing for a cog-wheel 17, which has a threaded opening to receive the rod 12. Journaled in a thrust bearing-plate 18 is a shaft carrying on its outer end a hand-wheel and on its inner end a cog-wheel which engages the cog 17, thus forming a bevel-gear for controlling the vertical movement of the inner frame.

Pivoted between the rear standards is a plate 19, which passes between the standards at a point between the sections of the movable cutting-frame, the free end resting on a pin 20 and adapted to be locked in this position by a U-shaped bail 22, pivoted between the standards and extending transverse the plate 19. The rod 25, which passes through a screw-eye 26, is provided on its upper end with an inwardly-extending arm which limits its downward movement and is pivotally connected on its lower end with the laterally-extending arm 24. The weight of the rod 25 serves to hold the bail on a center, thus locking the plate 19 against upward movement until the knives 15 have passed through the butter, when the upper section of the inner frame will trip the inwardly-extending arm of the rod 25, thus raising the bail 22 and allowing the plate 19 to be swung upward by the lower section of the cutting-frame, so that the butter can be easily taken out on the slide or plate 27. It will be seen that the plate 19 serves the same purpose with regard to the upper layer of butter as the upper layer serves to the layer immediately below it, in that the knives 15 pass through the top layer, cutting the edges of each block or section smooth and even, whereas in the absence of the resistance of the plate 19 the knives would raise the edges of the upper sections, leaving them ragged and necessitating their being worked over with a paddle. The under surface of plate 19 is provided with a depending portion 21, which is adapted to register with the opening in the cutting-frame and is preferably, although not necessarily, provided with parallel grooves corresponding with the knives 15.

In the recess 4 I provide a movable slide 27, having an upwardly-extending portion

corresponding in size with the opening under the knives in the movable cutting-frame and parallel grooves for receiving the knives 15.

The numeral 28 indicates a vertical pressure-plate having a concave face and two laterally-extending arms 29 and 30. Rigidly attached to the back of the pressure-plate 28 is a bearing-plate adapted to receive the head of a longitudinal screw-threaded rod 32, which is operated by a hand-wheel 33. Screwed to the top of blocks 34 and 35 are two plates with screw-threaded openings, forming a thrust-bearing for the rod 32.

Extending across the opposite end of the table I provide a movable frame 36, in which is journaled a roller 37. Attached to the roller 37 is one end of an apron 38, made of rubber or like material. The roller is revolved by a hand-wheel 39.

The numeral 40 indicates a longitudinal recess which extends the entire length of the table and is adapted to receive a guide-bar 41, which connects the laterally-extending arm 29 of the pressure-plate with one end of the frame 36, the other end of the roller-frame 36 being connected with the arm 30 of the pressure-plate by a U-shaped bail 42. It will be seen that the longitudinal movement of the frame 36 is controlled by and is identical with the movement of the pressure-plate 28 for the purpose of keeping the apron stretched tight while the butter is being forced forward, thus preventing the apron from rolling or folding in front of the butter.

In operating my machine the apron is unrolled from the roller 37, passed by hand between the standards of the vertical frame up to or under the lower edge of the pressure-plate 28, the said plate being preferably formed high enough to permit the apron to be passed under. The movable cutting-frame being lowered, as shown in Fig. 1, the apron will be between the knives 15 and the butter as it enters the vertical frame and prevents the knives from scraping the butter. The butter 43 to be cut is placed on the table, as shown in Fig. 2. As the pressure-plate is carried forward by turning the hand-wheel 33 the butter is forced against the primary knives 8, cutting it into horizontal slices. The apron, which prevents the butter from scraping against the knives 15, is then withdrawn by winding it around the roller 37, thus depositing the butter on the receiving-plate 27, which serves to support it while being cut by the knives 15. The vertical cutting-frame is then raised by operating the hand-wheel 39, causing the longitudinal cutting-knives 15 to cut the butter into blocks. The U-shaped bail 22 serves to hold the plate 19 against the butter until the knives have passed through the last layer or slice, when the upper portion of the inner frame will trip the arm of the bar 25, which allows the plate 19 to be raised by the lower section of the inner frame. The butter can then be easily taken out on the slide 27.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a butter-cutting machine, a supporting-table a pressure-plate and apron-roller longitudinally movable thereon, a vertical frame provided with adjustable primary cutting-knives, a vertically-movable cutting-frame, means for operating the same, a pivoted plate for resisting the upward pressure of the butter and means for releasing the plate before the frame reaches the limit of its upward movement, substantially as described.

2. In a butter-cutting machine a supporting-table a pressure-plate adapted to force the butter through primary cutting-knives, an apron, a roller for withdrawing the same, rigid connections between the roller and pressure-plate, a vertical frame carrying a bevel-gear engaging the screw-threaded rod 12, for controlling the vertical movement of the inner frame, a hand-wheel for operating the said gear, horizontal adjustable cutting-knives adapted to cut the butter into blocks or squares, a pivoted plate, a U-shaped bail holding the said plate normally down, the upwardly-extending rod 25 connected with the U-shaped bail and adapted to be tripped by the inner frame in its upward movement, a removable or sliding plate for receiving the butter after it has been cut into blocks, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE L. SMITH.

Witnesses:
J. P. HAND,
J. C. KING.