No. 855,404.

PATENTED MAY 28, 1907.

A. JENSEN.

BUTTER CUTTER.

APPLICATION FILED JAN. 17, 1907.

4 SHEETS—SHEET 1.

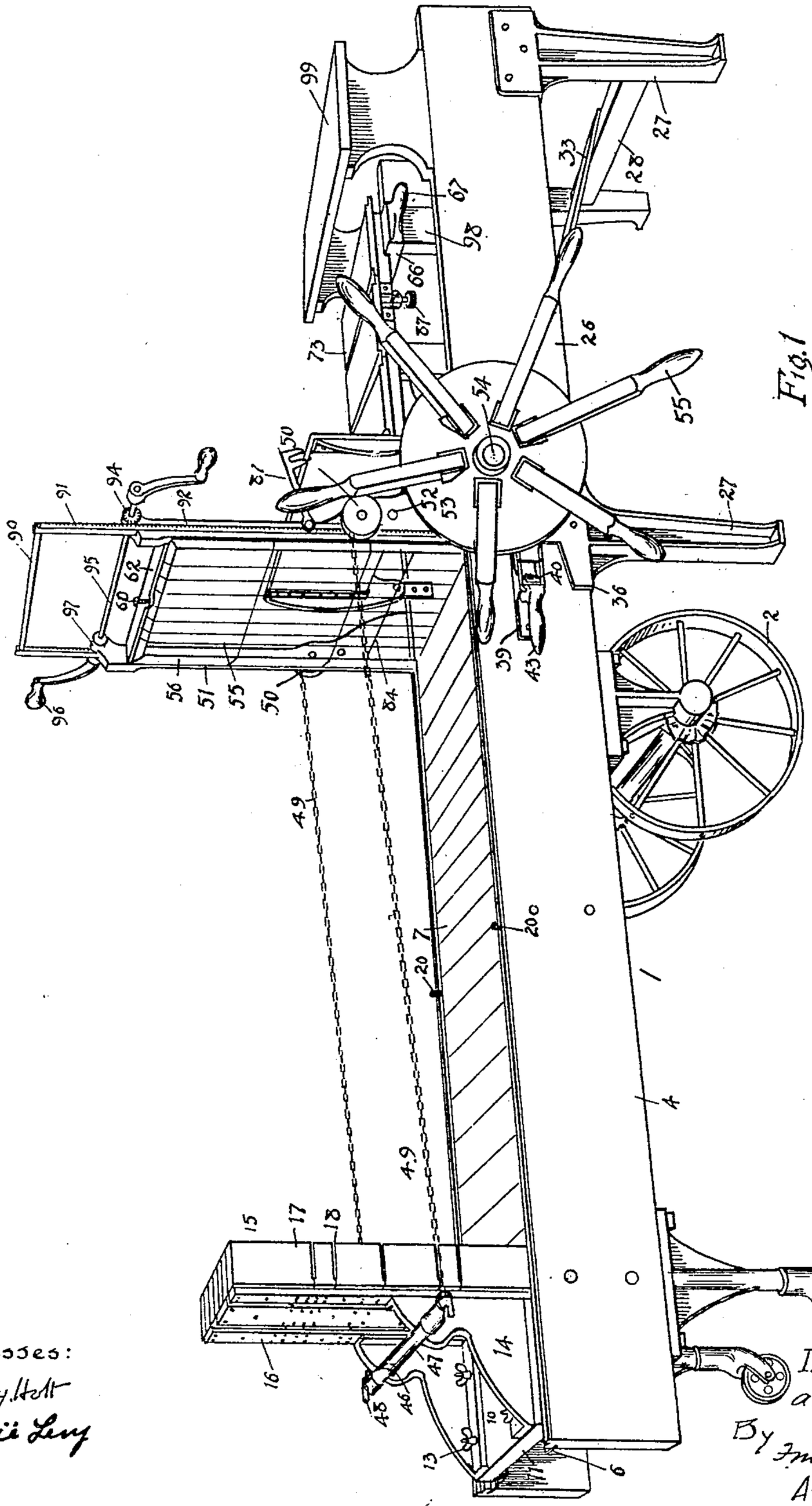

Fig. 1

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4 SHEETS—SHEET 2.

Fig. 2

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4 SHEETS—SHEET 3.

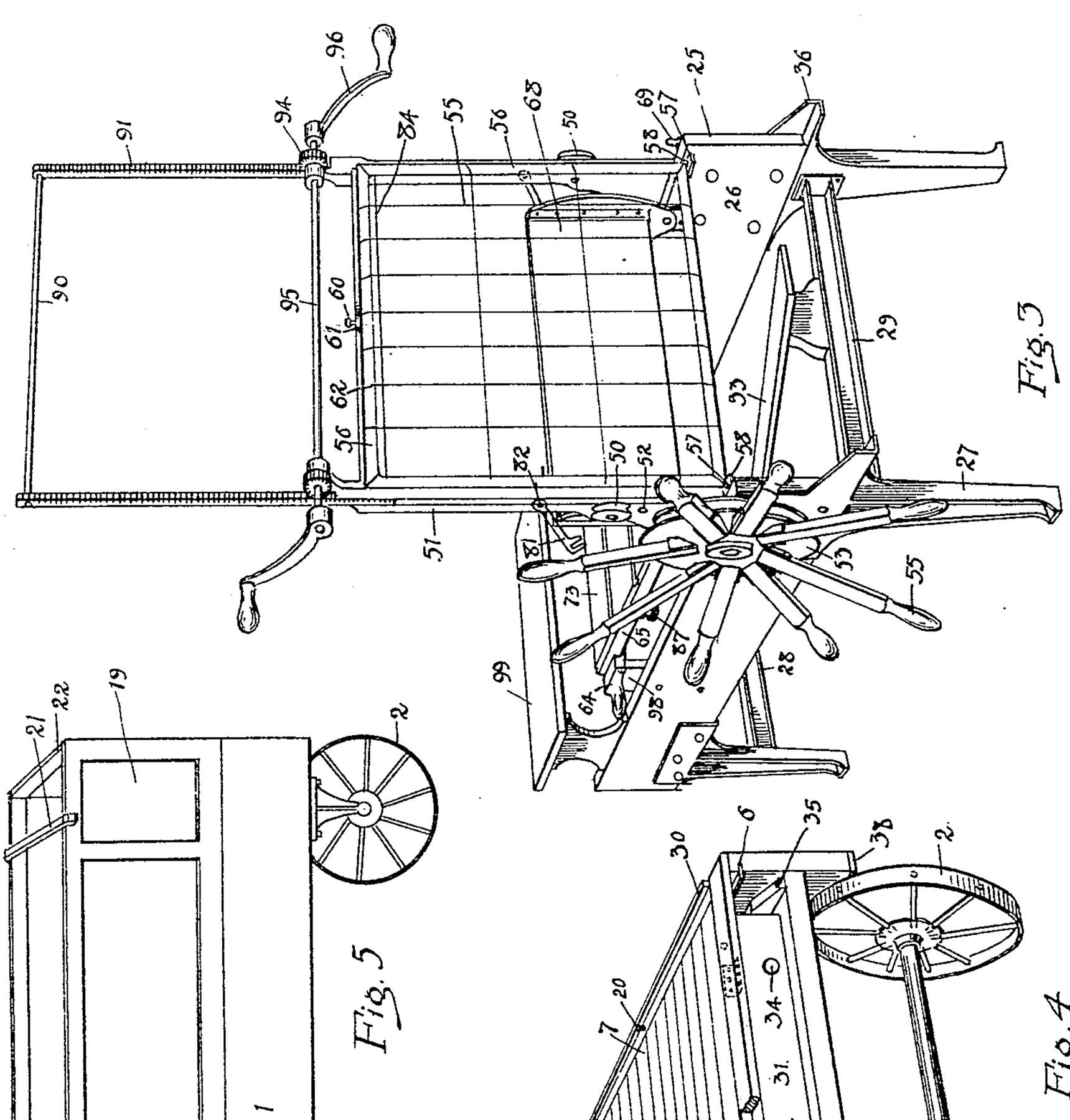

Fig. 3

Fig. 5

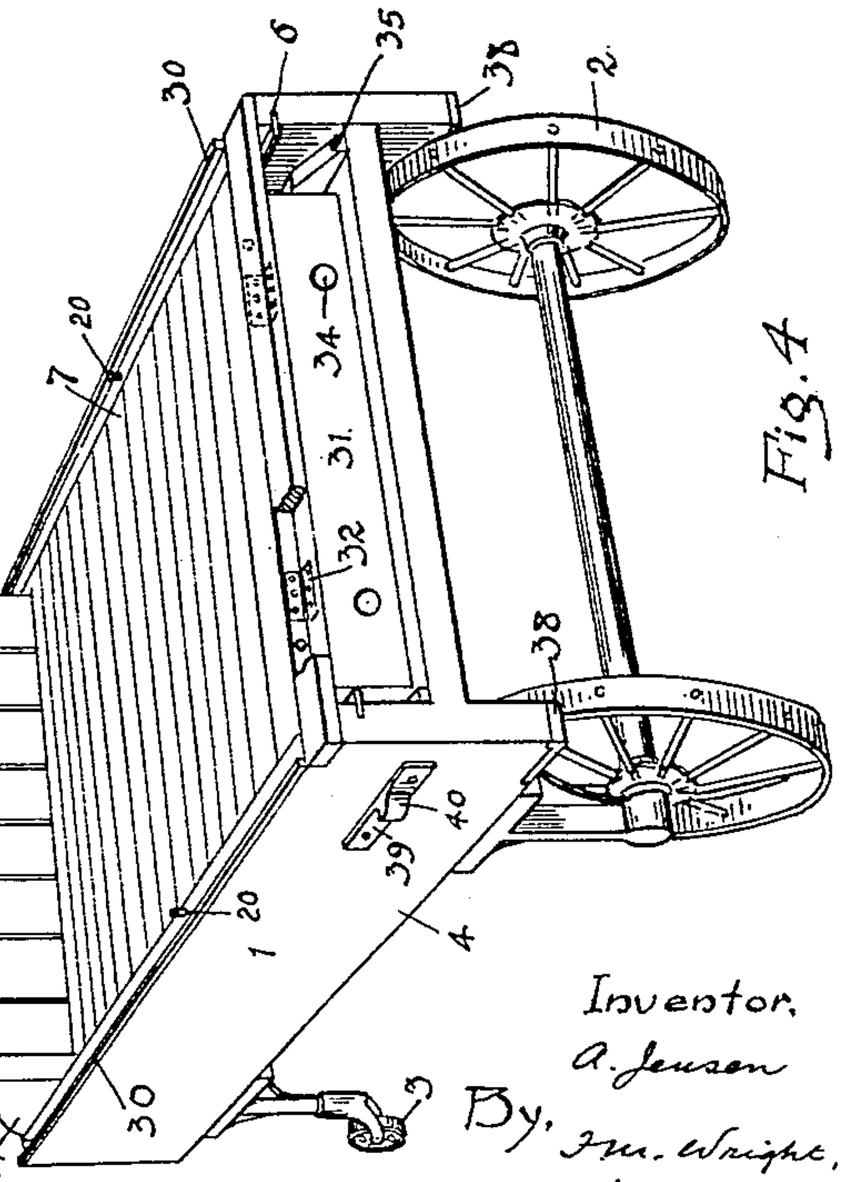

Fig. 4

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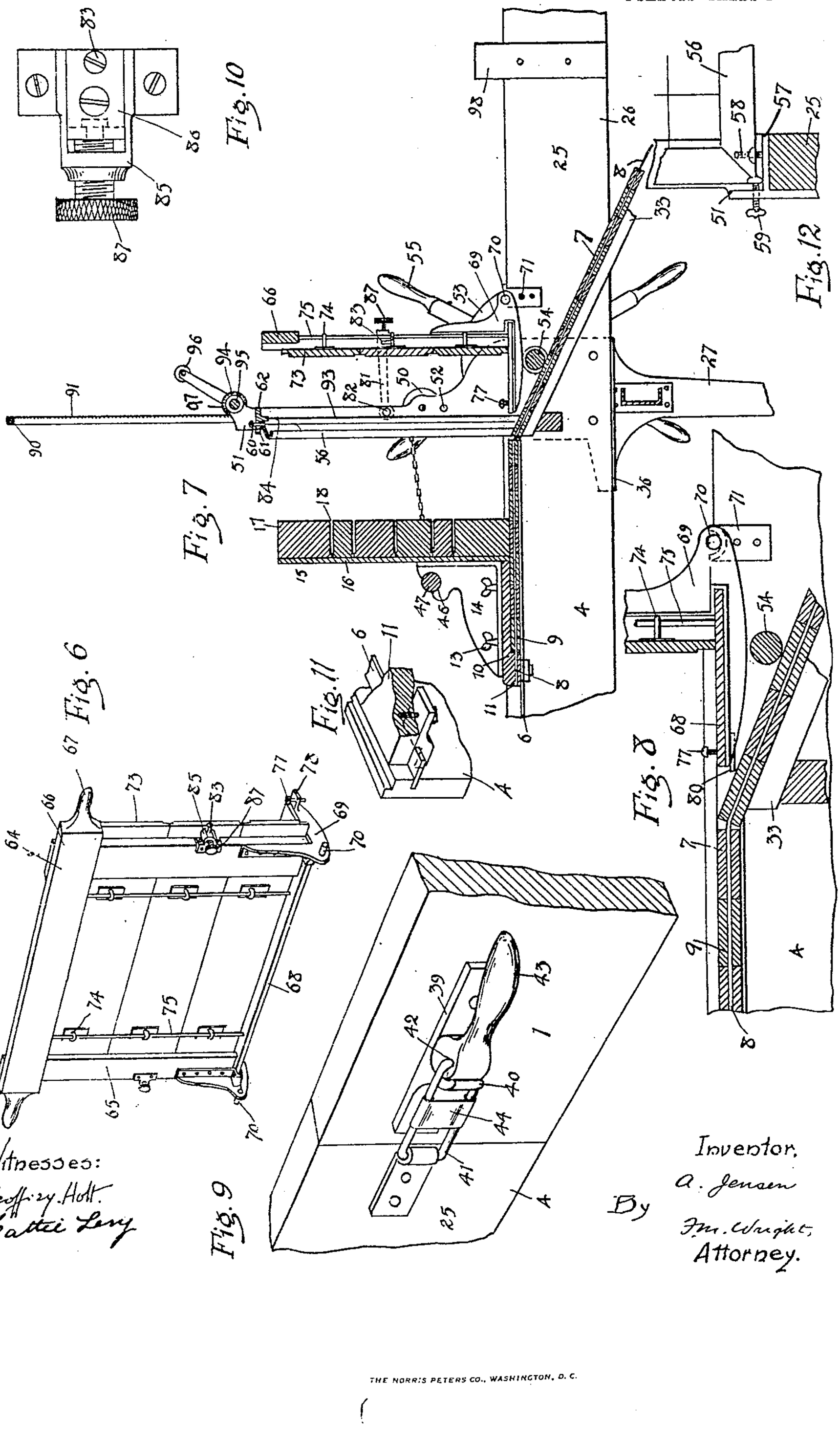

Witnesses:
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UNITED STATES PATENT OFFICE.

AAGE JENSEN, OF EUREKA, CALIFORNIA.

BUTTER-CUTTER.

No. 855,404. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 17, 1907. Serial No. 352,731.

To all whom it may concern:

Be it known that I, AAGE JENSEN, a citizen of the United States, residing at Eureka, in the county of Humboldt and State of California, have invented new and useful Improvements in Butter-Cutters, of which the following is a specification.

This invention relates to improvements in butter cutters, the object of the invention being to provide a machine of this character by means of which butter packed in large masses coming from a churn may be conveniently cut up into uniform blocks for sale, and by means of which a series of such masses can be so cut in succession quickly and with ease.

In the accompanying drawing, Figure 1 is a perspective view of the butter cutter showing the parts as they appear at the commencement of the operation of cutting the butter; Fig. 2 is a similar view, the parts being shown in the position when the butter has been fully cut; Fig. 3 is a perspective of the cutter proper, detached; Fig. 4 is a similar view of the carrier for the butter; Fig. 5 is a perspective view showing the box upon the carrier for containing the packed butter; Fig. 6 is a perspective view of the swinging tray detached; Fig. 7 is a broken longitudinal sectional view of adjacent portions of the carrier and cutter table; Fig. 8 is an enlarged broken longitudinal section of the floor of the truck and of the adjacent portion of the cutter table; Fig. 9 is an enlarged perspective view of one of the clamps; Fig. 10 is an enlarged side view of the adjusting device; Fig. 11 is a detail section view of one of the lugs on the end gate; Fig. 12 is a broken detail view of a shelf for the cutter frame.

Referring to the drawing, 1 indicates the truck or carrier upon which the butter is supported when it is packed and while it is being cut. This truck is mounted at its front ends upon wheels 2, and upon its rear end upon either one or two caster wheels 3. In the present instance I have shown a pair of such caster wheels. The frame of the truck comprises the side plates 4 and the cross beams 5, and into the inner sides of said side plates above the cross beams are let a pair of metallic rails 6. Upon said rails slides the floor of the truck, which is composed of transverse slats 7 flexibly connected together, and as a convenient means for so connecting them flexibly, I provide two wire cables 8, which extend longitudinally through registering holes 9 in the slats. At their rear ends, said cables are secured to an upper end gate base 10 which is formed with a depending portion 11 of the same size and shape as the slats, so that the lower surface thereof rest upon the rails 6, while the upper surface is flush with the floor of the truck; and secured to said depending portion 11 are lugs which fit around the rails 6 and prevent the end gate tilting in case of an uneven resistance against the butter. To said base 10 are bolted, as shown at 13, the brackets 14 for the end gate 15. Said end gate comprises the vertical supporting plates 16 and the transverse wooden pieces 17 secured on the front faces of said vertical plates. Said pieces are so formed that, when secured together on said vertical plates, they form a continuous wooden block with the vertical and horizontal grooves 18. These grooves are formed in the end gate to receive the cutting wires at the end of the operation of cutting the butter so as to insure that said wires pass entirely through the butter and completely sever the same longitudinally into blocks.

In order to pack the butter upon the truck, there are provided the removable sides 19 secured on the sides of the truck by dowel pins 20 fitted within the small projecting rails 30, and held together by yokes 21, and the removable end 22 at the opposite end of the truck to the end gate. These movable sides and end, having been placed in position on the truck, form with the end gate a box into which the butter is firmly compacted.

When it is desired to cut the butter, the removable sides and end are removed, and the truck is moved up to the cutter table 25, which has the sides 26, the legs 27, and the end bars 28. Before connecting the truck and the cutter table, provision must be made for the disposal of the slats 7 of the truck floor, as said floor is advanced, the butter severed into blocks, and the blocks removed from the remainder of the mass. For this purpose a depending slat 31, hinged, as shown at 33, to the foremost of the horizontal slats, is pulled outward and placed upon the upper end of an inclined support 33 extending down from the front end of the cutter frame and supported upon the end bars 28, 29. For conveniently lowering said vertical slat 31, it has holes 34 for the in-

sertion of the fingers. In consequence of this arrangement, all of the remaining slats of the truck floor will follow the slat so placed upon the support 33, and will descend upon said support as the floor is advanced, being guided thereto by the inclined side guides 35.

Upon the legs 27 at the end toward which the truck is moved are secured the angular guide plates 36, and upon the lower edges of the side plates 4 of the truck, at their front ends, are secured the metallic wear plates 38, which, when the truck is moved into position adjacent to the cutter table, move in contact with the guide plates. Said guide plates converge, as to their vertical sides inwardly and as to their horizontal sides upwardly, so that, as the truck moves close to the cutter table, it is caused by said guide plates to register exactly therewith. The truck must now be firmly clamped to the cutter frame. For this purpose at the sides 4 of the truck there are secured plates 39 having hook-shaped lugs 40, and upon the sides 26 of the cutter table, close to the front end thereof, are pivoted the links 41, upon the outer ends of which are pivoted the eccentrics 42 having handles 43. Said links are reinforced by a sheet metal web 44. When the truck has been moved close to the cutter frame, these links are swung inward, the ends of the links passing over the hook-shaped lugs on the truck, the eccentric handles at that time extending outward or away from the carrier, but the eccentrics themselves being within the hook-shaped lugs. By moving the handles close to the sides of the truck, the eccentrics rotate upon the ends of the links within the cavities of the hook-shaped lugs, and press said lugs toward the cutter table and thus firmly clamp the truck and cutter table together.

The truck and cutter table having now been secured together, preparation is made for advancing the mass of butter toward the cutter, hereinafter described, to cut the same into blocks. The brackets 14 supporting the end gate are formed with socket 46, more than one being provided so as to vary the height at which force is applied to the end gate. In these sockets is placed a transverse bar 47, having hooks 48, to which are hooked the ends of chains 49. These chains pass over idlers 50 secured upon vertical posts 51, which are integral extensions of the front legs of the cutter table. The idlers are mounted upon axles which can be selectively secured in sockets 52, the object of providing more than one such socket in each post being to vary the height of transmission of the force. Said chains pass round winding drums 53 upon a transverse shaft 54, handles 55 being secured upon the sides of said chain drums to rotate the same by hand. Upon rotating the drums, the chains are wound round said drums to move the end gate toward the cutter table. The force applied to the end gate and the rearmost slat secured thereto advances the whole floor of the truck, and the butter thereon, toward the cutter table.

As the floor is advanced by the rotation of the shaft 54, the butter is cut into blocks by means of vertical and horizontal wires 55 secured in a rectangular cutter frame 56. Said frame is supported upon shelves 57 formed on said posts 51, and is adjusted as to height by means of screws 58, resting upon said shelves. The cutter frame is adjusted in a transverse direction by means of screws 59, and the ends of said screws abutting against the sides of said frame at the bottom thereof. Said screws 59 also serve to clamp the frame in position. To additionally clamp said frame there is provided a top screw 60, which is screwed down upon the upper edge of said frame through a threaded boss 61 upon the transverse bar 62 connecting the tops of the posts 51. The cutter frame thus being secured in position and the mass of butter advanced as already described, the mass is divided longitudinally into blocks.

To determine the length and weight of the blocks to be cut off there is provided a stop or abutment which arrests the mass of butter at the proper position to furnish blocks of the desired weight. This abutment also serves as a tray wherewith to remove the blocks of butter so severed from the mass. The frame of this tray 64 is composed of the side bars 65, the top bar 66, which has extensions 67 therefrom to form handles, the bottom shelf 68, and the brackets 69 having the trunnions 70. When the tray is in use, said trunnions rest in sockets 71 secured upon the inner sides of the cutter table. Upon the frame rest the butter plates 73, secured to said frame by means of loops 74 on the backs of the plates, through which loops pass rods secured between the top bar and the shelf 68. Thus said butter plates can be moved from each other, and the blocks of butter lying thereon can be separated. The tray can be adjusted and secured in an accurately vertical position by means of screws 77, which are secured through ears 78 extending outward from the brackets 69, said screws 77 resting upon the top of shelves 80 formed on the posts 51. The tray is securely held in its vertical position by means of hooks 81, pivoted at 82 upon the sides of the posts, and engaging studs 83 on the edges of the tray, and, to vary the position of the tray relatively to the cutting-off wire 84, hereinafter described, the position of said studs upon said tray is adjustable. For this purpose there is secured, on each longitudinal edge of the tray, a slideway 85 in which a slide 86 carrying said stud 83 is moved in or out by an adjusting screw 87, and thereby the distance of said tray from the cutting off wire can be corre-

spondingly increased or diminished. These adjusting devices, being placed midway of the height of the tray, serve to adjust the position of the whole tray longitudinally of the cutting table. The sockets for the trunnions of the tray are flattened so as to allow of longitudinal motion of the lower part of the tray corresponding with the adjustment thus made.

The tray having been placed in a vertical position and adjusted for the required length of the blocks of butter to be cut off, the mass of butter is forced onward, the cutting wires 55 dividing it longitudinally into blocks, until the front face of said mass impinges upon the butter plates of the tray, when the motion of the mass is arrested. It is now necessary to sever these blocks from the remainder of the mass. This is done by the cutting-off wire 84 which forms the lower edge of a frame 90 the sides of said frame consisting of racks 91 which slide vertically in grooves 92 in the posts 51, said posts having slots 93 in the bottom of the grooves to permit the wire to pass through. The racks 91 are actuated by pinions 94 on a shaft 95 operated by handles 96, said shaft having bearings 97 formed upon the upper ends of the posts. By operating said handles the cutting wire is forced vertically through the butter, severing the blocks which have already been formed by the cutting wires 55. The blocks thus severed rest upon the shelf 68 of the tray. The tray is now tilted into a horizontal position to remove said blocks from the remainder of the mass of butter, and the outer side of the tray then rests upon standards 98 upon the cutting table. The butter plates 73 are now separated, the blocks of butter resting upon the several plates. The ends of the blocks of butter being thus exposed, said blocks can readily be lifted off the butter plates and placed upon a wrapping table 99. When all of the blocks have been removed from the tray, the tray is again lifted and secured in a vertical position, and the operation is repeated, the mass of butter being advanced and divided longitudinally into blocks until the forward ends of said blocks impinge upon the butter plates of the tray, when the cutting off wire is again operated, but now in the reverse direction, to sever from the mass of butter the blocks so formed. When all the butter has been cut into blocks, the carrier is removed from the cutter table, and another carrier with a mass of butter thereon can be substituted and operated upon in the same manner.

This butter cutter is adapted to cut blocks of butter of any of the sizes sold, by using the proper frame, having the horizontal and vertical cutting wires arranged at the proper distance, said frames being readily removed and placed in position. In the State of California, butter is generally sold in blocks of three different sizes, and to adapt the butter cutter for cutting blocks of butter of either of the larger sizes, the end gate is formed with vertical and horizontal grooves 18 corresponding in position to the position of the wires 55 in the cutter frame suitable for cutting either size of blocks. To cut the smallest size a board is added to the butter plate 73, thus correspondingly reducing the width at which the butter is cut off. With the same object in view the sides 19 of the butter box are made of a height exactly equal to the lengths of three blocks of the largest size or four of the intermediate size, and the grooves 18 are correspondingly formed. In order that their height may be maintained accurately uniform, when more or less moist, the side is made with a hardwood frame, and soft wood side pieces having the frame vertical, as the wood will not swell endwise.

I claim:—

1. In an apparatus of the character described, the combination, with a cutter, of a carrier having a movable end gate, brackets for supporting said end gate, and chains for drawing the end gate toward the cutter, said brackets being provided with means for selectively securing said chains to the brackets at different points in the height thereof, substantially as described.

2. In an apparatus of the character described, the combination, with a cutter, of a carrier having a movable end gate, brackets for supporting said end gate, said end gate comprising vertical plates and transverse grooved pieces forming when placed together a continuous wooden block with vertical and horizontal grooves, substantially as described.

3. In an apparatus of the character described, the combination of a cutter table, a carrier having a movable bottom formed of slats flexibly connected together, and an inclined support upon the cutter table, upon which the slats move as they advance and leave the carrier, substantially as described.

4. In an apparatus of the character described, the combination of a cutter table, a carrier having a movable bottom formed of slats flexibly connected together, and an inclined support upon the cutter table, upon which the slats move as they advance and leave the carrier, said carrier having inclined side guides at its front end to guide the slats on to the inclined support, substantially as described.

5. In an apparatus of the character described, in combination a cutter table, a cutter thereon, a carrier having a movable bottom, means supported upon the cutter table for moving said bottom toward said table, and means carried by the carrier and cutter table and co-operating with each other to cause the carrier to register in suitable rela-

tion to the cutter table, substantially as described.

6. In an apparatus of the character described, in combination with a cutter table, a carrier having a removable bottom, means supported upon the cutter table for moving said bottom toward said table, and means for guiding the carrier into engagement with said table, comprising guide plates on the front of the cutter table, and devices on the carrier adapted to engage said guide plates to register it therewith, substantially as described.

7. In an apparatus of the character described, in combination with a cutter table, a carrier having a movable bottom, means carried by the cutter table for moving said bottom toward said table, and means for clamping the carrier and cutter table together, substantially as described.

8. In an apparatus of the character described, in combination, a cutter table, a carrier having a movable bottom and a movable end gate, brackets supporting said end gate, each having a plurality of sockets, a transverse bar in sockets thereof, chains attached to the ends of said bar and means carried by the cutter table for winding up said chains, substantially as described.

9. In an apparatus of the character described, in combination, a cutter table, a carrier having a movable bottom and a movable end gate, brackets supporting said end gate, each having a plurality of sockets, a transverse bar in sockets thereof, chains attached to the ends of said bar and means carried by the cutter table for winding up said chains, said means comprising a transverse shaft and winding drums on the ends of the shaft, substantially as described.

10. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, substantially as described.

11. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, said tray comprising a frame, vertical rods on said frame, and butter plates movably secured to said rod, whereby they can be separated from each other, substantially as described.

12. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, and means for securing said tray in a vertical position, substantially as described.

13. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, and means for adjustably securing said tray in a vertical position, substantially as described.

14. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, means for securing said tray in a vertical position, and an adjusting device arranged midway of the height on the tray for adjusting the longitudinal position of the whole tray when vertical, substantially as described.

15. In an apparatus of the character described, the combination of wires for dividing butter longitudinally into blocks, vertical posts, racks guided on the outside of said post, a rigid bar connecting the tops of the racks, a cutting off wire exclusively connecting the bottoms of the racks, the post having vertical slots of substantially the same width as the wire to permit only said wire to pass therethrough, and pinions engaging said racks for moving them vertically, substantially as described.

16. In an apparatus of the character described, the combination of wires for dividing the butter longitudinally into blocks, vertical posts, racks guided on the outer sides of said

post, a rigid bar connecting the tops of the racks, a cutting off wire exclusively connecting the bottoms of the racks, and pinions engaging said racks for moving vertically, substantially as described.

17. In an apparatus of the character described, the combination of wires for dividing the butter longitudinally into blocks, posts, a frame comprising side members guided vertically on the outer sides of posts, a rigid bar connecting the tops of said members, and a cutting off wire exclusively connecting the lower ends of said members, and means for moving said frame vertically on said posts, substantially as described.

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

AAGE JENSEN.

Witnesses:
FRANK NAZRO,
J. M. NISSON.