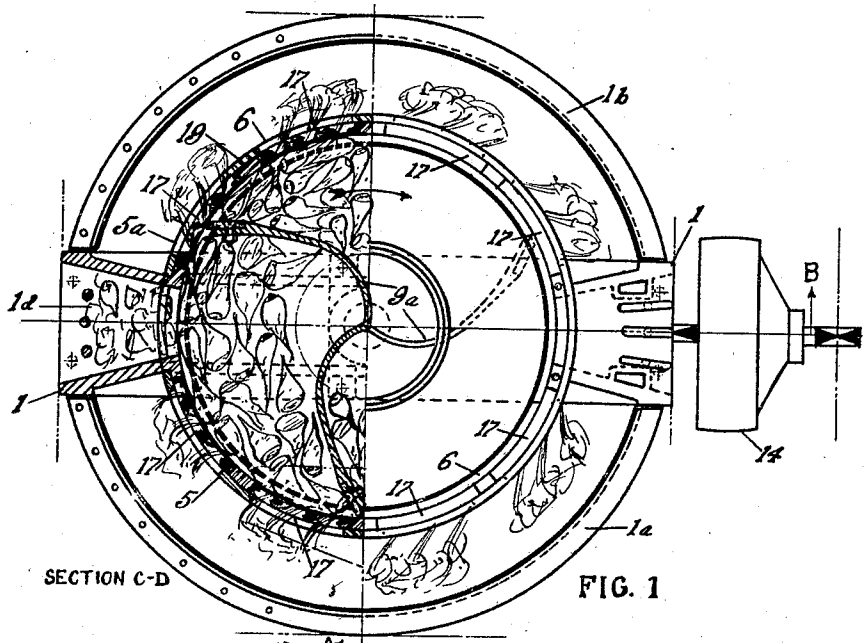
Feb. 12, 1924. 1,483,803

H. L. HARTBURG

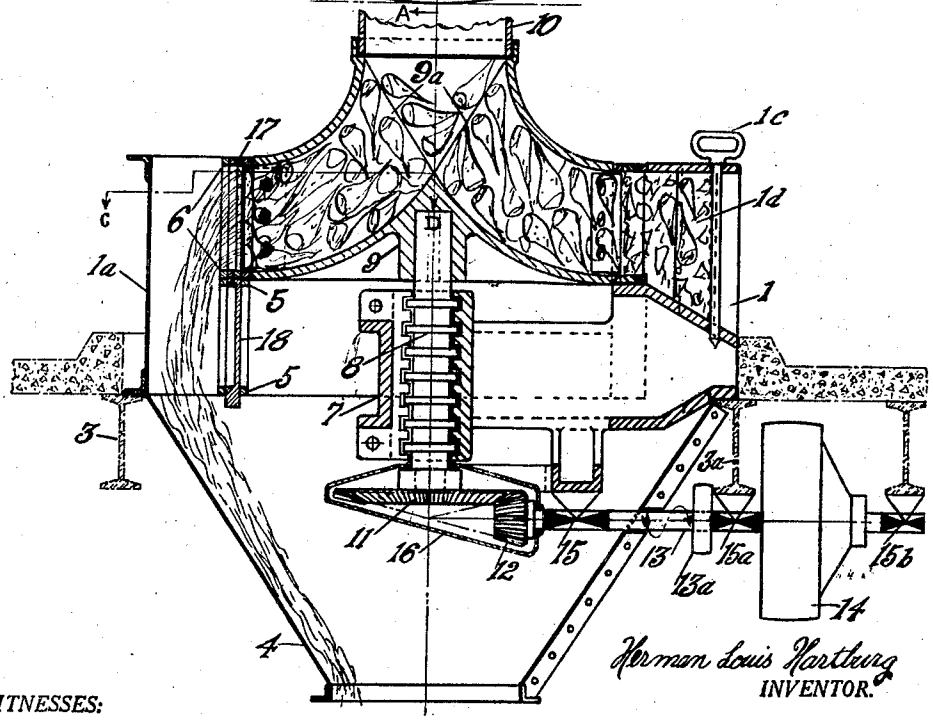
BEET CUTTER

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SECTION C-D

FIG. 1



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SECTION A-B

FIG. 2

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BEET CUTTER

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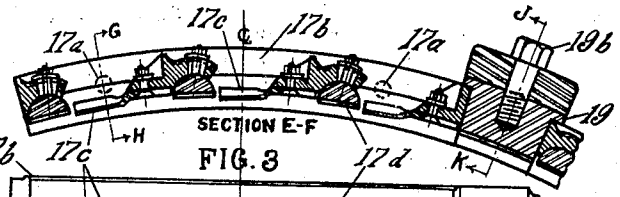


FIG. 3

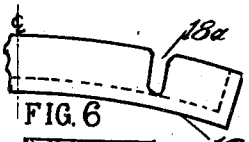


FIG. 6

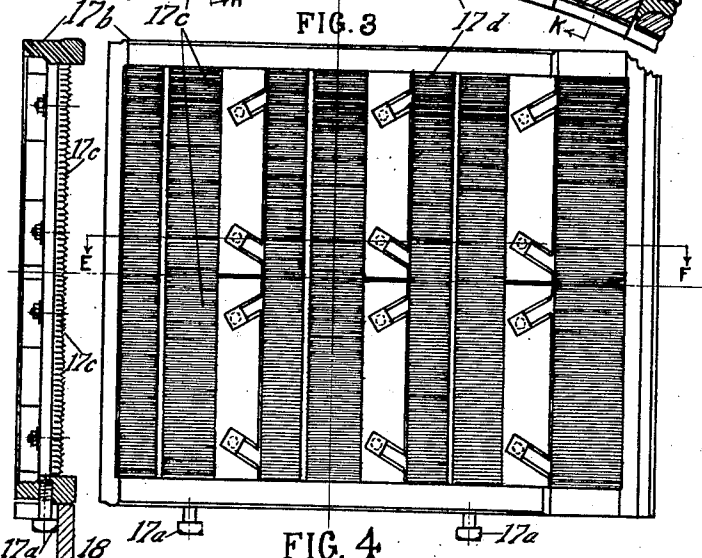


FIG. 4

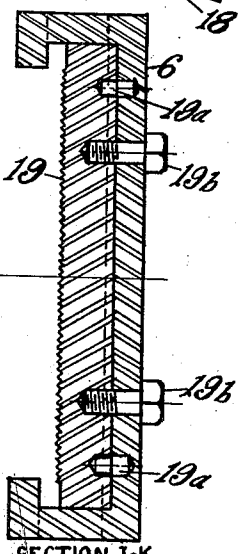


FIG. 7

FIG. 5

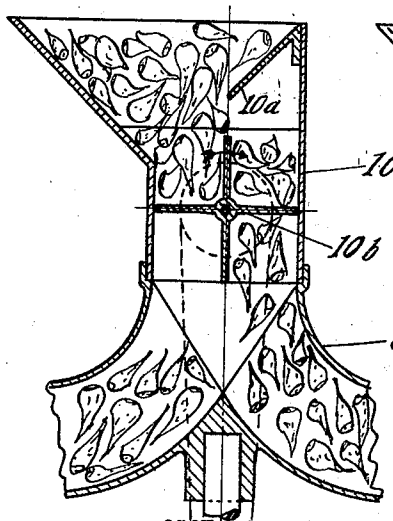


FIG. 8

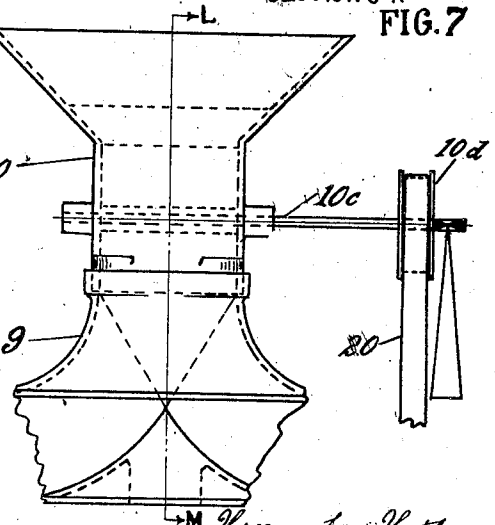


FIG. 9

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Patented Feb. 12, 1924. 1,483,803

UNITED STATES PATENT OFFICE.

HERMAN LOUIS HARTBURG, OF DENVER, COLORADO.

BEET CUTTER.

Application filed March 17, 1922. Serial No. 544,617.

To all whom it may concern:

Be it known that I, HERMAN LOUIS HARTBURG, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Beet Cutters, of which the following is a specification.

My invention relates to improvements in beet cutters in which the knives and knife blocks are held in a stationary position and the beets are rotated during the cutting or slicing operation.

The objects of this arrangement are primarily to increase capacity over existing machines, to facilitate inspection, removal or renewal of knives and knife blocks while the cutter is in operation. Another object is better slices or cossettes, as they are known in the beet sugar manufacturing industry, as centrifugal force does not break the cossettes at high rotational speeds in my cutter. Centrifugal force instead aids in causing the beets to track and therefore produce uniform cossettes.

I attain these objects by the mechanism illustrated in the accompanying drawings.

Figure 1 is a half sectional plan of assembled cutter taken at C—D of Figure 2 and half full plan. Figure 2 is a sectional elevation of assembled cutter taken at A—B of Figure 1. Figure 3 is a sectional plan of a knife block and one guide taken at E—F of Figure 4. Figure 4 is an elevation of a knife block and one guide viewed from the inside or cutting side. Figure 5 is a sectional elevation of a knife block taken at G—H of Figure 3. Figure 6 is a part plan of a blank knife block. Figure 7 is a sectional elevation of the guide and frame taken at J—K in Figure 3. Figure 8 is a sectional elevation of a feeding device taken at L—M in Fig. 9. Figure 9 is an elevation of a feeding device.

Similar numerals refer to similar parts thruout the several views.

The casting 1 and the semi-rings 1^a and 1^b, Figures 1 and 2 constitute the main frame which are in turn supported on any convenient structure such as I beams 3 and 3^a. In casting 1 are provided stone pockets 1^d with retaining bars 1^c. The inverted cone hopper 4 is attached to the rings 1^a and 1^b. The blank knife block half rings 5 and 5^a are supported from casting 1. The knife block ring 6 is also supported on rings 5 and 5^a and casting 1. The vertical bearing 7 is carried on casting 1 and in turn carries shaft 8. The impeller 9 is attached to shaft 8. Within impeller 9 are the vanes 9^a. Directly above but not attached to impeller 9 is the feed hopper 10. The shaft 8 is driven thru bevel gears 11 and 12, which in turn are driven thru shaft 13 and clutch pulley 14. The shaft 13 is supported by bearings 15, 15^a and 15^b. Gears 11 and 12 are enclosed in casing 16.

The knife blocks 17, which are carried in ring 6 are of the conventional design and are shown in larger detail in Figures 3, 4 and 5. The blank knife blocks 18 are carried in the rings 5 and 5^a. These blank knife blocks have practically the same dimensions as the knife block 17. When the knife blocks 17 are removed from the ring 6 the blank knife blocks 18 slide into their place in ring 6 from rings 5 and 5^a. When the blocks 17 and 18 are in place in the rings 6 and 5 and 5^a their position is shown in Figure 5. The heads of the bolts 17^a hold the blocks 17 and 18 together as a unit while in the rings 6, 5 and 5^a. When the blank block 18 is in the ring 6 in the place of the knife block 17, it is attached or detached from the knife block 17 by sliding in or out, the bolts 17^a coinciding with slots 18^a.

The knife block 17 is conventional and is composed of the frame 17^b which carries the standard corrugated knives 17^c and the corrugated rocker bar 17^d.

The knife blocks 17 are held in ring 6 by a removable corrugated stop bar 19, which is secured to the ring 6 by dowel pins 19^a and bolts 19^b.

The object of having bar 19 removable is to be able to substitute a bar with corrugations to coincide with those of the knives 17^c.

The feeding device shown in Figures 8 and 9 is comprised of the stationary hopper 10 with a baffle plate 10^a. Directly below hopper 10 is the rotating impeller 9. Within the hopper 10 is a multivaned feeder 10^b, secured to and driven by shaft 10^c, which in turn is secured to and driven by pulley 10^d.

The belt 20 drives the pulley 10^d at the required speed from shaft 13 and pulley 13^a.

The operation of my beet slicer is as follows: The beets are deposited into stationary hopper 10 and are fed by the feeder 10^b into the rotating impeller 9. Centrifugal force throws the beets against the sta-

tionary knife blocks 17. The beets are prevented from sliding or rotating in the impeller 9 by the vanes 9^a.

The stationary knives 17^c in blocks 17 present sharp edges against which the beets are moved at a high peripheral speed, resulting in a continuous stream of slices or cossettes being deposited from the knives 17^c into the hopper 4.

Should any foreign matter, like stones, find its way into the cutter it will be lodged in the stone pocket 1^d and can be removed by the raising of bars 1^c.

I claim:

1. In a beet cutter, the combination of stationary slicing elements, a rotating element having a centrally located inlet passage diverging into a plurality of spiral peripheral outlet passages which match with the stationary slicing elements, and blank elements in position to be substituted for the slicing elements.

2. In a beet cutter, the combination of a feeding device, a horizontal rotating element having an inlet opening concentric above its vertical axis, the inlet opening being partitioned by vanes to form a plurality of outlets, stationary cutting elements with which said outlet passages coincide, blank elements in position and adapted to be substituted for said cutting elements, and means for driving the feeding device and the horizontal rotating element.

3. In a beet cutter, the combination of a feeding device, a horizontal rotating element having an inlet opening concentric above its vertical axis, the inlet opening being partitioned by vanes to form a plurality of outlets, stationary cutting elements with which said outlet passages coincide, blank elements in position and adapted to be substituted for said cutting elements, means for driving the feeding device and the horizontal rotating element, means to receive hard or foreign substances, and removable means whereby said foreign substances are removed from the machine.

4. In a beet cutter, the combination of a rotary impeller having a central inlet and a plurality of lateral outlets, removable knife blocks concentric therewith, and means for receiving and removing hard or foreign substances from the machine.

5. In a beet cutter, the combination of a vaned type of feeding device, means for driving the same, a horizontal closed vaned type of impeller rotating therebelow, means for driving the impeller, the impeller having peripheral openings, removable stationary knife blocks, blank blocks adapted to be substituted therefor, and slotted concentric rings for holding said blocks in a definite position.

6. In a beet cutter, the combination of a rotary impeller having a central inlet and a plurality of lateral spiral outlets, vertically slidable knife blocks concentric therewith, and blank blocks removably attached at the lower edges thereof.

7. In a beet cutter, the combination of a rotary impeller having a central inlet and a plurality of lateral outlets, vertically slidable knife blocks concentric therewith, blank blocks having slotted laterally extended flanges at the upper edge, and bolts extending through the slots in the flanges into the lower edge of the knife blocks.

HERMAN LOUIS HARTBURG.