

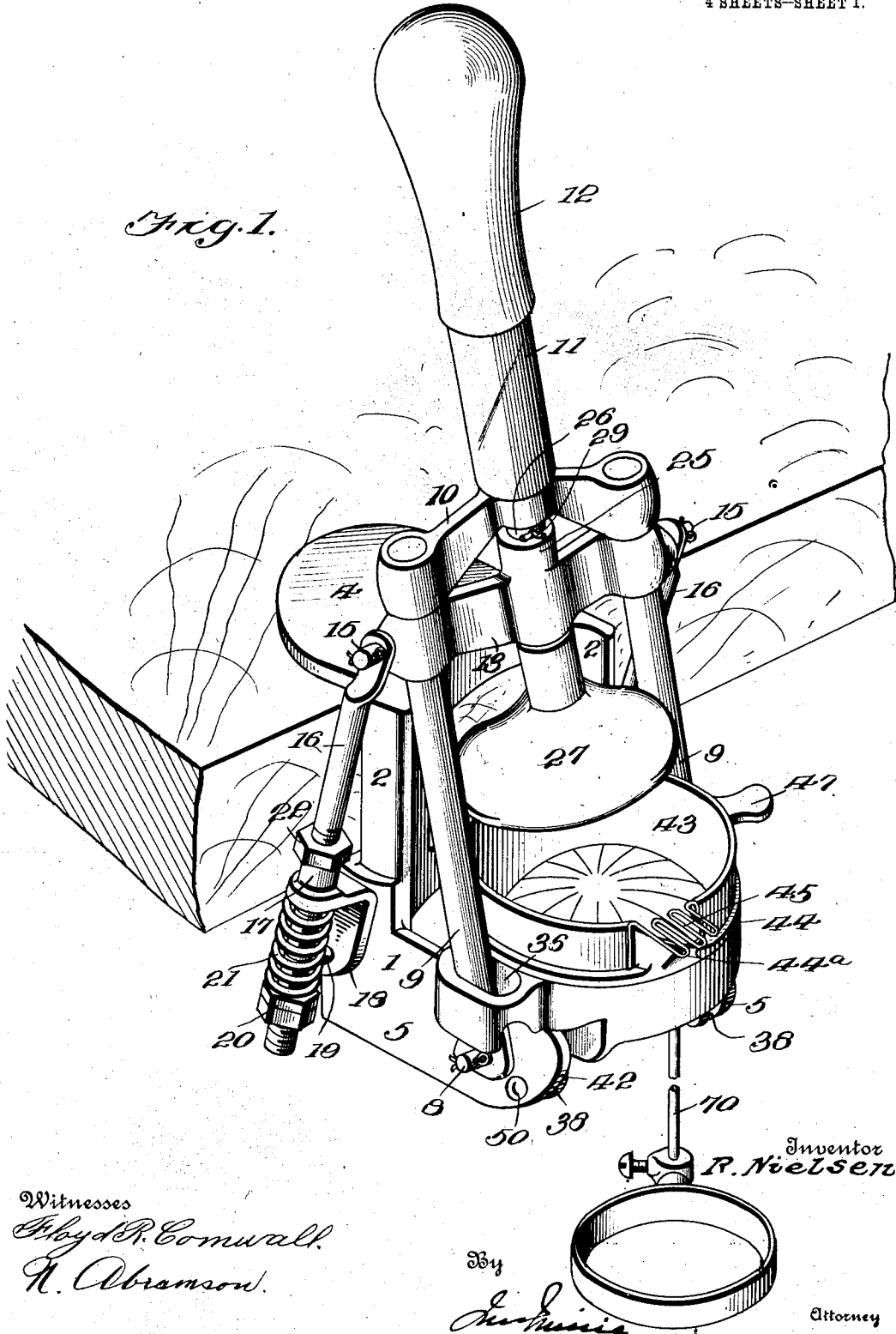
R. NIELSEN.
LEMON SQUEEZER.
APPLICATION FILED JULY 8, 1912.

1,063,056.

Patented May 27, 1913.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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H. Abramson.

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J. H. Smith

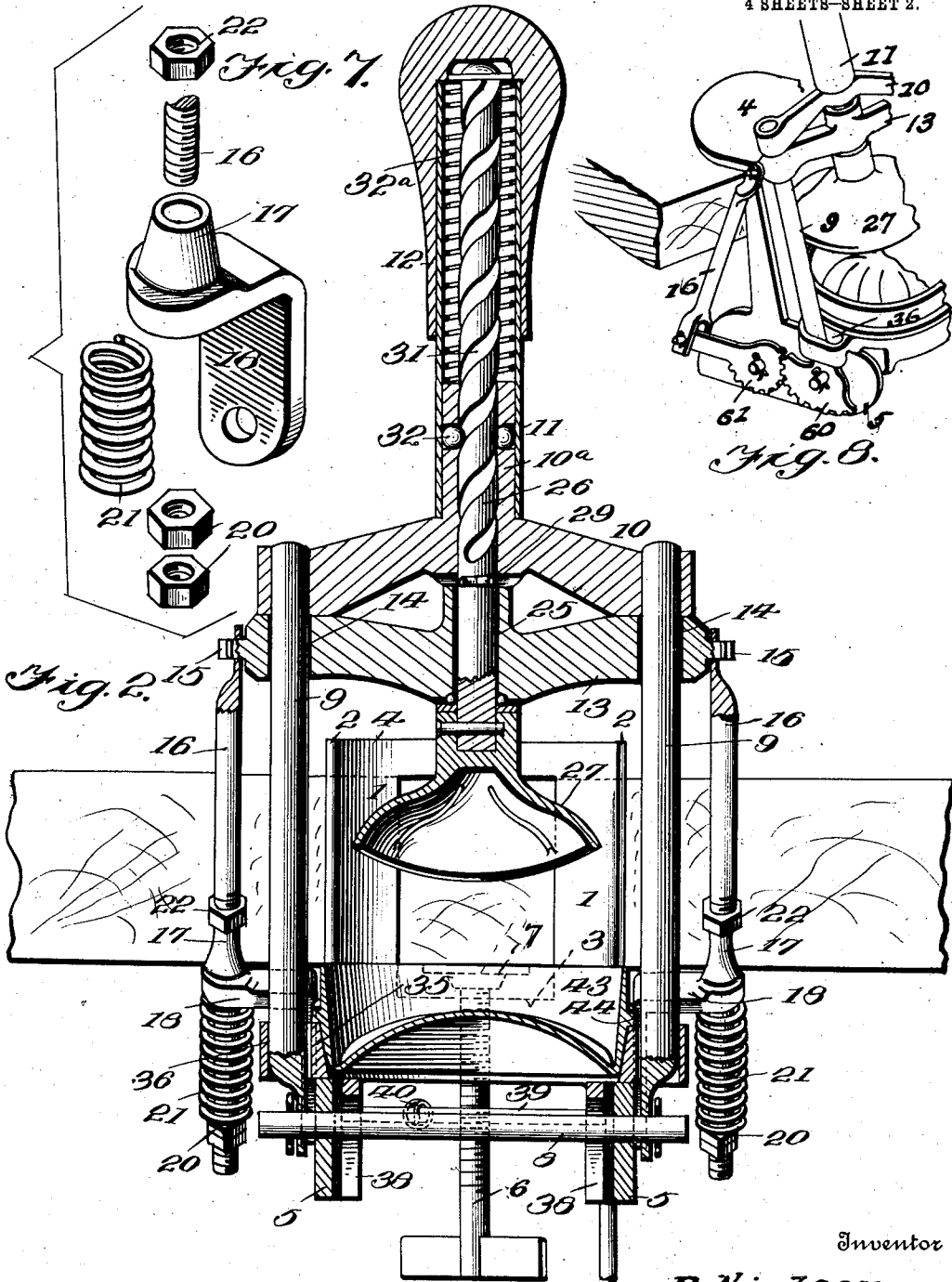
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4 SHEETS-SHEET 2.



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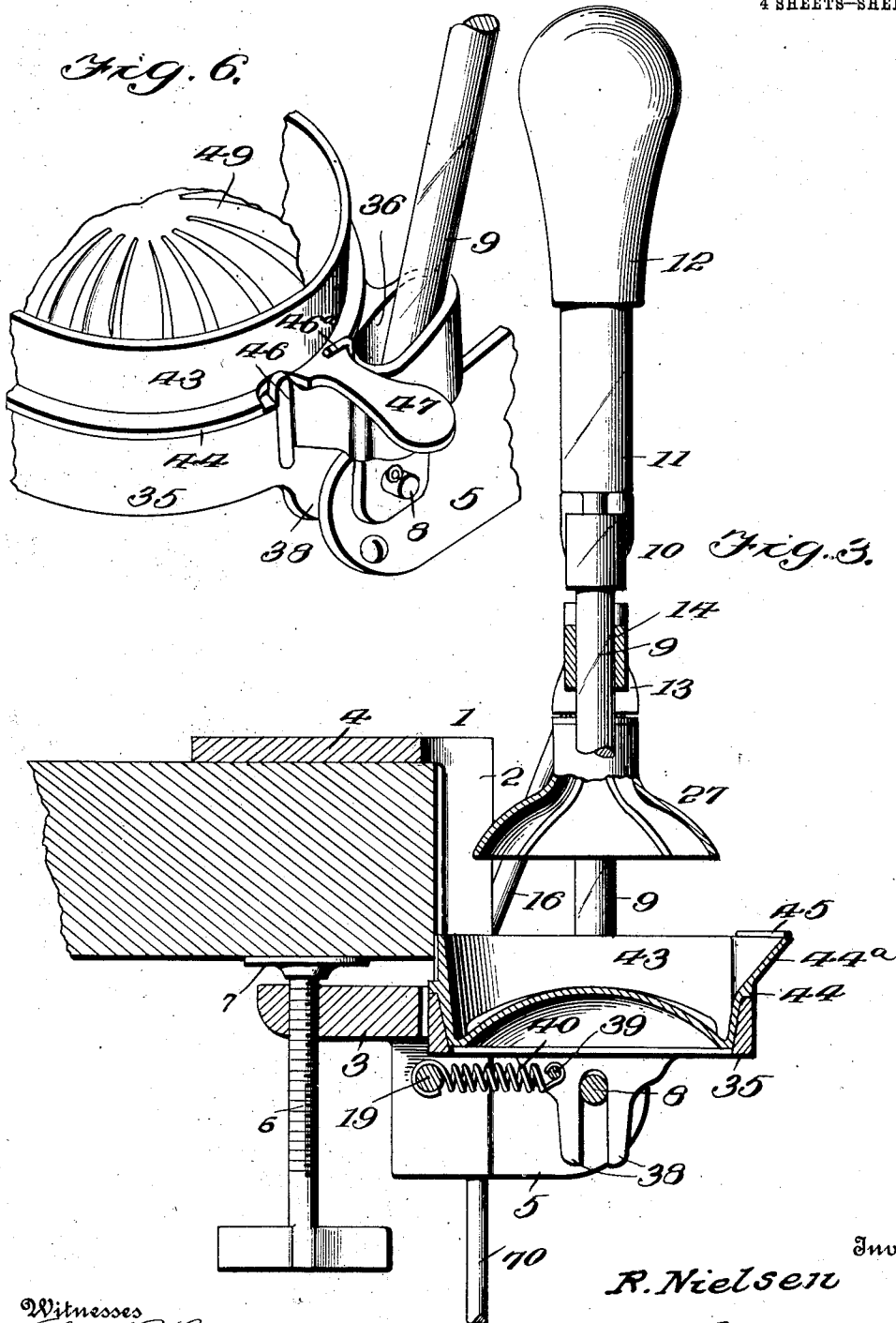
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

RASMUS NIELSEN, OF TROY, NEW YORK, ASSIGNOR TO CATHERINE NIELSEN AND
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LEMON-SQUEEZER.

1,063,056.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed July 8, 1912. Serial No. 708,251.

To all whom it may concern:

Be it known that I, RASMUS NIELSEN, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Lemon-Squeezers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in lemon squeezers.

The object of the invention is to provide means for effectually squeezing the lemon to insure of the entire mass being subjected to pressure to obtain the juice.

According to this invention I provide tilting an oppositely movable compressor and cup, the compressor being rotatable during the squeezing operation whereby the lemon may be conveniently placed in position to be squeezed and while the compressor and cup are moving the same are tilted and the juice is poured into a receptacle.

The invention also comprehends improvements in the details of construction and arrangement of parts which will be hereinafter described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved lemon squeezer, the parts being in normal position; Fig. 2 is a transverse section looking toward the rear; Fig. 3 is a central longitudinal section, the tilting frame having been slightly moved; Fig. 4 is a side elevation, the tilting frame having been moved to a horizontal position; Fig. 5 is a detail perspective view of the cup frame; Fig. 6 is a detail of the cup and its frame; Fig. 7 is a detail perspective view, parts separated, of the pivotal and resilient connection of the compressor reciprocating means. Fig 8 is a view of a modification.

The numeral 1 indicates a stationary frame of appropriate construction, and as shown in the drawings, comprises vertical side bars 2, two horizontal flanges 3 and 4, and forwardly projecting ears 5. The horizontal flange 3, is formed with a threaded

opening in which fits an attaching screw 6, the upper end thereof being provided with a swiveled disk 7, which with the flange 4, forms a clamp to secure the squeezer in position. Extending through the ears 5 is a rod 8, the ends of which receive the lower portion of rods 9, of a tilting frame 10. The frame 10, is provided with a barrel 11, and secured thereto is a handle 12.

13, indicates a bearing bar, the outer ends of which have openings 14, to receive the rods 9, and projecting laterally from the opposite ends of the bar are trunnions 15, which form pivots for the ends of rods 16. The rods 16, pass through sleeves 17, formed on brackets 18, pivotally mounted on the ends of a cross rod 19, extending across the lower portion of the frame. The lower ends of the rods 16, are threaded and receive lock nuts 20 between which and the sleeves 17, are springs 21. The rods are also provided with nuts 22, which abut against the upper ends of the sleeves, when the parts are in normal position.

The central portion of the bearing bar 13 is formed with an elongated bearing 25, in which is mounted a compressor rod 26. To the lower end of the compressor rod is fastened a compressor 27, the under surface being concave and is formed with projections, or it may be otherwise roughened to take hold of the lemon. The bearing bar 13 is held in relative position with the compressor rod by the compressor and a pin 29, so that any movement of the bearing bar 13, will also impart movement to the compressor and its rod.

The compressor rod is formed with a pair of spiral grooves 31, in which fit balls 32, suitably mounted in the openings formed in an extension 10^a, in the barrel. Between the end of the extension 10^a, and a washer on the upper end of the compressor rod is a spring 32^a, the tension of which tends to force the compressor rod up to its normal position.

A cup frame, 35, is normally supported on the ears 5, and at opposite sides it has ears formed with elongated openings 36, through which the rods 9 pass. Depending from the cup frame 35, inside the ears 5, are bifurcated lugs 38 which straddle the bar 8. These lugs are connected by a rod 39, to which and the rod 19, is secured a

light spring 40. This spring always tends to draw the cup toward the frame 1 or to its normal position on the ears 5. The ends of the ears 5 form cams 42, to advance the cup frame during the squeezing operation the springs 40, serving to cause the frame to snugly hug the cams.

A cup 43, is supported in the cup frame 35. The cup 43, is provided with a flange 44, which rests on the upper edge of the frame 35, and above the flange is a spout 44^a, over which is a strainer 45. A lug 46, projects from the cup frame and engages a recess in the flange 44, and a hooked lug 46^a, also extending from the cup frame, engages a finger piece 47, projecting from the cup. The projection and hooked lug form an interlocking connection to prevent displacement of the cup, yet by slightly elevating the cup, it can be conveniently removed for cleaning purposes. The bottom of the cup is convex, and it is provided with a series of corrugations 49, to hold the lemon during the squeezing operation. A rod 70 depends from the frame 1, and at its outer end it is provided with a holder in which a receptacle may be held to catch the juice flowing from the cup.

In operation, assuming the parts are in the position shown in Fig. 1, a lemon or similar fruit is first placed in the cup, and the handle 12, is tilted forwardly, which rocks the frame 10. As the pivotal connections of the rods 16—16 are in rear of the pivotal connections of the rods 9—9, the bearing bar 13 will slide down on the rods 9—9 when the handle is tilted. This movement causes the compressor and its rod to be moved toward the cup, and grips the lemon. It will be observed that when in normal position, the rods 9—9, are at the rear of the elongated openings 36, so that upon the first movement of the handle, no motion whatever will be imparted to the lower cup, but the compressor will descend. The purpose of this construction is to first grip the lemon between the compressor and cup before it is tilted from a horizontal to a vertical position. When the rod 26 is lowered the balls 32 fitting in the spiral grooves, will cause the rod to rotate, so that in the squeezing operation a rotary as well as a movement of the compressor toward the cup will take place. This movement occurs whenever the handle is tilted so that the lemon is under the influence of a double action during the whole time the compression is taking place. After the lemon is gripped between the compressor and the cup, the rods 9—9 will encounter the forward walls of the elongated openings 36, and the cup 43, and its frame will be tilted in unison with the compressor. Immediately the cup is tilted on the bar 8, the cams 42, commence to force it toward the compressor so that the lemon is squeezed

from opposite ends, the juice, of course, being caught by the cup. When the frame 10, is tilted from a horizontal to a vertical position as shown in Fig. 4, the rods 9—9 contact with stops 50, on the ears 5, thereby limiting the movement of the parts. When the rods contact with the lugs, the cup is so positioned, that the juice will drain through the spout. Because of the variation in the size of the fruit and the fact that the movement of the compressor rod is always the same when the handle is tilted, it is necessary that provision be made to prevent crushing and consequent mashing of the pulp. To meet this contingency the springs 21, are provided. In tilting the handle the lock nuts 20, will approach the springs 21 and if the mass of pulp between the compressor and cup forms a wad and prevents the complete movement of the frame 10, the springs will yield. If, for instance, an unusually large lemon or orange be held between the compressor and cup, obviously the springs will be compressed to a greater extent than if the lemon were smaller. It follows therefore that by this arrangement of parts, the pulp will not be ground into such small particles as would destroy the efficacy of the juice. When the rods 9 and 16 are parallel, rods 9 contact with the stops 50, and as the pivotal points of said rods are in alinement, a lock is formed and the tilting frame is held in a horizontal position. After the squeezing operation is complete, the handle is slightly raised to break the alinement of the pivotal connections between the rods 9 and 16, whereupon the spring 40 will return the parts to their normal position and the skin and pulp of the lemon can be conveniently removed. The relation and coöperation of the parts are such that the entire mass as a whole is compressed and twisted that all the juice will be expressed, the entire operation being performed by the simple tilting of the handle.

In Fig. 8 I have shown a modified form of the invention. In this construction, the lower ends of the rods 9—9, are provided with toothed segments 60, which engage toothed segments on a link 61, pivoted to the lower ends of the rods 16—16. Obviously when the handle is tilted, the intermeshing segments will cause the rods 16, to lower and draw the compressor toward the cup as described in connection with the preferred form of the invention.

What I claim is:—

1. A lemon squeezer comprising a tilting frame, a compressor, a cup, and means for rotating and advancing the compressor toward the cup when the frame is tilted.

2. A device of the character described comprising a compressor, a cup, and means operated when the compressor and cup are

tilted for rotating and advancing the compressor toward the cup.

3. A device of the character described comprising a normally vertically disposed tilting frame, a reciprocating rod mounted in the frame, a compressor on the rod, a normally substantially horizontally disposed cup mounted on the tilting frame and tiltable to a vertical position when said frame is tilted and means to cause the rod and compressor to reciprocate when the frame is tilted to a horizontal position.

4. A device of the character described comprising a stationary frame, a tilting frame pivoted to the stationary frame, a reciprocating rod mounted in the tilting frame, a compressor on the rod, a bearing for the rod, slidable on the tilting frame, a pivotal connection between the sliding bearing and the stationary frame, means for rotating the reciprocating rod when the tilting frame is moved and a cup which cooperates with the compressor to hold and squeeze a lemon.

5. A device of the character described comprising a stationary frame, a tilting frame pivoted to the stationary frame and including a sliding member, a rod mounted in the sliding member, a compressor on the rod, means for rotating the rod when the frame is tilted, and a cup with which the compressor cooperates.

6. A device of the character described, comprising a stationary frame, a tilting frame, a compressor and a cup movable with the tilting frame, means for rotating the compressor, and means for reciprocating the rotating compressor when the frame is tilted.

7. A device of the character described comprising a stationary frame, a tilting frame pivoted to the stationary frame, a compressor and a cup movable with the tilting frame, means for simultaneously reciprocating and rotating the compressor, and means for delaying the tilting of the cup when the frame is first tilted.

8. A device of the character described comprising a stationary frame, a tilting frame pivoted to the stationary frame, a compressor and a cup movable with the tilting frame, means for simultaneously reciprocating and rotating the compressor, means for delaying the tilting of the compressor when the frame is first tilted, and means for subsequently advancing said cup toward the rotating compressor.

9. A device of the character described comprising a stationary frame, a tilting frame pivoted to the stationary frame, a bearing slidably mounted on the tilting frame, a rod mounted in the bearing, a compressor secured to the rod, means for rotating the rod and the compressor, a frame pivoted to the bearing, pivotal and yielding

connections at the opposite ends of the latter frame and the stationary frame, a cup movably supported on the stationary frame, the compressor and cup being tilted when the tilting frame is operated.

10. A device of the character described, comprising a stationary frame, a tilting frame pivoted to the stationary frame, a cup formed with elongated openings and supported on the stationary frame, a tilting frame having two legs which pass through the elongated openings and pivoted to the stationary frame, a bearing slidably mounted on the legs of the tilting frame, perforated brackets pivoted to the stationary frame, bars extending through the perforations in the brackets and pivoted at their upper ends to the sliding bearing, stops on the ends of the rods, springs interposed between the stops and the brackets, a rod mounted in the bearing and the tilting frame, and a compressor secured to the rod whereby when the tilting frame is operated the compressor and its rod will be reciprocated and the compressor and cup will be tilted.

11. A device of the character described, comprising a stationary frame, a tilting frame pivoted to the stationary frame, a cup formed with elongated openings and supported on the stationary frame, a tilting frame having two legs which pass through the elongated openings and pivoted to the stationary frame, a bearing slidably mounted on the legs of the tilting frame, perforated brackets pivoted to the stationary frame, bars extending through the perforations in the brackets and pivoted at their upper ends to the sliding bearing, stops on the ends of the rods, springs interposed between the stops and the brackets, a rod mounted in the bearing and the tilting frame, a compressor secured to the rod, and means on the tilting frame and rod for rotating said rod whereby when the tilting frame is operated the rod will reciprocate and rotate and both the compressor and cup will tilt.

12. A lemon squeezer comprising a stationary frame, a cup normally supported by the stationary frame, a tilting frame, a cup and a compressor movable with the tilting frame, means for rotating the compressor when the tilting frame is operated, means including a sliding bearing and links pivoted to the sliding bearing and the stationary frame for reciprocating the compressor, and means for permitting the compressor to yield when the tilting frame has moved to one limit of its movement.

13. A lemon squeezer of the character described comprising a stationary frame, a tiltable cup mounted on the stationary frame, a spring for holding the cup in normal position, guides formed on the cup, bars

- pivoted to the stationary frame, and extending between the guides, a frame connecting the rods and having a barrel and a handle, a rod formed with spiral grooves fitting in the barrel, means in the barrel cooperating with the grooves for rotating the rod, a compressor on the rod, means for reciprocating the rod when the handle is tilted, and means for returning the compressor and the rod to normal position.
14. A lemon-squeezer comprising a tilting frame, a pair of squeezing elements movable with the tilting frame, and means operated when the frame is tilted for simultaneously rotating and advancing one of the squeezing elements toward the other.
15. A lemon squeezer comprising a stationary frame formed with cams, a cup frame mounted on the stationary frame and formed with guides, a cup supported in the frame, a yielding connection to hold the cup in normal position, a tilting frame including a barrel and side rods, the latter engaging the guides on the cup frame, a compressor rod operable in the barrel, a sliding bearing on the side rods to receive the compressor rod, a compressor on the rod, a yielding pivotal connection between the sliding bearing and the stationary frame to reciprocate the rod when the tilting frame is operated, a stop to limit the movement of the tilting frame, and a spring for returning the tilting frame to normal position.
16. A lemon squeezer comprising a tilting frame, a cup tiltable with the tilting frame and formed with a spout, a compressor mounted on and tiltable with the tilting frame, means operated when the frame is tilted to reciprocate the compressor to squeeze the lemon, and means for returning the tilting frame to normal position.
17. A lemon squeezer comprising a stationary frame, a tilting frame including two side bars pivoted at their free ends to the stationary frame a bearing slidable on the side bars, a compressor mounted on the tilting frame and the bearing, links pivotally connected to the bearing and the stationary frame, the pivotal connections of the links with the stationary frame being in alignment with the pivotal connections of the side bars to form a lock when the tilting frame is at one limit of its movement, stops on the frame for limiting the movement of the side bars, and means for returning the tilting frame to normal position when the locking connection formed by the pivotal connections is broken.
18. A lemon squeezer comprising a stationary frame, a tilting frame pivoted to the stationary frame, a cup supported on the stationary frame and movable with the tilting frame, means for advancing the cup on the tilting frame when the latter is operated, a reciprocating compressor on the tilting frame and movable therewith, and means operated when the frame is tilted for advancing the compressor toward the cup.
19. A lemon squeezer comprising a stationary frame, a tilting frame pivoted to the stationary frame, a cup supported on the stationary frame and movable with the tilting frame, means for advancing the cup on the tilting frame when the latter is operated, a reciprocating compressor on the tilting frame and movable therewith, means operated when the frame is tilted for advancing the compressor toward the cup, and means for retarding the advancing movement of the compressor when the fruit pulp is about compressed.
20. A lemon squeezer comprising a stationary frame, a tilting frame pivoted to the stationary frame, a cup movable with the tilting frame, a cam for advancing the cup on the tilting frame, means for returning the cup to normal position, a compressor mounted on the tilting frame, means for reciprocating and rotating the compressor by movement of the tilting frame, including a yielding connection to retard the movement of the compressor in one direction of its reciprocation, and means for returning the tilting frame and compressor to normal position.
21. A lemon squeezer comprising a vertical tilting frame, a compressor, a normally substantially horizontally disposed cup movable with the tilting frame, and means for advancing the compressor toward the cup when the frame is tilted to tilt the cup in a vertical position.
22. A lemon squeezer comprising a vertical tilting frame, a compressor, a cup normally substantially horizontally disposed on the tilting frame, and means operated when the compressor and frame are tilted for creating a relative movement between the compressor and cup to effect the squeezing operation and to tilt the cup from a horizontal to a vertical position.
23. A lemon squeezer comprising a tilting frame, a compressor, a cup, means operated when the compressor, cup and frame are tilted for creating a relative movement between the compressor and cup to effect the squeezing operation, and means for delaying the tilting of the cup when the frame is first tilted.
24. A lemon squeezer comprising a tilting frame, a compressor, and a cup movable with the tilting frame, means for creating a relative movement between the compressor and the cup, and means for subsequently advancing said cup toward the compressor to complete the squeezing operation.
25. A lemon squeezer comprising a tilting frame, a pair of squeezing elements movable within the tilting frame, means operated when the frame is tilted for advancing one

of the squeezing elements toward the other, and means acting later to advance the other one of said squeezing elements to cause both the latter to simultaneously move toward
5 each other.

26. A lemon squeezer comprising a stationary frame, a tilting frame mounted on the stationary frame, a sliding frame mounted on the tilting frame, and pivoted
10 to the stationary frame, a cup, a compressor mounted on the tilting and sliding frames, and a yielding connection between the sliding frame and the stationary frame to stop the advancing movement of the compressor
15 toward the cup when a lemon of unusual size is squeezed, the compressor and cup

moving with the tilting frame when the latter is operated.

27. A lemon squeezer comprising a tilting frame, a compressor mounted on the tilting frame, a cup movable with the tilting frame, means for rotating the compressor when the frame is tilted, and means operable by the tilting frame for advancing the compressor toward the cup.
20

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.
25

RASMUS NIELSEN.

Witnesses:

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JOSEPH J. PILLSWORTH.