

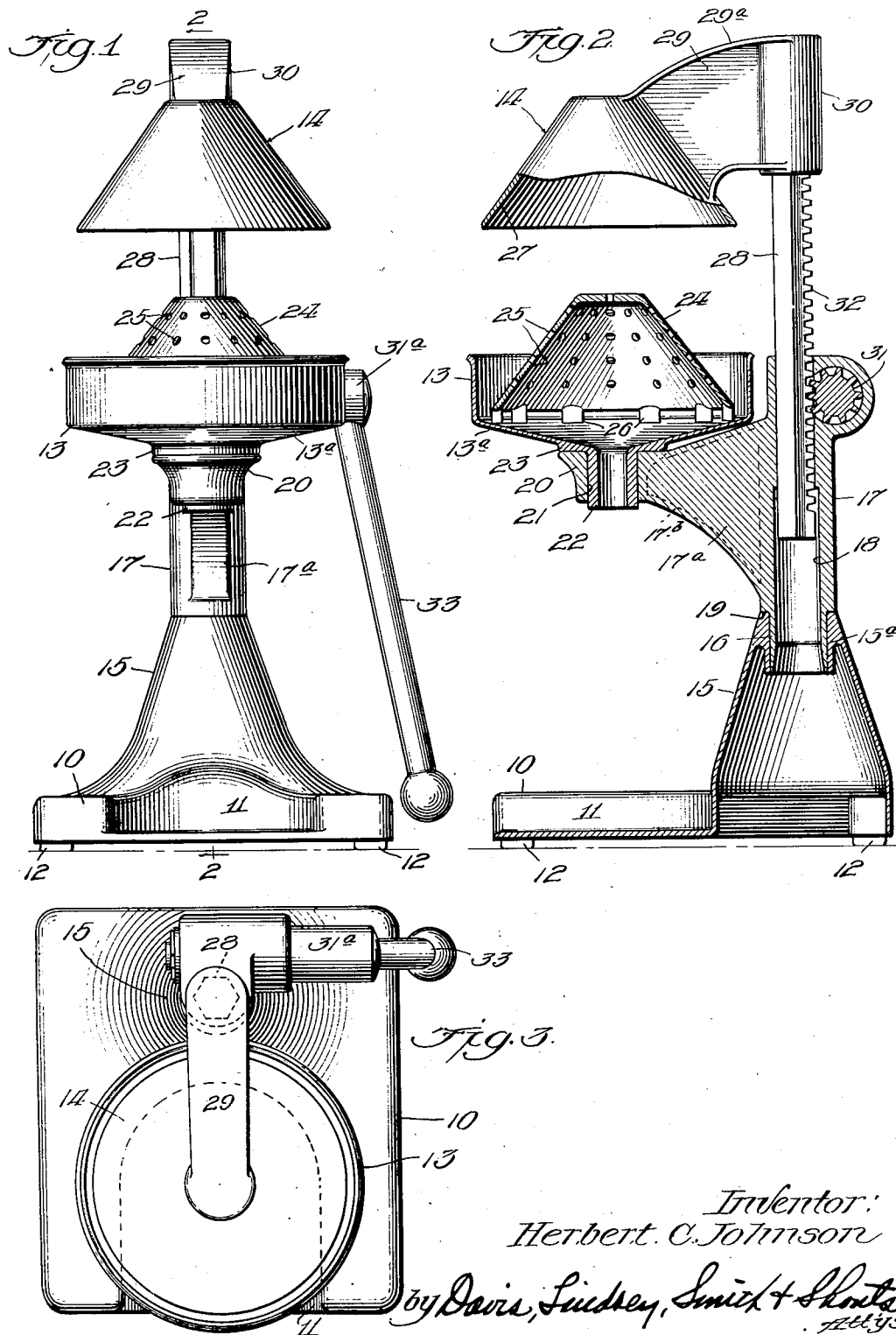
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JICE EXTRACTING DEVICE

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JUICE EXTRACTING DEVICE

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My invention relates to juice-extracting devices and it has to do especially with a manually operable device of this character well suited for extracting juices from fruits such as oranges, lemons, etc.

One of the objects of my invention is to provide an improved device of the foregoing character.

Another object is to provide a juice-extracting device of a so-called squeezer type which is quite simple in construction, is inexpensive to manufacture, is highly durable, and is adapted for rapidly extracting substantially all of the juice from the orange, lemon, or the like.

An additional object is to provide a device of the foregoing character which embodies but few parts that may be readily and easily cleaned, and which are so associated as to provide a very compact device that may be stored away in a very small space.

Other objects and advantages will become apparent as this description progresses and by reference to the drawing, wherein:

Figure 1 is a front elevational view of one form of device embodying my invention;

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 1; and

Fig. 3 is a top plan view of the structure shown in the previous figures.

The extractor device shown in the drawing is of a so-called squeezer type, and it includes a base 10 preferably of squared form and of such area as to readily support the device against tipping. This base is provided in its upper front portion with an outwardly-opening well 11 adapted to receive and support a receptacle for receiving juices extracted by the device. This base is provided, at each corner, with a leg 12 formed of rubber or other non-marring material for support of the device without danger of marring the table or supporting surface.

The base 10 also supports the juice-extracting mechanism which comprises a supporting cup 13, squeezer cone 14 and the parts for operating the latter. More particularly, the rear side of the base 10 is provided with an upstanding tubular and somewhat cone-shaped portion 15 having its upper end provided with an internal and axial re-enforcing flange 15^a adapted to receive the lower, reduced and tubular end or neck portion 16 of a vertical extension 17 which supports the cup 13, the squeezer cone 14 and its operating parts. The extension 17 is provided with a vertical slideway 18 axially aligned with its tubular neck portion 16 so that such slideway opens

downwardly into the tubular base portion 15. The reduced end portion 16 of the extension 17 provides a shoulder 19 that seats upon the top of the base portion 15, and this arrangement is such that when the tubular bracket portion 16 and the upper flanged end 15^a of the base portion 15 are rigidly secured together, as by soldering, welding, or the like, the extension 17 is rigidly and firmly supported in position substantially the same as if it were an integral part of the base portion 15.

The extension 17 is provided with an arm or bracket portion 17^a that extends laterally over and above the well 11 of the base 10, and it is provided at its outer end with a circular saddle-like boss 20 having a vertical opening 21 therein adapted to snugly, but removably, receive the spout 22 of the cup 13. The bottom of the cup 13 is provided with an annular seat 23 adapted to seat flush upon the horizontal top of the saddle-like portion 20 so that the cup 13 is supported firmly in horizontal position with its spout 22 aligned with the receptacle (not shown) that may be placed in the base well 11. The bracket portion 17^a is provided with reinforcing flanges 17^b at its upper and lower edges providing a strong support for the cup 13 upon which considerable pressure is exerted during the juice extracting operation.

The cup 13 is provided with an inverted cone-shaped bottom wall 13^a so that juices deposited therein will readily and quickly flow to and be discharged through the spout 22. This cup is adapted to freely and removably receive a cone-shaped squeezer head 24 provided with numerous perforations 25 to permit juices to readily flow down thereover and also therethrough to the bottom of the cup. This strainer-type squeezer head is provided with a plurality of feet 26 around its lower peripheral edge holding the squeezer head spaced from the bottom of the cup so that any juices that flow down over the outer surface of such head will readily flow past the lower edge thereof along the bottom of the cup to and through the spout 22. This squeezer head is of sufficient height to project above the upper rim of the cup 13 for coaction with the squeezer cone 14 which is provided with an internal cone surface 27 shaped complementally to the outer cone surface of the squeezer head 24. The squeezer head 24 is adapted to support the fruit or object from which the juice is to be extracted. In the case of an orange, for example, it may be divided into halves and one part is then placed upon the squeezer head 24 with the

outer rind thereof positioned to be engaged by the inner surface of the squeezer cone 14 with the meat portion thereof disposed toward the squeezer head 24 and in position to be squeezed down over such head.

The squeezer cone 14 is supported by a vertical rack bar 28 slidably fitted in the vertical bracket slideway 18. The rack bar 28 is (preferably but not necessarily) of hexagonal shape in cross section and the slideway 18 is similarly shaped so that the bar 28 will not rotate out of a predetermined position wherein the squeezer cone 14 is aligned with the cup 13 and squeezer head 24. The squeezer cone 14 is mounted upon the upper end of the rack bar 28 by a laterally extending arm 29 having a tubular part 30 receiving the upper end of the rack bar 28 and rigidly secured thereto by soldering or in any other desired manner. The cone-supporting arm 29 extends laterally and somewhat downwardly so that its outer end is disposed over the cup 13. By projecting the arm diagonally downward, squeezing pressure is transmitted to the squeezer cone 14 from the rack bar 28 in a downwardly oblique direction thereby minimizing the tendency of the thrust forces to move the rack bar 28 laterally and cause excessive wear therein. The arm 29 is web-shaped like the bracket arm 17^a, being provided with horizontal flanges 29^a along its upper and lower edges for strengthening purposes. With this arrangement, the rack bar and squeezer cone operate substantially as a rigid, integral part, and as the rack bar 28 is raised and lowered the squeezer cone 14 moves away from and toward the squeezer head 24, respectively.

The rack bar 28 is reciprocated by a horizontally mounted pinion 31 rotatably supported in the upper part of the extension 17 and substantially directly above the casing portion 15. The teeth of this pinion are adapted to engage the rack teeth 32 of the rack bar 28 so that, as the pinion is rotated in one direction, the rack bar will be raised and as it is rotated in the opposite direction the bar will be lowered. The slideway 18, by opening into the hollow casing portion 15, permits the lower end of the rack bar 28 to move downwardly into the casing portion 15 and thereby permit, unhampered, full reciprocation of the rack bar 18 and squeezer cone 14. The pinion 31 is provided with a lateral extension 31^a to which is connected a handle 33 of sufficient length to provide the leverage necessary to enable one to apply the force required to move the rack bar 28 and squeezer cone 14 downwardly and squeeze the fruit upon the squeezer head 24 and extract the juice therefrom.

It is believed that the operation and advantages of my invention will be readily understood from the foregoing description. When the orange, lemon, or the like, is placed in proper position upon the squeezer head 24 and the squeezer cone 14 is actuated in the manner described, all of the juice of the lemon, orange, or the like, is substantially squeezed therefrom, and, at the same time, the extracted juice is confined to the cup in such a way that all of it finds its way through or around the squeezer head to the bottom of the cup 13 and into the receptacle therebeneath. This not only aids in cleanliness of operation but insures the securing of substantially the entire output of juice of the fruit in question. Also, by this arrangement, a very compact structure is provided. When the squeezer cone 14 is in its lower position, the device is of very small height and is

sufficiently compact that it may be stored in a very small space. The parts are readily accessible so that they may be easily and quickly cleaned. But few parts are employed, wear is reduced to the minimum, and the device may be used indefinitely without repair.

Although I have shown my invention applied to only one form of structure, it will be understood that other changes in details and arrangements of parts may be resorted to without departing from the spirit and scope of my invention as defined by the claims that follow.

I claim:

1. A juice extractor comprising a base portion; a member extending upwardly from said base portion, said member having an apertured arm projecting laterally therefrom; a cup supported by said arm, said cup comprising a side wall, a bottom wall having an upper sloping surface, a boss projecting from said bottom wall, said boss having a substantially flat under surface and having a projection depending therefrom, and means communicating with the interior of the cup for draining said cup, said projection extending into the aperture of said arm and said arm having a flat upper surface surrounding said aperture and in engagement with the flat under surface of said boss whereby said cup is prevented from tilting with respect to said arm; squeeze means carried by said cup; and cooperating squeeze means carried by said upwardly extending member including a reciprocable support having a squeeze member permanently fixed thereon and aligned with said cup-carried squeeze means.

2. A juice extractor comprising a base portion, a hollow member secured to said base portion, a cup member, said cup member having a sloping bottom portion and a boss formed at the lowest portion of said bottom, said boss being flat over substantially its entire bottom surface area, means supporting said cup relatively to said hollow member, said means having an opening, the upper surface of said means at said opening being flat over a substantial area, said boss having a spout depending therefrom and projecting into said opening, the flat surface of said boss and said flat surface of said means being in contact and preventing said cup from tilting with respect to said means; squeeze means carried by said cup member, and cooperating squeeze means carried by said hollow member including a reciprocable support having a squeeze member permanently fixed thereon and aligned with the squeeze means in said cup member.

3. A juice extractor comprising a base portion; a hollow member secured to said base portion; a cup member, said cup member having a sloping bottom portion and a boss formed at the lowest portion of said bottom, and a spout depending from said boss, said boss having a substantially horizontal flat bottom surface surrounding said spout; an apertured arm supporting said cup in spaced relation to said hollow member, said arm having a substantially horizontal surface extending over a substantial area and being disposed parallel to the horizontal surface of said boss and in engagement therewith, said spout extending into the aperture of said arm, whereby said cup is prevented from substantial tilting with respect to said arm; a squeezer head mounted in said cup; a vertically movable member slidably mounted in said hollow member; a squeezer member secured to the upper end of said vertically movable member, said squeezer member having a recess substantially complementary in shape to re-

ceive said squeezer head; and means for moving said vertical member to raise and lower said squeezer member with respect to said squeezer head.

5 4. A juice extractor comprising a base portion; a hollow member secured to said base portion; an apertured arm extending laterally from said hollow member; a cup member detachably supported by said apertured arm, said cup having
10 an axially extending flange, a bottom wall having an upper sloping surface, a depending annular seating part formed on said bottom wall, and a spout projecting from said annular seat into the aperture of said arm, the upper surface of said
15 arm at said aperture being of a shape complementary to that of said annular seating part and in engagement therewith to prevent tilting of said cup with respect to said arm; a convex squeezer head mounted in said cup; a vertically
20 movable member slidably mounted in said hollow member; a squeezer member secured to the upper end of said vertical member, said squeezer member having a recess substantially complementary in shape to that of said convex squeezer head;
25 and means for moving said vertical member to raise and lower said squeezer member with respect to said squeezer head.

5. A juice extractor comprising a base portion; a hollow member extending upwardly from
30 said base portion; a pinion supported by said hollow member; a laterally projecting arm secured to said hollow member; a cup arranged above said arm, said cup comprising an annular flange portion and a bottom having a sloping
35 upper surface, said bottom having a boss depending therefrom, a projection depending from said boss, and means communicating with the interior of the cup for draining said cup, said boss having a bottom surface which is substantially
40 flat and constitutes a seating surface, said arm having a flat seating surface in engagement with the seating surface of said boss, said projection extending into the aperture of said arm, said pinion and said cup being located in substantially a
45 common horizontal zone; squeezer head means in said cup; a vertically movable member reciprocally mounted in said hollow member; a squeezer member secured to said vertically movable member; and means for positively moving said vertical
50 member up and down in said hollow member.

6. A juice extractor comprising a supporting base portion; a hollow tubular member extending upwardly from said base portion adjacent one end thereof; a pinion gear supported by said
5 hollow tubular member; a rack meshing with said pinion and reciprocally mounted in said tubular member; a substantially rigid arm extending laterally from said hollow tubular member in a direction toward the end of the base opposite
10 to the end aforementioned; a cup having a body portion disposed above said arm, said body portion comprising a sloping bottom wall and a side wall extending upwardly therefrom, a boss projecting from said bottom wall, said boss having
15 a flat seating surface formed thereon, a projection depending from said seating surface, and means communicating with the interior of the cup for draining said cup, said arm having an opening therein and said projection extending into said
20 opening, said arm also having a flat surface engaging the seating surface of said boss to prevent tilting of said cup; a squeezer head in said cup; a squeezer member secured to said rack; and means for rotating said pinion to move said
25 rack and squeezer member up and down relatively to said squeezer head.

7. A juice extractor comprising a supporting base; a hollow member extending upwardly from said base; said member having a laterally projecting boss, said boss having an aperture
30 extending in a direction substantially at right angles to said hollow member; a pinion rotatably mounted in the aperture of said boss; a gear rack meshing with said pinion and slidably mounted in said
35 hollow member; a cup member, said cup comprising a body including a side wall and a bottom wall having an upper sloping surface; means supporting said cup relatively to said hollow member, said
40 means having an opening; means depending from said bottom wall and spacing said cup body from said supporting means, said means having a spout depending therefrom and extending into the
45 opening of said supporting means; a squeezer head in said cup; a squeezer member secured to said gear rack, said squeezer member having a recess to receive said squeezer head; and means for positively moving said gear rack and squeezer member up and down with respect to said cup and squeezer head.

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