

Michael Suter, Class of 1966

I graduated Phi Theta Kappa at Elgin Community College while attending Night Classes and Weekend after being discharged from USAF and relocating to Carpentersville ILL. My degree was an Associate of Science Degree in Electronic Technology.

During my employment I won both divisional and global achievement awards in New Product Development and advancements in Citrus Processing Technologies.

I presented 3 Papers at the Florida Citrus ASME , 1 paper at the International Power Conference, 2 presentations at the Detroit Auto Conference. I taught one semester class at ECC on automation after graduation.



Having graduated at the bottom or near the bottom of my class in 1966 at Lee, I would never have been able to achieve the aforementioned accomplishments had I not gone through the USAF in 1966 - 1970 nor been "inspired" by my wife of 49 years.

The following are some of my US patents and other accomplishments. I have approximately twice as many foreign patents but most are based on the US patent. Countries include Mexico, Brazil, Israel, Spain and Euro patents. The photo is of me when I was awarded the American Society of Mechanical Engineers (Engineer of the Year Award) for the Citrus Chapter.

application number	Description	Published
20090081338	CITRUS JUICE APPARATUS WITH UNDESIREED MATERIAL RELEASE DETECTOR AND RELATED METHODS - A citrus juice apparatus may include at least one citrus juice processing device. The at least one juice processing device may include at least one juice output having a flow of juice therethrough. The at least one juice processing device upon a malfunction may cause an undesired material release along with the flow of juice into the at least one juice output. An undesired material release detector may be coupled to the at least one juice output for detecting the undesired material release. The detector may operate based upon magnetic proximity sensing of a moving filter plate within a housing of the detector. Alternatively, the detector may operate using a filter plate, and based upon pressure.	03-26-2009
20120021098	APPARATUS AND METHOD FOR SENSING AND CONTROLLING THE CONCENTRATION OF PULP IN A CONCENTRATED PULP STREAM - A juice processing apparatus includes a concentrator for generating at least one concentrated pulp stream, and a pulp pasteurizer coupled downstream from the concentrator. A flow restrictor is coupled in the at least one	01-26-2012

20120021102	<p>concentrated pulp stream for generating a pressure drop therein. The pressure drop is indicative of a concentration of pulp in the at least one concentrated pulp stream. At least one pressure sensor is associated with the flow restrictor for sensing the pressure drop. A controller is for controlling the concentrator based upon the sensed pressure drop.</p> <p>APPARATUS AND METHOD FOR SENSING THE CONCENTRATION OF PULP IN A CONCENTRATED PULP STREAM - A juice processing system includes at least one fluid line for a concentrated pulp stream, and a flow restrictor coupled in fluid communication with the at least one fluid line for generating a pressure drop in the concentrated pulp stream indicative of a concentration of pulp therein. The system may further include at least one pressure sensor associated with the flow restrictor for sensing the pressure drop, and a controller coupled to the at least one pressure sensor for generating at least one control signal based upon the sensed pressure drop. The control signal may be for an upstream and/or a downstream control device.</p>	01-26-2012
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Patent Number	Title Of Patent	Date Issued
<u>D513155</u>	<u>Juice extractor design</u>	December 27, 2005
<u>7878113</u>	<u>Juice extractor including drive shaft seal and related methods</u>	February 1, 2011
	A juice extractor may include a drive housing and a drive shaft extending outwardly there from to a juice extraction area. The juice extractor may further include a shaft seal that, in turn, includes a seal housing and at least one positioning ring contained within the seal housing and	
<u>7503449</u>	<u>Multi-lane fruit guide assembly for a juice extractor and related methods</u>	March 17, 2009
	A fruit guide assembly may include a frame to be positioned between a fruit conveyor and a multi-position fruit feeder, a vibrator removably fastened to the frame to be removable there from in the upward direction, and a fruit guide body removably fastened to the frame to be removable	
<u>7421945</u>	<u>Juice extractor including fruit feeder decoupling detector and associated methods</u>	September 9, 2008
	A fruit juice extractor may include a load sensitive coupler coupling a drive motor to a drive shaft during normal operation, and decoupling the drive motor from the drive shaft when the fruit feed members become jammed. The extractor may also include a decoupling detector for detect	
<u>7337715</u>	<u>Juice extractor including pressure-actuated nozzle and associated methods</u>	March 4, 2008
	A juice extractor may include a juice extraction assembly, and at least one pressure-actuated spray nozzle having an inlet to be connected to a controllable fluid pressure source and a spray outlet directed toward the juice extraction assembly and moving between a retracted off position	
<u>7303061</u>	<u>Multi-lane fruit guide assembly having integral ridge ends for a juice extractor and related met</u>	December 4, 2007
	A fruit guide assembly may include a frame to be positioned between the fruit conveyor and the multi-position fruit feeder, a vibrator connected to the frame, and a fruit guide body having a series of alternating ridges and valleys therein defining a plurality of fruit lanes. Each pair	
<u>7222567</u>	<u>Juice extractor with tapered clean up nozzle</u>	May 29, 2007
	A juice extractor includes a juice extraction assembly having a wall surface and fluid outlet thereon. At least one tapered spray nozzle is mounted flush on the wall surface at the fluid outlet for receiving and discharging fluid and configured for preventing build-up on the spray no	

- 7032370 Fruit trailer for fruit harvesting system and associated methods April 25, 2006
A fruit trailer is for a fruit harvesting system including a fruit collector including a vehicle and at least one collector conveyor carried thereby for collecting fruit shaken from a tree, and a fruit removal vehicle intermittently brought to the fruit trailer for receiving fruit th
- 6945022 Fruit harvester including pivotable fruit deflector and associated methods September 20, 2005
A fruit harvester includes a vehicle, a boom having a proximal end carried by the vehicle, a shaker head connected to a distal end of the boom for vibrating a tree trunk to shake fruit therefrom, and a fruit deflector comprising upper and lower portions connected together and cooperative
- 6938403 Fruit harvester including telescoping boom and related methods September 6, 2005
A fruit harvester may include a vehicle, a telescoping boom, a shaker head connected to the distal end of the telescoping boom for vibrating a tree to shake fruit from the tree. A boom positioning assembly is provided for connecting the boom to the vehicle. The boom positioning assembly
- 6931829 Fruit harvester collection apparatus with compact conveyor arrangement and associated methods August 23, 2005
A fruit collection apparatus is for collecting fruit as the fruit is shaken from a tree, and may include a vehicle, and a fruit collector carried by the vehicle. The fruit collector may include a collection conveyor with opposing first and second ends and an exterior conveyor surface ext
- 6925792 Tree-fruit harvester including deflector with pivoting upper portion and associated methods August 9, 2005
A fruit harvester for harvesting fruit from a tree includes a shaker vehicle, a boom having a proximal end connected to the shaker vehicle and moveable between an extended position and a retracted position, a shaker head connected to a distal end of the boom, and a fruit deflector carrie
- 5386766 Automatic juice extraction system February 7, 1995
A juice extraction process control system includes provisions to determine the load on the processing line and adjust processor speed and availability of juice extraction hardware responsive to the through put load of the juice extraction process facility.
- 5386765 Automatic spray ring for use in a juice finisher February 7, 1995
A spray ring is cycled back and forth along the longitudinal axis of a finisher to allow a high pressure cleaning stream of water or solvent to be directed against the surface of the finisher. A linear rodless cylinder is attached to the spray ring and is sequenced to move the spray ring
- 5193446 Automatic spray ring for use in a juice finisher March 16, 1993
The spray ring is cycled back and forth along the longitudinal axis of the finisher to allow the high pressure cleaning stream of water or solvent to be directed against the surface of the finisher. A linear rodless cylinder is attached to the spray ring and is sequenced to move the spra
- 4995973 Modular longitudinal spray finisher February 26, 1991
A juice processing module is provided in a raw juice stream to aid in the separation of the juice stream into clarified juice and pulpy juice. Raw juice is forced through directed orifices at a separating screen carried in a containment housing. Juice outlet ports are provided for the
- 612226 Peeling apparatus and associated methods September 2, 2003
A peeling apparatus may include a frame, a set of mounts being removably connected to a first end of the frame adjacent at least one first roller opening and each mount including a flange bearing. The peeler may also include a set of abrasive rollers being arranged to define a peeling
- 6575085 Peeling apparatus with enhanced abrasive rollers and associated methods June 10, 2003
A peeling apparatus includes a frame, and at least one set of abrasive rollers carried by the frame to define at least one peeling chamber. Each abrasive roller includes an elongate body portion having an abrasive outer surface and may have a

pair of mounting stubs permanently affixed to

6530310

Peeling apparatus and associated methods

March 11, 2003

A peeling apparatus may include a frame, a set of mounts being removably connected to a first end of the frame adjacent at least one first roller opening and each mount including a flange bearing. The peeler may also include a set of abrasive rollers being arranged to define a peeling

6431061

Peeling apparatus having feeder control based upon load and associated methods

August 13, 2002

A peeling apparatus includes a set of abrasive rollers, at least one roller drive motor, a feeder for controllably feeding fruit or vegetables adjacent the abrasive rollers, at least one sensor associated with at least one roller drive motor for sensing a load thereon, and a controller

6427584

System and method for processing citrus fruit with enhanced oil recovery and juice quality

August 6, 2002

A method and system of processing citrus fruit is disclosed. A peeling chamber has opposing ends and a fruit inlet and fruit outlet formed at respective opposing ends. Abrasive rollers are rotatably mounted in an arcuate configuration within the peeling chamber at an area forming a I

6426107

System and method for processing citrus fruit with enhanced oil recovery and juice quality

July 30, 2002

A method and system of processing citrus fruit is shown. A peeling chamber has opposing ends and a fruit inlet and fruit outlet formed at respective opposing ends. Abrasive rollers are rotatably mounted in an arcuate configuration within the peeling chamber at an area forming a lower

6375996

Method and system for processing pulp and juice in a juice finisher

April 23, 2002

The method and system of the present invention measures pulp dryness using nuclear magnetic resonance (NMR). It also controls the discharge of pulp and juice from a juice finisher. The discharge from the juice finisher is measured using the sensor. Based on the results of the NMR measure

5996485

Juice extractor with alignment bearing

December 7, 1999

A juice extractor includes upper and lower cups for supporting the exterior of a fruit and separating the peel therefrom. A strainer tube is mounted to receive the juice and pulp of the fruit. An orifice tube is moveable within the strainer tube. A mounting assembly is positioned on the

5992311

Juice extractor with hydraulic control of extraction back pressure

November 30, 1999

A juice extractor includes a mechanism for supporting the exterior of a fruit and separating the peel therefrom, such as upper and lower cups having cutters to cut plugs. A strainer tube is mounted to receive juice and pulp of the fruit. An orifice tube has upper and lower ends and the

5970861

Juice extractor with safety release member

October 26, 1999

A juice extractor includes a mechanism such as upper and lower cups for supporting the exterior of a fruit and separating the peel therefrom. A strainer tube is mounted to receive juice and pulp of the