

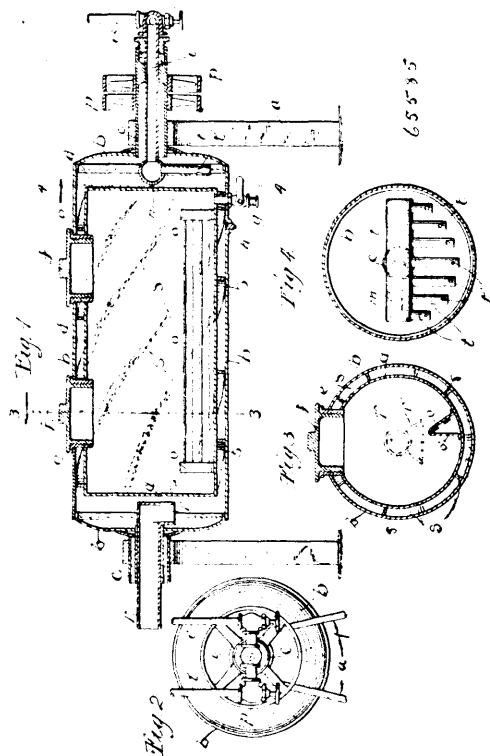
head communicating with the discharge conduit, an inwardly closing valve at said port, a piston in the cylinder, and means for operating the piston to move the same to the cylinder head approximately without clearance, comprising a toggle lever mounted to rock at one of its arms on a fulcrum and operatively connected at its other arm with the piston, and toggle lever driving means geared to the toggle lever to flex the same to one side, to produce the suction stroke of the piston, and to extend the same to a dead centre, to produce the discharge stroke of the piston, and at the end of the discharge stroke to interrupt movement of the piston for a period sufficiently prolonged to permit seating of the eduction valve before the piston advances upon its suction stroke, substantially as and for the purpose set forth. 3rd. In a refrigerating machine, the combination with the compressor cylinder and the gas return and discharge conduits, of an eduction port in the cylinder head communicating with the discharge conduit, an inwardly closing valve at said port, a piston in the cylinder, and means for operating the piston to move the same to the cylinder head approximately without clearance, comprising a toggle lever mounted to rock at one of its arms on a fulcrum and operatively connected at its other arm with the piston, and toggle lever driving means comprising a crank shaft geared to the toggle lever, to flex the same to one side and produce the suction stroke of the piston, in the movement of the crank to one dead centre, and to extend the toggle lever to a dead centre, and produce the discharge stroke of the piston, in the movement of the crank to its other dead centre, and interrupt movement of the piston at the end of its discharge stroke for a prolonged period, whereby the seating of the eduction valve is effected during such interruption, substantially as and for the purpose set forth. 4th. In a refrigerating machine, the combination with the compressor cylinder and the gas return and discharge conduits, of an eduction port in the cylinder head communicating with the discharge conduit, an inwardly closing valve at said port, an induction port toward the opposite end of the cylinder communicating with the return conduit, a passage extending from the cylinder head to the opposite end portion of the cylinder, a valve for opening and closing said passage, a piston in the cylinder, and means for operating the piston to move the same to the cylinder head approximately without clearance, comprising a toggle lever mounted to rock at one of its arms on a fulcrum and operatively connected at its other arm with the piston, and toggle lever driving means geared to the toggle lever to flex the same to one side, to produce the suction stroke of the piston, and to extend the same to a dead centre to produce the discharge stroke of the piston, and at the end of the discharge stroke to interrupt movement of the piston for a period sufficiently prolonged to permit seating of the eduction valve before the piston advances upon its suction stroke, substantially as set forth. 5th. In a refrigerating machine, the combination with the compressor cylinder, and the gas return end discharge conduits, of an eduction port in the cylinder head communicating with the discharge conduit, an inwardly closing valve at said port extending when seated flush with the inner face of the cylinder head, an induction port toward the opposite end of the cylinder communicating with the return conduit, a passage through the piston, an induction valve on the piston for opening and closing said passage and extending when seated flush with the end of the piston, and means for operating the piston to move the same to the cylinder head approximately without clearance, comprising a toggle lever mounted to rock at one of its arms on a fulcrum and operatively connected at its other arm with the piston, and toggle lever driving means geared to the toggle lever to flex the same to one side, to produce the suction stroke of the piston, and to extend the same to a dead centre, to produce the discharge stroke to interrupt movement of the piston for a period sufficiently prolonged to permit seating of the eduction valve before the piston advances upon its suction stroke, substantially as and for the purpose set forth. 6th. In a compressor, the combination with the compressor cylinder, piston in the cylinder, and drive shaft, of a toggle lever mounted to rock at one of its arms on a fixed fulcrum, and operatively connected at its other arm with the piston, a pitman connected in a centric operative relation to the shaft, and intermediate toggle mechanism forming a connection between the said pitman and toggle lever, substantially as and for the purpose set forth. 7th. In a compressor, the combination with the shell having a base portion forming an oil reservoir and supporting the cylinder, drive shaft, piston, piston stem and piston driving cross head, of bearings for the drive shaft on the inner sides of the said base provided with oiling openings, a chamber in the cross head having outlets to the cross head guides, an oil pump in the said base portion actuated from the compressor driving mechanism and discharging into the said chamber, and oil conveying ducts extending from below said cross head guide to the said oiling openings at the drive shaft, substantially as and for the purpose set forth.

No. 65,585. Liquid Pasteurizing or Sterilizing Apparatus.
(Appareil à stériliser les liquides.)

The Creamery Package Manufacturing Company, Chicago, Illinois, assignee of Charles E. Bushnell, Appleton, Wisconsin, U.S.A., 29th December, 1899; 6 years. (Filed 2nd May, 1899.)

Claim. 1st. In a pasteurizing or like apparatus, the combination of a pair of rotary receptacles, one inclosed within the other and adapted to be closed air tight, a water space surrounding the inner

receptacle, a valved water pipe communicating with said space, and a valved steam pipe also communicating with said space and extend-



ing below the water level, whereby water may be introduced into the space and heated by the introduction of steam. 2nd. In a pasteurizing or like apparatus the combination of a pair of rotary receptacles, one inclosed within the other and surrounded by a water space, a water pipe communicating with said space and spirally arranged strips secured in the space between the receptacles running longitudinally thereof. 3rd. In a pasteurizing or like apparatus, the combination of a pair of rotary receptacles, one inclosed within the other and surrounded on all sides by a water space, a pipe for the introduction of water into the space between the receptacles, means for introducing and drawing off from the inner receptacle the material to be treated, an agitator in the inner cylinder, and means for insuring a circulation of water in the space between the receptacles. 4th. In a pasteurizing or like apparatus, the combination of a pair of rotary receptacles, one inclosed within the other and surrounded by a water space, a water pipe communicating with said space at one end of the receptacles, a pipe for drawing off water from said space at the other end of the receptacles, a steam pipe extending into the water space, a muffler in said space connected with the steam pipe and extending below the water line. 5th. An apparatus for pasteurizing or sterilizing liquids consisting of suitable standards, a pair of rotary cylinders journaled in bearings in the standards, one of said cylinders inclosed within the other and surrounded by a water space, spiral strips arranged in the waterspace along the sides of the cylinders, a stirrer or agitator secured within the inner cylinder, means for introducing and drawing off the liquid from the inner cylinder, a cleaning opening in the outer cylinder, a pipe extending through the bearings at one end of the cylinders, separate water and steam pipes connected thereto, a muffler located in the water space and connected to the pipe that passes through the cylinder journal and depending below the water line, a pipe leading from the water space and passing through the journal at the opposite end of the cylinders, and means for rotating the cylinders. 6th. In a pasteurizing or like apparatus, the combination of a pair of rotary cylinders, one inclosed within the other and surrounded by a water space, a water and steam pipe communicating centrally with the space at one end of the cylinders, and a muffler connected to the end of the pipe and consisting of a drum extending diametrically across the cylinder heads and having perforated pipes depending therefrom below the water line. 7th. In an apparatus for pasteurizing liquids, the combination of a pair of cylinders, one arranged within the other with a water space surrounding it, means for rotating the cylinders, air tight closures for the inner cylinder, means for introducing and drawing off liquid from the inner cylinder, a stoppered opening into the water space for cleaning and drawing off the contents, pipes at one end of the cylinders for introducing steam and water into the space between them, and a pipe at the opposite end of the cylinders.