

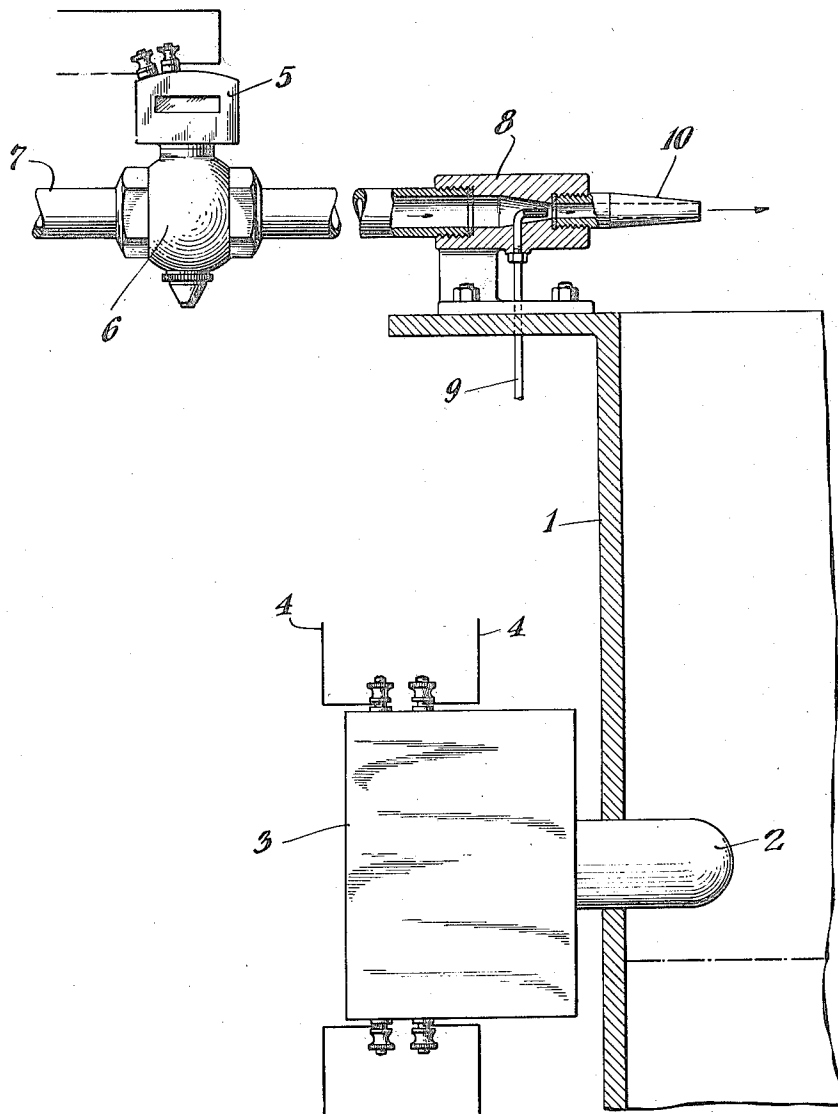
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SUPPRESSION OF FROTH OR SCUM ON LIQUIDS

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SUPPRESSION OF FROTH OR SCUM ON LIQUIDS

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This invention relates to the suppression of froth or scum on liquids and has for its object to provide improved means for preventing froth or scum from overflowing or accumulating in excess in vessels containing liquids in which fermentation, distillation or similar operations are being performed.

According to the present invention a light sensitive element such as a selenium cell or photo-electric valve is placed inside the vessel at a depth below the brim corresponding to the level above which the froth or scum should not rise appreciably and the said light sensitive element is connected to control means for reducing or suppressing the froth or scum formation. Such means may for example control the release and delivery of anti-frothing or scum-suppressing medium over the liquid.

The essential feature of the present invention may be embodied in various arrangements, one of which is illustrated by way of example and in a somewhat diagrammatic manner in the accompanying drawing.

In the arrangement illustrated the reference numeral 1 represents part of a vat or still in which it is desired to keep froth or scum from rising above a certain level. At the desired level a selenium cell represented diagrammatically at 2 is fitted internally on the wall of the vessel. The box 3 indicates any electrical contrivances necessary for supplying electric current to the cell. Leads 4 from a relay controlled by the cell supply current to a solenoid 5 which actuates a valve 6 in a compressed air pipe 7 leading to an injector device 8 by means of which oil or liquid fat is drawn from a pipe 9 and sprayed through a chute or nozzle 10 over the mouth of the vessel. It will be understood that when the fat or oil is sprayed it descends on the rising froth or scum and causes the latter to subside.

The arrangement is such that so long as the froth or scum is below the level of the selenium cell and the latter is therefore fully exposed to the ordinary daylight or to artificial light the valve 6 remains closed but as soon as the froth or scum rises sufficiently to submerge the cell the light acting thereon is cut off or reduced and the solenoid 5 becomes energized so that the valve 6 is opened and the fat or oil is sprayed over the rising froth or scum.

Various modifications of the particular arrangement above described will be apparent. For example the solenoid may control a pump and the fat or oil may be sprayed under pressure through a nozzle without the aid of com-

pressed air. Also instead of fat or oil any other means for reducing the volume of froth or scum may be used; for instance in the case of froth or scum due to applied aeration incidental to the operation in the fermenter or still the change of illumination of the selenium cell may be caused to change the degree of the aforesaid aeration. Moreover, in place of a selenium cell any other suitable light sensitive device may be employed. The light sensitive device may be fixed to the inner surface of the wall of the vessel or be suspended from above the vessel or may be located in a recess or side chamber, the latter being regarded as a part of the main vessel.

The invention is particularly useful in yeast manufacture, as it enables the amount of fat normally used to suppress excessive frothing to be considerably diminished and thereby causes not only a saving in fat expenditure but also a reduction in contamination of the yeast by the fat or oil.

The invention has also the advantage that it can be used in a simple and efficient manner in closed vessels in which frothing is likely to occur, such as distilling columns.

What I claim is:—

1. A method for controlling froth formation upon liquids undergoing treatment which comprises positioning a photo-electric cell above the liquid subject to foaming or froth formation, passing light from a source above the body of the liquid to the said cell, said cell and said light source being so positioned that the rising foam on the liquid is adapted to cut-off or intercept light passing to the cell, intercepting the passage of light to the said cell by the said foam and causing the operation of means connected to the said cell which is operated by the said light interception for breaking up of froth upon the said liquid in response to actuation of the said cell.

2. A method for controlling froth formation upon liquids undergoing treatment which comprises positioning a photo-electric cell above a liquid subject to foaming or froth formation, said cell being positioned above the liquid in the container at a height corresponding substantially to the level of foam in the container at which it is desired to initiate the breaking-up of the froth, passing light from a source above the body of the liquid to the said cell, intercepting the passage of light to the said cell by the foam at the said level and causing operation of means connected to the said cell, through the operation of the cell by the said light inter-

ception, for the breaking up of froth upon the said liquid.

3. A method for controlling froth formation upon liquids undergoing treatment which comprises positioning a photo-electric cell above the liquid subject to froth formation, passing light from a source above the body of the liquid to the said cell, said cell and said light source being so positioned that the rising foam on the liquid is adapted to cut-off or intercept light passing to the cell, intercepting the passage of light to the said cell by the said foam and discharging a froth preventing medium into the said froth by means of a discharge device operated by the said cell through the interception of light thereto.

4. In a device of the kind described, means for controlling froth formation of liquids undergoing treatment which comprises a container for the liquid undergoing treatment, a photo-electric cell positioned above the said liquid subject to foaming or froth formation adapted to be operated by intercepting light passing thereto, said cell being so positioned with respect to light passing thereto as to be intercepted or cut-

off by rising foam on the said liquid and means operatively connected to the said photo-electric cell for breaking up of froth upon the said liquid by light interception passing to the cell by the said froth.

5. In a device of the kind described, means for controlling froth formation in liquids undergoing treatment which comprises a container for the liquid undergoing treatment, a photo-electric cell adapted to be exposed to a source of light and positioned inside the container above the liquid at a height corresponding to the level at which it is desired to initiate breaking up of the froth, the said light impinging upon said cell from a direction so that the rise of froth on the liquid will intercept or interfere with passage of light to the said cell and means for causing the froth to subside said means being connected to and controlled by the direct action of said photo-electric cell which responds to variations in the intensity of the light striking thereon due to the rise and fall of the froth in the said container.

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