Oct. 9, 1945. C. K. GODFREY 2,386,208

PRODUCE DISPLAY FIXTURE

Filed June 22, 1942

Fig. 1.

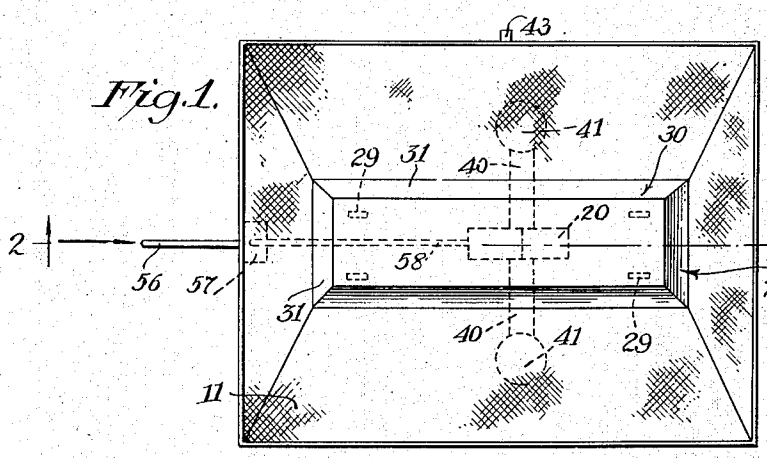


Fig. 5.

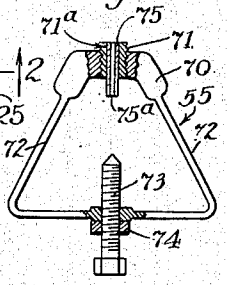


Fig. 2.

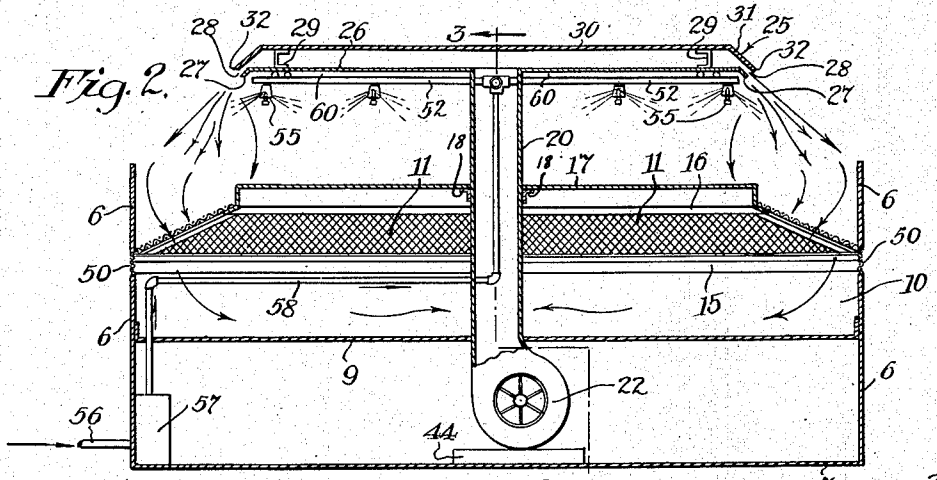
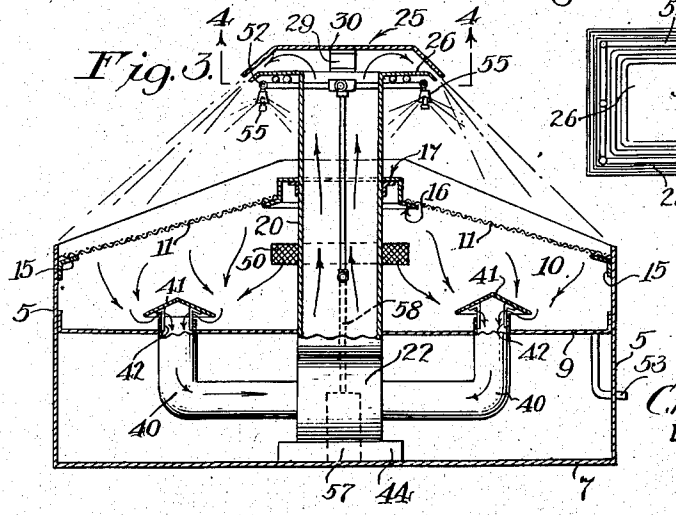


Fig. 3.



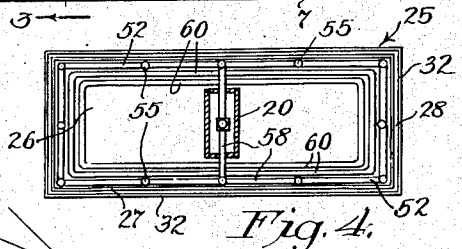


Fig. 4.

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Patented Oct. 9, 1945 2,386,208

UNITED STATES PATENT OFFICE

2,386,208

PRODUCE DISPLAY FIXTURE

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Application June 22, 1942, Serial No. 447,938

3 Claims. (Cl. 261—115)

My invention relates to produce display fixtures and, in its more particular aspects, it has to do with air circulating wet stands and methods for displaying and preserving produce.

I am aware that various attempts have been made to provide a produce display stand capable of preserving the produce by sprayed moisture as well as air circulation and while some of those attempts have been partially successful in some localities and for some uses, they have all possessed serious shortcomings which have prevented their general adoption and use. One of the most serious of those shortcomings has been the impossibility of adapting them to different humidity conditions. Another shortcoming has been their lack of proper cooling of the produce due to the inherent character of the construction and operation which have rendered it impossible to obtain uniform and efficient evaporation of the deposited moisture. Another serious fault with those prior art fixtures has been that they are not adaptable for use in closed markets, particularly in relatively humid climates due to the fact that they so increase the relative humidity in the store as to cause injury to other goods on display in the store and they have not been successfully usable in open-air markets for the reason that the spray is picked up by extraneous air currents and deposited on the floor and other articles around and adjacent the device, which is not only unsanitary but not infrequently has caused injury to customers due to their slipping on the wet floor.

Without attempting to enumerate all the various objects and advantages of my invention I will state that among those objects I aim to provide an air circulating produce display stand of the wet type in which moisture is intermittently deposited on and continuously evaporated from the produce bed under fully controlled conditions.

Another object is the provision of a fixture of this character in which the area of the spray deposit is controlled by a directed air stream whereby the spray is evenly deposited throughout the entire produce bed and at the same time it is confined to the area of the produce bed without being permitted to escape over the side and ends of the fixture.

Another object is the maintaining of the circulating air stream in a sufficiently dry state as to effectively evaporate all excess moisture from the produce.

Another object is the provision of a produce display stand of this character which requires a minimum of water to operate and a minimum of plumbing work incidental to its installation and use.

Another object is the provision of a highly effective and novel combination and arrangement of the illuminating and spray systems which create a rainbow effect over the produce bed, thus greatly enhancing the effectiveness of the display.

Another object is a novel and effective preserving produce.

Still further objects and corresponding accomplishments are inherent in my invention and how those as well as the objects hereinabove specifically enumerated are achieved will become apparent to those skilled in the art from the following detailed description of one of the presently preferred forms and adaptations of which the invention is susceptible, for which purpose I shall refer to the accompanying drawing, in which:

Fig. 1 is a plan view;

Fig. 2 is an enlarged medial longitudinal section, partly in elevation, taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross-section, partly in elevation, taken on line 3—3 of Fig. 2;

Fig. 4 is a bottom plan view of the hood; and

Fig. 5 is a view, partly in elevation and partly in section showing my spray member.

Referring now to the drawing, I show a box-like case having side walls 5, end walls 6 and a bottom wall 7. A false bottom 9 serves both as a drain wall and as a divider to provide the bottom wall of a chamber 10 beneath the produce bed. Chamber 10 is covered by and is in communication with the produce bed through foraminate sloping produce supporting walls 11 mounted along their bottom edges on brackets 15 and along their top edges on a flange 16 formed integral with the longitudinal medial shelf 17, which shelf is supported at its sides on the brackets 18.

An air conducting stack 20 leads upwardly from an electrically driven blower 22 of conventional type, the stack supporting and discharging into a hollow hood 25 spaced above the foraminate walls 11. Hood 25 has a flat bottom wall 26 presenting an outwardly and downwardly disposed peripheral lip 27 which forms the bottom of an air discharge passageway 28, the passageway opening continuously around the periphery of the hood. Top 30 of the hood is supported from the bottom wall 26 by brackets 29 and has sloping side and end walls 31 whose peripheral edges 32 are spaced from the lip 27 to define the

air passageway 28 above mentioned. Lip 27 and peripheral edges 32 are so disposed as to direct the air stream in a diagonal plane downwardly and outwardly towards the lower side and end edges of the foraminate walls 11 for the purposes to be hereinafter explained.

Air intake conduits 40 extend through false bottom 9 and have their inlet ends communicating with chamber 10, each being covered by a conical cap 41 supported in position spaced above the inlet ends by brackets 42, the outlet ends of the conduits communicating with the blower intake. Blower 22 is supported on a base 44 mounted on the bottom wall of the case. In each end wall 6, I provide a screened window 50, the function and significance of which windows will be pointed out hereinafter.

Around the under face of the bottom wall 26 of hood 25, I secure a water feed pipe 52 into which I screw the intake end of spray members 55 at spaced points therealong. Spray members 55 will be more particularly described hereinafter and it will be understood that any type of spray may be used which is capable of delivering a fog or mist-like spray. Pipe 52 is connected to a source of water under pressure, here designated as 56, through a time valve 57, a pipe 58 connecting the time valve to the pipe 52 via the stack 20 and hood 25. Time valve 57 is of a well-known construction capable of intermittently opening and closing to deliver water to the sprays at timed intervals and is of a construction which may be set to operate at any desired time interval. In a climate in which the average relative humidity ranges say between 50 and 70, I have found that a valve setting which will deliver spray for approximately four seconds at five-minute intervals is quite satisfactory. This setting of course would be varied for relatively wetter or drier climates.

Preferably inwardly of the sprays 52, I mount on the bottom wall 26 of the hood fluorescent light tubes 60 connected to an electrical source, not shown. In some cases it may not be necessary to mount the illuminating tubes behind the sprays, particularly if the spray is sufficiently spread outwardly from the spray as to cause the spray to appear between the illuminating tubes and the periphery of the hood so that the viewer sees the light through the spray. I here show two such tubes which extend lengthwise and transversely of the bottom wall 26, and are adapted to produce different colored lights, although it will be understood that any desired number may be used and other suitable illumination mediums may be employed.

In operation, the blower 22 is preferably operated continuously at a speed which will deliver from the annular discharge passageway 28 an air stream directed towards the outer side and end edges of the foraminate walls 11 so that there is a continuously moving air current over the entire produce bed. Inasmuch as the blower 22 has its intake in communication with chamber 10, a subatmospheric pressure is thereby constantly maintained beneath the produce bed supported on the walls 11 so that air continuously moves downwardly through the produce bed into the chamber 10 from whence it is recirculated by the blower. When the sprays are periodically operated to produce a fine water mist, the outer portion of this spray is thus induced into the diagonally outwardly and downwardly moving air stream discharged from passageway 28 and is thus carried to and deposited on the outer edges of the produce bed, the inner portion of the spray being deposited by gravity on the inner portion of the produce bed, although its distribution there is aided by the moving air currents caused by the air stream emerging from passageway 28. In this manner the spray is prevented from being picked up by extraneous air currents and deposited on the floor around the case. Inasmuch as the air current is thus continuously moving over, through and under the produce bed, the intermittently deposited moisture is effectively evaporated to provide efficient cooling of the produce and to prevent excess moisture thereon which might result in water logging. I have found from experience with my device that produce which, on ordinary display stands, will spoil in one day or less, may be kept in a crisp, freshened condition for a week or more in any climate.

A drain pipe 43 has its inlet communicating through the drain wall 9 and its outlet extending outwardly through a side wall 5 for connection with a suitable plumbing outlet, not shown.

I have found that the circulating air stream may be prevented from becoming saturated or objectionably humid due to the absorbed moisture, by means of providing the auxiliary air inlets 50 to permit air to enter the chamber 10 from points remote from the spray area. By providing these auxiliary inlets in the relatively higher end walls the air entering through those inlets is relatively dry and acts to dilute the air stream being circulated through the wetted produce bed.

By providing the illuminating tubes 60 behind the spray members 52—or so that the mist spray delivered by the spray members will be between the illuminating tubes and the eye of the observer around the case—as the spray is intermittently operated an attractive rainbow effect of colors is thus created by the light and spray combination and arrangement.

A preferred and novel spray member 55 is shown in Fig. 5 and is of a type to produce an umbrella-type spray. It consists of a body 70 having a threaded opening to receive threaded nipple 71, arms 72 preferably being made of a pliable material, and having at its lower end a boss presenting a threaded opening to receive a threaded impact member 73 which may be locked in any adjusted position by a lock nut 74. Nipple 71 has a longitudinal bore 71*a* in which is force fitted a tube 75 having an extremely small bore 75*a*. Nipple 71 is externally threaded to screw into the water supply pipe 52.

While I have resorted to considerable detail in describing these particular adaptations, I have done so only to make my invention clearly understandable. Other modifications and adaptations may be made within the broader scope of my invention as defined by the following claims.

I claim:

1. A produce display stand of the class described comprising, in combination, walls forming a chamber therebetween, the topmost of which walls has air passing openings therethrough and provides a produce support, a hollow hood extending longitudinally of the topmost wall in position spaced medially thereover, said hood being narrower than the width of the topmost wall and presenting around its peripheral edge a restricted air discharge passageway opening parallel to the outer edge of the topmost wall and being disposed in an outward and downward direction defined by a straight line leading between the periphery of the topmost wall and said

passageway, a blower having its inlet communicating with the chamber whereby to create a subatmospheric pressure therein to move air downwardly through the openings in the topmost wall as well as the produce supported thereon and having its outlet discharging into the hood whereby to direct an air stream through said air discharge passageway directly towards the outer edge of the topmost wall, and a row of spray nozzles disposed under and adjacent the hood in position spaced inwardly from said air discharge passageway, said nozzles being positioned exterior of and adjacent the air discharge passageway out of the direct path of the air stream whereby the outer portion of the spray produced by the nozzles will be induced into the air stream and the remainder of the spray will gravitate onto the produce supported on the topmost wall.

2. In a device of the class described, the combination of a produce support, a hood positioned medially over the support, air directing means extending circumferentially of the hood, a blower communicating with said air directing means for forcing an air stream therethrough and means for creating a mist spray adjacent the bottom of the hood and within the area surrounded by the air directing means whereby to be out of the direct path of the air stream, said air directing means being disposed in a plane defined by a line extending outwardly and downwardly therefrom and intersecting the outer edges of the produce support whereby to direct and confine the spray deposit area to the area of the produce support.

3. A produce display stand of the class described comprising, in combination, walls defining a box-like structure providing a chamber, the topmost of said walls having air-passing openings therethrough communicating with the chamber and being adapted to support produce thereon, a hollow hood supported in position spaced above the topmost wall, a blower having its inlet communicating with said chamber and its outlet communicating with the interior of the hood, a restricted air outlet passageway along the periphery of the hood, said passageway being disposed in a plane defined by a straight line extending between the outer periphery of the passageway and the outer periphery of the said topmost wall whereby to direct a stream of air directly towards the last-named periphery, and spray means adjacent but removed from the direct path of the air stream whereby spray created thereby will be induced into the air stream and be thereby deposited upon produce supported on the topmost wall.

CHARLES K. GODFREY.