Dec. 13, 1949 B. POOLE 2,491,015

METHOD FOR STERILIZING WOODEN BASKETS

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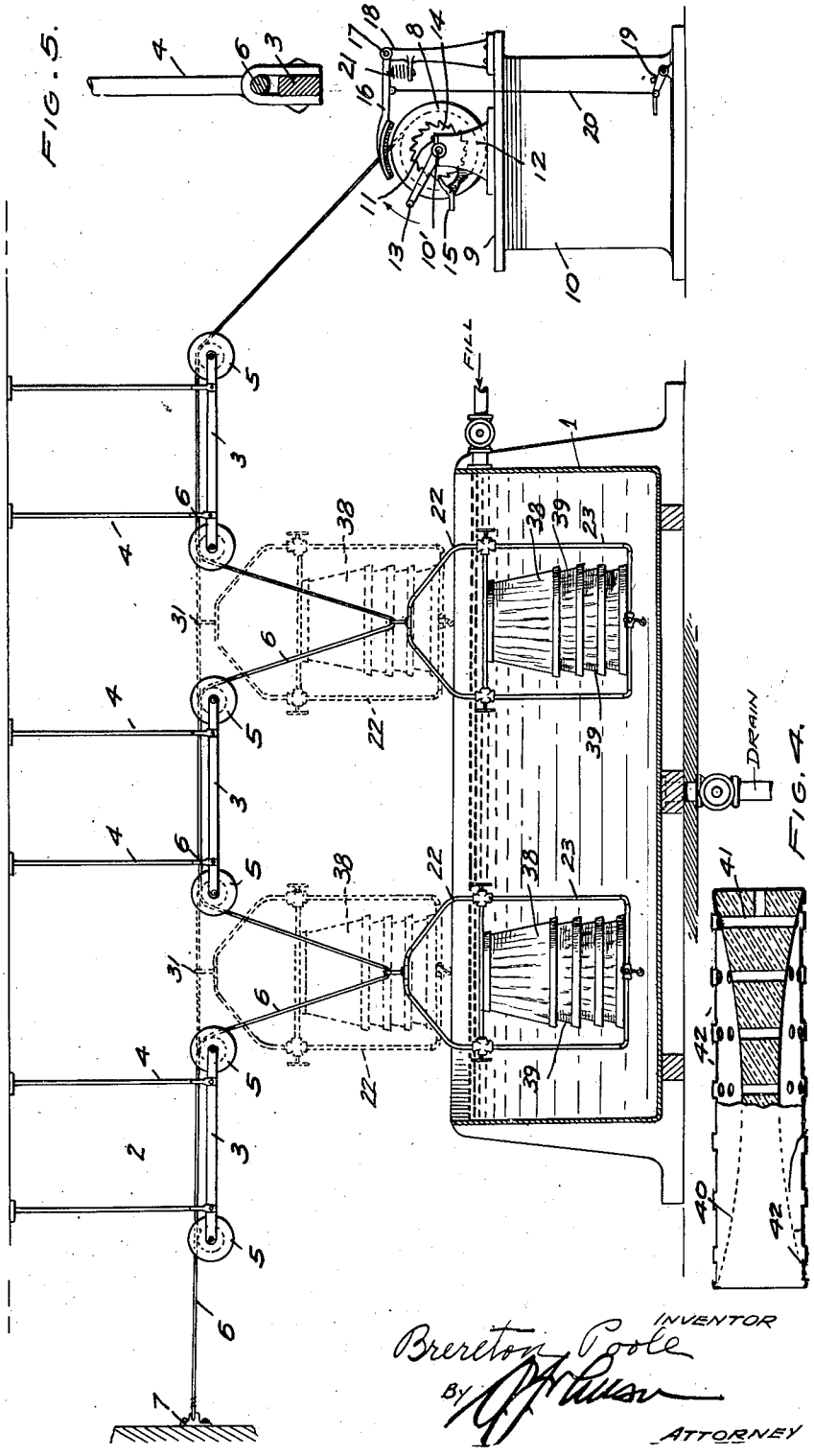

FIG. 1.

FIG. 4.

FIG. 5.

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FIG. 3.

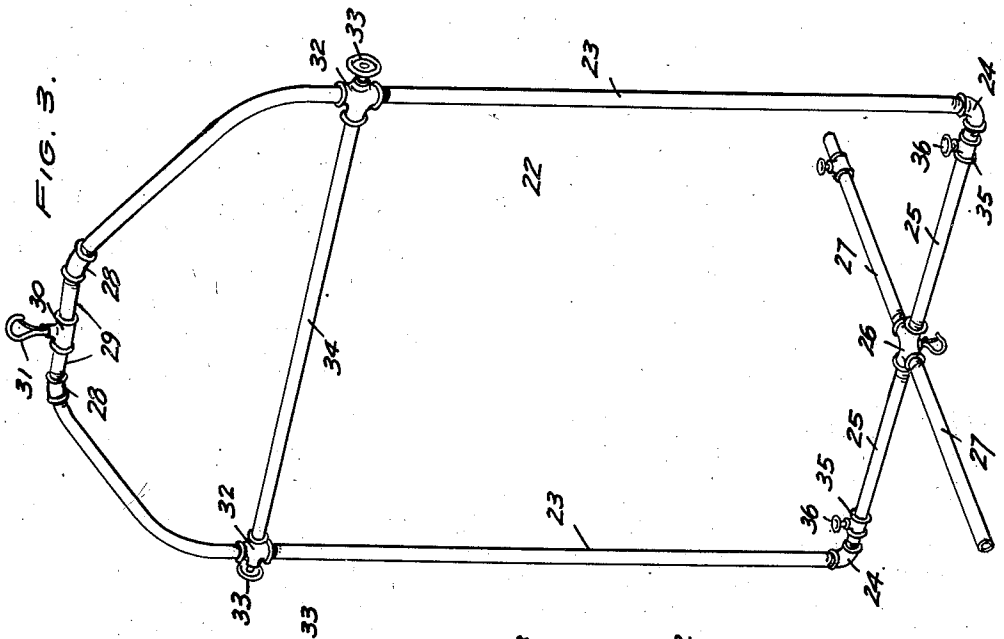
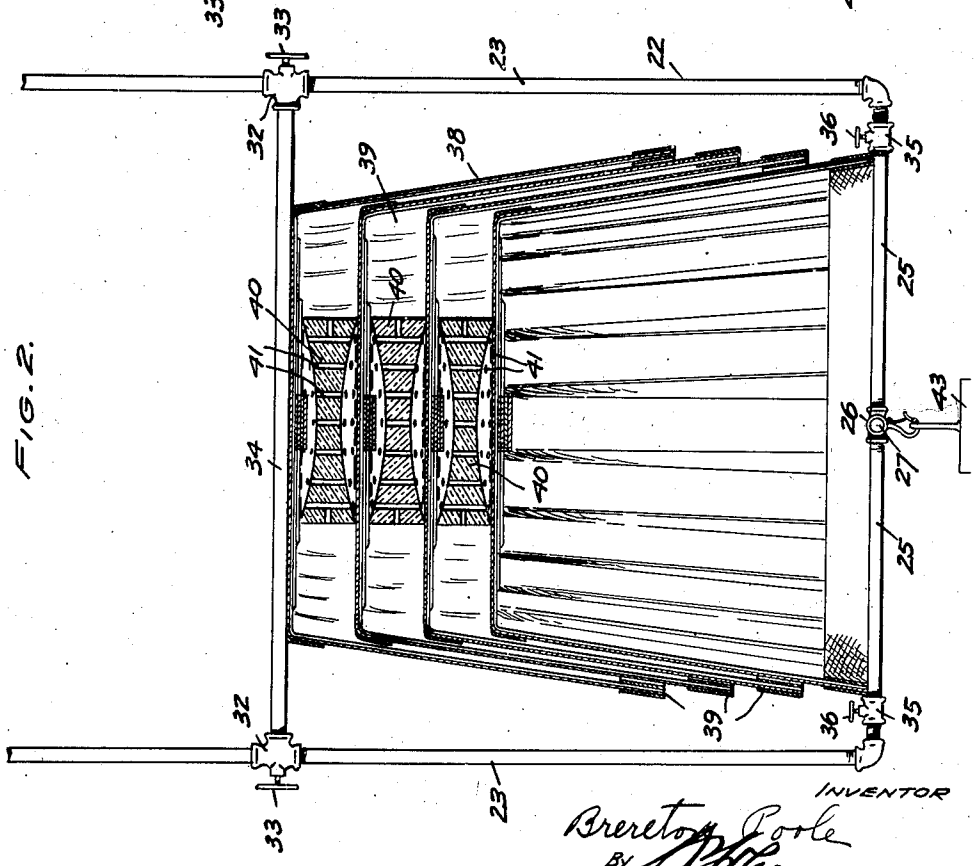


FIG. 2.



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METHOD FOR STERILIZING WOODEN BASKETS

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3 Claims. (Cl. 21—2)

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This invention relates to a method and apparatus for sterilizing and reconditioning wooden produce baskets. These baskets are of the kind extensively used for handling and shipping fruits and vegetables, and are used in enormous quantities. They are made of thin wooden strips or veneer, somewhat narrower at the bottom than at the top, the strips being spaced somewhat for ventilation of the contents. They are made in various sizes the most popular being one half bushel and five eighths bushel, and vary in size accordingly. They are all substantial and capable of being used many times, but because of some prohibitions in some States, their continued use is not allowed.

The shape of the baskets is such that in handling, they are nested closely together with the result that a very considerable number can be handled as a unit, but in practicing the method about to be described, the baskets are not completely nested, but sufficiently spaced, one from the other, to allow the sterilization fluid to reach all parts of the baskets, since the method contemplates the immersion of the spaced or partially nested baskets in bundles of convenient size for handling and the immersion forcefully in a suitable sterilizing fluid, the baskets constituting the bundle being supported in a suitable holder in inverted position.

In the drawings:

Figure 1 is a schematic view in side elevation of an apparatus by which the method may be practiced, including the tank, basket holders, means for suspending the baskets and means for operating the suspending means.

Figure 2 is an enlarged section showing a part of the holder with a number of baskets mounted thereon and spaced apart by spacers.

Figure 3 is a perspective view of the holder.

Figure 4 is an enlarged sectional view of a spacer which may be employed for spacing the baskets, and

Figure 5 is a fragmentary detail of one of the hanger rods.

It is conceived that the holders may be mainly and conveniently made of pipe lengths and pipe fittings such as couplings, T's, elbows, four-way fittings, etc., altough obviously other suitable materials may be used.

Referring to the drawings, and particularly to Figure 1, the numeral 1 designates an oblong tank which will be of any suitable length and which will contain any suitable and appropriate sterilizing fluid or bath, of a depth

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suitable for immersing such numbers of partially nested baskets as may be expedient.

Above the tank and extending longitudinally and centrally thereof is a broken rail designated as a whole by the numeral 2 made up of any desired number of secions 3, three in the present instance, suspended above the tank by hangers 4 which may be attached at their upper ends to the ceiling or to some other suitable support above the tank. Each section is provided at each end with a grooved roller 5, over which runs a cable 6, preferably wire of suitable gauge to sustain the weight of such number of holders and their baskets as may be employed. One end of the cable is attached to a support 7 at one end of the tank and the remaining part of the cable is wound over a drum 8 preferably supported on the platform 9 of a pedestal 10. The drum is mounted on a shaft 10' in bearing 11 in standards 12 on the platform 9, and the shaft is provided with a crank 13 by which the drum may be conveniently rotated to wind the cable thereon and permit it to unwind to furnish the necessary slack in the cable when required, as will more fully appear. There is preferably mounted on the drum shaft, a ratchet wheel 14, normally engaged by a pawl 15, to prevent retrograde movement of the drum when the cable is being wound thereon, which pawl may be manually, or otherwise released to permit the cable to rapidly unwind under the weight of the various holders and the bundles of baskets that may be supported by the cable. There is a brake 16 on the platform 9 whose outer end is pivoted at 17 to the upper end of a standard 18 on the platform, there being mounted on the bottom of the pedestal, a treadle 19 connected with the brake by a cord 20, so that upon the operation of the treadle, the brake may be forcefully held against the drum, there being a spring 21 for returning the brake to non-contacting position.

The hangers 4 are bifurcated at their lower ends and embrace the rail sections 3, the bifurcation serving also as a guide and centering means for the cable 6 in its longitudinal movements over the pulleys, and also serving to prevent lateral movement of the cable in attaching the holders thereto and the removal of the holders therefrom.

Referring particularly to Figure 3, the numeral 22 generally designates the basket holder comprising two identical oppositely disposed side rods 23 which may be of any suitable size standard pipe. For convenience of description of the

holder, it will be described in terms of pipe fittings, etc., although, as stated at the outset, the holder may be made of any suitable material, for instance of metallic strips of suitable width, fastened together by any suitable means and shaped to support the baskets in suitable manner during the operation of immersing them in the bath and otherwise handling them in the holders, as may be required.

The side rods 23 are pipe lengths, threaded at their lower ends for attachment to elbows 24, whose other ends receive comparatively short pipe sections 25, which are screwed into the threaded openings in a four-way fitting 26, whose other arms receive the threaded ends of short pipe sections 27, the pipe sections and fitting form a spider upon which the lower edge of the lowermost basket of a bundle of backets rests, in the immersing operation, as will more fully appear.

The pipe rods 23 are connected at their upper ends by couplings 28 to short pieces 29 whose inner ends arec onnected by a T-coupling 30, to which is attached a snap fastener 31, for attaching the holder and its lot of baskets to the cable. Vertically adjustable on the side rods are T-fittings 32, slightly modified for the reception of hand wheels 33. These fittings are connected by cross rod 34 adapted to engage the bottom of the uppermost basket of the bundle of baskets on the spider at the lower end of the holder. Slidable on the pipe sections 25 at the lower end of the holder are T-fittings 35, modified to receive hand wheels 36. These fittings are slidable on the sections 25, and adapted to be positioned on the sections, in engagement with the periphery of the lower edge of the lowermost basket of the bundle, since it will be understood, the baskets vary in size and their lateral movement is, by this means, prevented. A fitting 37 is provided on one of the pipe sections 27, so that, with the fittings 35, the bundle of baskets is given a three-way support against lateral movement, it being preferred to leave off the fitting on one of the sections 27, so that the bundle of baskets can be more conveniently placed on the spider, or removed therefrom, from and toward the operator.

Referring to Figure 2, the numeral 38 designates a bundle of incompletely nested or spaced baskets 39, with the lower edge of the lowermost basket resting upon the arms of the spider, with the adjusting sleeves or fittings 35 in engagement with the lower outer periphery of the lowermost basket, to, as intimated, stabilize the bundle on the spider. As clearly shown the baskets are not completely nested but, of necessity, in carrying out my method, they are spaced apart by the introduction of spacers 40, which may be molded of glass or other suitable material and provided with numerous perforations 41, so that the sterilizing liquid may pass through them and fully contact the area of the basket bottoms occupied by the spacers. The spacers are interposed between the inner bottom of one basket and the outer bottom of the adjoining one, the baskets thus spaced permitting the sterilizig solution to reach every part of all of the baskets. The spacers are circular and double concave in form with serrated edges 42, so that there are few points of contact between the baskets and the spacers, and these so small as to not interfere in any appreciable degree with the free circulation of the sterilizing liquid and assuring their complete sterilization.

The weight of the bundle of baskets will of course vary according to the number of baskets treated at one time, and they will have a certain buoyancy which must be taken into consideration in the immersing operation. The holder being of metal will, according to its weight be ordinarily enough to sink the baskets rapidly, but the holder may be provided with a weight such as 43 attached by snap fastener to the central fitting 26 of the holder.

In the orderly carrying out of the method, I assemble the baskets preparatory to their immersion in the sterilizing bath. I start with the first basket in inverted position by placing a spacer centrally on the bottom thereof, and add baskets to the bundle, placing a spacer between each basket, until the bundle has reached the desired size. This bundle is then placed upon the spider and the cross rod 34 brought firmly into contact with the bottom of the uppermost basket and the rod secured in position by the hand wheels 28, thus firmly seating the bundle on the spider. Of course the bundle may be assembled on the spider in the first place. The holders with their basket loads are then hung on the cable and the cable given slack as shown in full lines in Figure 1 and the holders and baskets are then lowered into the sterilizing bath in the tank to a depth to completely submerge them, and allowed to remain therein for a time sufficient to thoroughly sterilize them, when by winding the drum, the holders and baskets are removed from the bath. It is preferable to suspend them for a time over the bath to sufficiently drain them, or remove them expeditiously to a drier tunnel which may be provided adjacent the tank.

Obviously, the rapidity with which the baskets are submerged may be manually controlled from the drum; that is to say, they may be lowered into the sterilizing fluid, or dropped rapidly or plunged into the fluid, it being conceived that the rapid immersion or quick plunging of the baskets will force the solution rapidly up between their sides and over their bottoms.

In immersing the baskets, the sterilizing fluid passes rapidly through the spaces between the veneer strips of which the baskets are made and the fact, as has already become apparent, that the sides and bottoms of the baskets are spaced from each other, there will be nothing to prevent the fluid from contacting all parts of the baskets.

At the outset it was stated that the most popular sizes of baskets were one half bushel and five eighths bushel. To this should be added the bushel size which is probably the most numerous of all. The baskets have different constructions, as some have continuous staves with spaces between them, others with no spaces, and some made with solid disk bottoms, but all can be thoroughly sterilized by reason of immersing them in inverted position and spacing them apart, as obviously when the baskets are in such position the sterilizing solution can pass up and around the bodies of all of them, and drain rapidly from them when the bundle is lifted from the solution.

The tank will be of a depth to contain a depth of sterilizing fluid sufficient to enable the whole bundle of baskets to sink rapidly for a sufficient distance to force the fluid between the baskets and the fluid may be colored to give distinction to the baskets of particular users, to act in a quasi

trade mark capacity and to obliterate any markings that may have been placed upon the baskets in their original condition.

I claim:

1. The method of sterilizing and reconditioning nestable wooden produce baskets, comprising spacially nesting a plurality of baskets and stabilizing said baskets in such relative position, and immersing the bundle of baskets thus formed in inverted position in a suitable sterilizing liquid whereby the liquid may be brought in contact with all of the surfaces of all of the baskets.

2. The method of sterilizing and reconditioning produce baskets, comprising spacially nesting a plurality of baskets and stabilizing such baskets in such relative position and rapidly sinking the bundle of baskets thus formed with the baskets in inverted position in a suitable sterilizing liquid, whereby the liquid is brought forcefully in contact with all of the surfaces of all of the baskets.

3. The method of sterilizing and reconditioning produce baskets, comprising spacially nesting a plurality of baskets and stabilizing such baskets in such relative position and passing the bundle of baskets thus formed through a suitable sterilizing liquid in a manner to forcefully bring said liquid in contact with the interior and exterior surfaces of all of the baskets.

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