June 30, 1953 J. P. BUNCE 2,643,662

CONTAINER HAVING A MOVABLE BOTTOM

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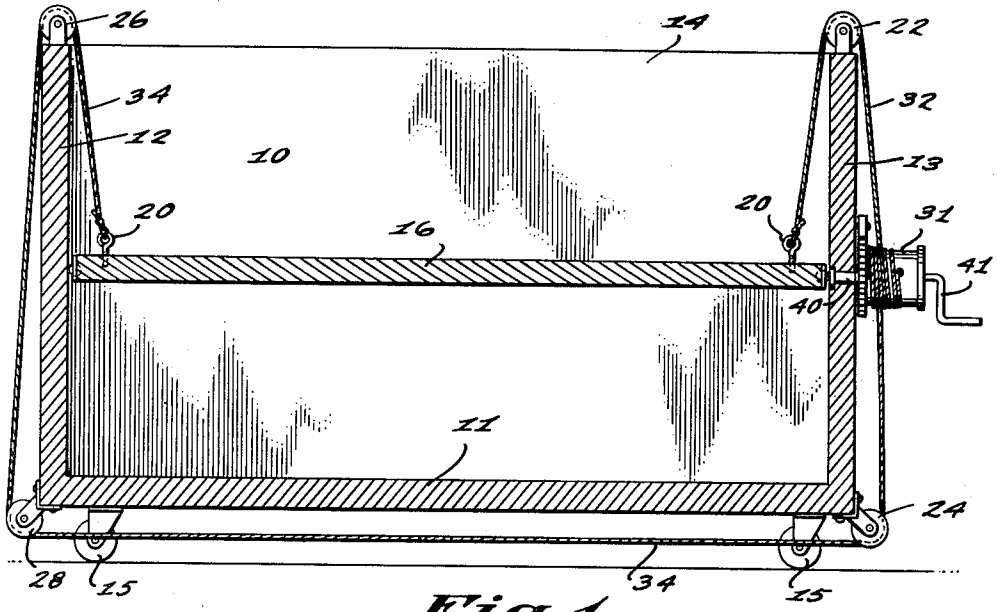


Fig. 1

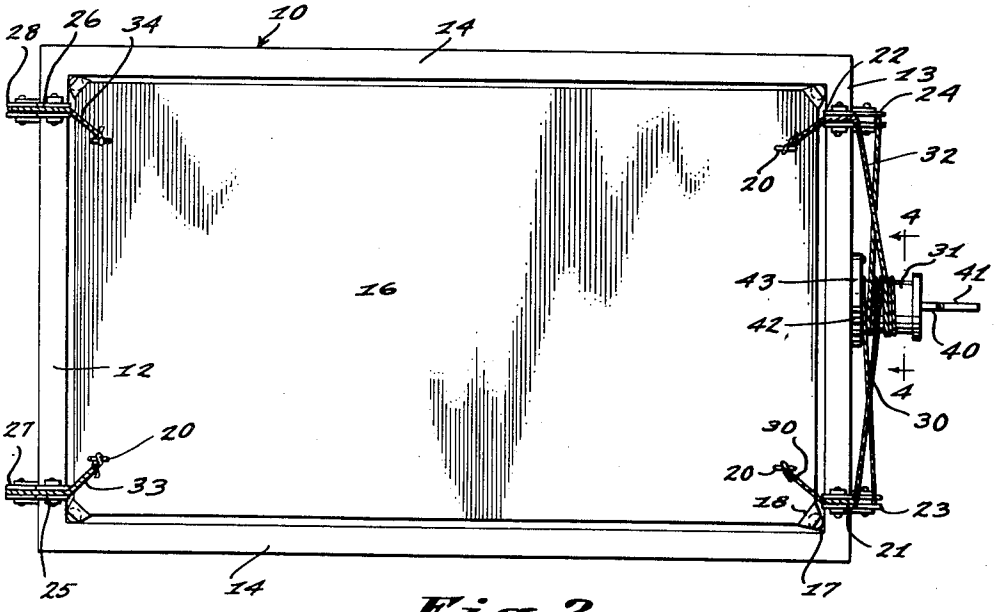


Fig. 2

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Fig. 3

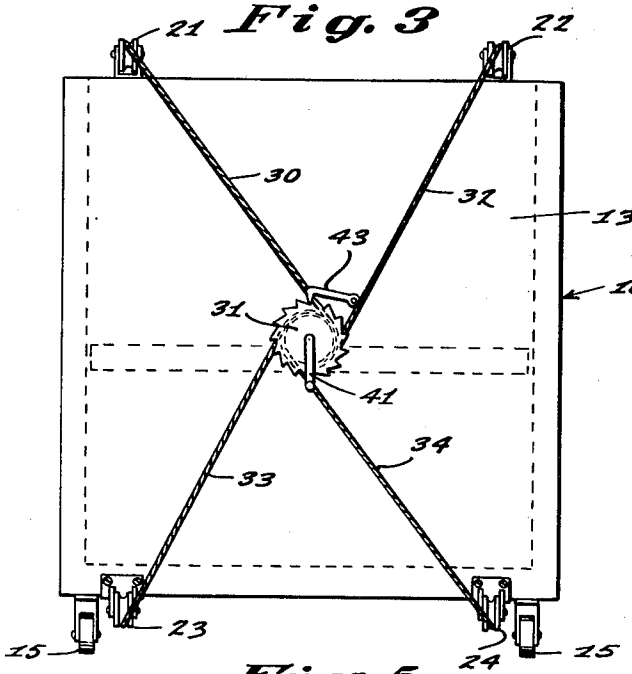


Fig. 5

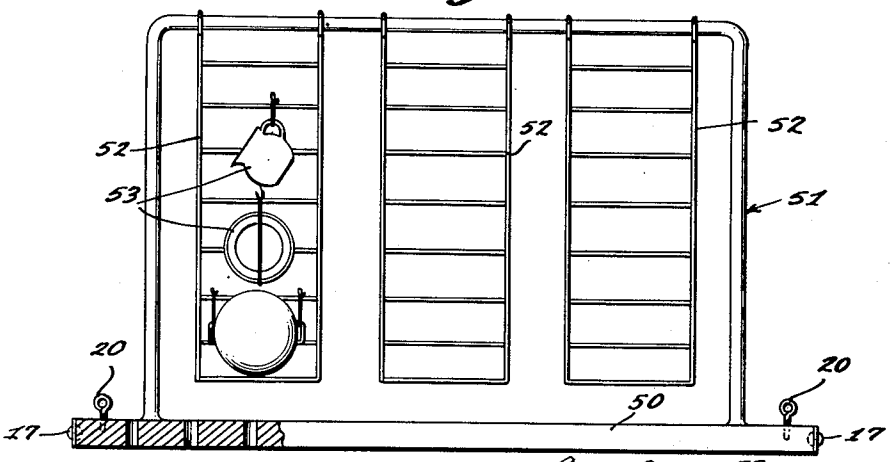


Fig. 4

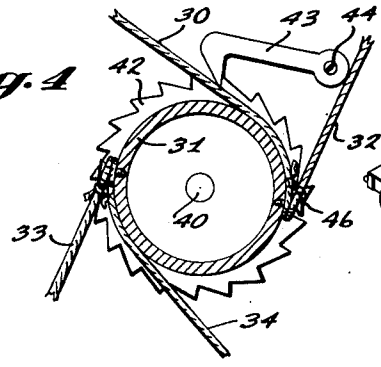
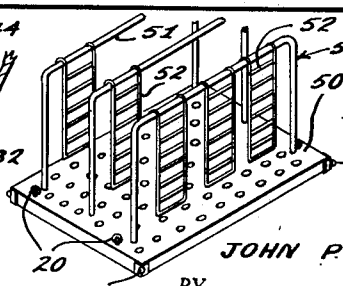


Fig. 6



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Patented June 30, 1953

2,643,662

UNITED STATES PATENT OFFICE

2,643,662

CONTAINER HAVING A MOVABLE BOTTOM

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Application April 9, 1948, Serial No. 20,043

2 Claims. (Cl. 134—164)

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This invention relates to a container or tank having a movable false bottom.

An object of the invention is the provision of a container or tank having a false bottom which may be raised at the will of the operator for bringing into view articles or materials placed on the false bottom. The bottom being elevated and supported at predetermined heights in the container by a mechanism mounted exteriorly on end walls of the container.

A further object of the invention is the provision of a container having a perforated false bottom which is adapted particularly for raising or lowering racks containing articles in the container filled with a plating solution, the false bottom being operated by a series of cords or cables trained on pulleys mounted in pairs at the top and bottom of each end wall, the ends of the cables being connected between the ends of the bottom and a manually rotated drum upon which the cables are wound for raising the false bottom. A ratchet and pawl cooperate to retain the drum against rotation while the false bottom is disposed in an elevated position.

This invention is best understood from a consideration of the following detailed description in connection with the accompanying drawings, nevertheless, it is to be understood that the invention is not confined to the disclosure but is susceptible of such changes and modifications as shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a vertical longitudinal section of tank showing a false bottom retained in an elevated position,

Figure 2 is a top plan view of the device shown in Figure 1,

Figure 3 is an end view in elevation of the device showing the manually operated mechanism for raising or lowering the false bottom,

Figure 4 is an enlarged vertical section taken along the line 4—4 of Figure 2 showing a drum and ratchet mechanism for retaining the elevated false bottom in position,

Figure 5 is an end view in elevation of a modified form of false bottom provided with article supporting racks, and

Figure 6 is a reduced view in perspective of the false bottom and racks illustrated in Figure 5.

Referring more particularly to the drawings, 10 designates a container which may be a tank, bin or box and which may have various dimensions depending upon its use. In Figures 1 and 2, the container may be employed for storing vegetables or various articles. The container is preferably rectangular although it may be oval or circular and has a main bottom 11, end walls 12 and 13 and side walls 14. The bottom is equipped with casters 15 so that the tank may be moved over a surface and raised above said surface.

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An imperforate false bottom 16 conforms to the configuration of a horizontal section of the tank but is of slightly smaller dimensions so that the bottom may be raised or lowered readily in the tank. A ball bearing 17 is mounted in a casing 18. A casing, in turn is secured in a pocket at each corner of the false bottom. The bearings or rollers ride in the four corners of the tank and thus eliminate friction. Eyes or hooks 20 rise from the four corners of the false bottom.

A pair of pulleys 21 and 22 are mounted on the top of the end wall 13 while a pair of pulleys 23 and 24 extend downwardly and outwardly from the lower edge of said end wall. Pairs of pulleys 25—26 and 27—28 extend respectively from the upper and lower edges of the end wall 12. A cable 30 has its opposite ends connected between one eye 20 at one corner of the bottom 16 and a drum 31, and is trained on the pulley 21. A cable 32 is trained on the pulley 22 and connected between an eye 20 on said drum. A cable 33 is trained on pulleys 25, 27 and 23 and connected between an eye 20 and the drum 31.

A cable 34 is connected between an eye 20 and the drum and trained on the pulleys 26, 28 and 24.

The drum 31 is secured to a shaft 40 mounted in bearings in the end wall 13. A crank 41 is formed integrally with the shaft for revolving the drum. A ratchet wheel 42 is secured to the drum and revolved therewith. A pawl 43 engages the teeth of the ratchet and is pivoted at 44 on the end wall 13.

In Figures 5 and 6 is shown a modified form of the false bottom illustrated in Figures 1 and 2. The bottom 50 is perforated and is adapted particularly for use in a tank filled with a plating solution. The eyes 20 and ball bearings 17 are carried by the bottom 50.

A plurality of U-shaped frames 51 is mounted on the false bottom and racks 52 are suspended from the bight portions of the frames. Articles 53 to be plated are hung or supported on the racks in any approved manner.

My device is operated in the following manner.

If the false bottom 16 or 50 is resting on the main bottom 11 of the tank or container 10, it is raised by rotating the crank 41 and likewise the

drum 31. All of the cables are wound on the drum in the same direction and elevate the false bottom. The pawl 43 riding on the ratchet 42 will be in a position to engage a tooth of the ratchet and retain the drum against reverse movement while holding the false bottom in a predetermined position until the pawl is released manually.

When the bottom 16 is raised, articles of various kinds or vegetables may be stored on said bottom and the bottom is lowered so that a greater quantity of goods may be packed in the container. However, certain products as vegetables, may be placed in the container when the false bottom is resting on the main bottom. When it is desired to remove some or all of the products, the false bottom may be raised in stages until all of the products have been removed.

When the tank has been filled with a plating solution, the perforated bottom 50 together with the U-shaped members 51 and racks 52 are employed. The bottom is raised sufficiently so that the articles 53 may be applied to the rack. When the racks are full, the bottom is lowered by the release of the pawl 43 with the operator controlling the reverse rotation of the crank 41. The false bottom is raised when the plating operation has been completed. This device eliminates the old method of manually placing the racks equipped with articles in the tanks and removing said racks in the same manner.

What I claim is:

1. In a tank having a bottom wall and first and second end walls rising therefrom and means for spacing the bottom wall of the tank from a surface on which the tank is supported, a false bottom positioned within the tank, pairs of laterally spaced upper pulleys mounted on and rising above the upper ends of said end walls, pairs of laterally spaced lower pulleys mounted on and depending from the lower ends of said end walls to a level below the tank bottom wall, a cable drum mounted centrally on said first end wall at the side thereof remote from the false bottom, said cable drum being positioned with its axis perpendicular to the said side of said first end wall, a pair of cables at each side of the tank, each pair consisting of a first cable trained over the upper pulley on said first end wall at the related side of the tank and secured at one end to the drum and at its other end to the adjacent end of the false bottom at the side thereof adjacent to such upper pulley, a second cable trained under the lower pulley on said first end wall at the same side of the tank as said first cable and beneath the tank bottom wall and under the lower pulley on the second tank end wall at the same side of the tank and over the upper pulley of the second tank end wall at the same side of the tank, the second cable being secured at one end to the cable drum and at its other end to the other end of the false bottom at the related side of the tank, and means for rotating said drum to raise and lower the false bottom in the tank.

2. In a tank having a bottom wall and first and second end walls rising therefrom and means for spacing the bottom wall of the tank from a surface on which the tank is supported, a false bottom positioned within the tank, pairs of laterally spaced upper pulleys mounted on and rising above the upper ends of said end walls, pairs of laterally spaced lower pulleys mounted on and depending from the lower ends of said end walls to a level below the tank bottom wall, a cable drum mounted centrally on said first end wall at the side thereof remote from the false bottom, said cable drum being positioned with its axis perpendicular to the said side of said first end wall, a pair of cables at each side of the tank, each pair consisting of a first cable trained over the upper pulley on said first end wall at the related side of the tank and secured at one end to the drum at its other end to the adjacent end of the false bottom at the side thereof adjacent to such upper pulley, a second cable trained under the lower pulley on said first end wall at the same side of the tank as said first cable and beneath the tank bottom wall and under the lower pulley on the second tank end wall at the same side of the tank and over the upper pulley of the second tank end wall at the same side of the tank, the second cable being secured at one end to the cable drum and at its other end to the other end of the false bottom at the related side of the tank, and means for rotating said drum to raise and lower the false bottom in the tank, the upper and lower pulleys at each side of the tank being vertically aligned, and said cable drum being located intermediate the upper and lower pulleys and midway between the pulleys at the opposite sides of the tank.

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