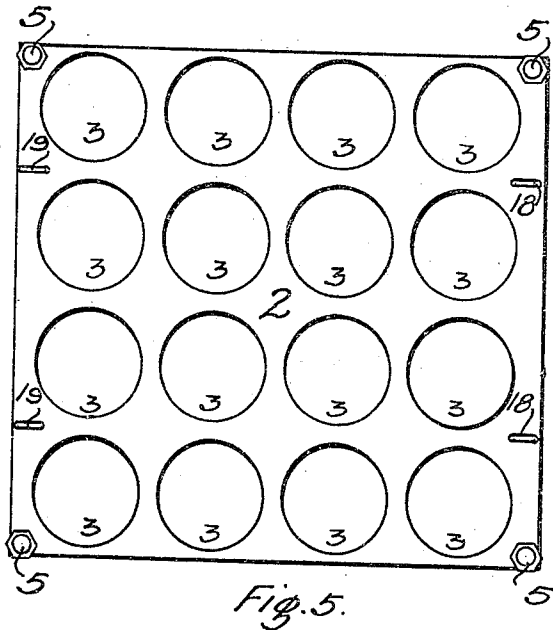
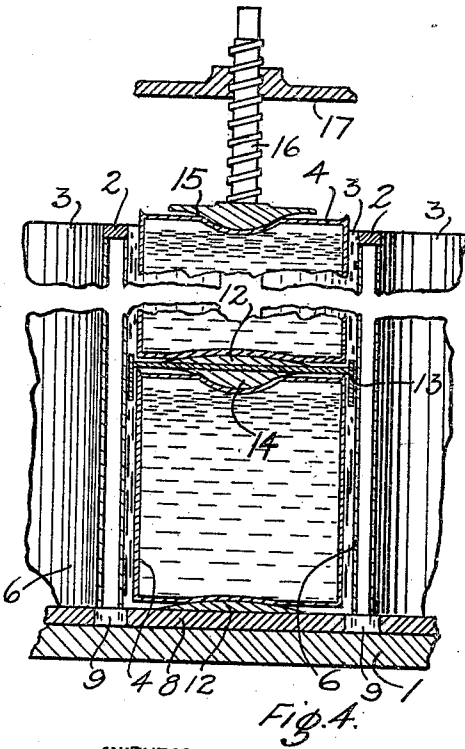
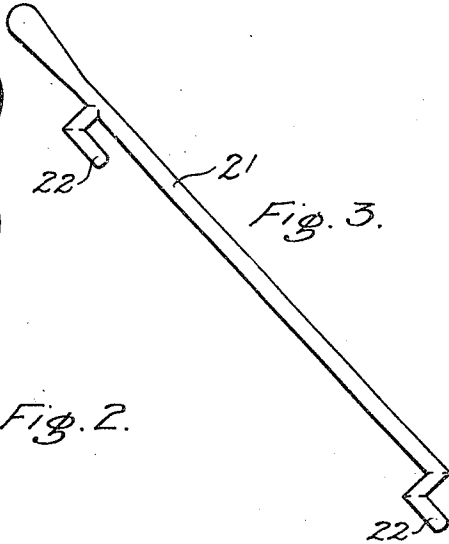
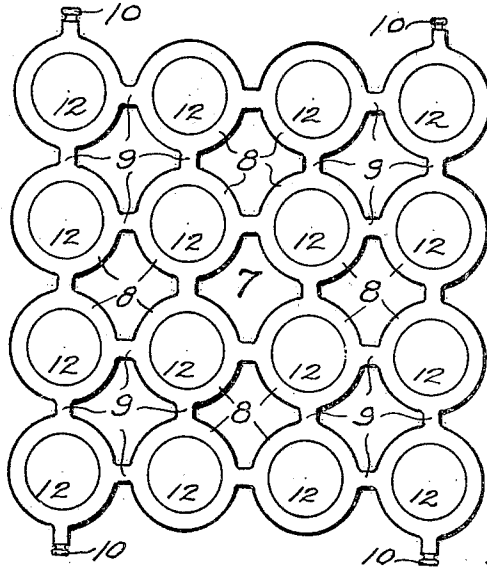


J. B. FROST.
CAN ANTIBUCKLING PRESS.
APPLICATION FILED NOV. 27, 1908.

957,323.

Patented May 10, 1910.

3 SHEETS—SHEET 2.



WITNESS:
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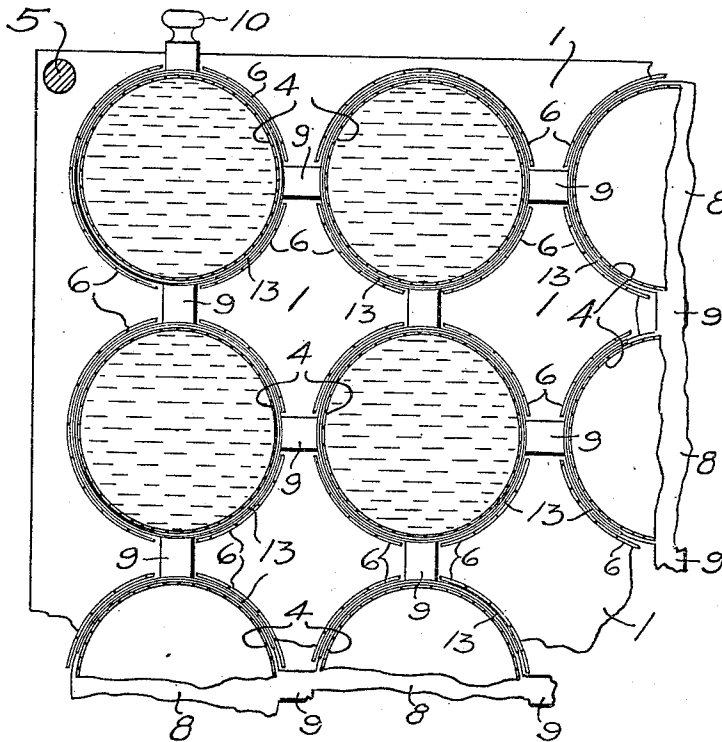


Fig. 6.

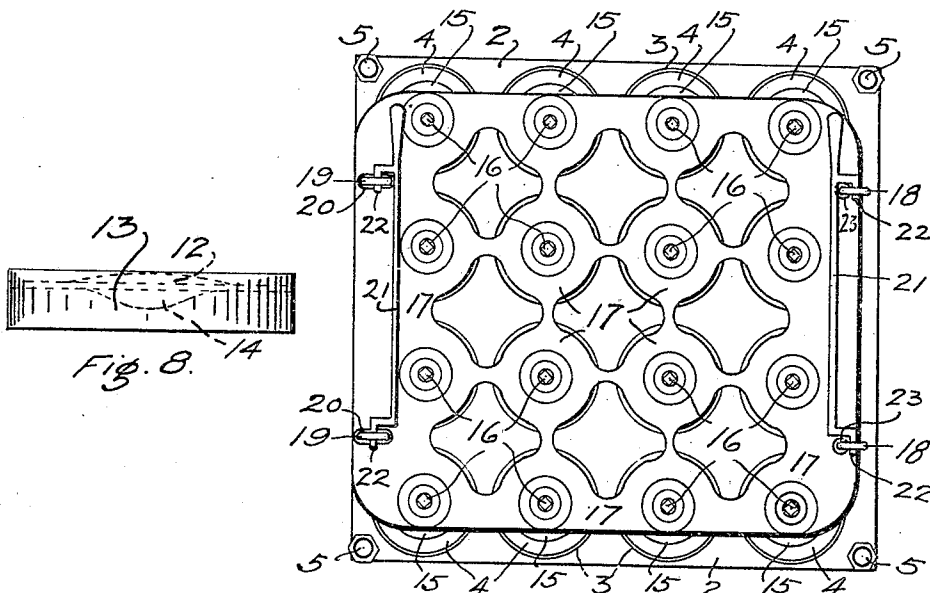


Fig. 7

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UNITED STATES PATENT OFFICE.

JOHN B. FROST, OF BUCKLEY, WASHINGTON, ASSIGNOR OF ONE-HALF TO FRANK WENKE, OF BUCKLEY, WASHINGTON.

CAN-ANTIBUCKLING PRESS.

957,323.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed November 27, 1908. Serial No. 464,652.

To all whom it may concern:

Be it known that I, JOHN B. FROST, a citizen of the United States of America, residing at Buckley, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Can-Antibuckling Presses, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to devices for preventing the buckling of cans, containing fruit or vegetables, when cooled after sealing and has for its object to provide a means for indenting the top and bottom plates of all the cans as they are cooled so as to relieve the strain due to the vacuum developed in the can.

My invention is designed for use in large canning factories and is adapted to operate on a group or batch of cans numbering in practice from 64 or more.

I attain these objects by the devices and mechanisms illustrated in the accompanying drawings in which—

Figure 1 is a side view of my press in use; Fig. 2 is a plan of the carrier plate or grid; Fig. 3 is a plan of one of the locking bars; Fig. 4 is a vertical section of the upper and lower parts of a stack of cans in the press; Fig. 5 is a plan of the top plate of the press frame; Fig. 6 is a horizontal section of a group of four stacks of cans in the press; Fig. 7 is a plan of the press in use showing especially the pressure plate; and Fig. 8 is a side elevation of one of the separating caps.

Similar numerals of reference refer to similar parts throughout the several views.

The frame of this press consists of a bed plate 1, a top plate 2, having holes 3 for the cans 4 to pass through, and joined to the bed plate 1 by means of bolts or rods 5 at the corners thereof. Between the plates 1 and 2, and surrounding the holes 3 and the cans therein, are the split cylindrical guides 6. A grid or carrier plate 7 (Fig. 2), which consists of a number of circular carriers 8 joined together by arms or webs 9, is mounted between the plates 1 and 2 in such manner that the circular carriers 8 may slide vertically in each of the cylindrical spaces formed by the guides 6, the webs 9 passing therefrom through the spaces in the split guides. The plate 7 is also provided with lugs or projections 10 extending out beyond

the line of the frame and adapted to be engaged by a chain 11 or any other suitable device whereby the carrier plate 7 and its load of cans 4 can be raised when desired. An indenting piece 12 is secured to or formed on each of the parts 8 and the lowest can of a stack rests on this part 12 so that the weight of the cans and the pressure applied thereto tends to bend the lower end of the bottom cans inward or upward. A number of separating caps 13 are provided, each adapted to fit loosely over the top of a can and provided with a rim extending upward and downward therefrom. The caps 13 are provided on their upper surfaces with indenting pieces 12, such as are above described for the parts 8 of the carrier, and on their lower surfaces with other indenting pieces 14 adapted to press inward the top end of the can. The piece 14 is preferably rather thicker than the piece 12 so that the bend in the tops of the cans is rather greater than that in the bottoms thereof.

As before stated the cans are stacked one above the other, the lower one resting on the carrier plate, and a cap 13 is placed between adjacent cans. The top of the upper can in each stack is pressed downward by a piece 15 similar to the piece 14 but connected to a vertical pressure-screw 16 which passes through the pressure plate 17. This pressure plate 17 is preferably loosely secured by a hinge-like connection to the top plate 2 of the frame; the said connecting means consisting of the two staples or loop rods 18 (Figs. 1, 5 and 7) one leg of each of which passes loosely through a hole 23 (Fig. 7) near one edge of the plate 17, the said staples 18 being secured to the top plate 2. Another pair of similar staples or loop rods 19 are secured to the other edge of the top plate 2 and extend upward through the slots 20 suitably located in the pressure plate 17. Two removable locking bars 21, each provided with two suitably spaced offsets or pins 22, are inserted into the staples 18 and 19 above the pressure-plate 17 so as to lock it to the top plate 2 against upward movement. When it is so locked the pieces 15 are pressed down on top of each stack of cans by screwing the pressure-screws 16 downward through the plate 17. As the cans cool and the ends are bent they are followed up by forcing downward the pieces 15 by the screws 16. I find that this device completely

prevents the cans from buckling in their sides, thus saving their appearance, and much difficulty in packing, and in many cases saving the contents from spoiling, as the tin of the cans will often crack at the buckled point and will allow air to enter the can.

My device is used in the following manner. When the press is empty the carrier grid 7 is raised by the chain 11 to a point a little below the top plate 2. Then hot, sealed, cans are passed through the holes 3 in the top 2 so that they rest on the grid 7, each can engaging the part 12 thereof. When all the holes 3 have been filled, a cap 13 is placed on each can and then the grid 7 is lowered a distance equal to the length of a can. Then another layer of hot, sealed, cans 4 is placed on top of the caps 13, and a second set of caps 13 is placed on this second layer of cans 4. Then the grid is again lowered and the operation is repeated until the press is full. Then the pressure plate 17 is brought into horizontal position over the top plate 2 and is then locked by inserting the pins 22 between it and the tops of the staples 18 and 19. Then the screws 16 are turned to apply pressure as the cans are cooled. The press is unloaded in the reverse manner. The press will normally stand in a tank of cold water whereby the cans are more quickly cooled.

Having described my invention what I claim is:

1. In a device of the class described, the combination with a frame adapted to hold a stack of cans piled end to end; indenting pieces within the frame and adapted to be placed between adjacent cans to bend the end plates thereof inward; and means for applying pressure to the top of the stack of cans.

2. In a device of the class described, the combination with a frame adapted to hold a stack of cans piled end to end; indenting pieces within the frame and adapted to be placed between adjacent cans to bend the end plates thereof inward; a pressure plate removably attached to the frame; and means engaging the pressure plate for applying pressure to the top of the stack of cans.

3. In a device of the class described, the combination with a frame adapted to hold a stack of cans piled end to end; indenting pieces within the frame and adapted to be

placed between adjacent cans to bend the end plates thereof inward; a pressure plate removably attached to the frame; and adjustable means engaging the pressure plate for applying pressure to the top of the stack of cans.

4. In a device of the class described, the combination with a bed plate; guides secured to the bed plate and adapted to hold a stack of cans piled end to end therebetween; a top plate secured to said bed plate and having holes formed therein to permit the cans to pass therethrough; indenting pieces between the guides and adapted to be placed between adjacent cans to bend the end plates thereof inward; a pressure plate removably attached to the top plate; and adjustable means engaging the pressure plate for applying pressure to the top of the stack of cans.

5. In a device of the class described, the combination with a frame adapted to hold a stack of cans piled end to end and projecting through the top thereof; indenting pieces within the frame and adapted to be placed between adjacent cans to bend the end plates thereof inward; loop rods secured to the top of the frame and projecting upward therefrom; a pressure plate loosely mounted on one set of said loop rods and passing over the other set thereof; lock bars adapted to be placed above said pressure plate and through said loops; and adjustable means engaging said pressure plate for applying pressure to the top of the stack of cans.

6. In a device of the class described, the combination of a bed plate; a top plate secured thereto but spaced therefrom and having can holes therethrough; split cylindrical guides secured to and extending between said bed and top plates and surrounding the can holes; a grid between said bed and top plates and having portions thereof within each of the cylinders formed by the guides and all said portions being joined into a plate by arms which pass through the spaces in the split guides; and means for raising or lowering said grid.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. FROST.

Witnesses:

W. B. OSBOURN,
PAUL E. PAGE.