J. D. WALL.

TIMED EGG BOILER.

APPLICATION FILED DEC. 27, 1915

1,277,158.

Patented Aug. 27, 1918.

2 SHEETS—SHEET 1.

Fig. 1

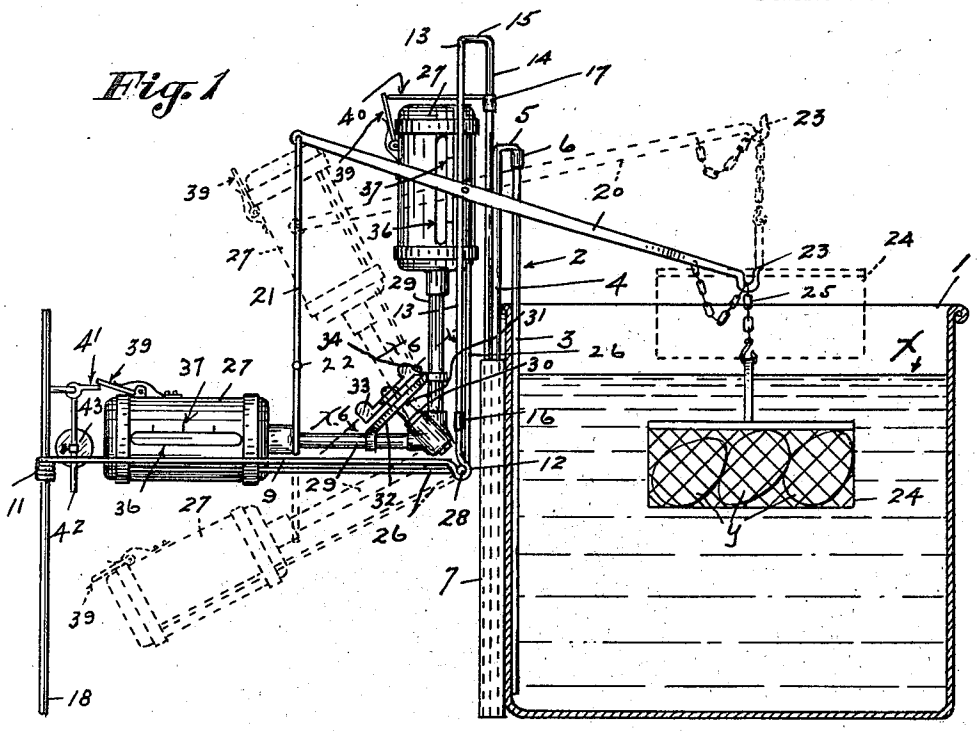


Fig. 2

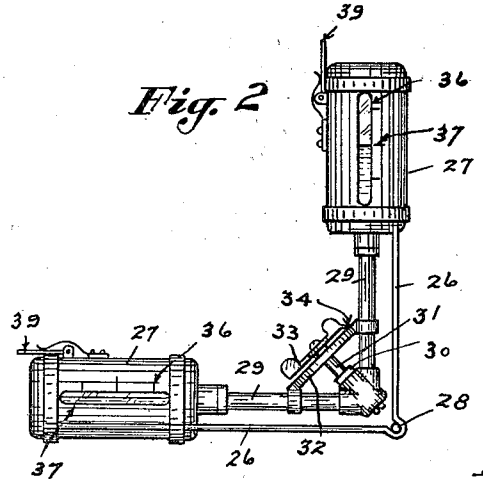


Fig. 3

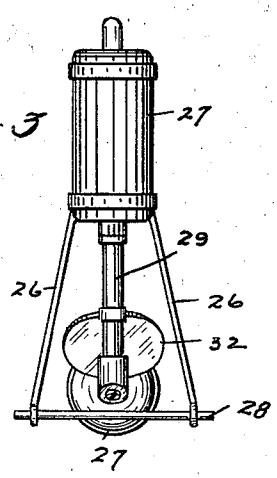
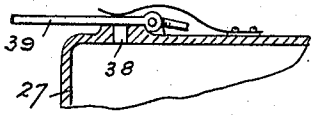


Fig. 4



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5

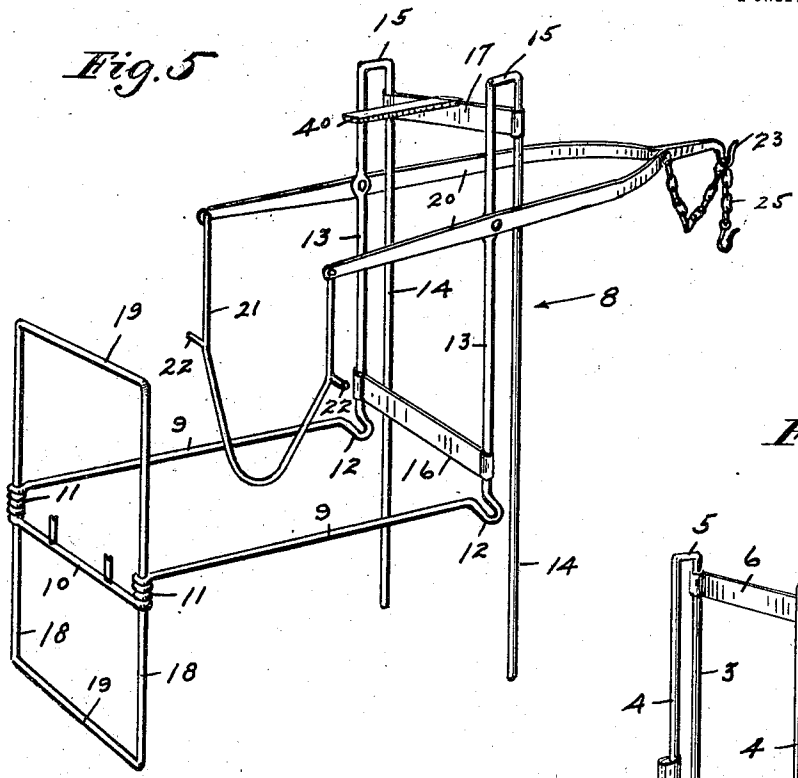


Fig. 6

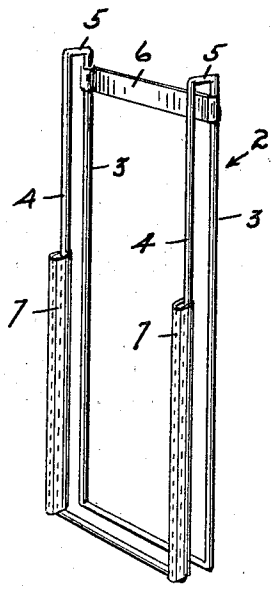
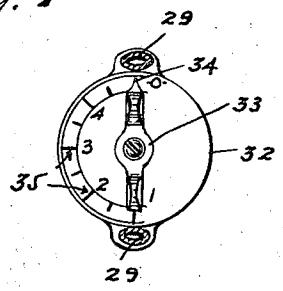


Fig. 7



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UNITED STATES PATENT OFFICE.

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TIMED EGG-BOILER.

1,277,158. Specification of Letters Patent. Patented Aug. 27, 1918.

Application filed December 27, 1915. Serial No. 68,736.

To all whom it may concern:

Be it known that I, JOHN D. WALL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Timed Egg-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved hydraulic timer and elevator intended for general use, but especially adapted for use in boiling eggs. To the above end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings,

Figure 1 is a view principally in side elevation of the invention, some parts being shown in different positions by means of broken lines;

Fig. 2 is a side elevation of the hydraulic motor;

Fig. 3 is a rear elevation of the same;

Fig. 4 is a fragmentary detail view of one of the relief valves of the hydraulic motor, some parts being sectioned;

Fig. 5 is a perspective view of the frame and supporting lever, some parts being broken away;

Fig. 6 is a perspective view of the frame holding bracket; and

Fig. 7 is a detail view with some parts sectioned on the line x^6 x^6 of Fig. 1.

The numeral 1 indicates a pan or receptacle containing water X in which eggs Y are boiled. Detachably secured to the side of the pan 1, is a bracket 2 comprising inner and outer laterally spaced U-shape members 3 and 4, respectively, connected at their upper ends by short transverse rails 5. The bracket members 3 and 4 and rails 5 are preferably made from a single piece of wire and the upper ends of the members 3 are connected by a flat tie bar 6.

Secured to each upright of the bracket member 4, is a long upright sleeve or socket 7, preferably folded from sheet metal. The inner bracket member 3 is extended into the pan 1 and the bracket 2 is held against downward movement on the pan by the engagement of said bracket member 3 with the bottom of the pan 1, or by the engagement of the bracket member 4 with the top of a stove, or other support, not shown, on which the pan 1 rests.

The numeral 8 indicates a supporting frame, also preferably made from wire. Of the parts of this frame 8, the numeral 9 indicates a pair of laterally spaced side rails, having at one of their ends an end rail 10 connected thereto by vertically extended coils 11. The other ends of the rails 9 are bent downward and outward upon themselves to form open trunnion seats 12. Extending upward from each trunnion seat 12 is an upright 13, and extending parallel to each upright 13 in line with the respective side rail 9, is a leg 14, which extends below the side rails 9. Short rails 15 connect the upper ends of the respective uprights 13 and legs 14. A flat tie bar 16 connects the lower end portions of the uprights 13 and a flat tie bar 17 connects the upper end portions of the legs 14. A pair of legs 18 are slidably mounted, one in each of the coils 11 and are connected at their upper and lower ends by top and bottom rails 19, respectively. The legs 18 engage the support on which the pan 1 rests and the side rails 9 are secured to said legs in different vertical adjustments by the frictional engagement of the coils 9 with said legs.

As shown, the side rails 9, and rail 10, coils 11, trunnion seats 12, uprights 13, legs 14 and rails 15 are all made from a single piece of wire. The legs 18 and top and bottom rails 19 are also made from a single piece of wire.

The prongs of a bifurcated lifting lever 20 embrace the frame 8 and are intermediately fulcrumed, one to each of the uprights 13, as best shown in Fig. 5. Pivoted to the prongs or short ends of the lever 20, is a bail 21 which hangs between the frame side rails 9 and is provided with a pair of oppositely projecting stop fingers 22 arranged to engage said side rails 9 and limit the downward movement of the bail 21. On the other or long end of the lever 20, is a hook 23. The eggs Y are placed within a handle-equipped basket 24, preferably constructed from woven wire, and supported in or over the receptacle 1 by a chain 25 connecting the handle of the basket 24 to the hook 23 of the lever 20. The weight of the basket 24 and

the contents therein tip the lever 20 into a position to hold the basket submerged in the water X, and the bail 21 in a raised position, as best shown in Fig. 1. The basket 24 may be supported at different depths within the water X by taking up or letting out the links of the chain 25, which are connected to the hook 23.

The lifting lever 20 is oscillated to lift the basket 24, and hence, the eggs Y out of the water X, by a timed hydraulic motor invertibly mounted on the supporting frame. As shown, this motor comprises a bell-crank lever 26 having at each end a fluid chamber 27. The bell-crank lever 26 is made up of a pair of laterally spaced members secured to the fluid chambers 27. The pivot for the bell-crank lever 26 is in the form of a rod 28 connecting the members of said lever and with its ends forming trunnions removably mounted in the seats 12. A fluid conduit 29 connects the two fluid chambers 27 and has interposed therein a timed valve 30, the stem 31 of which is journaled in a dial 32 secured to said conduit. On the valve stem 31, is a finger piece 33 by which the valve 30 may be operated. Secured to the finger piece 33, is a pointer 34 which coöperates with graduations 35 on the dial 32, representing minutes and half minutes.

Normally, the upper fluid chamber 27 is filled, or substantially filled, with a liquid Z which, when the valve 30 is open, will flow through the conduit 29 into the lower fluid chamber 27. Preferably, the fluid Z is water, but the term herein used is intended to cover broadly any fluid that will flow from one fluid chamber 27 to the other. A sight opening 36 is formed in each fluid chamber 27 and graduations 37, marked on one of the longitudinal edges thereof, permit a person to determine the amount of fluid Z in each chamber.

In each fluid chamber 27, is a relief port 38, which may be closed by a spring held valve 39 of the flap type. When the motor is in the first position, illustrated by full lines in Fig. 1, the valve 39 in the upper fluid chamber 27 is held open by a fixed tripping abutment 40, rigidly secured to the tie bar 17 and the valve 39 on the lower fluid chamber 27 is held open by a movable tripping abutment 41. This tripping abutment 41 is pivotally mounted on the end rail 10 of the frame and is provided with an arm 42, on which is adjustably mounted a weight 43. To limit the opening movement of the valve 39 and relieve the pressure on their springs, each of said valves is provided with a stop finger 44 arranged to engage the casing of the respective fluid chamber 27. The purpose of the ports 38 is to leave the fluid chambers 27 open to the atmosphere, while the fluid Z is flowing from one of the fluid chambers to the other. The valves 39, which automatically close when the motor drops, prevent the fluid Z from running out of the fluid chambers 27 or spilling when the motor is inverted. The fluid may be poured into either one of the chambers 27 through its port 38 until the same is substantially full.

Obviously, the engagement of the valve 39 on the lower fluid chamber 27 with the movable tripping abutment 41, normally holds the motor in its full line position, as shown in Fig. 1 and while the fluid Z is flowing from one of the fluid chambers 27 to the other thereof. When sufficient fluid Z has entered the lower fluid chamber 27, to overcome the weight 43, the tripping abutment 41 is moved on its pivot out of the path of the engaged valve 39 allowing the motor to drop into its broken line position, as shown in Fig. 1. Normally, the horizontal section of the conduit 29 loosely rests upon the transverse portion of the bail 21 and when the motor drops, said bail is pulled downward thereby rocking the lever 20 sufficiently to lift the basket 24 and eggs Y out of the water X, as shown by broken lines in Fig. 1.

The length of time required for enough of the fluid Z to flow from one fluid chamber 27 to the other to overcome the weight 43, may be regulated by the valve 30. For instance, if the eggs Y are to be boiled three minutes, the pointer 34 will be set over the graduation marked "3". To again set the motor, the valve 30 is closed and the motor lifted from the seats 12, inverted and again mounted in said seat. As the motor drops into position, the valves 39 are automatically opened by the tripping abutments 40 and 41. The inverting of the motor will bring the fluid chamber 27 filled with the liquid Z into an uppermost position, where said fluid may flow again through the conduit 29 and into the lowermost fluid chamber 27.

From the above description, it is evident that eggs placed within the basket 24, may be boiled a predetermined length of time by the regulation of the flow of liquid Z through the valve 30, and then automatically lifted out of the water, thus not requiring the attention of the cook. The above described device, while extremely simple, and of comparatively small cost to manufacture, is thought to be highly efficient for the purpose had in view.

What I claim is:—

1. The combination with an element to be moved, of a motor including two fluid chambers, a frame supporting said two chambers, the one above the other and at an angle to each other, said frame being pivoted at a point between said two chambers for vertical oscillatory movement, a conduit connecting said two chambers, whereby the flow of

liquid from the upper fluid chamber to the other thereof will impart a movement to the frame, and a lifting connection from the frame to the element to be moved.

2. The combination with an element to be moved, of a motor including two fluid chambers, a frame supporting said two chambers, the one above the other and at an angle to each other, said frame being pivoted at a point between said two chambers for vertical oscillatory movement, a conduit connecting said two chambers, whereby the flow of liquid from the upper fluid chamber to the other thereof will impart a movement to the frame, said frame arranged to be bodily inverted to alternately change the position of the chambers, and a lifting connection from the frame to the element to be moved.

3. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating bell-crank lever having at each end a fluid chamber, relief valves in the fluid chambers, means connecting said element to the operating lever, and a contracted conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever.

4. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating lever having at each end a fluid chamber, spring closed relief valves in the fluid chambers, tripping abutments for opening the relief valves, means connecting said element to the operating lever, and a conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever.

5. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating lever having at each end a fluid chamber, spring closed relief valves in the fluid chambers, tripping abutments for opening the relief valves, means connecting said element to the operating lever, a conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever, and a timed valve in the conduit.

6. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating bell-crank lever having at each end a fluid chamber, means connecting said element to the lever, a contracted conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever, and a tripping abutment for holding the operating lever in normal position.

7. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating bell-crank lever having at each end a fluid chamber, means connecting said element to the operating lever, a contracted conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever, and an adjustable tripping abutment for holding the operating lever in normal position.

8. The combination with an element to be moved, of means for moving the same comprising an intermediately pivoted operating bell-crank lever having at each end a fluid chamber, relief valves in the fluid chambers, means connecting said element to the operating lever, a contracted conduit connecting the two fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever, and an adjustable tripping abutment for holding the operating lever in normal position.

9. The combination with an element to be moved, of a motor including two fluid chambers, a frame supporting said two chambers, the one above the other and at an angle to each other, said frame being pivoted at a point between said two chambers for vertical oscillatory movement, a conduit connecting said two chambers, whereby the flow of liquid from the upper fluid chamber to the other thereof will impart a movement to the frame, a lifting connection from the frame to the element to be moved, and a timed valve in the conduit.

10. The combination with an element to be moved, of a motor including two fluid chambers, a frame supporting said two chambers, the one above the other and at an angle to each other, said frame being pivoted at a point between said two chambers for vertical oscillatory movement, a conduit connecting said two chambers, whereby the flow of liquid from the upper fluid chamber to the other thereof will impart a movement to the frame, a lifting connection from the frame to the element to be moved, an intermediately fulcrumed lifting lever having said element attached to one of its ends, and a link connecting the other end of the lifting lever to the frame.

11. The combination with an element to be moved, of a frame, a lifting lever intermediately fulcrumed on the frame, a bell-crank operating lever fulcrumed on the frame and having at each end a fluid chamber, relief valves in the fluid chambers, a link connecting the other end of the lifting lever to the bell-crank operating lever, a conduit connecting the fluid chambers, whereby the flow of fluid from one of the fluid chambers to the other will actuate the operating lever, and a timed valve in the conduit.

12. The combination with an element to be moved, of a frame, a lifting lever intermediately fulcrumed on the frame, a bell-crank operating lever fulcrumed on the frame and having at each end a fluid chamber, spring closed relief valves in the fluid chambers, a link connecting the other end of the lifting lever to the bell-crank operating lever, a conduit connecting the fluid chambers, whereby the flow of fluid from one of the fluid chambers to the others will actuate the operating lever, a timed valve in the conduit, and tripping abutments for holding the operating lever in normal position and for opening the relief valve.

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

JOHN D. WALL.

Witnesses:
CLARA DEMAREST,
HARRY D. KILGORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."