Sept. 22, 1931. C. JOHNSON ET AL 1,824,154

CHICKEN WATERER

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Fig. 1

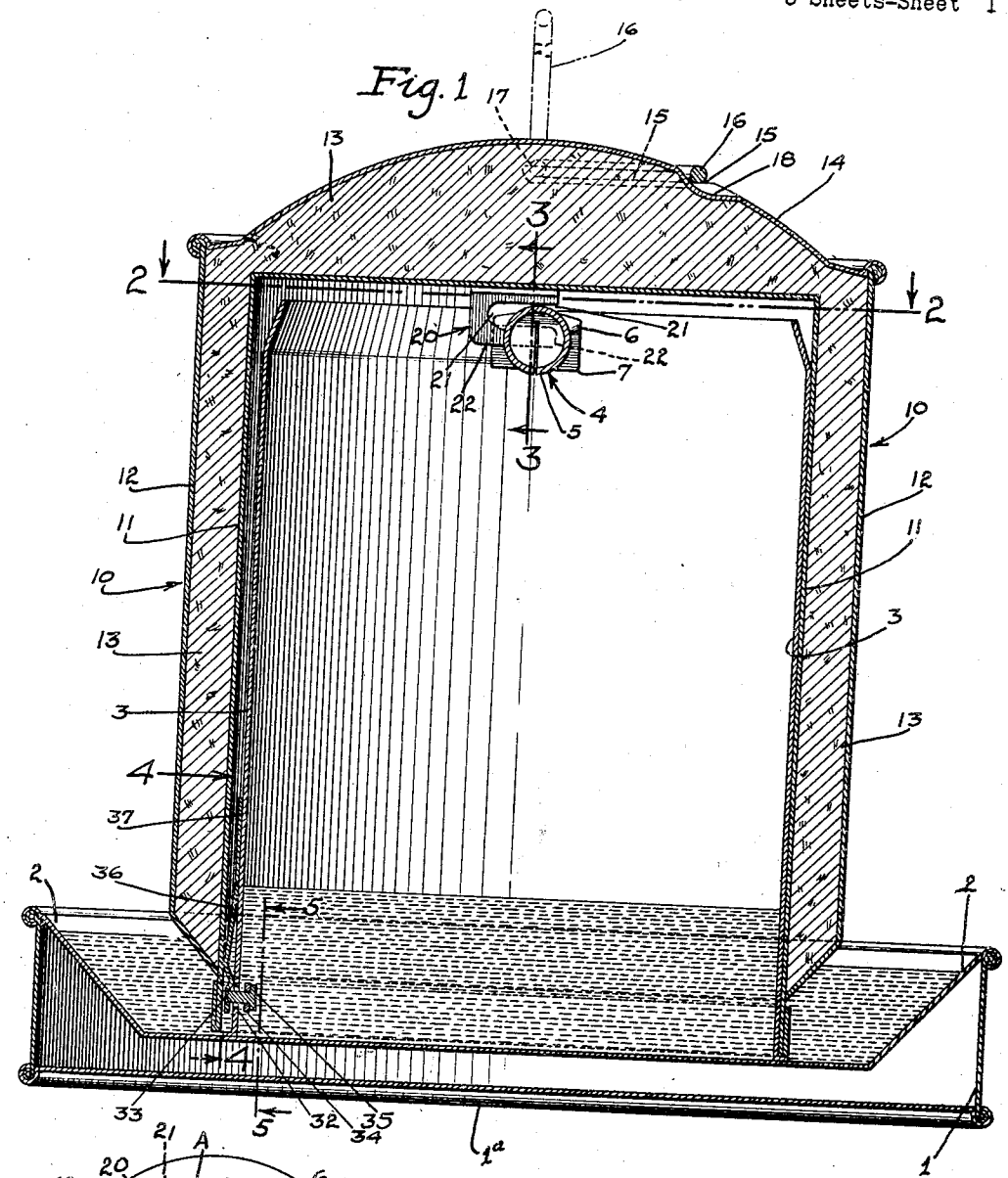


Fig. 7

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Fig. 2

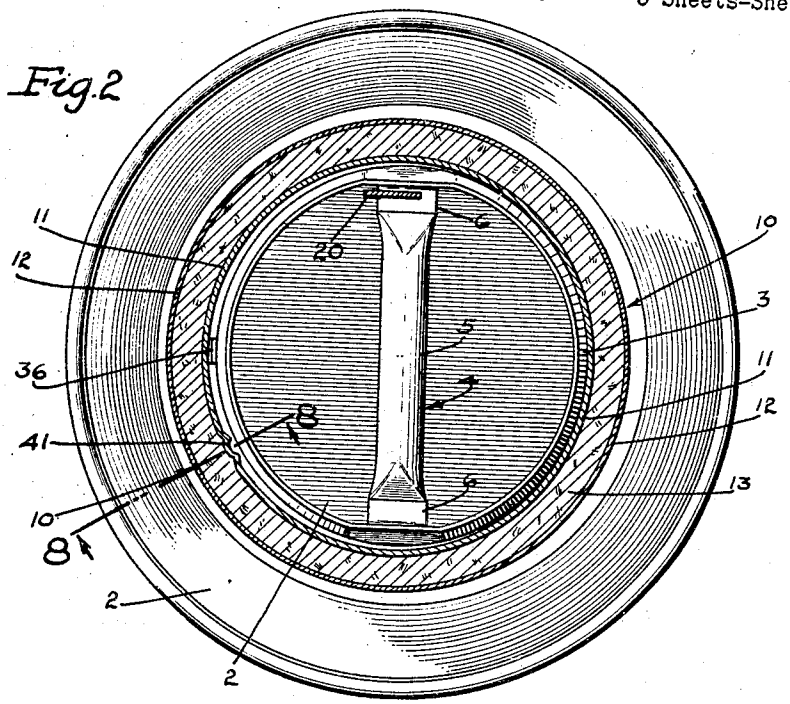


Fig. 3

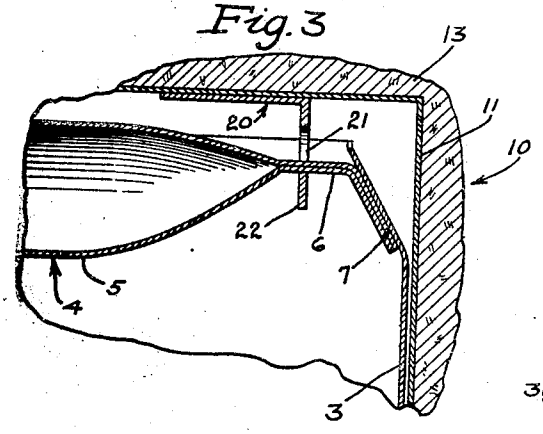


Fig. 4

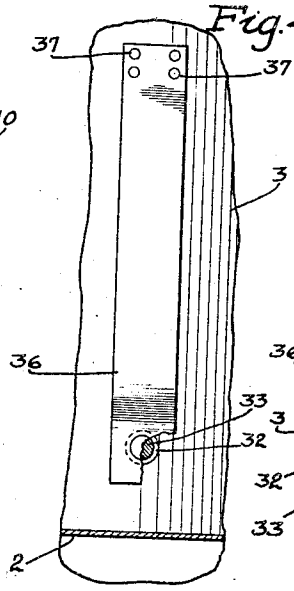


Fig. 5

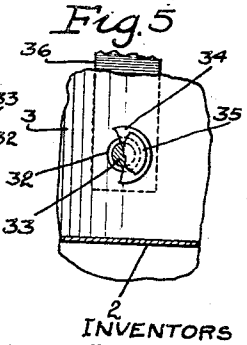
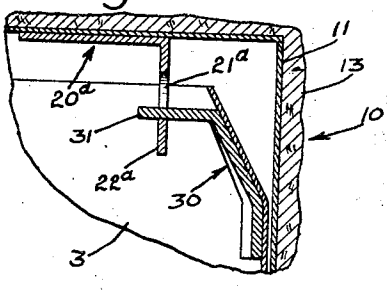


Fig. 6



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Fig. 8

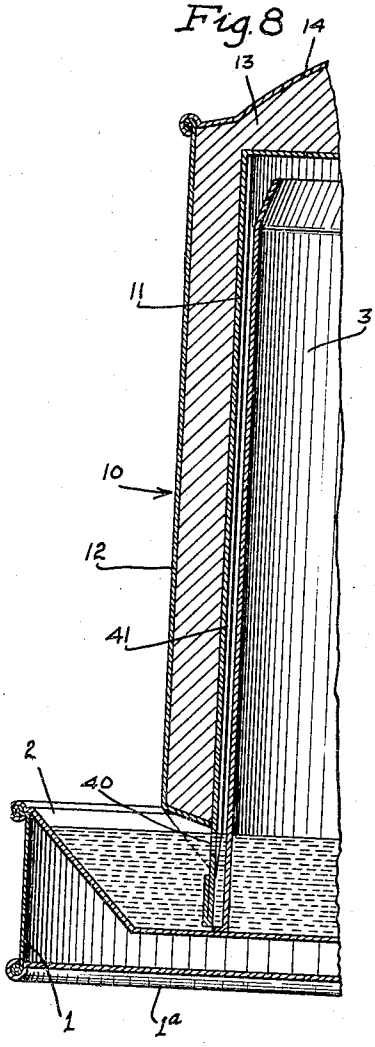


Fig. 9

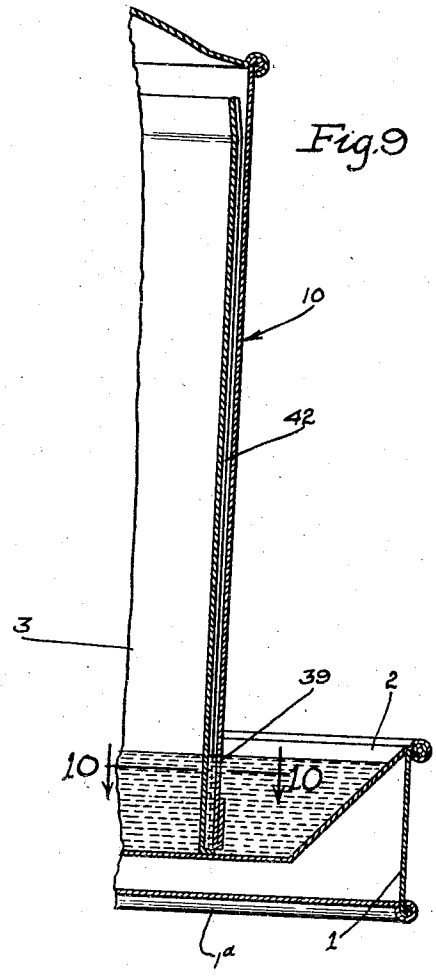
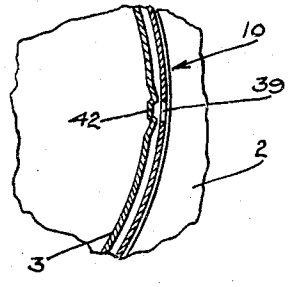


Fig. 10



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UNITED STATES PATENT OFFICE

CLEMENT JOHNSON AND MAURICE H. KEATING, OF MINNEAPOLIS, MINNESOTA, ASSIGNORS TO H. D. HUDSON MANUFACTURING COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA

CHICKEN WATERER

Application filed March 7, 1930. Serial No. 433,975.

This invention relates to improvements in chicken waterers or equivalent devices, adapted to store water and automatically feed it to a drinking pan.

The main objects of the invention are to provide a device of this type in which the telescopic cover of a reservoir may be locked to the reservoir so that the entire device may be lifted by means of a handle attached to the cover; to provide means for latching the cover to the reservoir which means lies above the water level; to provide such a latching means which is arranged entirely within the apparatus; to provide a latch means which is engageable and disengageable for its latching purposes by a rotative movement of the cover; to provide a latching means which is partly formed by a lifting handle placed within the reservoir; and broadly to provide any form of latching means in a combination of this kind which is attachable and detachable by a rotative movement of one of the casing elements. Other objects will be mentioned later.

Features of the invention include the means for carrying out the objects aforesaid, along with all details of construction shown in the drawings.

Advantages of the invention will appear in the description of the drawings forming a part of this application, and in said drawings

Figure 1 is a vertical section of a chicken waterer, constructed in accordance with the teachings of this invention;

Figure 2 is a plan section on line 2—2 of Figure 1, taken through one of the latch elements;

Figure 3 is a vertical section on line 3—3 of Figure 1 illustrating that form of latching means which utilizes the handle of the lower receptacle;

Figure 4 is a vertical section on line 4—4 of Figure 1 illustrating the liquid control valve;

Figure 5 is a section on line 5—5 of Figure 1 further illustrating the valve;

Figure 6 is a view showing a modified form of latching means;

Figure 7 is a diagrammatic plan illustrating the relation of the outer handle with reference to the latching means and inner handle, before latching;

Figure 8 is a fragmentary vertical section on line 8—8 of Figure 2 illustrating means for preventing dumping and splashing effects;

Figure 9 is a view similar to Figure 8 showing a modified construction for the same purpose; and

Figure 10 is a fragmentary horizontal section on line 10—10 of Figure 9.

The device comprises a hollow base section 1 having therein the water pan 2, to which pan is attached the reservoir 3 open at the top. This reservoir has a lifting handle 4, arranged adjacent its top, and diametrically thereacross. The handle provides a hollow tubular grip portion 5 and terminal horizontally flattened portions 6 which are attached to the inner side of the reservoir 3, at 7, as by soldering.

The water pan 2 forms a top for the hollow base and is suitably secured thereto. The base has a bottom 1^a. The pan extends downwardly into this hollow base in a manner to leave a dead air space between it and the walls of the base.

A cylindrical cover-casing 10 has a loose telescopic fit with the receptacle. This casing is, of course, open at the bottom side and closed at its top side. The casing 10 is composed of inner and outer sections 11—12 arranged to form a hollow wall or chamber and this chamber is filled with suitable insulating material 13. The top wall of the element 10 is arched upwardly as shown at 14. The arched element is provided with an arcuate substantially horizontally arranged depression 15 for the reception of the correspondingly curved portion 16 of a bail or handle, the ends 17 which pass through the arched top 14. The device is thus provided with inner and outer handles, one for the reservoir and attached base and one for the cover. The bail or handle can be swung into the depression as shown and adjacent the central portion of the bail the depression is extended outwardly as shown at 18 to permit the finger

to be introduced under the bail at that point. These are features of the invention.

Other features of the invention relate to a latch means arranged above the water level, and to such a means adapted to be engaged and disengaged by a rotative movement. In the preferred form of the invention, the inner handle by which the reservoir and pan are lifted, is utilized as one element of the latch. Referring to Figures 2 and 3 it will be seen that this handle has the flattened portions 6 with either of which a latch element generally indicated at 20 is engageable. In this instance the latch provides a recess 21 to receive the flattened portion 6, and has finger 22 to engage beneath said portion. The element 20 is attached as shown to the top inner surface of the telescopic cover, and has a rightangularly vertically disposed extension providing the recess 21 and the finger 22. It will be seen that the latch element 20 can be made to cooperate with either flattened portion by rotating the telescopic cover 10. This is a valuable feature of the invention. A modification is shown in Figure 6, in which no handle is used for the lower receptacle, and therefore in which a suitable latch element 30 is attached to the inner face of the reservoir. This bracket or element has a horizontal extension 31 beneath which the arm 22^a with which the latch member 20^a of the telescopic member 10 engages, the element 20^a also having the recess 21^a adapted to receive the arm 31. Rotation of the outer receptacle causes the hook-like element 22^a to lockingly engage the companion element as in the first case.

Inasmuch as we believe ourselves the first to provide any interlocking device between the reservoir and a cover for a device of this kind, which is arranged above the water level, this feature in itself is claimed herein, along with the other features.

Another feature of the invention which is best illustrated in Figure 7 is the arrangement of the axis of the bail or handle with reference to the element 20 so that when the cover is raised above the top of the reservoir the operator can (by sighting and aligning the bail element 16 with the handle element 4) position the element 20 with reference to the handle so that after the cover is lowered (the axes of the elements 16 and 4 having been kept in substantially parallel relation during the lowering motion) a slight rotation of the cover 10 in direction of the arrow A, will cause the parts to assume latched position. Thus the operator can always know what the relative positions of parts 20 and 4 are, although after the closure 10 is in lowermost position he can see neither.

Another feature of the invention relates to the simple valve structure for controlling the flow of water from the reservoir into the pan. An opening 32 is provided in the wall of the reservoir adajacent the bottom of the pan, and in this opening is loosely arranged the stem 33 of a valve having a gasket 34 engaging against a head 35, said gasket being adapted to overlap and close the opening. At the outside the valve stem is connected with a flat resilient element 36 secured in any suitable manner at 37 to the outer surface of the reservoir. The element 36 normally springs outwardly so that the gasket 34 closes the opening 33. When the telescopic cover is moved to the position shown in Figure 1, its inner face engages the spring and presses it inwardly, and holds it in the position shown in the drawings so that water can flow through the opening 33 between the vessels and outwardly through opening 39 of the cover 10, into the pan. A certain water level is automatically maintained in the pan. As soon as this level falls below the opening 39, water flows outwardly into the pan.

It will be again noted that one feature of the invention is the idea of having the handle form one portion of the latching means. Another feature is the arrangement whereby the latching and unlatching is obtained by rotating the outer receptacle. Another feature relates to the feature whereby part of the latch element, to-wit the handle, acts as a carrier for the inner receptacle. Another feature relates to the means whereby two sections can be locked together so that a common handle (the bail 16) will answer for both.

One of the important features of this invention is the use of a latching means which is arranged above the water level. In all other devices known to me the sections are locked together by a device which lies in the water receptacle below the level of the water. This is a very objectionable feature.

Another feature of the present invention is the use of two handles, one on each receptacle. Another feature is the arrangement of the locking device where it is not exposed to the weather. Another feature is its arrangement so that it does not project beyond the casings to catch upon clothes.

Another valuable feature of the invention relates to means illustrated in Figures 2, 7, 8, 9 and 10. The function of this means is to prevent wasting of the liquid by overflow, due to disturbance of the hydrostatic balance as the result of entry of air into the column of liquid lying between the inner and outer receptacles. It will be understood that as soon as the outer casing has assumed the position shown in the drawings with reference to the inner casing, the valve is opened and water flows into the pan and to a level above the water control orifice and thereafter gradually rises between the cover and the reservoir substantially to the level of the water within the reservoir.

Referring to Figure 8, the water level control orifice is indicated at 40 and it will be understood that when the water falls below

the level of the top of this opening, bubbles of air are admitted which travel upwardly to a point above the water column lying between the reservoir and cover. This results in the release in the usual manner of a predetermined quantity of water into the pan. However, in devices of the ordinary construction it often happens that a relatively large quantity (too large a quantity) is released, or that it is too suddenly released, resulting in a splash and overflow of the pan. This is a grave objection, particularly in cold weather, because the fowls get their feet wet and the moisture freezes. In the case of hens this frozen or cold foot condition interferes with the laying, and otherwise incapacitates them.

The present invention overcomes the above objection, and a regular non-splash flow is obtained and the flow is controlled so that there is no overflow of the pan. It is accomplished by providing a groove 41 either in the cover or on the inner receptacle, the groove being opposed to or aligned with the water level control orifice, and being extended vertically thereabove, substantially the full height of either the cover or the reservoir, at least to a level above that of the water. Under these conditions when air is admitted to the control orifice, the bubbles rise in a manner not to unduly disturb the hydrostatic equilibrium (as previously) and there are no splashing effects.

Although it is practicable to place the groove in the outer casing and therefore have the control orifice and groove in the same element, yet when this casing is only of a single thickness, as distinguished from the double wall casing illustrated in Figure 1, the groove is unsightly. Therefore, in some instances, the groove is applied to the reservoir, so that the cover will hide it, and in this case, some means must be employed for causing the groove to always assume the proper operative relation to the orifice 39 after the parts are locked together. The parts are so arranged, see Figure 7, that after the rotative movement of the cover to bring the locking means 6, 21 into locked engagement, the orifice is always in opposition to the groove.

Figures 7 and 10 show the position of the water level control orifice in relation to the groove, when the groove is provided in the reservoir section (as distinguished from the cover). In Figure 7 two grooves 42, 42ª have been indicated in the reservoir element 3, and these grooves are diametrically related. In the position of the parts shown in this figure, the water level control orifice 39 is at the position it occupies when the handles 4 and 16 are aligned and before the locking means has moved to locked position as the result of rotative motion of the cover. If the lock element 20 assumes a position diametrically opposite that shown in the drawings, the orifice 11 will occupy a position diametrically opposite that which it now occupies, so that when the cover is rotated, it will fall into registration with the groove 42ª instead of the groove 42.

We claim as our invention:

1. A device of the class described comprising a water pan and a reservoir attached thereto, said reservoir having a lifting handle arranged within and adjacent its top, a cover for the reservoir, means to detachably connect the cover to the handle and a handle.

2. A device of the class described including a water pan and water reservoir secured thereto and in communication therewith, said reservoir having a handle, a casing telescopically engaging the reservoir to form a cover therefor, latch means adapted to detachably cooperate with the handle to prevent separation of the reservoir and casing when the device is lifted, said casing also having a handle by which the entire apparatus may be lifted when the latching means is engaged with the other handle.

3. A device of the class described including a water pan and water reservoir secured thereto and in communication therewith, said reservoir having a handle therewithin adjacent its upper open end substantially diametrically disposed, said handle including a terminal flattened portion which lies adjacent the inner wall of the reservoir, a casing telescopically engaging the reservoir and forming a cover therefor, and having a latch adapted to detachably cooperate with the flattened portion of the handle when the casing is rotated to prevent separation of the reservoir and casing when the device is lifted.

4. A device of the class described including a water pan, a water reservoir secured to and in communication with the water pan, and having a handle and an outer casing telescopically engaging the reservoir and forming a cover therefor, said casing having latch means detachably cooperable with the handle to prevent separation of the reservoir and casing when the device is lifted, said latch means being adapted to move to operative position by rotative motion of the casing.

5. A device of the class described including a water pan, a water reservoir secured to and in communication with the water pan, and having a handle, and further having a valve for controlling flow of water into the pan, and an outer casing telescopically engaging the reservoir and forming a cover therefor, and being engageable with the valve to hold it in open position, said casing having latch means detachably cooperable with the handle to prevent separation of the reservoir and casing when the device is lifted, said latch means being adapted to move to operative and inoperative positions by rotative motion of the casing.

6. A device of the class described including a water pan and a water reservoir secured to

and in communication with the pan, an outer casing telescopically engaging the reservoir and forming a cover therefor, and latch means portions of which are respectively carried by said reservoir and casing, adapted to cooperate as result of rotation of the casing to prevent separation of the reservoir and casing when the device is lifted, said latch means being positioned above the water level.

7. A device of the class described including a water pan and a water reservoir secured to and in communication with the pan, said reservoir having a valve adapted to control flow of water therefrom to the pan, an outer casing telescopically engaging the reservoir and forming a cover therefor, and adapted when so engaged to hold the valve in open position and permit flow of water from the reservoir to the pan, and latch means portions of which are respectively carried by said reservoir and casing, adapted to cooperate as result of rotation of the casing to prevent separation of the reservoir and casing when the device is lifted, said latch means being adapted to move to operative and inoperative position by rotative motion of the casing, and being positioned above the water level.

8. A device of the class described comprising a water pan, a reservoir attached to the pan and communicating therewith and having a handle within it substantially diametrically arranged, a cover telescopically engaged with the reservoir and having latch means adapted to engage the handle and latch the reservoir and cover together and adapted to be latched by rotating the cover, and a handle for the cover, the axis of the cover handle being so related to the latching means, that when the operator brings the axes of the two handles into substantial parallelism, and when the cover is moved to closing position while maintaining this parallelism, the latch means is and the operator may be sure after the cover is lowered that said latch means is, so positioned with reference to the inner handle that a slight rotation will latch the parts to permit the entire device to be carried by means of the outer handle.

9. A device of the class described including a water pan and a reservoir element attached thereto, a cover element for said reservoir extending into the pan and having an orifice adapted to control the level of water in the pan, one of the elements having a relatively narrow vertical groove therein which cooperates with the orifice to guide air entering the orifice in a vertical direction.

10. A device of the class described including a water pan and a reservoir element attached thereto, a cover element for the reservoir extending into the pan and having an orifice adapted to control the level of the water in the pan, means for locking the cover to the reservoir, a groove in said reservoir extending above the water level control orifice, and adapted to be opposed to the groove, said locking means and groove being so related that locking is accomplished when the groove is operatively related to the control orifice so that the locking means also acts as a positioning means.

11. A device of the class described comprising a water pan and a reservoir attached thereto, a valve for controlling flow of water from the reservoir, a cover adapted to extend into the water pan, and operate the valve to open it, when so extended, said cover having a water level control orifice, one of said elements having a vertical groove arranged in opposition to said orifice so that air entering said orifice will be guided upwardly by the groove, and means for detachably locking the cover to the reservoir, by rotative motion of the cover, so that when said means is in locking position the control orifice is arranged in operative relation to the groove.

In witness whereof, we have hereunto set our hands this 19 day of February, 1930.

MAURICE H. KEATING.
CLEMENT JOHNSON.