J. H. CROWELL.

POULTRY AUTOMATIC WATER FEEDER.

APPLICATION FILED NOV. 1, 1911.

1,076,351. Patented Oct. 21, 1913.

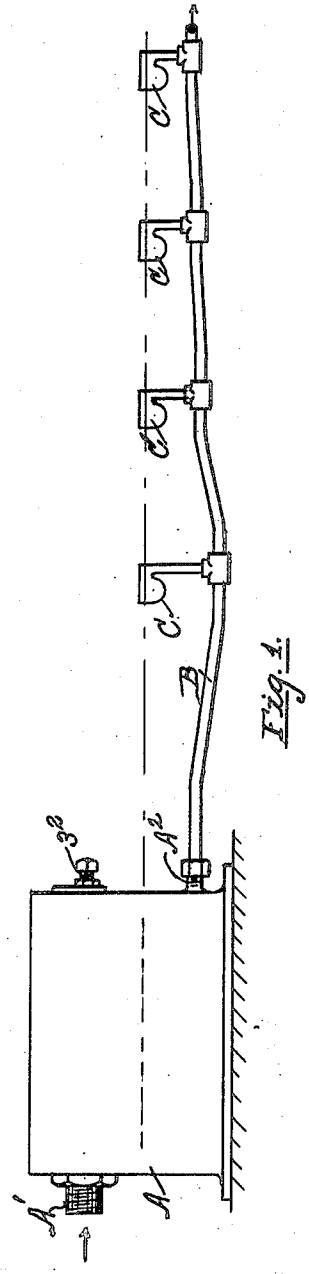


Fig. 1.

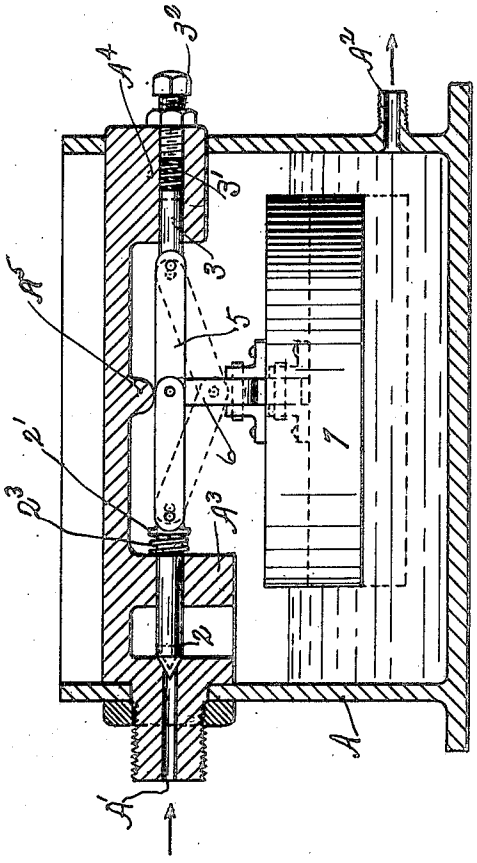


Fig. 2.

WITNESSES

Arthur A. Rhodes.

Alfred Wilson

INVENTOR

John H. Crowell

BY Henry Marsh Jr.

ATTY.

UNITED STATES PATENT OFFICE.

JOHN H. CROWELL, OF VINEYARD HAVEN, MASSACHUSETTS.

POULTRY AUTOMATIC WATER-FEEDER.

1,076,351. Specification of Letters Patent. Patented Oct. 21, 1913.

Application filed November 1, 1911. Serial No. 658,019.

To all whom it may concern:

Be it known that I, JOHN H. CROWELL, a citizen of the United States, residing at Vineyard Haven, in the county of Dukes and State of Massachusetts, have invented a new and useful Poultry Automatic Water-Feeder, of which the following is a specification.

The purpose of my invention is to provide a water feeder for poultry in which the supply and distribution of the water will be automatically controlled and regulated.

To these ends my invention consists in the novel construction, combination and arrangement of parts hereinafter described and illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of a water feeder embodying my invention. Fig. 2 is a longitudinal section of the reservoir of my feeder, showing the automatic feed valve and its operating mechanism in solid lines.

Similar reference letters and numerals indicate like parts throughout the drawings.

Referring to the drawings: A represents the reservoir of my water feeder, provided with an inlet opening A^1 located above the normal water level and fitted, in the well known manner, for connection with the water supply main, and also with an outlet opening A^2 located below the normal water level and likewise fitted for connecting a distributing pipe, as B, connected with drinking founts located outside of the reservoir.

For purposes of illustration I show drinking founts C, but the special construction and arrangement of drinking founts I reserve for another application for patent.

The inner end of the inlet A^1 is fitted to serve as a seat for a valve 2 (shown conical in the drawing), and the stem of said valve is mounted for both reciprocating and rotary movements in a housing A^3, and therein and thereby held and maintained in right alinement with said valve seat. At or adjacent the inner end of said valve stem is secured an annular collar 2^1 between which and said housing and surrounding said stem is a coil spring 2^3 arranged and adapted to be compressed during the closing of the valve and to react to assist in withdrawing the valve from its seat. Said spring further serves to take up and compensate for any slackness caused by wear of the valve, toggle member and plunger, and thus insures the requisite close seating of the valve at all times, its immediate positive action in its opening and closing movements, and its instant opening at the slightest lowering of the water level in the reservoir. I consider this an important and novel feature of my invention as actual practical use has proven that the valve will instantly open on the discharge of a very slight amount of water from the reservoir, and will as quickly close after the admission to the reservoir of an equal amount, and thereby automatically maintain the water at its normal level in the reservoir. At the opposite side of said reservoir is a housing A^4 in which is mounted for both reciprocating and rotary movements, and in right alinement with the valve stem 2, a plunger 3, cushioned by a coil spring 3^1 interposed in the bore of said housing between the end of said plunger and, preferably, an adjusting screw 3^2 tapped longitudinally into said bore. Said spring 3^1 serves as a cushion for the plunger, and also to aid in holding the valve to its seat. Said valve-stem and plunger are operatively connected by a toggle-joint 5 arranged to impart synchronous reciprocating movements to them and also adapted to rotate with them, thereby precluding possibility of either stem or plunger becoming cramped or bound in their respective housings. A strap 6 is pivotally connected at one end to the knuckle of the toggle member for lateral movement in a plane parallel with the toggle member. A float 7 adapted to rest in the water contained in the reservoir A, and to rise and fall therewith, is pivotally connected to the opposite end of said strap 6, and by reason of the pivotal connection at each end of said strap, the float is free to rock in planes at right angles to each other. In other words, the float is rockingly suspended from the knuckle of the toggle member, and therefore readily accommodates itself to any movements of the toggle member, valve and plunger, as well as to variations in the inclination of the water level in case the reservoir rests upon an uneven surface, and thus by permitting unrestricted rotary and reciprocating movements of the valve and plunger binding or cramping of the latter in their housings is prevented, and their sensitive and effectual action at all times is insured, since, as shown, the float has capacity to rock independently of the movements of the toggle operated parts. When the water is at or above its normal

level in the reservoir said float is thereby held in position to close the valve 2, the valve, plunger and toggle-joint then being in alinement with each other, as shown by the solid lines in Fig. 2. As the water falls below its normal level in the reservoir the float falls with it and opens the valve 2 to admit water to the reservoir, in which case the parts assume the dotted line position shown in Fig. 2. As the water again rises in the reservoir the float rises with it and actuates the toggle-joint to close the valve and stop the inflow of water, the parts then resuming the solid line position (Fig. 2). As a result of the action of the float and the parts operated thereby the supply and distribution of the water is automatically controlled and regulated, and a uniform water level maintained in the reservoir and in drinking founts properly disposed a distance from the reservoir.

In the drawings I have shown a boss A^5 integral with the inner side of the top of the reservoir, and adapted to limit the movement in one direction of the toggle-joint so that it cannot be forced beyond its line of greatest stress. Other forms of stop, as an adjusting-screw or the like, may be substituted for the integral boss.

I claim:

1. An automatic water feeder for poultry comprising a water containing reservoir provided with a top, an inlet located above the normal water level, housings bored for journal bearings depending from said reservoir top and oppositely disposed with their bores in alinement with each other and with said inlet, a valve seatable in said inlet and mounted in the bore of one of said housings for both reciprocating and rotary movements, a plunger similarly mounted in the bore of the opposite housing, an adjusting screw tapped longitudinally into the bore of the plunger housing, a coil spring disposed in said bore between the end of said plunger and said screw, and adapted to serve as a cushion for said plunger, a toggle member operatively connecting said valve stem and said plunger, a second coil spring surrounding said valve stem between the valve stem housing and the adjacent end of said toggle member, a float operatively connected with the knuckle of said toggle member for vertical movement therewith and arranged and adapted to rise with the rise of the water in said reservoir and close said valve, and to fall as the water level is lowered and open said valve, an outlet opening located below said inlet and the normal water level, and a distributing pipe connected with said outlet opening.

2. The combination with a water containing reservoir provided with an inlet located above the normal water level and an outlet located below said normal water level, of a valve seatable in said inlet and mounted in alinement therewith for both reciprocating and rotary movements, an adjustably cushionable plunger similarly mounted and held in permanent alinement with said valve for operation synchronously therewith, a toggle member operatively connecting said valve and plunger for conjoint synchronous movements, a float pivotally connected with the knuckle of said toggle member for vertical movement therewith, and for independent rocking movement, and arranged and adapted to be actuated by the rise and fall of the water in said reservoir to operate said toggle member to open and close the valve intermittently and automatically.

3. The combination with a water containing reservoir provided with a top, a valve controlled inlet and an outlet below said inlet, of a valve seatable in said inlet and mounted in permanent alinement therewith for both reciprocating and rotary movements, an adjustably cushionable plunger similarly mounted opposite said valve in permanent alinement therewith for synchronous conjoint movements, a toggle member operatively connecting said valve and plunger for conjoint rotating movement and alinable with said valve and plunger to close said valve, and a depending stop disposed on the reservoir top and arranged and adapted to contact with the toggle knuckle to limit the movement of said toggle member in one direction.

4. In an automatic water feeder having a water containing reservoir provided with a top and with an inlet located above the normal water level, the combination with said parts of oppositely disposed separated journal bearings depending from said reservoir top and arranged with their bores in permanent alinement with each other and with said inlet, a valve mounted in one of said bearings for both reciprocating and rotary movements, a plunger similarly mounted in the opposite journal bearing in permanent alinement with said valve and inlet, a toggle member located between said valve and plunger and operatively connecting the two for united synchronous movements, means located in said plunger bearing for adjustably cushioning said plunger endwisely, and other means interposed between one end of said toggle member and the face of said valve bearing support and arranged and adapted to assist in withdrawing said valve from its seat.

JOHN H. CROWELL.

Witnesses:
HENRY MARSH, Jr.,
ARTHUR A. RHODES.