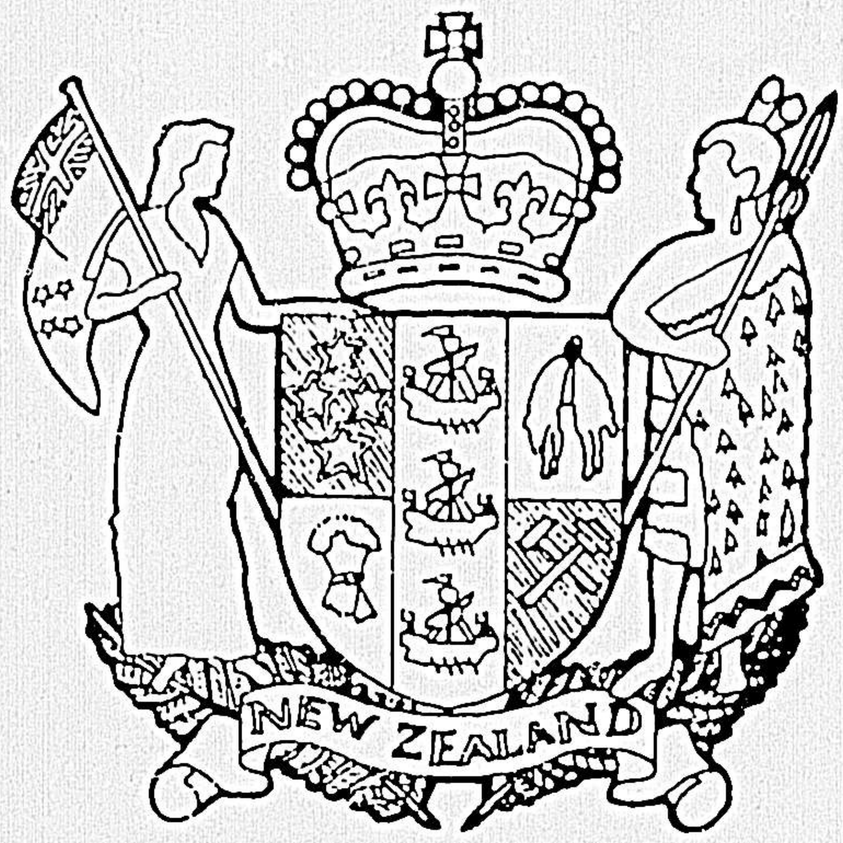


NEW ZEALAND

PATENT SPECIFICATION

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PATENT OFFICE
12 MAY 1919
NEW ZEALAND

PATENT AND TRADE MARK AGENTS
HENRY HUGHES,
LIMITED.
191 FEATHERSTON ST., WELLINGTON, N.Z.

JOURNAL.
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Date: 24 JUL 1919

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NEW ZEALAND

"The Patents, Designs and Trade Marks Act 1911".

COMPLETE SPECIFICATION.

"IMPROVEMENTS IN AUTOMATIC CONTROL APPLIANCES FOR WINDMILLS."

We, THE AUTO MILKING MACHINE COMPANY LIMITED of Regent Street, Hawera in the Dominion of New Zealand, Manufacturers, and FRANCIS JAMES BROWN, of Princes Street Extension, Hawera, aforesaid, Fitter, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:-

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This invention relates to improvements in that class of automatic control for windmills in which a lever bar is provided and has one of its ends connected to the control rope of the windmill gear, and has secured upon it a water vessel that is adapted to be filled with water by the overflow from the water tank, and by the weight of such water, to tip the lever to draw on the control rope and put the windmill out of gear with the pump.

The invention consists specially in improved means for controlling the passage of the water to the lever water vessel on the filling of the tank and also in a new system of controlling the operation of such lever.

The means devised consist in the combination with the water-main leading to the tank and having its outlet into the tank controlled by a ball cock, of a special spring-controlled valve, arranged to normally close a branch from the water-main, which branch is connected with the lever water-vessel. On the filling of the tank and the resultant closing of the main's outlet into the tank, the pressure of water in the main is directed to the spring-valve so as to force it open and thereby allow the lever water-vessel to be filled, in order to operate the lever in the required manner to stop further pumping.

The said water-vessel is in this invention, provided with a small discharge-aperture that is always open, so that the vessel may empty itself in a reasonable time and permit the lever to rise and the gear to be re-engaged. This feature will permit of the tank and the control-means being placed at any desired relative levels, as the emptying of the water-vessel on the lever is not dependent on the fall of the water-level in the tank, as is the case with most of the automatic controls of this class, necessitating the arrangement of the tank and lever at approximately the same level. In the present case should the pump be placed in gear while the water-tank is still filled, the control-means would be brought instantly into operation to put it

out of gear again.

The invention is illustrated in the accompanying drawings, in which:-

Figure 1 is an elevation of the means employed and such portions of the windmill and tank as are necessary to a proper understanding of the invention.

Figure 2 is a sectional elevation of the spring valve controlling the branch of the water main.

A is the windmill framing, B the water tank, C the water main leading from the pump into the tank, and D the ball cock controlling the outlet from such main. E is the well known lever for actuating the control, such lever being pivotted on the frame A and having one of its ends provided with a water vessel F secured thereon/and its end made fast to the control rope G of the gear, so that such vessel end shall be kept raised when the vessel is empty of water, and thereby allow the windmill gear to remain in operation, and will turn down when the vessel is filled with water and thereby draw on the control rope to place the windmill out of gear on the system that is also already well known.

In this invention the main C is provided with a branch H leading into one end of a valve chamber J from the side of which an outlet J' leads and which outlet is connected with the water vessel F by means of the flexible pipe K having sufficient slack to permit of the free movements of the lever E. The valve chamber J is of cylindrical form and fitted therein is a piston valve M that is adapted to engage and close the inlet from the branch H, a special seat being formed in the chamber end to receive it. This piston valve is retained normally on its seat by means of the spring N in compression between it and a screwed cover O for the other end of the chamber. This spring is adapted to be compressed when the pressure of the water upon the piston valve becomes greater than the strength of the spring so that the valve may be forced back from its seat and open the outlet J'.

It will be seen therefore that when the tank B is

filling, the valve will be closed and the water will pass through the main into the tank in the usual way, until the tank fills and closes the cock D. The water will then be diverted into the branch H so that its pressure will be exerted against the valve M and will force it open and permit the water to pass into the vessel F to fill it and operate the lever E. Then when such pressure is relieved, either by the stoppage of the pumping, or by the opening of the ball cock D, the valve will resume its seat to close the branch.

The vessel F is designed to empty itself slowly by providing it with any suitable outlet, as for instance a draining cock P, by which also the period taken to empty it may be regulated.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. In automatic controlling means for windmills of the class herein described, the combination with the controlling lever having a water vessel secured upon it, and with the water main leading to the tank, having a ball cock controlling its outlet into the tank, of a branch leading from such main and connected with the said water vessel, and a spring actuated valve normally closing such branch but adapted to be opened by the pressure of the water in the main when the outlet into the tank is closed, substantially as specified.

2. In the means for automatically controlling windmills constructed and operating as described in claim 1, a valve for the said branch formed by a valve chamber having one end connected to the branch and constructed with a valve seat in such end and with a discharge outlet in its side, a piston valve fitting in such chamber and adapted to engage the valve seat thereof, a cover upon the other end of the valve chamber and a spring in compression between such cover and the piston valve, substantially as herein specified.

3. In automatic controlling means for windmills of the

class herein described constructing the water vessel of the control actuating lever with a discharge draining cock or other draining means, substantially as and for the purposes specified.

4. The improvements in windmill controlling means, substantially as herein described and explained, and as illustrated in the accompanying drawings.

Dated at Wellington this 12th day of May 1919.

HENRY HUGHES, LTD.
per W Alexander
AGENT FOR THE APPLICANTS

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Fig. 1

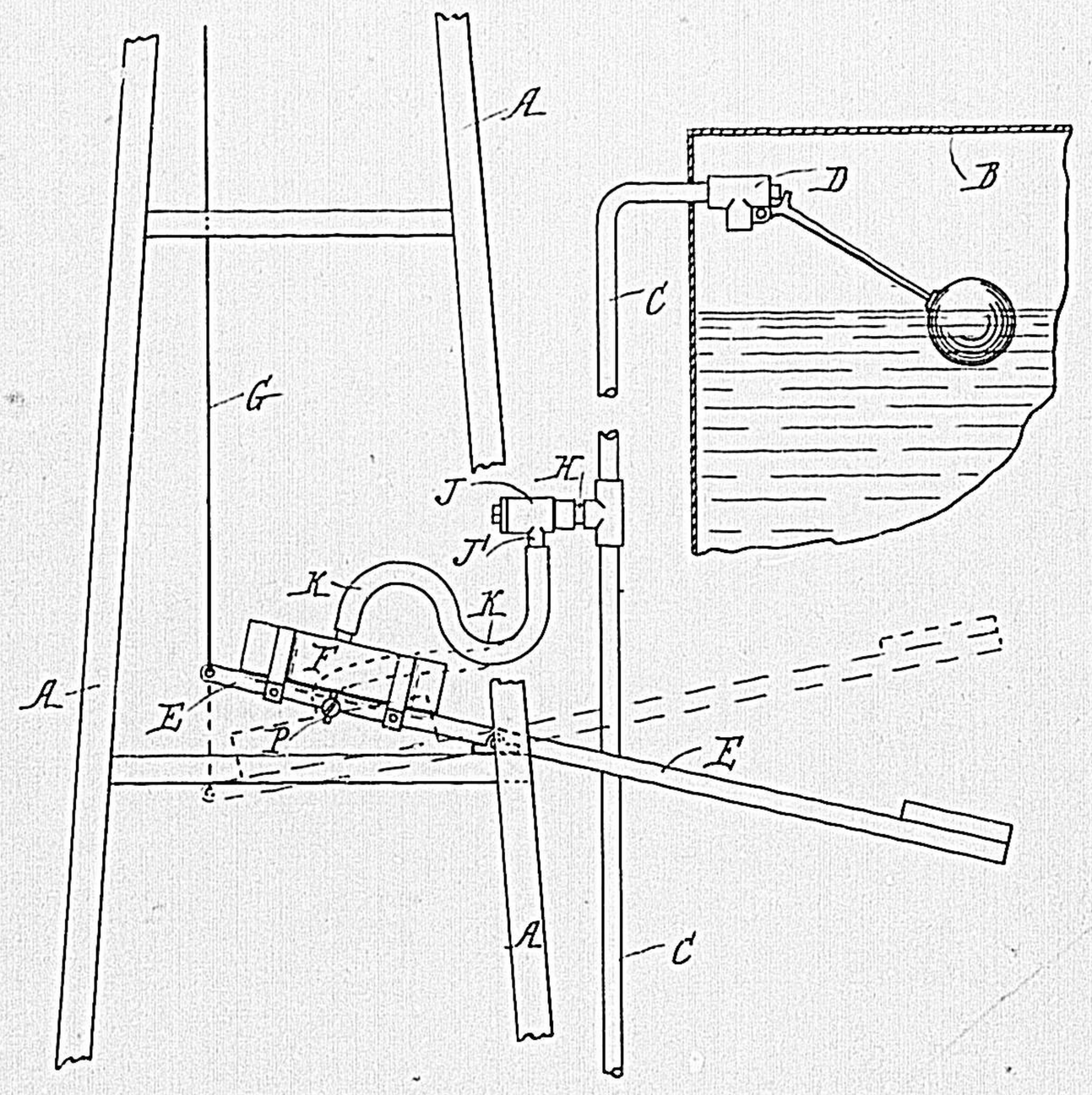
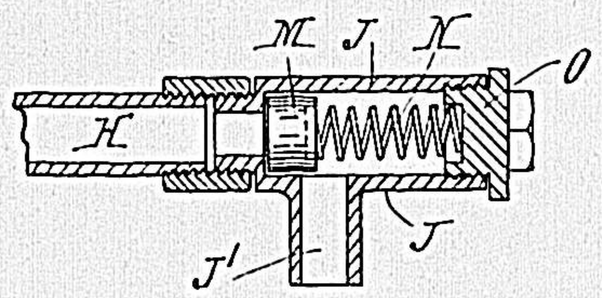


Fig. 2



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END