April 22, 1952 M. T. TIXHON ET AL 2,593,938

AUTOMATIC OBTURATOR FOR THE ADDUCTION OF FLUIDS

Filed July 27, 1948

Fig. 2a.

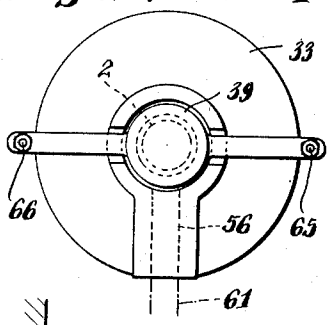


Fig. 1.

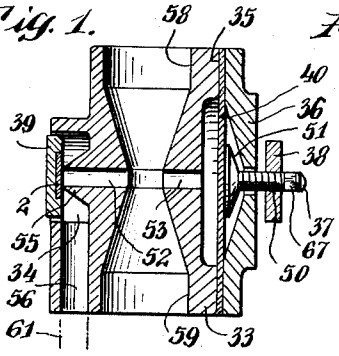
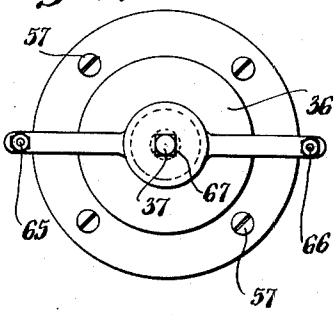


Fig. 2b.



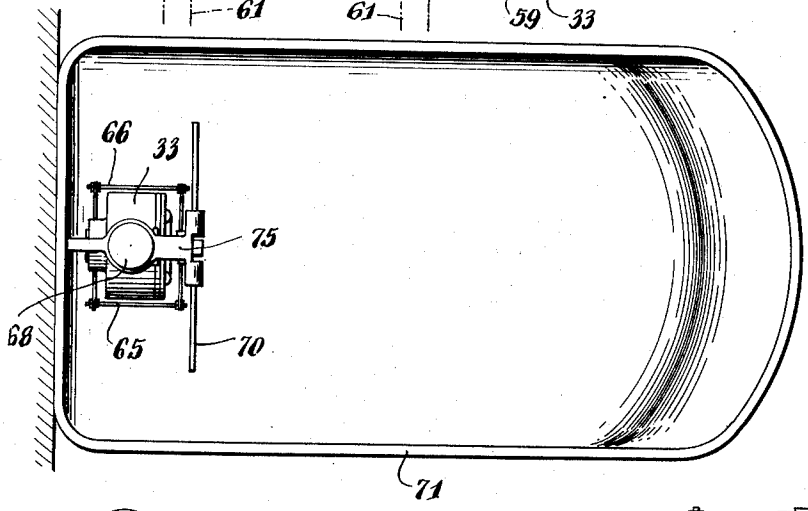


Fig. 4.

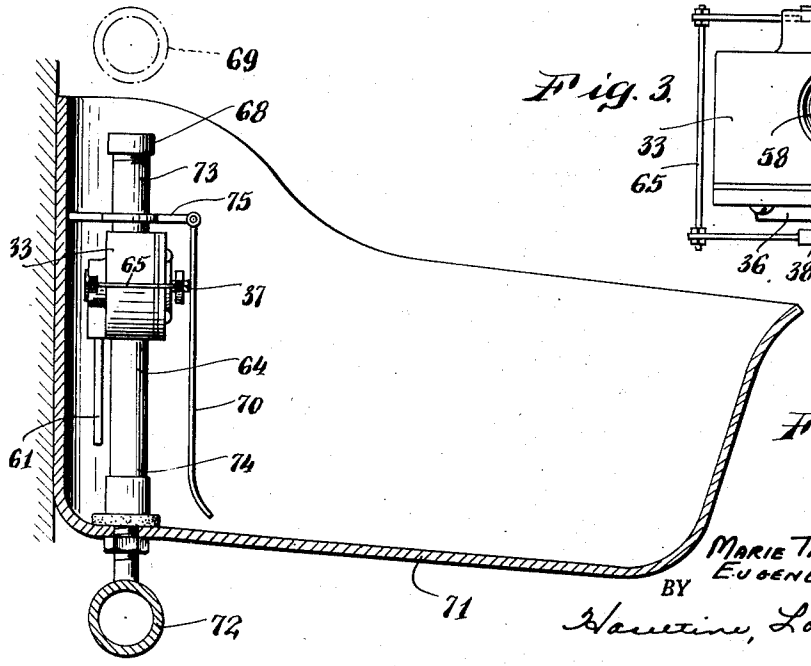


Fig. 3.

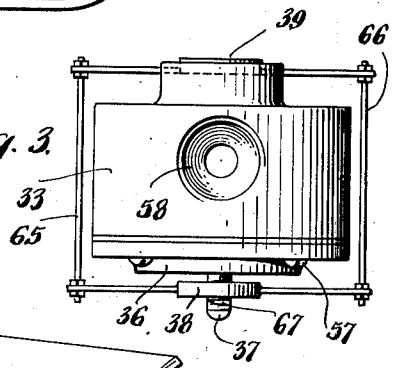


Fig. 5.

INVENTOR.
MARIE THERESE TIXHON
EUGENE LAGUESSE
BY
Hauptine, Lake & Co.
AGENTS.

Patented Apr. 22, 1952

2,593,938

UNITED STATES PATENT OFFICE

2,593,938

AUTOMATIC OBTURATOR FOR THE ADDUCTION OF FLUIDS

Marie Thérèse Tixhon, Herstal, and Eugene Laguesse, Leige, Belgium

Application July 27, 1948, Serial No. 40,974
In Belgium July 28, 1947

1 Claim. (Cl. 251—135)

1

The present invention relates to an automatic valve for the control of fluid, especially of a liquid, such as water, for example for the automatic supply of water to the drinking troughs of animals, without, however, excluding the possibilities of its application to the distribution of water for domestic and industrial purposes.

The invention will be more readily understood when reference is made to the accompanying drawings showing, by way of illustrative examples, a preferred embodiment wherein

Figure 1 is a sectional elevation in a longitudinal direction through a valve according to the invention;

Fig. 2*a*, at the left, shows one half of one side of the same, and Fig. 2*b*, at the right, shows one side of the external control;

Figure 3 is a plan view of the valve shown in Figures 1 and 2;

Figure 4 is a section through a watering trough fitted, by way of example, with the valve represented in Figures 1–3; and

Figure 5 is a plan view of the trough.

Referring to Figures 1, 2 and 3, **33** represents a tubular cross of a cylindrical external form, **58** and **59** representing the tube openings leading to the liquid or to an air trap. Along a transverse axis are formed the passages **52** and **53** through which are transmitted the pressure of the liquid, on the one hand by **52** and by the nozzle **55** on to a rubber disc **2** constituting the valve element, and on the other hand by **53** on to the elastic diaphragm **40** secured against the radial face **35** by a plate **36** through the screws **57**. The outer face of the diaphragm **40** is in contact with the face **51** of a push-button **37** guided in the plate **36**, and comprising a threaded part **50** on which is engaged the internally threaded socket **38** of a cross-member forming with a similar cross-member **39** disposed at the other side, and with the members **65**, **66**, a rigid frame or stirrup, see Figures 2 and 3.

The cross-member **39** carries the valve disc **2**.

The stem of the push-button **37** is provided with a square end portion **67** to allow adjustment of thread **50** in threaded socket **38** and thereby the advance or reverse movement of the rigid frame constituted by the elements **38—65—66—39**. Rotation of push-button **37**, by means of a socket-key fitting the square end portion **67**, will thus vary the pressure of rubber disk **2** against the nozzle **55**.

The operation, when the device is fitted to a drinking trough, is as follows:

When the plate **70** of a drinking trough **71** (see Figure 4) is pushed by the muzzle of an animal, with the plate resting like a pendulum on the part **37**, the diaphragm **40** yields to the effort and the assembly **38—65—66—39** recoils, so as to disengage the disc **2** from the nozzle **55** and allow the water to flow into the chamber **34**, from which it is released through the passage **56** and flows to the bottom of the drinking trough. This passage may be provided with a

2

tubular extension **61** projecting down into the bottom of the trough.

It is to be observed that the closure of the valve member is effected without the intervention of a spring or the weight of a mass, but solely by using the pressure of the fluid within the limits of the supply conduit, and that the closure is much more powerful when the service pressure is very strong. Besides, the opening and the closing of the valve are progressively regulated which obviates water hammering, ensures flexibility in operation, and a silence which can otherwise be obtained only with submerged valves.

We claim:

In an automatic fluid-control valve, a hollow body subjected interiorly to the fluid pressure, an outlet from the body, a flexible diaphragm arranged laterally in the body having its inner face, in contact with the fluid, subjected to the difference between the fluid pressure and the pressure at the outlet, a movable closure for the outlet subjected to the outlet pressure in opposing direction to the effective forces acting on the diaphragm, a positive connection between the closure and the diaphragm comprising a pair of ties arranged in parallel outside the body, the body being of tubular shape, a first cross-brace connected to one end of each tie and to the closure, a second cross-brace connected to the other end of each tie, a push-rod engaging at one end with the diaphragm and formed at the other end with an exterior adjustment controlling means, and a threaded connection between the push-rod and the second cross-brace, thereby to provide movement of the closure in response to movement of the diaphragm, and said exterior means controlling the adjustment of the closure relatively to the outlet.

MARIE THÉRÈSE TIXHON.
EUGENE LAGUESSE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
Re. 11,722	Gulland	Mar. 14, 1899
121,487	Burnett	Dec. 5, 1871
1,167,895	Fulton	Jan. 11, 1916
1,590,389	Mellowes	June 29, 1926
1,803,957	Bragg	May 5, 1931
1,836,976	Krause	Dec. 15, 1931
2,143,204	McCormack	Jan. 10, 1939
2,360,603	Ward	Oct. 17, 1944

FOREIGN PATENTS

Number	Country	Date
11,189	Great Britain	of 1846
520,433	Great Britain	of 1940
598,686	Germany	of 1934