

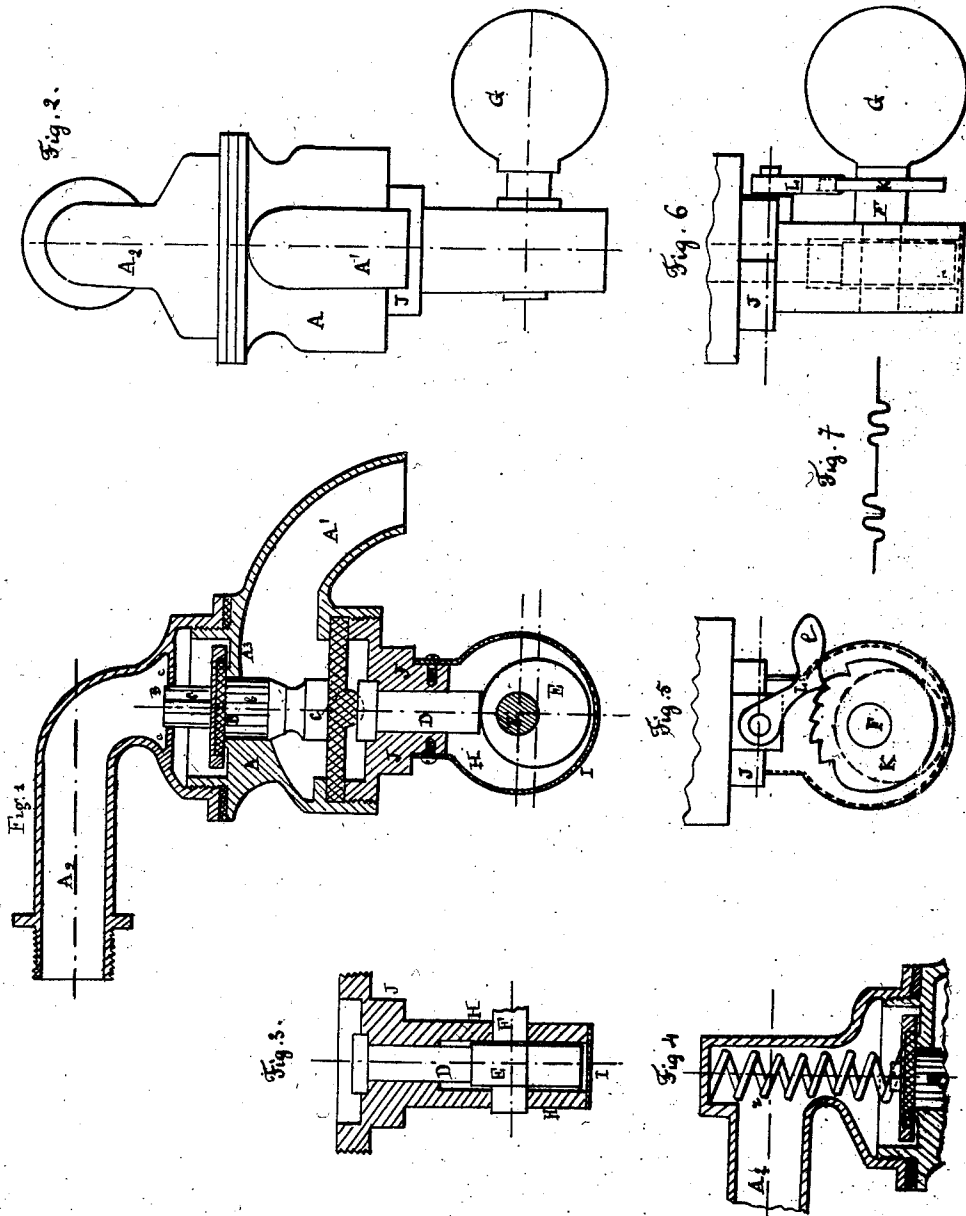
(No Model.)

F. MAREY & E. COLLE.

SELF CLOSING STOP COCK.

No. 362,025.

Patented Apr. 26, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

FERNAND MAREY AND EDOUARD COLLE, OF PARIS, FRANCE.

SELF-CLOSING STOP-COCK.

SPECIFICATION forming part of Letters Patent No. 362,025, dated April 26, 1887.

Application filed October 8, 1886. Serial No. 215,700. (No model.) Patented in France June 19, 1886, No. 176,867; in Belgium September 15, 1886, No. 74,536, and in England September 20, 1886, No. 11,942.

To all whom it may concern:

Be it known that we, FERNAND MAREY and EDOUARD COLLE, citizens of France, both residing at Paris, in the Republic of France, have invented a new and useful Self-Closing Stop-Cock, (for which we have obtained a patent in France, dated June 19, 1886, No. 176,867; in Belgium, dated September 15, 1886, No. 74,536, and have applied for a patent in Great Britain, dated September 20, 1886, No. 11,942,) of which the following is a specification.

This invention relates to the construction of a stop-cock for water or other liquid in such a manner that, the movement for opening or closing it being communicated through an impervious flexible diaphragm, there is no risk of leakage where the moving part passes through the shell. This moving part is also arranged so that unless the cock be held open it closes itself automatically, and the passage to the cock-chamber is so formed as to avoid the dangerous ram-like action that takes place on sudden stoppage of the flow.

The accompanying drawings show the construction of a stop-cock according to this invention.

Figure 1 is a vertical longitudinal section. Fig. 2 is a front view. Fig. 3 is a transverse section of the lower part. Fig. 4 is a section of the upper part modified. Fig. 5 is a side view, and Fig. 6 a front view, of the lower part, showing a modification; and Fig. 7 is a section of a corrugated metallic diaphragm.

A is the middle body of the stop-cock; A' the outlet, and A" the inlet, passage.

A³ is a partition forming a seating for a valve, B, which is guided below by its grooved stem *b* and above by a grooved stem, *b'*, that passes through a partition, *c*. The lower end of the valve-stem rests on a flexible diaphragm, C, which may be of caoutchouc, leather, or such like flexible and elastic material, or may be of thin metal plate corrugated, as shown in Fig. 7.

The diaphragm C is imperforate throughout and firmly held at its edge by screwing into the lower part of the cock the hollow boss J, with two sides, H, having its upper end located under and bearing against the lower side of the imperforate diaphragm C, and to the lower end of which is attached a cylindrical

casing, I. Through the boss J passes a pushing-stem, D, which bears against an eccentric, E, mounted within the casing I, and having its axis F passing through the sides H, and provided with an external button or handle, G, by which it can be turned. On turning the eccentric E partly round the stem D is raised, bulging upward the diaphragm C, and so raising the valve B from its seat and allowing liquid to pass from A' to A". On letting go the handle G the valve closes automatically, causing the eccentric to turn back, and, owing to the narrowed passage through the partition *c*, there is no ram-like action resulting from the sudden stoppage of the flow of liquid.

In cases where the liquid is under little pressure the partition *c* may be dispensed with, and a spring, *r*, as shown in Fig. 4, may be arranged to press down the valve B. When it is desired that the cock should remain open, even on letting go the handle G, the arrangement shown in Figs. 5 and 6 is adopted—that is to say, a ratchet-wheel or segment, K, is fixed on the axis F of the eccentric, and a drop-pawl, L, is mounted on the boss J, this pawl engaging with a tooth of the ratchet and preventing it from turning back until the pawl is disengaged by lifting its handle *l*.

Although we have described an eccentric, E, as means of raising by its partial revolution the stem D, obviously this might be effected by a lever or otherwise.

Having thus described the nature of our invention and the best means we know of carrying it out in practice, we claim—

1. A self-closing stop-cock combining in its structure a casing having an inlet, an outlet, and a valve-seat between said inlet and outlet, a tubular boss secured in said casing, a valve seating on said valve-seat with the pressure of the fluid, and provided with a depending valve-stem, a vertically-movable stem arranged in and guided by the boss, means, substantially as described, for raising the stem in the boss, and an imperforate flexible diaphragm interposed between the lower end of the depending valve-stem and the upper end of the stem in the boss, and having its edges held in a fixed position between the boss and the casing, so that said diaphragm is centrally bulged upward by the upward movement of the stem in

the boss, and the valve thereby lifted from its seat, substantially as described.

2. A self-closing stop-cock combining in its structure a casing having an inlet, an outlet, and a valve-seat between the inlet and outlet, a valve, B, seating downward on the valve-seat, and provided with a depending grooved valve-stem, *b*, a tubular boss, J, secured to the casing, and having side pieces, H, a vertically-movable stem, D, arranged in the boss, an imperforate diaphragm, C, interposed between the lower end of the valve-stem and the upper end of the vertically-movable stem D in the boss, and handle G, journaled in the sides of the boss, and provided with an eccentric, E, bearing against the stem in the boss, for centrally raising the diaphragm to open the valve against the pressure of liquid in the inlet of the casing, substantially as described.

3. A self-closing stop-cock combining in its

structure a casing having a valve-seat, a valve, B, seating downward on said seat, and having a depending grooved valve-stem, *b*, a vertically-movable stem, D, an imperforate diaphragm, C, interposed between the lower end of the valve-stem *b* and the upper end of the vertically-movable stem D, a handle, G, carrying an external ratchet-wheel, K, and an internal eccentric, E, and a pivoted pawl, L, for engaging the ratchet-wheel, substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 22d day of September, A. D. 1886.

FERNAND MAREY.
EDOUARD COLLE.

Witnesses:

JULES KLEGEN,
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