(No Model.) 2 Sheets—Sheet 1.

C. E. BUELL.

MEANS FOR PROPELLING MACHINERY BY WATER.

No. 304,072. Patented Aug. 26, 1884.

Fig. 1.

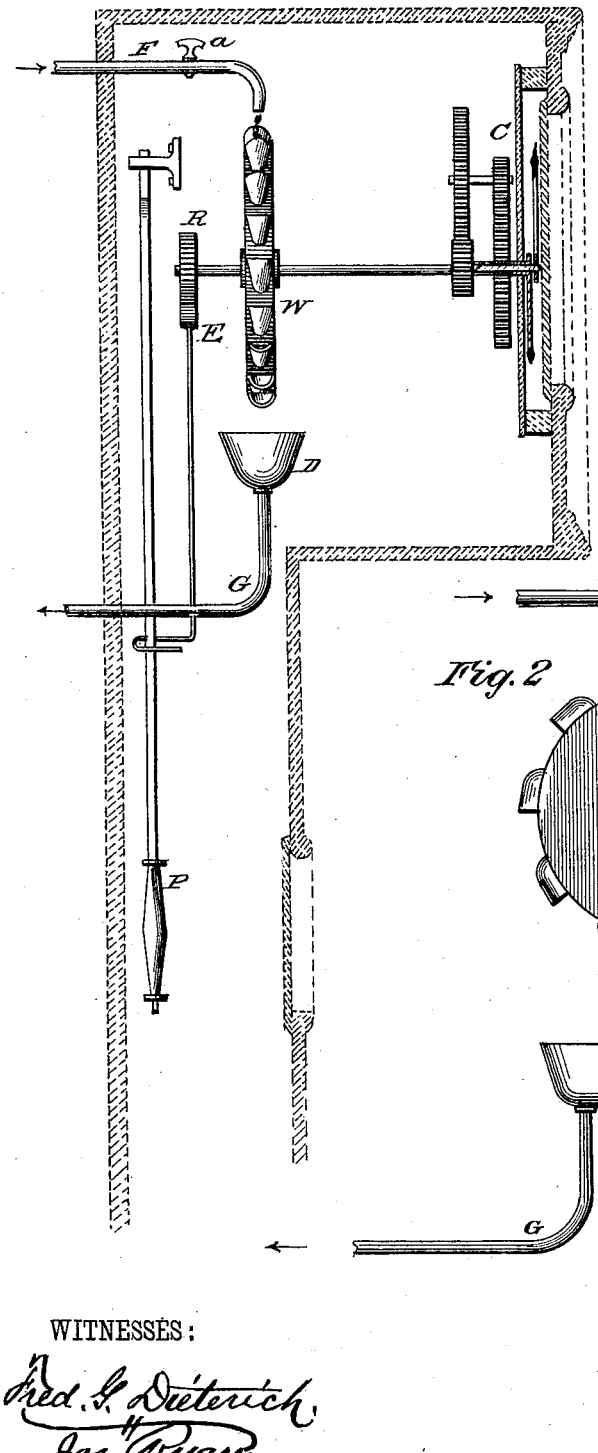
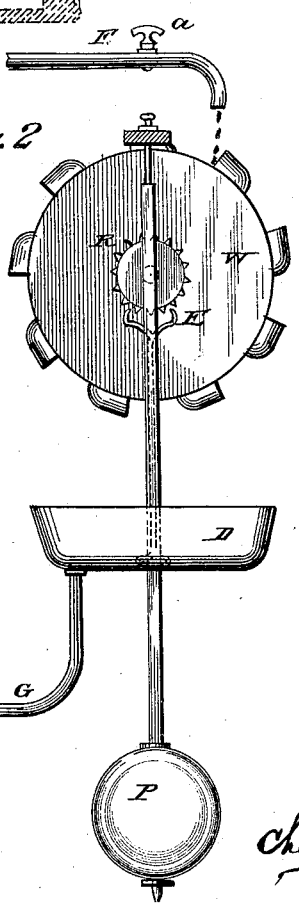


Fig. 2



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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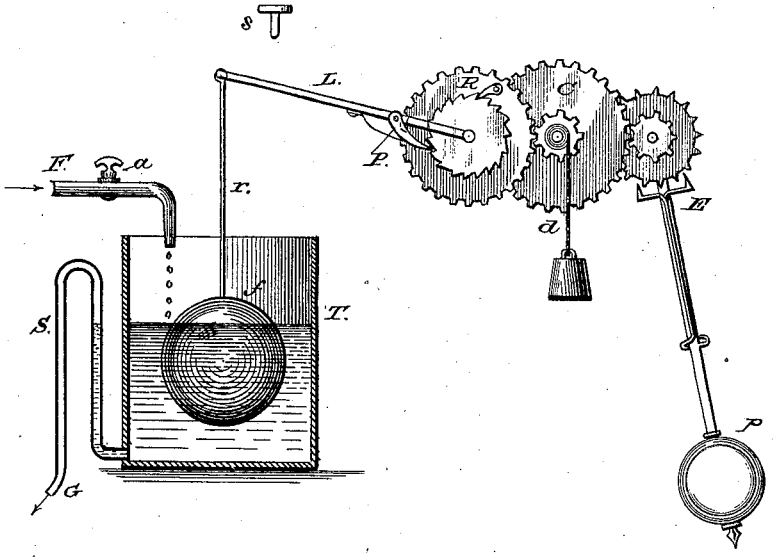
Fig. 3.



WITNESSES:

Fred. G. Dieterich.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

CHARLES E. BUELL, OF NEW HAVEN, CONNECTICUT.

MEANS FOR PROPELLING MACHINERY BY WATER.

SPECIFICATION forming part of Letters Patent No. 304,072, dated August 26, 1884.

Application filed November 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BUELL, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Means for Propelling Machinery by Water, of which the following specification is a full, clear, and exact description.

My invention relates to means for producing motion by the gravity or pressure of water continuously and automatically supplied; and its object is to furnish a cheap and reliable power which can be easily applied to produce motion in stationary mechanism designed to perform uniform movements—such, for instance, as telegraphic apparatus and apparatus for indicating time.

The invention consists in the combination, with means for furnishing a water-supply, and motor mechanism adjusted to perform uniform movements, of intermediate mechanism actuated by said water-supply, and devices constructed and arranged to retard or control said intermediate mechanism, so as to insure uniform movements in the motor mechanism, and also in certain other combinations hereinafter set forth. As will be seen farther along, the water-supply flows uniformly, and the mechanism actuated directly by the water is retarded and controlled.

In the accompanying drawings, forming part of this description, Figure 1 represents a front elevation of one form of my invention; Fig. 2, a side elevation of the same, and Fig. 3 a modification of the apparatus.

Referring to the drawings, in which like parts are indicated by like letters, W is a water-wheel of well-known type, provided with a series of buckets on its periphery.

F is a water-supply pipe intended to connect with a tank of water located above the wheel W, or with the water-service of a city or town, or other means whereby water may be supplied under pressure. The pipe F is provided with the cock *a* for regulating the flow of water therefrom.

D is a receptacle for receiving the discharge or drip from the wheel W, and it is provided with the discharge-pipe G for carrying off the water emptied therein. On the shaft of wheel W is a ratchet-wheel, R, which engages with the escapement E, which latter is controlled by the suspended pendulum P, the wheel R being released and checked thereby in a well-known manner.

The operation of this form of the apparatus, Figs. 1 and 2, is as follows: The cock *a* being turned to allow the water to drip from pipe F, the buckets on one side of wheel W become filled, or partly so, while those on the other side are empty. The weight of the water tends to propel the wheel W, and the pendulum being now set swinging, the wheel W revolves slowly and with a uniform movement, under the control of the escapement E and ratchet-wheel R. By regulating the flow of water to the wheel W, so that a bucket or buckets will become filled as fast as the descending buckets become emptied, the motion of the wheel W will be continuous and uniform, and the progressive movements of the motor mechanism C will be as regular as if governed by a weight or spring. But a limited quantity of water will be required to keep the apparatus in motion, and as the waste is automatically carried off the apparatus requires substantially no care.

The apparatus may be inclosed within a suitable casing, as shown in dotted lines, Fig. 1. Any well-known type of water-wheel or motor that can be made operative by the gravity or pressure of water—preferably by the gravity—may be substituted for that shown. In the modification shown in Fig. 3, the motor mechanism is a clock-work, adapted to be wound up at intervals by the weight of the float *f* acting upon the ratchet-wheel R, through the intermediate operation of the lever L and pawl P′. The float F is inclosed within a tank, T, and is gradually raised by the pressure of the water as it is supplied from the induction-pipe F. When the water in the tank T has reached a level above the bend *s* of eduction-pipe G, a siphonic action is produced and the contents of the tank T are thus rapidly discharged, leaving the float *f* supported from the lever L by the rod or cord *r*. As the float descends under its weight, the spring or weight of the motor mechanism or clock-work is wound up. The gravity or pressure of the water which accumulates in tank T causes the float *f* of less specific gravity than the water to again rise, when the siphon is again caused to operate, and the process of winding the motor is thus automatically repeated at regular in-

tervals. The length of time between the intervals of winding can be made longer or shorter by regulating the water-supply from the pipe F, which can be done through the medium of the cock *a*.

I reserve the right to claim in another application any invention not now claimed which is shown in Fig. 3 of the drawings of this case.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with means for furnishing a water-supply, and motor mechanism adjusted to perform uniform movements, of intermediate mechanism actuated by said water-supply, and devices constructed and arranged to retard or control said intermediate mechanism, so as to insure uniform movements in the motor mechanism, substantially as herein shown and described.

2. The combination, with means for furnishing a water-supply, and motor mechanism adjusted to perform uniform movements, of intermediate mechanism actuated by said water-supply, devices constructed and arranged to retard or control said intermediate mechanism, and independent means for regulating the discharge of the water-supply, substantially as shown and described.

3. The combination, with means for furnishing a water-supply, and motor mechanism adjusted to perform uniform movements, of intermediate mechanism actuated by said water-supply, devices constructed and arranged to retard or control said intermediate mechanism, independent means for regulating the discharge of the water-supply, and means for drawing off the waste water, substantially as herein set forth.

4. The combination, with means for furnishing a water-supply, and motor mechanism adjusted to perform uniform movements, of intermediate mechanism actuated by said water-supply, devices constructed and arranged to retard or control said intermediate mechanism, independent means for regulating the discharge of the water, and means for automatically removing the water which actuates the said intermediate mechanism, substantially as set forth.

5. The combination, with means for furnishing a water-supply, of mechanism actuated directly by said water-supply, devices constructed and arranged to retard or control said mechanism, and means for regulating the water-supply independent of the retarding or controlling devices, substantially as set forth.

6. The combination, with means for furnishing a water-supply, of mechanism actuated directly by said water-supply, devices constructed and arranged to retard or control said mechanism, means for regulating the water-supply independent of the retarding or controlling devices, and means for automatically removing the water which is discharged by the apparatus, substantially as set forth.

7. The supply-pipe F and water-wheel W, in combination with the escapement and pendulum E R P, substantially as set forth.

8. The supply-pipe F and water-wheel W, in combination with the escapement and pendulum E R P and the motor mechanism C, substantially as set forth.

9. The supply-pipe F, provided with the cock *a* and the water-wheel W, in combination with the escapement and pendulum E R P and pipe G for carrying off the waste water, substantially as set forth.

10. The supply-pipe F, having cock *a* and the water-wheel W, in combination with the escapement and pendulum E R P, motor mechanism C, and waste-water pipe G, substantially as and for the purpose set forth.

CHARLES E. BUELL.

Witnesses:

LENN HERTINGER,

A. C. BUELL.