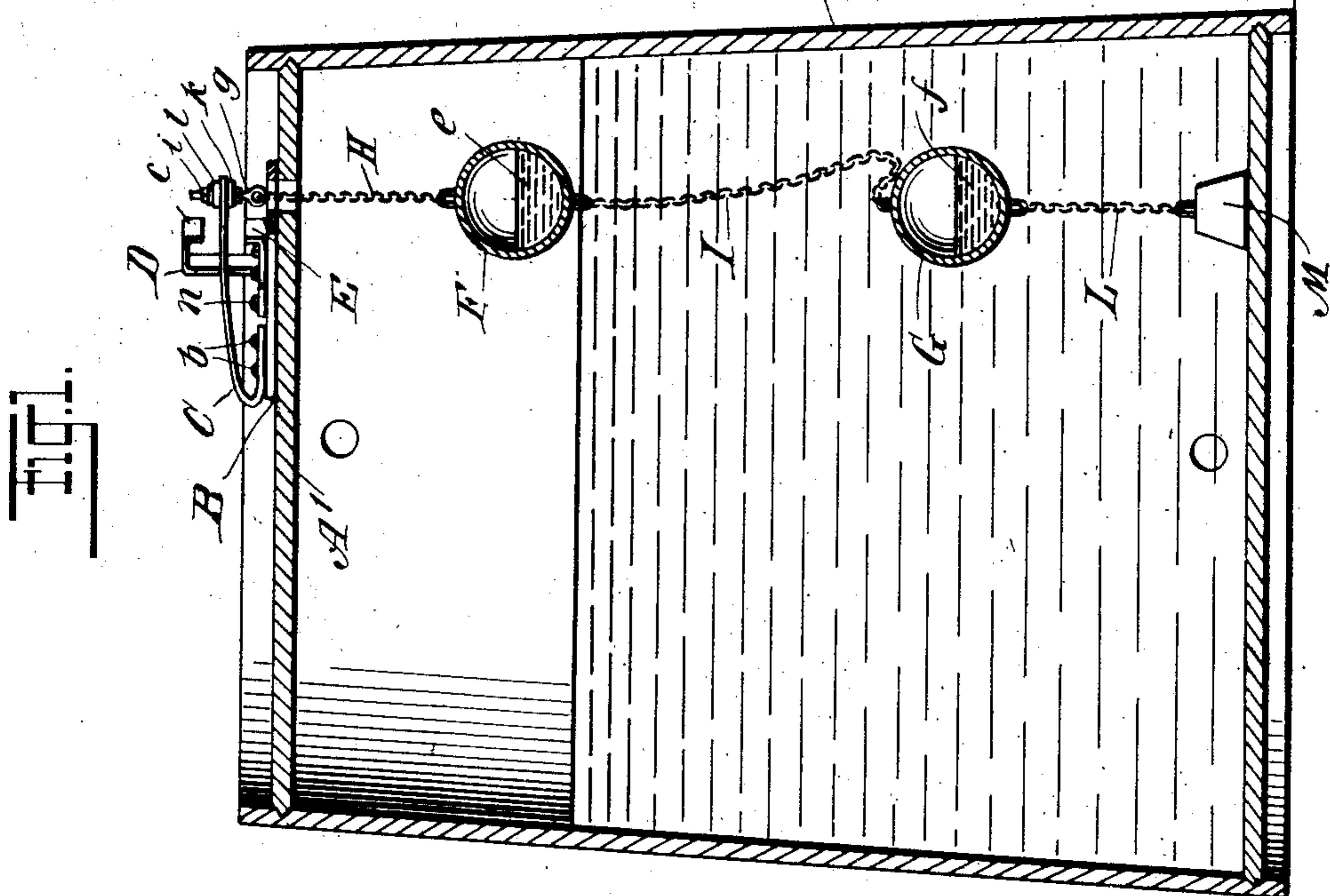
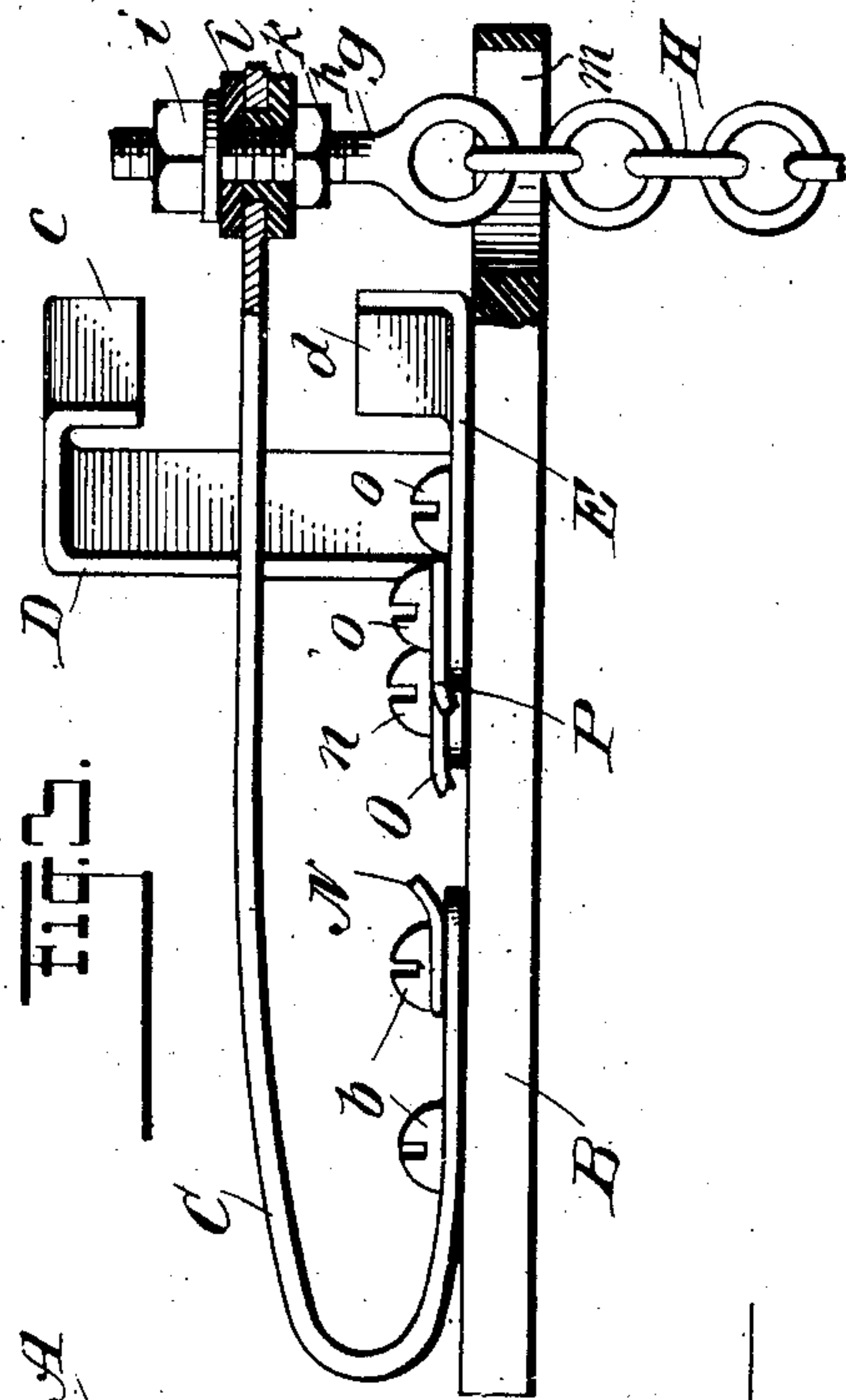
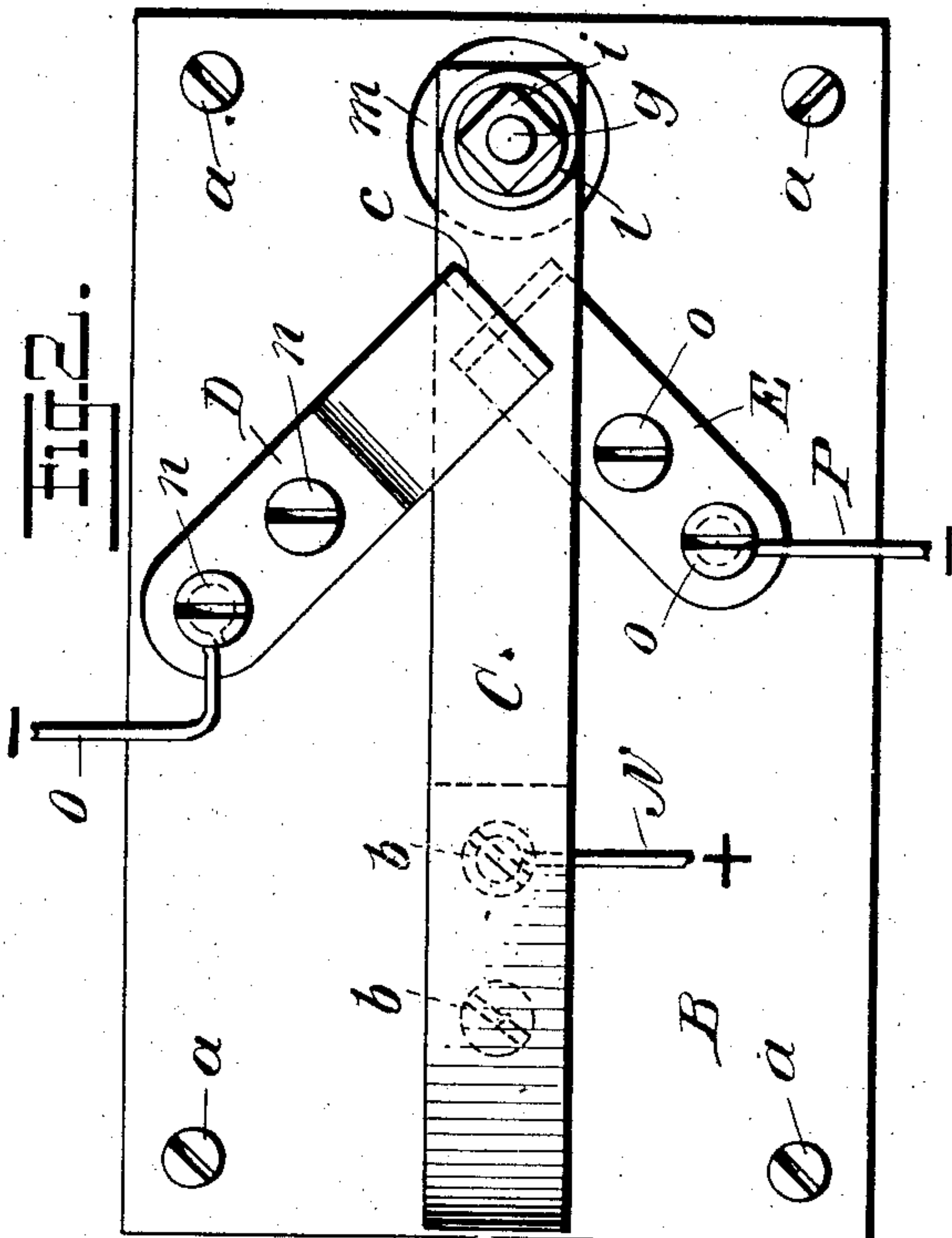


No. 842,554.

PATENTED JAN. 29, 1907.

A. JOHNSON.  
ELECTRIC WATER ALARM.  
APPLICATION FILED MAR. 20, 1906.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ALBERT JOHNSON, OF NEW YORK, N. Y.

## ELECTRIC WATER-ALARM.

No. 842,554.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed March 20, 1906. Serial No. 306,969.

*To all whom it may concern:*

Be it known that I, ALBERT JOHNSON, a subject of the King of Sweden, and a resident of the borough of Manhattan, city of New York, in the county and State of New York, have invented certain new and useful Improvements in Electric Water-Alarms; of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact specification.

My invention relates to automatic electric alarms applicable, in connection with tanks or reservoirs of any description for containing water or other liquid, to give notice of the rise or fall of liquid beyond certain predetermined points and to indicate that the supply should be checked or renewed, according to the particular circumstance.

The object of my invention is principally to provide or produce a reliable and efficient mechanism for establishing electric connection for producing an alarm upon the rise or fall of water in a supply-tank or reservoir of any character, which mechanism shall be simple of construction, easy to apply, and not liable to get out of order.

To accomplish the foregoing object and to secure other and further advantages in the matters of construction, operation, application, and use, my improvements involve certain new and useful arrangements or combinations of parts and principles of operation, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a sectional elevation showing my improved mechanism in place upon an ordinary water-tank. Fig. 2 is a top or plan view representing the bed-plate of my device, the spring and the contact-arms mounted in place on the plate, this figure being on a larger scale than Fig. 1. Fig. 3 is a corresponding side elevation with portions shown in section.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

A represents one form of water-tank, such as is ordinarily employed upon roofs and in other situations to afford a supply of water for household and other uses; but it should be understood that the improved device may be employed in connection with any exposed receptacle for water or other liquid or in connection with a well or cistern.

B is a non-conducting plate of suitable

size and shape for sustaining the operating parts, the plate being intended to be secured in place, as by screws *a a*, upon the top *A'* of the tank or upon any other convenient place of support. By preference I mount the plate B directly above the body of the liquid and near the center or side of the top of the receptacle; but obviously it might be mounted in any other position if proper provision be made for leading the connecting-line from the floats to the spring.

C is a bent spring, of which one end is secured upon plate B, as by screws *b b*, its opposite end being capable of movement between two arms, one extending over and the other beneath the spring. These arms are represented, respectively, at D and E, the former having a downturned end *c* for making a fair contact with the spring and the other having an upturned end *d* for a similar purpose.

Two separate floats, as F and G, are connected with the movable end of spring C, and they are located in the liquid-receptacle and rise and fall with the liquid, being properly ballasted by the introduction of any suitable liquid or other substance, as represented at *e* and *f*. The upper float F is connected with the spring by a chain or equivalent means, (represented at H,) and preferably this is applied by use of an eyebolt *g*, having suitable nuts *h* and *i*, the bolt being insulated from the spring by the interposition of insulating material, as at *k* and *l*; but other means of making this connection may be adopted. An opening *m* may be made through plate B to permit free movements of chain H.

The float G is connected with the spring, preferably through its connection with the float F, as by a chain or other flexible medium, (represented at I,) and applied between the two floats connecting one with the other. Applied to float G by a suitable chain or flexible medium L is a weight or anchor M, intended to rest upon the bottom of the receptacle and of gravity sufficient to resist the buoyant effort of the two floats combined; but obviously this weight might be replaced by any suitable means of anchoring the lower end of chain L. The chain I between the two floats is of length sufficient to permit the upper float to be carried up by the liquid in the receptacle to the predetermined highest level of the liquid, and when it is thus carried up the end of the spring C rises and makes the desired contact with the arm D.



Spring C is of sufficient power to sustain the weight of float F (and chains H and I) when the liquid falls below its highest level in the receptacle; but it is not of sufficient power to sustain the combined weight of the two floats. When the liquid recedes beyond the limit of its lowest predetermined level in the receptacle, the weight of the lower float is added to that of the upper one, and then the two together pull the end of the spring down, causing contact with the arm E. The required lengths of the chains and the tension or power of the spring for any required conditions are matters which are easily regulated.

The electrical sounder or other form of electrical alarm may be of any approved pattern and located at any convenient point and is not necessary to be shown herein. One of the screws *b* forms a convenient binding-post for an electric conductor of a current of one polarity, as the wire N, leading to whatever electrical alarm is employed and forming a part of an electric circuit which includes the spring C.

O and P are electric conductors of currents of polarity opposite that of conductor N, and either one forms part of the circuit, with conductor N, spring C, and arm D or E included. The arms D and E are preferably secured upon the bed-plate by screws, as *n n* and *o o*, one of each pair forming a convenient binding-post for the conductor O or P.

The parts being constructed and arranged substantially as above explained and being in place for use, when the liquid rises to its upper limit the electric circuit will be automatically closed through arm D, and when it falls to its lowest limit the circuit will be closed through arm E, and thus the alarm given under either circumstance. The flow of liquid to the receptacle may then be ar-

rested or renewed, as required. As long as the height of liquid in the receptacle remains between its extreme limits the spring C will remain free from contact with either arm D or E, and thus the circuit allowed to remain open.

The improved device is found to be simple and easy of construction and application, reliable in operation, and to fulfil all the purposes or objects of the invention hereinbefore alluded to.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a device of the character herein set forth, the combination with a spring and arms for contact therewith, of two floats applied in connection with said spring and adapted to permit the end thereof to rise and compel it to descend, substantially as and for the purposes set forth.

2. In a device of the character herein set forth, the combination with a spring and arms for contact therewith, of two floats connected with each other, one of said floats being connected with the end of the spring, substantially as explained and for the purposes set forth.

3. In a device of the character herein set forth, the combination with the spring and arms for contact therewith, of two floats connected with each other and with the spring, and an anchor applied in connection with the lower float, substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT JOHNSON.

Witnesses:

C. SEDGWICK,  
J. M. HOWARD.