N. B. ACHESON.
Rotary Water-Meter

No. 206,065. Patented July 16, 1878.

Fig. 1.

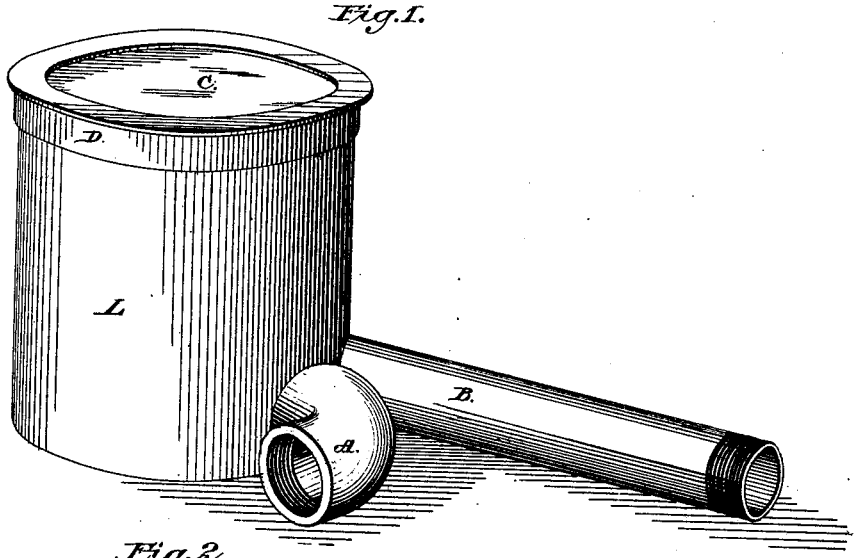


Fig. 2.

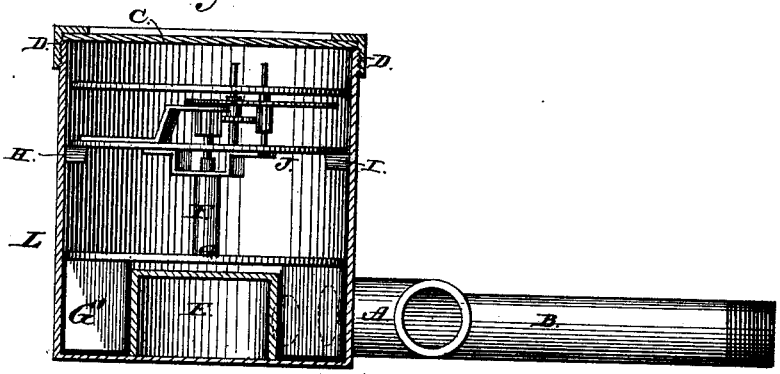
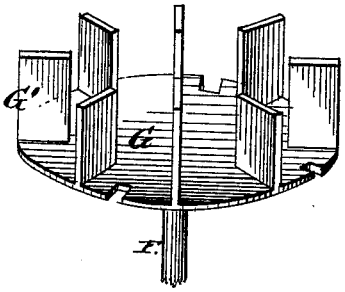


Fig. 3.



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UNITED STATES PATENT OFFICE.

NATHAN B. ACHESON, OF YOUNGSTOWN, OHIO.

IMPROVEMENT IN ROTARY WATER-METERS.

Specification forming part of Letters Patent No. **206,065**, dated July 16, 1878; application filed September 7, 1877.

To all whom it may concern:

Be it known that I, NATHAN B. ACHESON, of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Fluid-Meters; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in the construction of a fluid-meter in which the fluid has to pass nearly in a complete circle from its entrance to its exit, and act upon a disk having a series of radial wings depending therefrom into the circular passage, the disk operating the index, all as hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my improved fluid-meter. Fig. 2 is a central vertical section of the same. Fig. 3 is a perspective of the rotating wheel with its wings in inverted position.

L represents the metal shell or case of the meter, made in cylindrical form, with inlet-pipe A and outlet-pipe B. These pipes are located close together where they are united to the meter, and the outlet-pipe B is of smaller diameter than the outlet-pipe A, thus providing for the entrance into the meter of more fluid than could pass away, and thus securing a more even movement of the wheel. D is the cap of the case L, screwed thereon, and provided with a glass plate, C, through which the index may be seen.

In the center, on the bottom of the case L, is a cylindrical block or projection, E, of any suitable dimensions, which leaves an annular passage between it and the sides of the case at the bottom. This space is just large enough to allow a series of floats or wings, G′, depending from a disk, G, forming a wheel, to revolve freely around the cylinder E. The floats or wings G′ are attached in radial position, at equal distances apart, to the under side of the disk G, and this disk is secured to the lower end of a vertical shaft, F, which is held in position by bearings. The shaft F is attached to an index of ordinary construction above the plate J, which plate divides the space inside of the meter.

The fluid, entering the meter at A, flows at once into the annular space around the cylindrical block E, into which the floats or wings G′ project and fit closely. The fluid must flow around the block E in said space to the exit B, and must carry the wheel with it. Each revolution of the wheel is recorded by the index. When the fluid is drawn from the outlet-pipe B, the movement of the fluid carries the wheel around with it, as it cannot pass out in any other direction.

The space in the meter above the wheel is to be filled with some transparent fluid that is lighter than the fluid to be measured, and which will be absorbed by it. This is for the purpose of keeping the parts of the machinery clean and oiled, and free from any grit or dirt contained in the fluid being measured.

I am aware that a meter having a revolving wheel or fan for operating the index is not new; and I do, therefore, not claim such, broadly, as my invention. In such cases, however, as known to me the motion of the wheel or fan depends upon the force of the fluid when it first strikes the fan, while in my invention the rotary movement of the fluid from the large inlet to the smaller outlet furnishes the motive power to the wheel.

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

In a fluid-meter, the combination of the case L, central closed cylindrical block E, forming an annular passage, the disk G, having suspended shaft F, attached to the upper surface thereof, with pendent radial rings or floats G′, and the inlet A and outlet B, of unequal size, all constructed and arranged as described, whereby the fluid obtains a circular motion from the inlet to the exit, as and for the purpose herein set forth.

NATHAN B. ACHESON.

Witnesses:

A. E. KNIGHT,
GEO. RUDGE, Jr.,
GEO. RUDGE.