Sheet 1-2 Sheets.

J. Taggart

Gas Meter,

No. 12,887. Patented May 15, 1855.

Fig. 2.

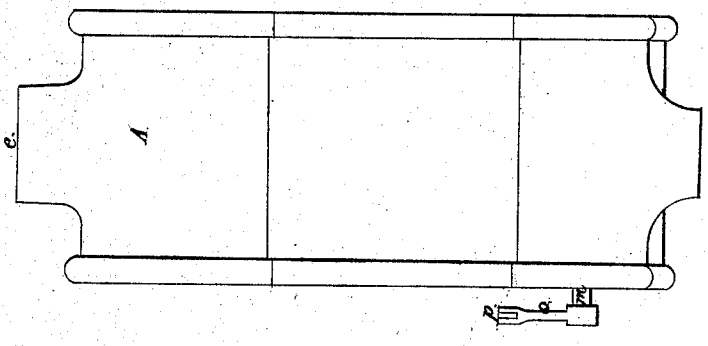
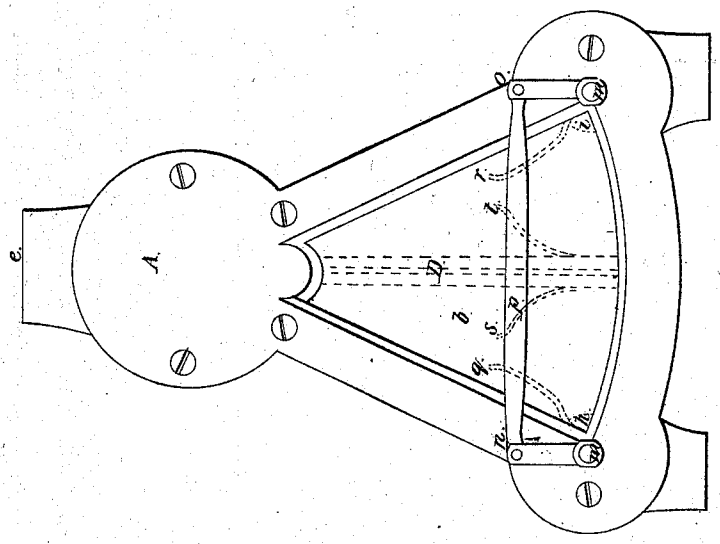


Fig. 1.



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Sheet 2 - 2 Sheets

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Fig. 4.

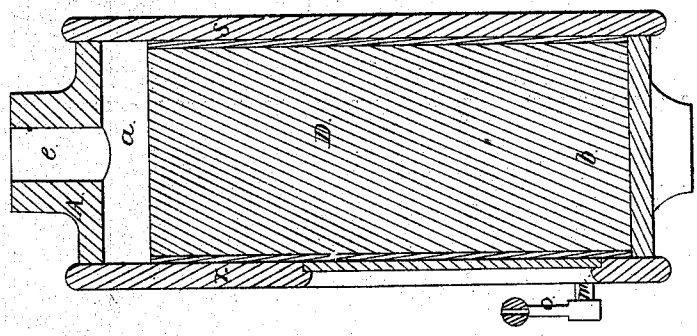
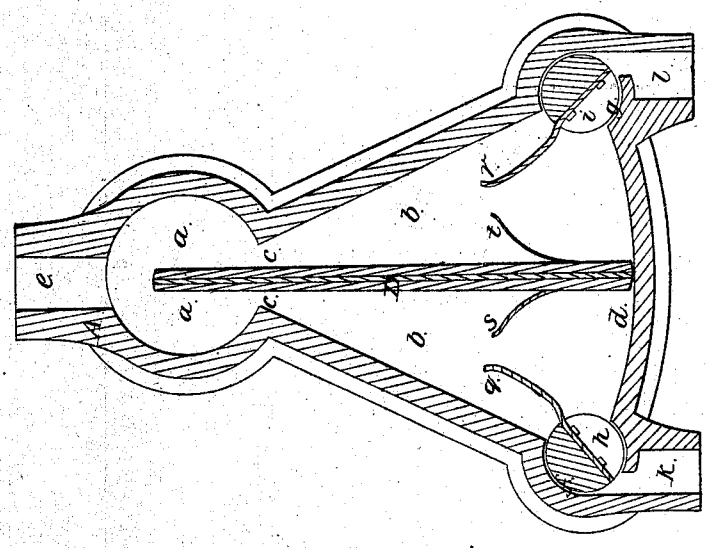


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN TAGGART, OF ROXBURY, MASSACHUSETTS, ASSIGNOR TO I. TAGGART AND I. S. SHALER.

FLUID-METER.

Specification forming part of Letters Patent No. **12,887**, dated May 15, 1855.

To all whom it may concern:

Be it known that I, JOHN TAGGART, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new or Improved Automatic Fluid-Meter; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 represents a front elevation of my improved meter. Fig. 2 is a side view of it. Fig. 3 is a central, vertical, and longitudinal section of it taken in a plane parallel to its front face. Fig. 4 is a transverse section of it.

In the construction of my improved fluid-meter I form its case A so as to contain two chambers, *a b*, which are made to open into each other by means of a neck or passage, *c*, the chamber *a* being placed above the chamber *b*, as represented in the drawings. The upper chamber, *a*, is of a cylindrical form, while the lower chamber may be said to approximate to the form of a sector of a cylinder, its bottom or lower part being made or curved as seen at *d*. The superior chamber *a* is provided with an induction pipe or opening, *e*, which is placed in the upper part of it, as seen in the drawings. The lower chamber has two eduction-valve chambers, *f g*, which freely communicate with the said chamber *b* and are cylindrical in shape and have inserted in them, respectively, two faucet-valves, *h i*, that are provided with eduction-passages *k l*, leading out of the valve-chambers. Each faucet-valve is made to turn within its valve-chamber and to have a journal, *m*, extended through the front side of the case A and having attached to it a crank-arm, as seen at *n o*, the two crank-arms of said journals being connected by a rod, *p*, jointed to both of them in such manner as to cause corresponding movements of both valves when either one is moved. Each valve is provided with an arm, *q r*, that extends from it into the chamber *b*.

Within the chamber *b*, and resting on its bottom and made to extend up through its passage or neck *c* and into the chamber *a*, is what may be termed a "rectangular vibrating" plate, dasher, or piston, D, whose thickness where it passes through the neck is made somewhat less than or about one-third of the width of the neck, and whose width corresponds to the distance between the two side plates, *r s*, of the case A. If desirable, packing may be introduced between the upright edges of the plate or dasher D and the said sides of the case A, such packing being confined to the dasher and so as to move with it and make close joints between the dasher and the sides of the case.

In order to relieve the valve arms from the effect of a sudden percussion when the dasher D is moved against either of them, such dasher may be provided with springs applied to opposite sides of it, as seen at *s t*, and so as to be alternately borne in contact with the arms during the vibratory movements of dasher or piston. Under these circumstances if water under pressure be allowed to enter the case A through the induction-pipe thereof it will flow into the chamber *a* and press the dasher against one side of the neck *c;* and if we suppose such side of the neck to be the right side of it and the eduction-valve on the left of the dasher is closed and that on the right of it open, the water will fill that space in the chambers *a* and *b* which is the left of the dasher or its spring, and by its pressure will move the dasher toward the eduction-valve on the right of it until the dasher is forced into contact with the arm of such eduction-valve and closes said valve, and at the same time forces open the other eduction-valve. The moment this takes place the pressure of the water in the chamber *a* will cause the dasher to be moved from the right to the left side of the neck *c*, which taking place the water will be stopped from passing from the chamber *a* to the chamber *b* on the left of the dasher, but will be free to pass from one of said chambers to the other on the right of the dasher. The eduction-valve at the left of the dasher being opened and that on the right of it being closed, pressure will be exerted on the right side of the dasher and force the dasher toward the left eduction-valve and to expel from that part of the chamber *b* which is on the left of the dasher such water or fluid as may be therein. This movement of the dasher will continue until it or its

spring is forced in contact with the arm of the left eduction-valve and closes said valve and causes the right eduction-valve to be opened. On such taking place the upper part of the dasher will be thrown over against the right side of the neck *c* and the dasher will be moved toward the right eduction valve, expelling the water that may be on the right of it (the said dasher) in the chamber *b*. Thus the operation will go on, and should we connect to one of the valves a suitable registering apparatus we may easily measure the flow of water taking place in any given time through the case A.

My apparatus is intended to be used as a fluid-meter or for such other purposes as it may be applicable to in the arts. In some respects it resembles a common force-pump made with a sectoral case and a vibrating dasher or piston, but in others it is essentially different therefrom. While such force-pump generally has four valves, this has but two, and the operation of its dasher or piston is very different from that of the force-pump. The case also is differently made, as it is constructed of two chambers opening into one another by a neck or passage wide enough to allow the dasher to vibrate or play from one side to the other.

What I claim as my invention is—

My improved automatic fluid-meter as constructed and made to operate substantially as described—that is to say, of the following elements or their mechanical equivalents in combination, viz: first, two chambers, *a b*, united by a rectangular or square neck or passage, *c*, made of a width greater than the thickness of the vibrating piston or plate extended through the neck; second, an induction pipe or opening, *e*, in the upper chamber; third, two eduction-passages, *k l*, and valves applied to the lower chamber; fourth, a vibrating plate, dasher, or piston, D, extending from one chamber, *a*, into another chamber, *b*, as described; fifth, a mechanism applied to the eduction-valves whereby they may be alternately opened and closed by the vibrating plate or dasher during its movement, as described.

In testimony whereof I have hereunto set my signature this 23d day of June, A. D. 1854.

JOHN TAGGART.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.