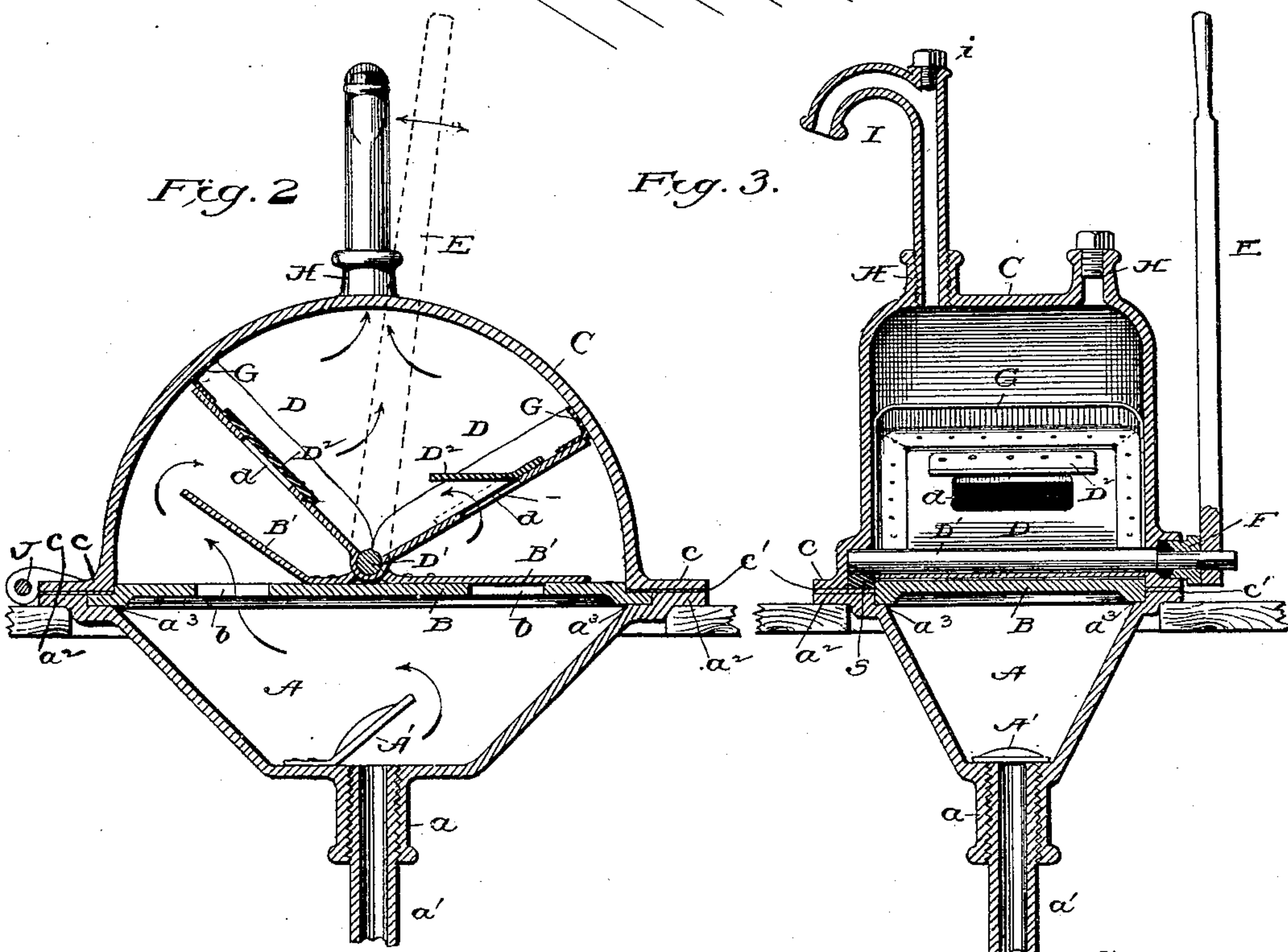


2 Sheets—Sheet 1.

No. 454,180.

Patented June 16, 1891.



Witnesses:

Witnesses:
N. N. Mortimer.
Wm. J. Little,

Inventor:

by William McLennan,
J. R. Littell,
Attorney

(No Model.)

2 Sheets—Sheet 2.

W. McLENNAN.
PUMP.

No. 454,180.

Patented June 16, 1891.

Fig. 4.

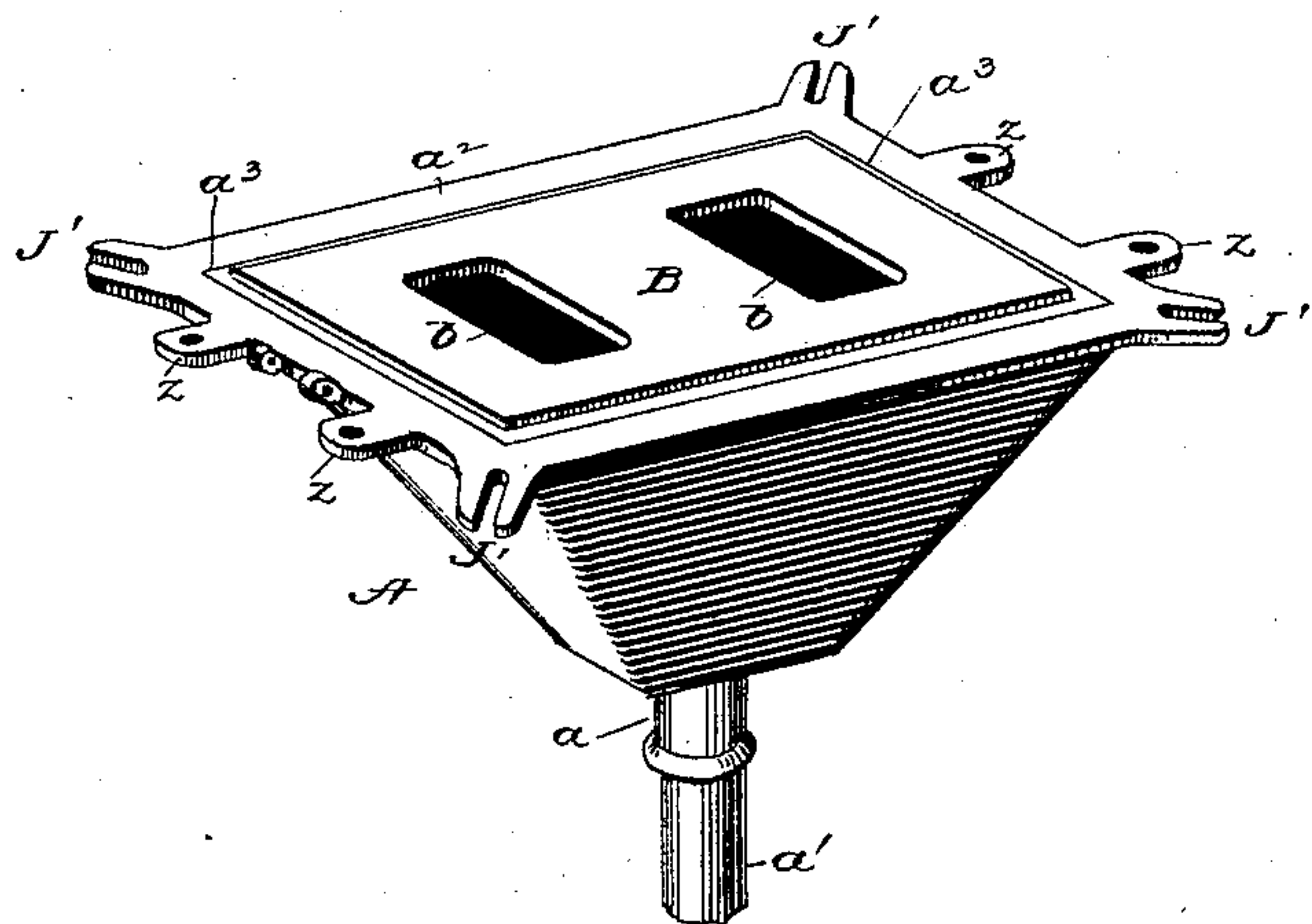


Fig. 5.

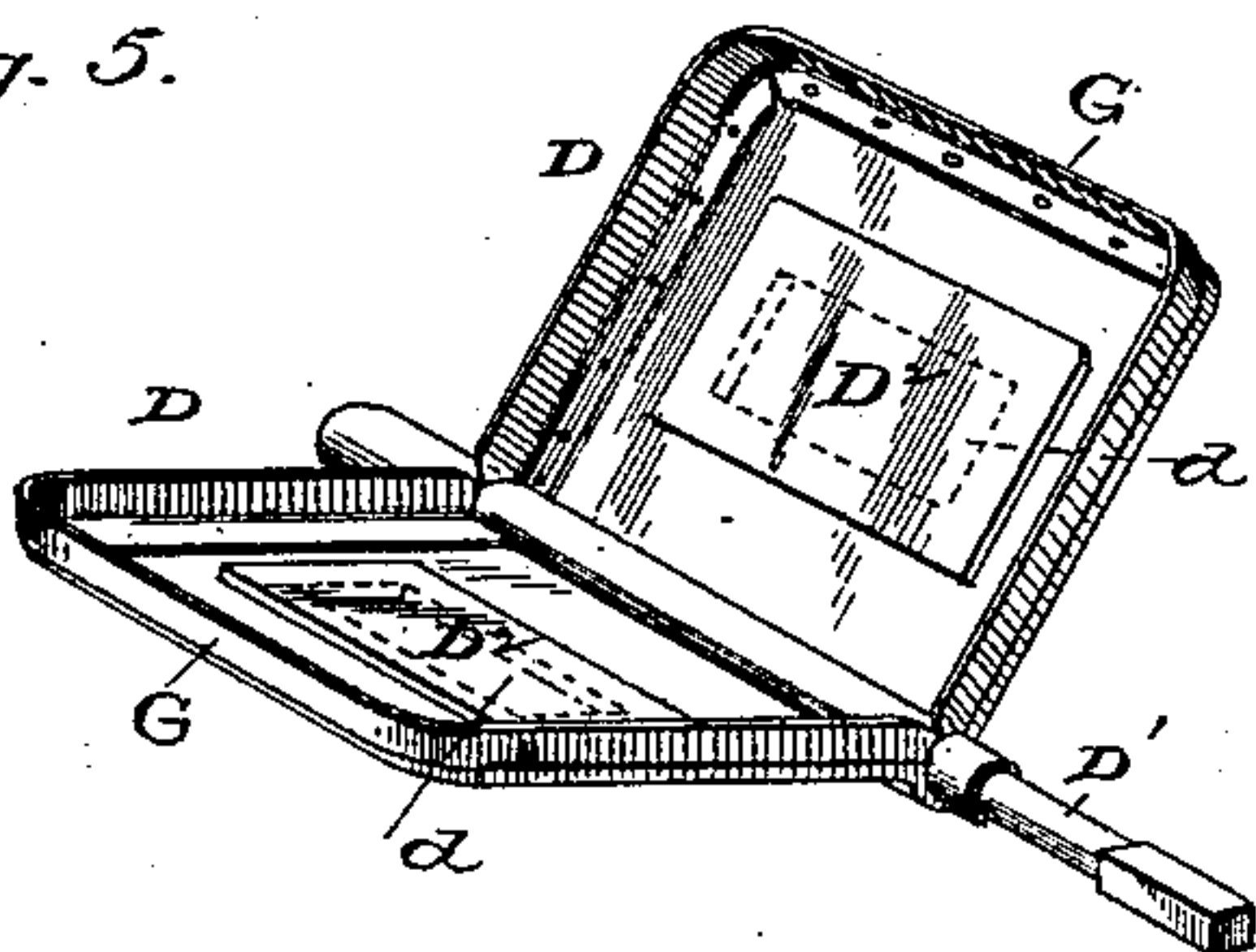
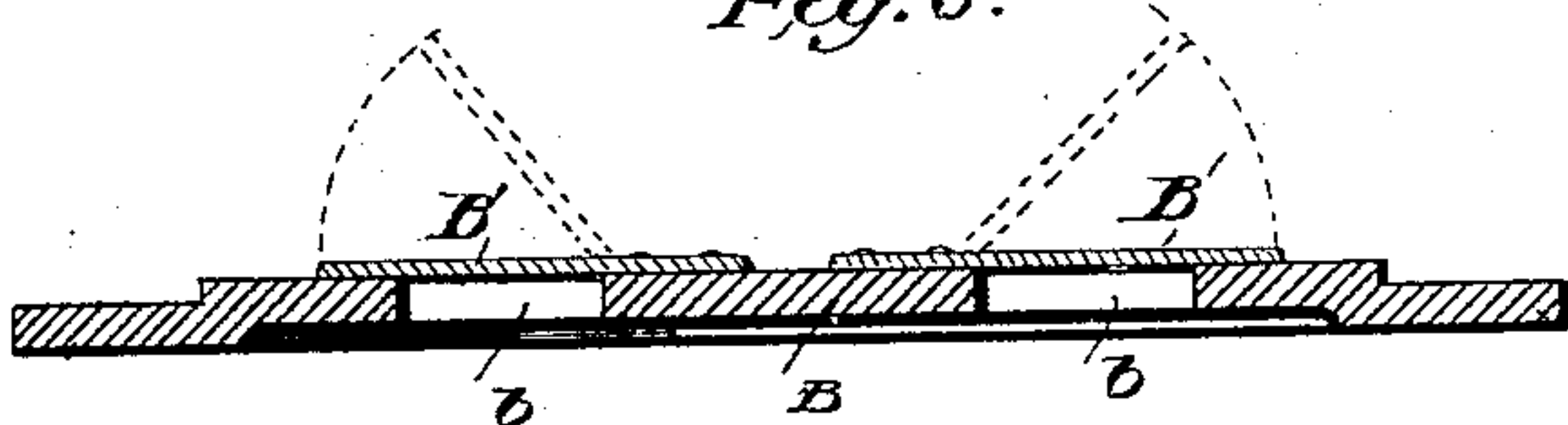


Fig. 6.



Witnesses:

William W. Mortimer,
Wm. J. Little,

Inventor:

William McLennan,
by J. P. Little,
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM McLENNAN, OF PORT ANGELES, WASHINGTON.

PUMP.

SPECIFICATION forming part of Letters Patent No. 454,180, dated June 16, 1891.

Application filed February 18, 1890. Renewed April 2, 1891. Serial No. 387,336. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McLENNAN, a citizen of the United States, residing at Port Angeles, in the county of Clallam and State of Washington, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of pumps known as "oscillating pumps;" and it has for its object to provide a pump of this class adapted to be used as either a lift or force pump, and which will also possess advantages in point of simplicity, inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a perspective view of a pump embodying my invention. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a similar view at right angles thereto. Fig. 4 is a detail perspective view illustrating the lower casing with the cover therefor in position. Fig. 5 is a detail perspective view of the oscillating wings removed. Fig. 6 is an enlarged detail sectional view of the cover for the lower casing.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates an under or lower casing, preferably rectangular in cross-section and formed flaring toward its top. At its lower contracted end the casing is provided with a cylindrical flange a , to which is connected a pipe a' , leading to the water, and at the top of said flange is provided a check-valve A' . At the top edge of the casing A is formed an outwardly-extending horizontal flange a^2 , extending entirely around the same, and said top edge is grooved at its inner side to form an interior flange a^3 . Fitting within the top of the casing A and resting upon the latter flange is a top or cover B, said top being provided at either side of its longitudinal center with an opening b , normally closed by valves B' , disposed upon said top and opening in opposite directions.

C designates an upper or top casing semi-circular in shape and provided at its lower edge with a continuous outwardly-extending flange c , corresponding to and adapted to be seated upon the flange a^2 of the under casing.

The flange c also projects over the edge of the top or cover B, and, a washer c' being interposed between the secured portions, a perfect joint is obtained.

Within the casing C are disposed two corresponding wings D D, rigidly mounted on a common shaft D', said wings being adapted to be oscillated within said casing. The shaft D' is journaled in the casing C at the extreme lower end thereof and midway its vertical sides, one end of said shaft being extended exteriorly and provided with an operating-lever E. The other end of the shaft may also be extended and provided with a similar operating-lever, as is desirable in some cases, or it may be journaled in any suitable manner within the casing—such as, for instance, a groove formed in the adjacent wall of the casing, or a set-screw passed through the latter from the outside. The protruding end of the shaft is preferably provided with a stuffing-box F to prevent leakage. The end of the shaft bearing in the groove is retained in place by a grooved block s , fitting within said groove.

At the point of juncture of the vertical sides of the casing C with the semicircular wall the casing is rounded, the purpose of which will be hereinafter described. The wings D are provided with central openings d , covered by valves D^2 , opposing each other. The wings are also provided at their wearing edges with leather washers G G, which fit closely against the top and sides of the casing C, and thereby prevent leakage. By rounding the corners of the casing these leather washers may be simply bent upon themselves (thereby forming rounded corners to the washers) without the necessity of cutting the leather to fit an angle-corner, as would otherwise be the case. The pump is further insured against leakage by elongating the opposing ends of the leather valves B' , so that they will abut against the shaft of the wings D.

At the top of the casing C is provided a nozzle H, to which may be attached a spout I when it is desired to use the pump as a lift-pump, an opening i being provided at the back of the spout for priming. When a force-pump is desired, a pipe or hose is attached to the nozzle H. In this event an opening H' is

also provided in the casing C for priming. If, however, the pump is to be used exclusively as a lift-pump, the opening H' may be entirely dispensed with.

5 The casings A and C are preferably secured together by hinges J at one end and by providing the corners of the securing-flanges of said casing with radiating bifurcated lugs J', adapted to receive retaining-bolts j. By this
10 means of connection, should the pump be rendered inoperative by an obstruction therein, the bolts can be quickly removed and the top casing thrown back, when the difficulty may be remedied and the casings readily se-
15 cured in position.

The entire pump is secured in position by elongated lugs z, projecting out from the flange α^2 of the bottom casing, said lugs being perforated for the reception of securing-
20 screws.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. As the operating-lever is oscillated the valve in
25 the advance wing opens, while the valve in the following wing closes. The pressure of the advance wing against the contents of the space between the same and the valve B' adjacent thereto closes said valve and causes
30 the water at that side to pass through the open valve and seek an outlet through the nozzle H. At the same time the following wing creates a vacuum between itself and the adjacent valve B', causing the latter to
35 be raised by the pressure of water underneath and become filled with the same, ready

for the return-stroke of the wings. The check-valve A' serves to retain the pipe underneath the same full of water when the sections of the pump are separated for the re- 40
moval of obstructions therein and at all other times, thus rendering priming practically unnecessary.

I claim as my invention—

1. In an oscillating pump, the combination, 45
with a stationary lower casing provided with a check-valve, of a semicircular top casing hinged thereto and separated therefrom by a partition provided with valves, an oscillating shaft journaled in the top casing and pro- 50
vided with valved wings, an outlet to said top casing, and an exterior operating-handle at either or both ends of the shaft, substantially as set forth.

2. In an oscillating pump, the combination, 55
with a semicircular casing provided at one side with a journal-box and at the opposite side with a vertical groove, of a shaft carrying valved wings and having one end passed through and bearing in said journal-box and 60
the opposite end seated in the groove, and a concave block inserted in the vacant portion of the groove and forming the second bearing for the shaft, substantially as and for the
purpose set forth. 65

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM MCLENNAN.

Witnesses:

C. S. STAKEMILLER,
L. T. HAYNES.