

**No. 668,290.**

**Patented Feb. 19, 1901.**

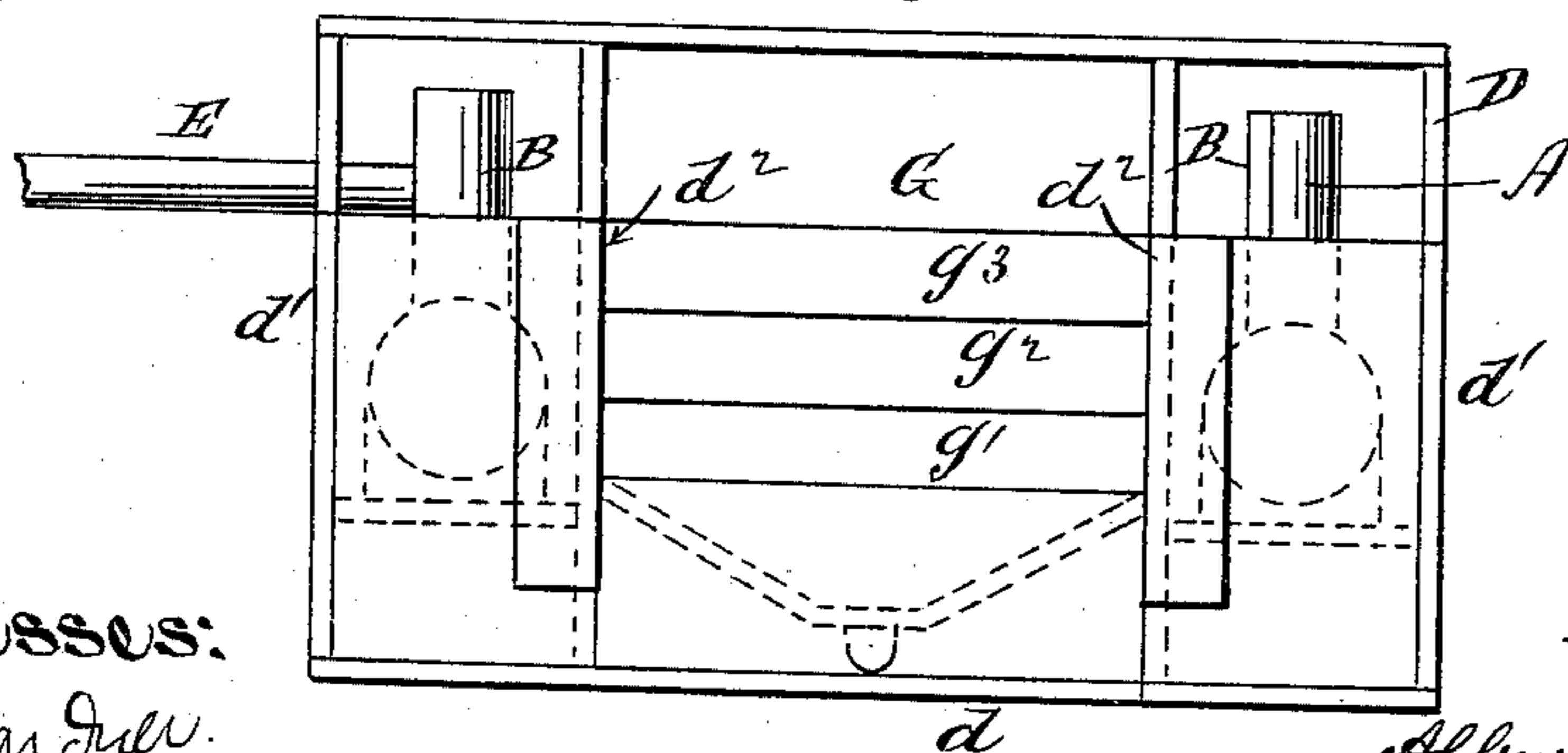
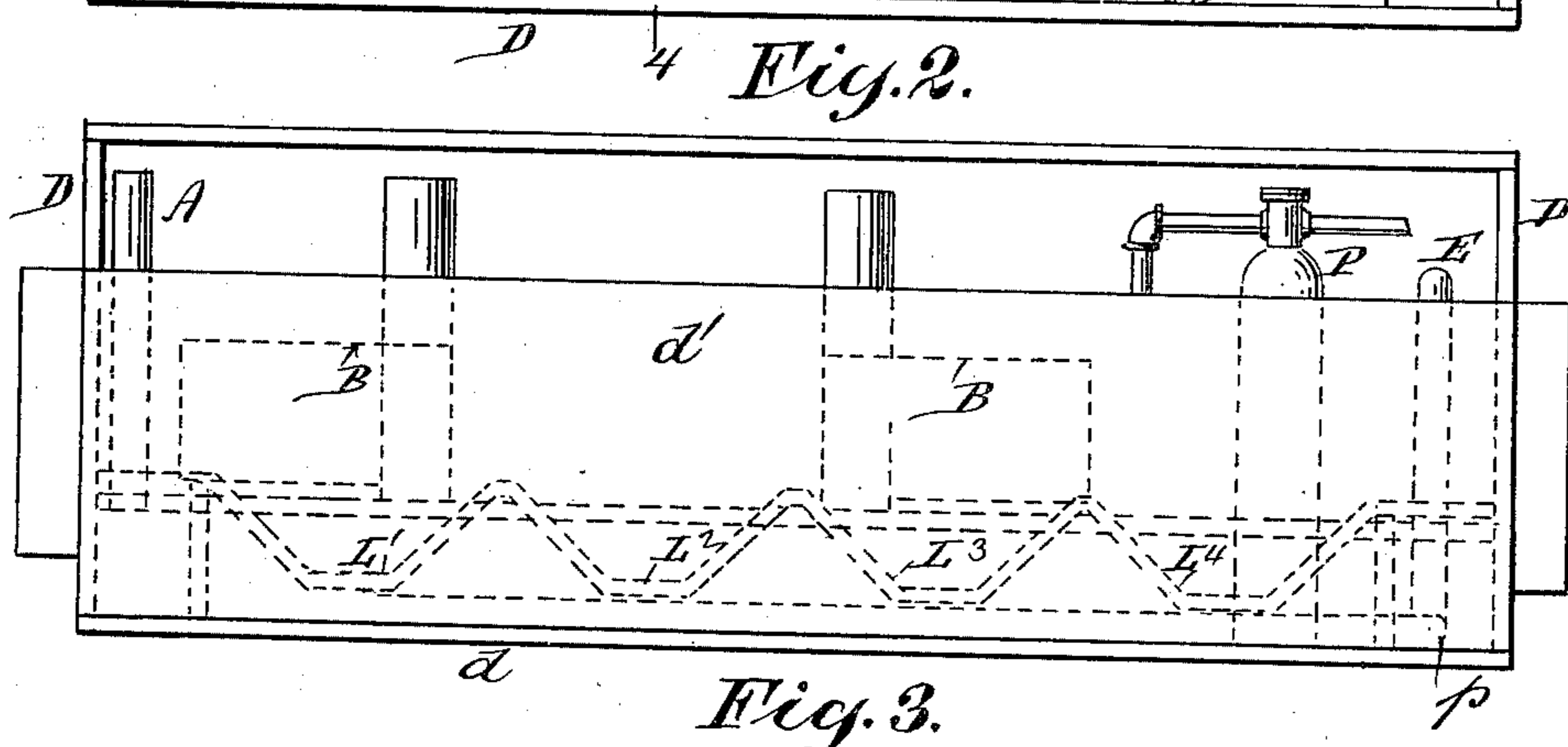
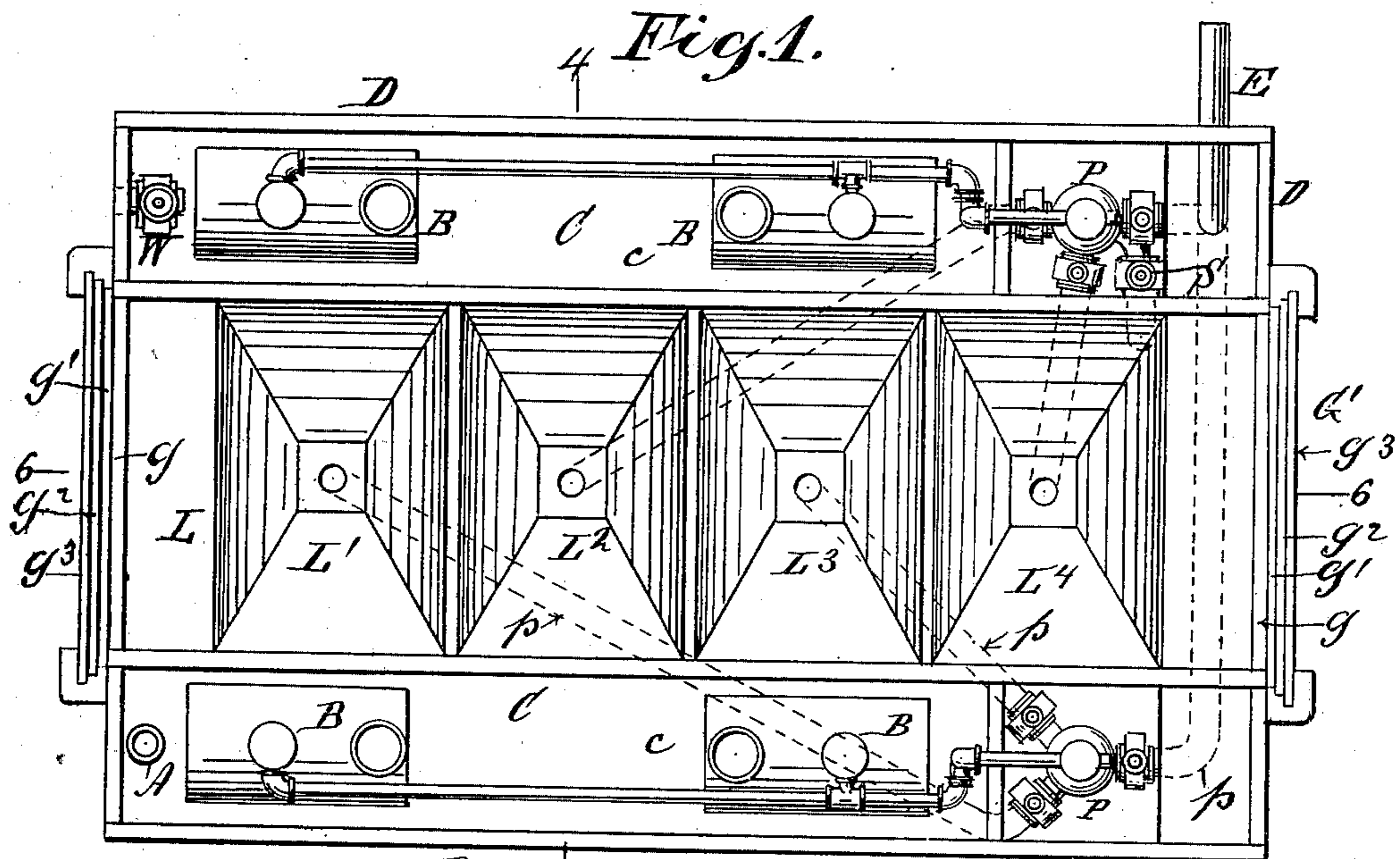
**A. C. HILSINGER.**

**DUMPING DOCK.**

(Application filed Apr. 25, 1899.)

(No Model.)

**2 Sheets—Sheet 1.**



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DUMPING DOCK.

(Application filed Apr. 25, 1899.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

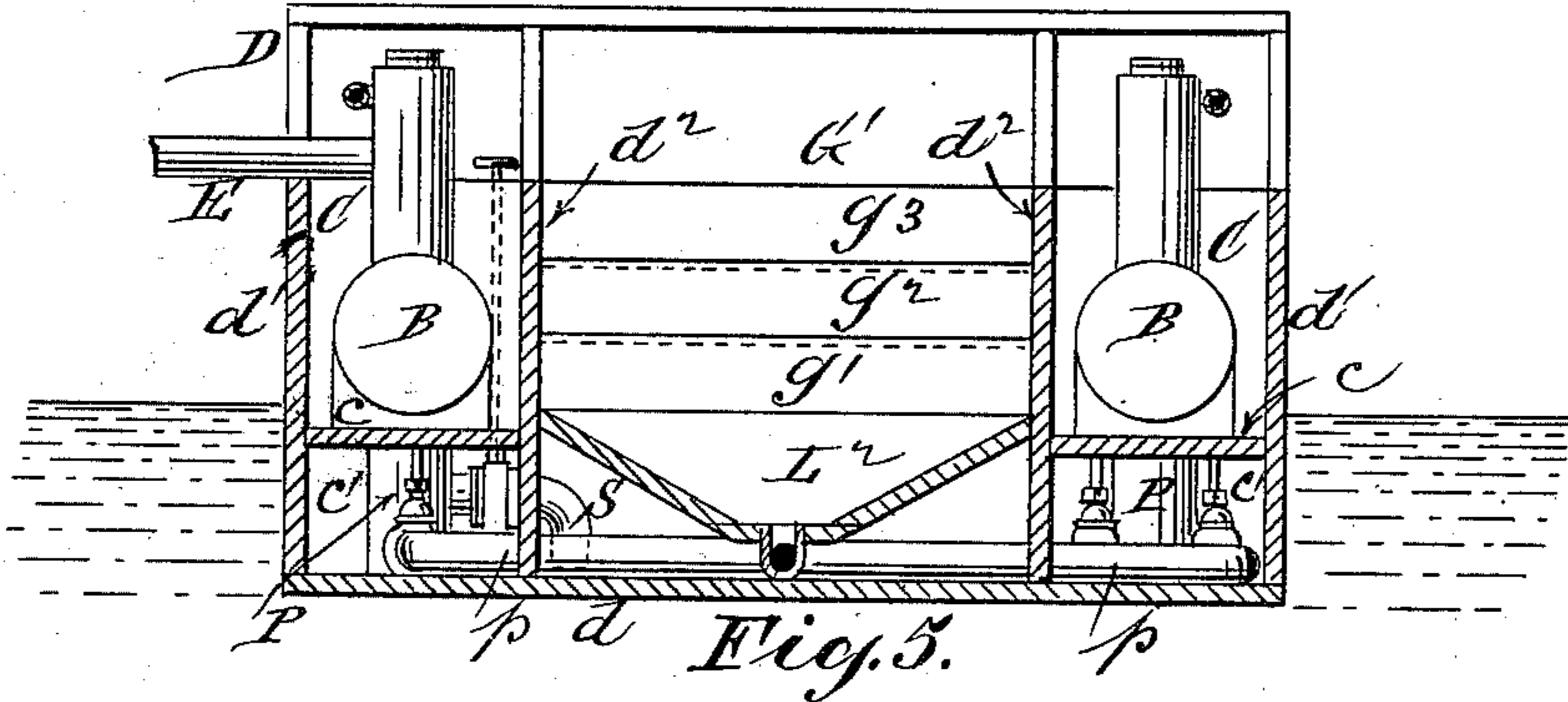


Fig. 5.

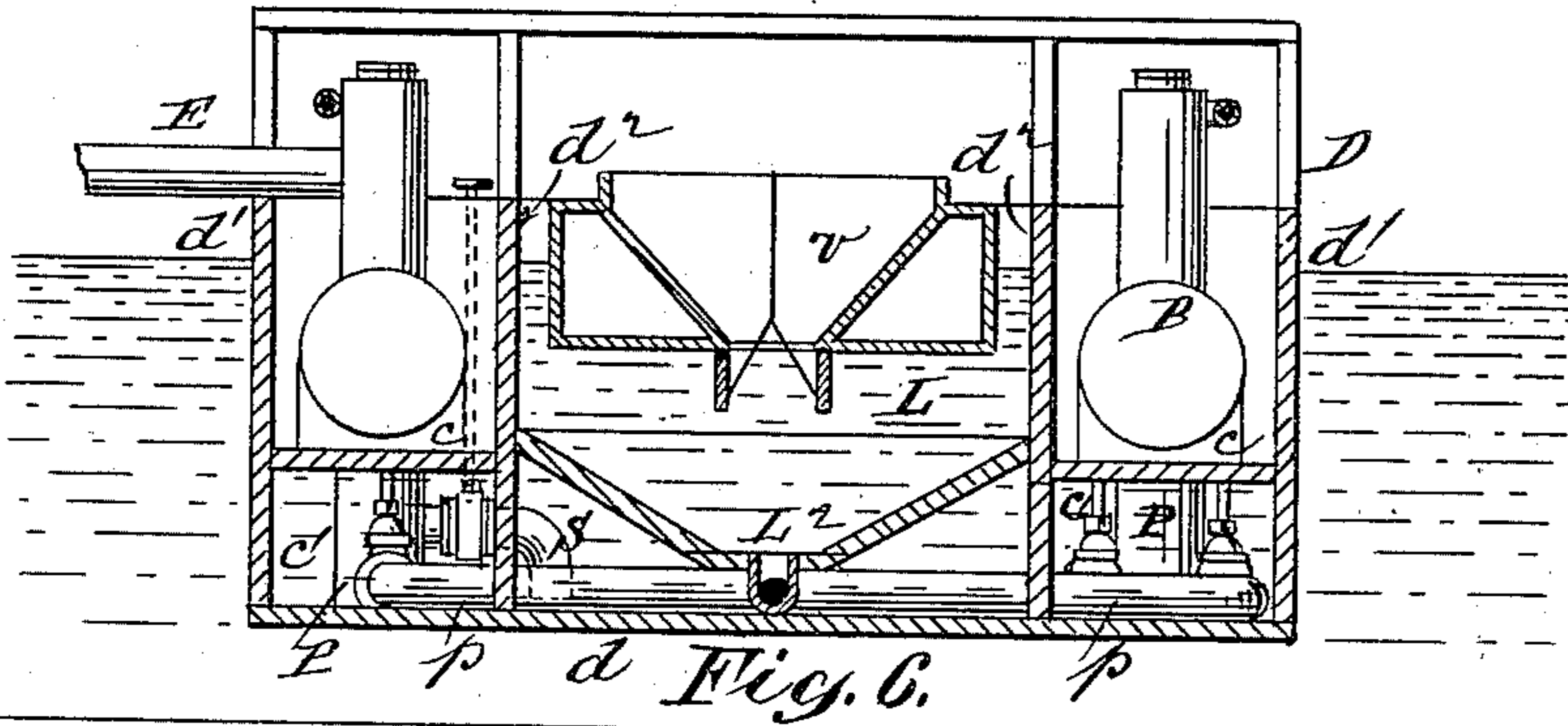


Fig. 6.

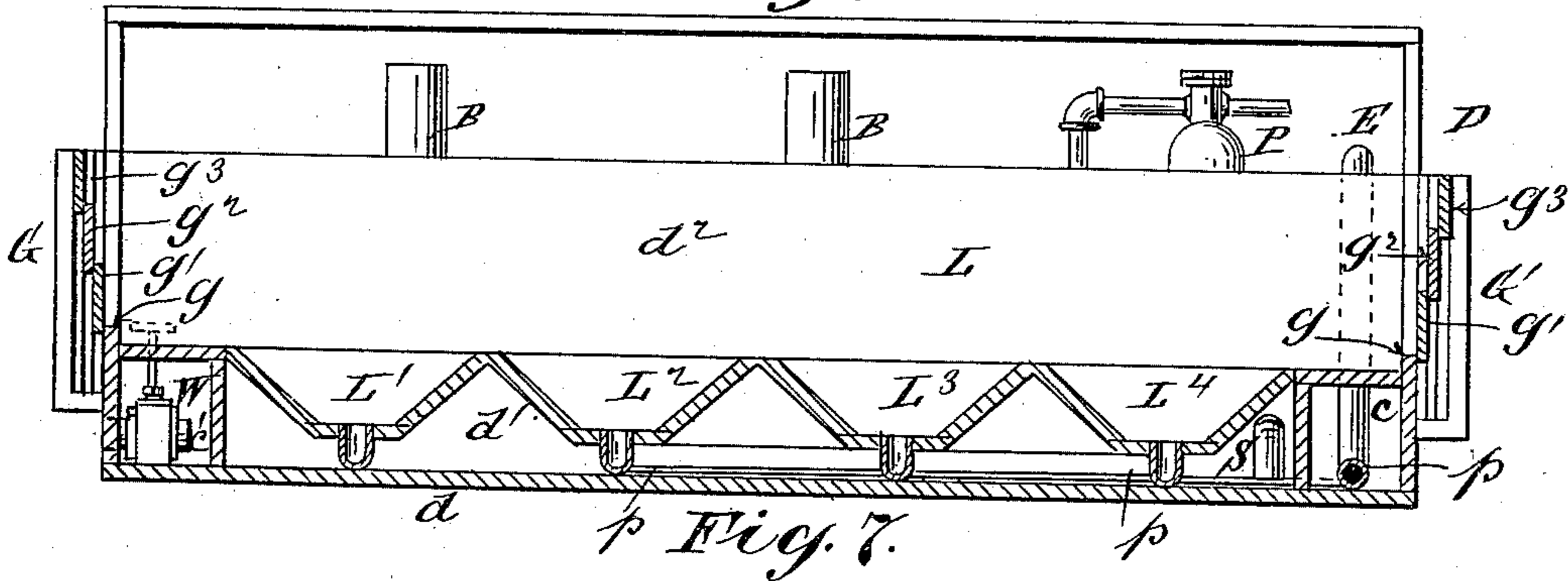
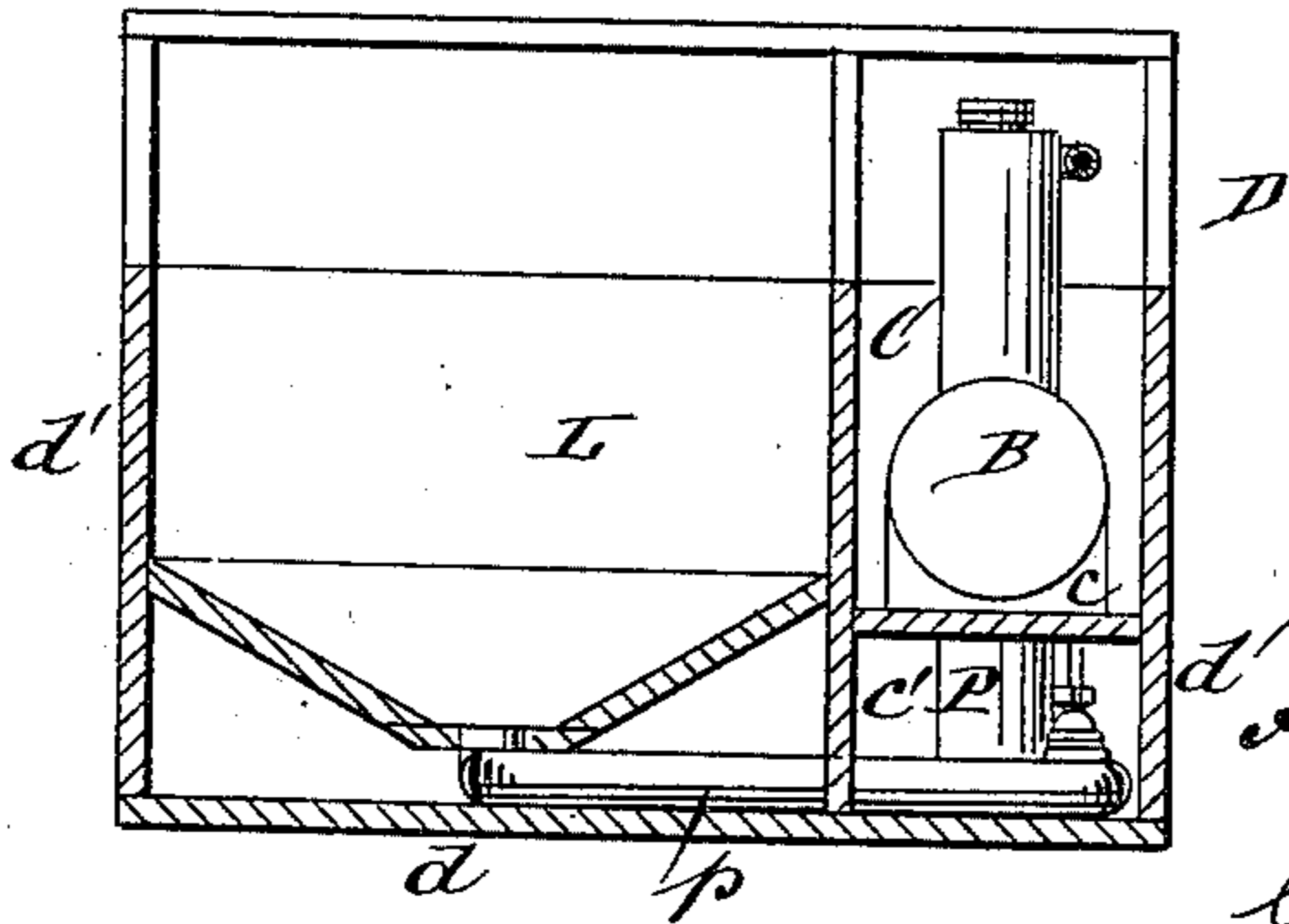


Fig. 7.



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# UNITED STATES PATENT OFFICE.

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## DUMPING-DOCK.

SPECIFICATION forming part of Letters Patent No. 668,290, dated February 19, 1901.

Application filed April 25, 1899. Serial No. 714,372. (No model.)

*To all whom it may concern:*

Be it known that I, ALBURTIS C. HILSINGER, a citizen of the United States, residing at Orange, Essex county, and State of New Jersey, have invented certain new and useful Improvements in Transportable Dumping-Docks, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to means for disposing of dredged material, refuse, &c., in which the containing-scow or other vessel is floated into a dock from which the contents may be discharged without loss. The design is to afford a submergeable dock which may be rendered floatable for purposes of transportation, provided with a receiving-lock having a plurality of pockets connected with suction and discharge apparatus adapted to transfer the contents of the scow or other conveying vessel to a prescribed place of deposit. I thus practically attain and combine all the advantages inherent in both the submerged and the floating docks heretofore known and used for analogous purposes. For instance, my dock can be as readily transported as a floating dock and submerged in proximity to a prescribed point of discharge, where it will be practically permanent for the time being and independent of the rise and fall of the tide, so that a rigid fixed discharge-pipe may be used, an advantage of importance when the vessels to be discharged are on tide-water.

The invention consists in the special combination and arrangement of parts hereinafter set forth, although I do not confine myself strictly to the identical structure shown, since modifications may be made therein without departing from the nature and intent of my improvements.

The accompanying drawings are necessarily more or less symbolical and diagrammatic, while showing all the features essential in carrying out my invention, practically minor details being omitted for the sake of clearness and simplicity.

Figure 1 is a plan of my improved transportable submergeable dock; Fig. 2, a side elevation of the same; Fig. 3, an end elevation of the same; Fig. 4, a transverse section upon the plane of line 4 4, Fig. 1, showing the dock

afloat; Fig. 5, a similar view showing the dock submerged and indicating a scow in the lock; Fig. 6, a longitudinal section upon the plane of line 6 6, Fig. 1; Fig. 7, a sectional view showing a modification.

D represents the superstructure of the dock generally.

L is a compartment or lock for the reception of a scow or similar vessel loaded with material to be disposed of. This lock is closed at either end by sliding gates G G' of special construction. On one or both sides of the lock L are formed compartments C for the power and actuating apparatus. These in the drawings consist of steam-boilers B B and vacuum-pumps P P, with their necessary appliances and connections, although any suitable or well-known suction and discharge apparatus may be substituted and the necessary power applied in any appropriate manner.

The dock is closed at the bottom throughout by a water-tight base  $d$ . The walls  $d'$   $d'$ , which are also water-tight, are of a height sufficient to reach above high-water level when the dock is submerged, the inner walls or partitions  $d^2$   $d^2$  being substantially the same in height as the others.

The compartment or compartments C have sealed floors  $c$   $c$ , creating spaces  $c'$   $c'$  above the base  $d$ , which open into or communicate with the space below the lock L. The lower part of the lock L is formed with a plurality of pockets  $L'$   $L^2$   $L^3$   $L^4$ , having converging side walls which conduct the material dumped from above to the mouths of the suction-pipes  $p$   $p$ . The side walls and bottom of the lock L are sealed, so as to create an airtight compartment or space below, communicating, as before said, with the spaces  $c'$   $c'$ , below the floors  $c$   $c$  of the compartments.

A water-gate W controls the admission of water to the water-tight space  $c'$ , which latter communicates with the atmosphere above through an air or stand pipe A. The water may be withdrawn from the sealed space  $c'$  through suction-pipes S, connected with one or more of the exhaust and discharge pumps P or equivalent appliances.

Each of the pockets in the bottom of the lock L is connected by a suction-pipe  $p$  with an exhaust and discharge-pump P. Obviously

all the pockets may be connected with a single pump P, if the latter is of sufficient capacity, or alternate pockets may be connected with different pumps P, as shown. In like manner the number of pockets in the lock L may be varied to suit requirements. A desirable arrangement is that indicated in the drawings, in which the lock L is situated between two working compartments C C and is formed with four pockets, two of which are connected with each pump P. A like result may, however, be attained by the modification indicated in Fig. 7, in which a single working compartment only is provided.

The lock-gates G each consist of a stationary sill  $g$  and two or more sliding sections  $g'$   $g^2$   $g^3$ , which are lowered below the upper edge of the sill  $g$  when it is desired to allow the passage of a scow or other vessel. When raised to close the lock, the sections  $g'$   $g^2$   $g^3$  extend one above the other, the upper one  $g^3$  projecting above high water.

Sufficient ballast is carried by the dock to insure the submergence thereof when the space  $c'$  is filled with water. The displacement of the latter may also be effected by other means than suction, as by the introduction of air under pressure, in which case the stand-pipe A would be closed and the water-gate W opened.

The use of the dock is as follows: The dock being submerged adjoining the desired point of discharge one of the gates is lowered to admit the scow or other containing vessel  $v$ , the gate at the end against which the tide is flowing being preferably left open, so as to prevent the escape of flotsam, while admitting readily water to replace that drawn off through the pumps, or in case of little or no tide both gates may be closed to prevent the escape of floating material fallen from the scow or other vessel. In any case the contents of the containing vessel is dumped into the water in the lock L above the plurality of pockets at the bottom thereof, and the pumps P are operated to draw the material, with water as a vehicle, from the pockets and to transfer it to a common discharge-pipe E, by which it is

ejected at the point desired. It will be noted that this discharge-pipe is not disturbed in its relations or work by the rise or fall of the tide, but is a simple rigid pipe of permanent height.

When it is desired to change the locality of the dock, the water is displaced or withdrawn from the space  $c'$ , as before indicated, floating the dock and admitting of its convenient transportation, after which it is again submerged by the admission of water.

With a plurality of pockets in the lock L connected alternately with different pumps I am enabled by operating the pumps alternately to effect practically a continuous discharge of material through the common ejection-pipe, thereby preventing clogging and economizing energy by keeping the material in motion. In other words, when the material is allowed to lose momentum and become temporarily stationary in the discharge-pipe it takes more steam or power to overcome frictional resistance, while there is an increased tendency on the part of the material to pack and clog—evils which I am enabled to avoid by a plurality of pockets and a plurality of pumps worked alternately and connected with a common discharge-pipe.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a dock for the purpose designated the combination of the lock formed with a plurality of pockets, suction-pipes connecting alternate pockets with different discharge-pumps, said discharge-pumps, and a common ejector-pipe, the whole arranged and operating substantially as herein described.

2. In a dock for the purpose designated the combination with the lock-compartment, of water-gates G, G', consisting of the sill  $g$ , and vertically-adjustable sections  $g'$ ,  $g^2$ ,  $g^3$ , arranged and operating substantially as described.

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