

(No Model.)

3 Sheets—Sheet 1.

J. W. HYATT.
FILTER.

No. 273,541.

Patented Mar. 6, 1883.

Fig. 1.

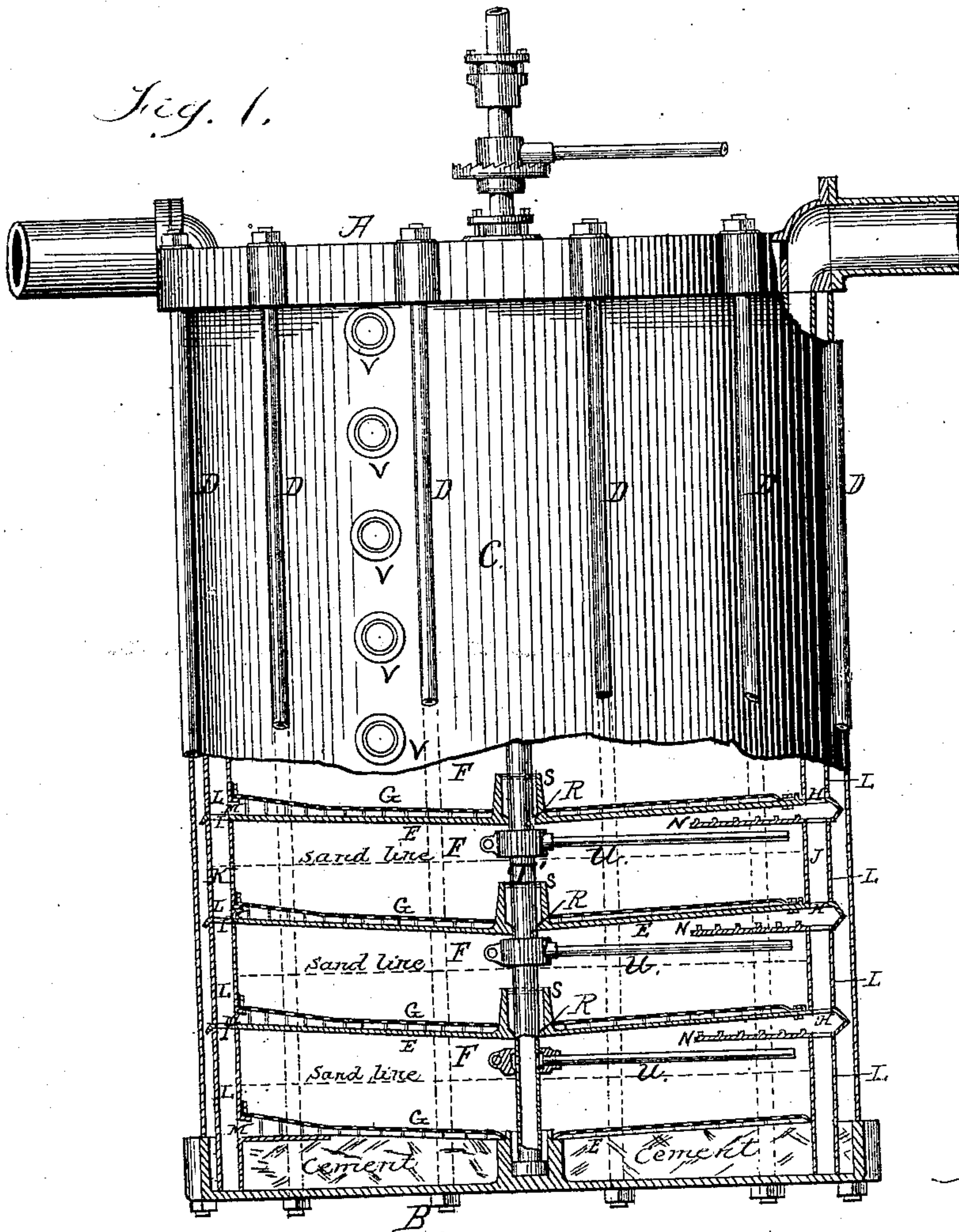
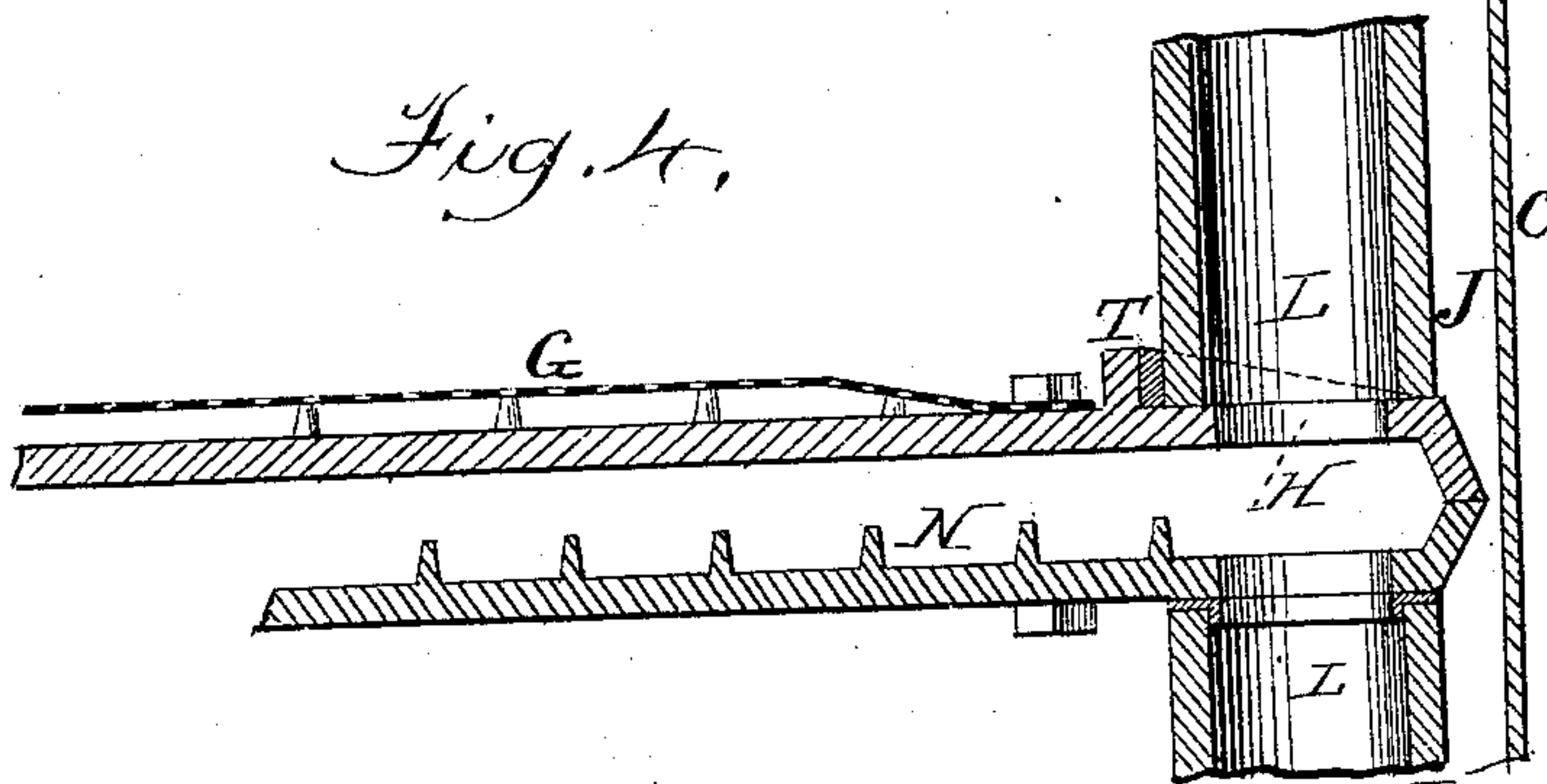


Fig. 4.



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Fig. 2.

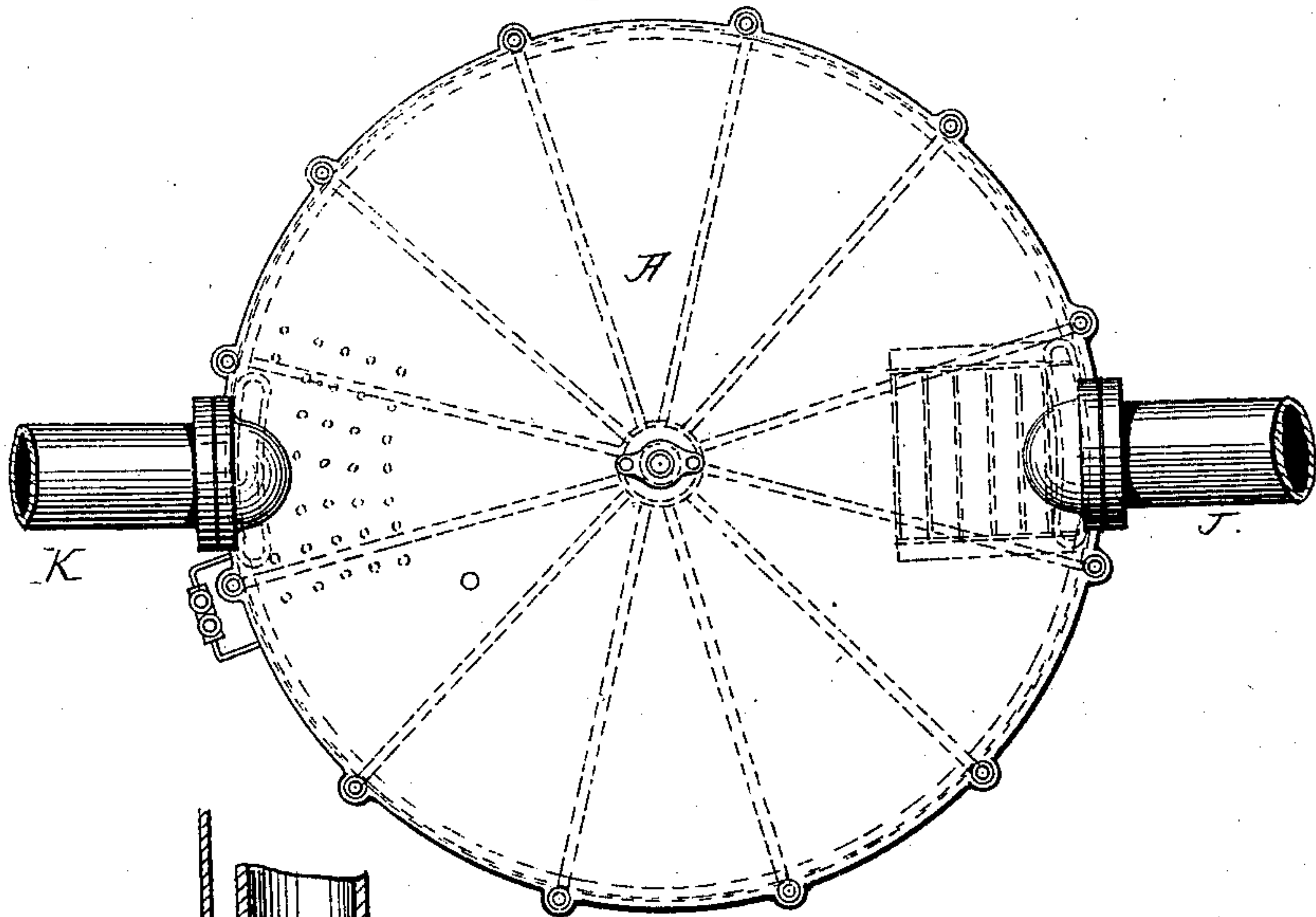
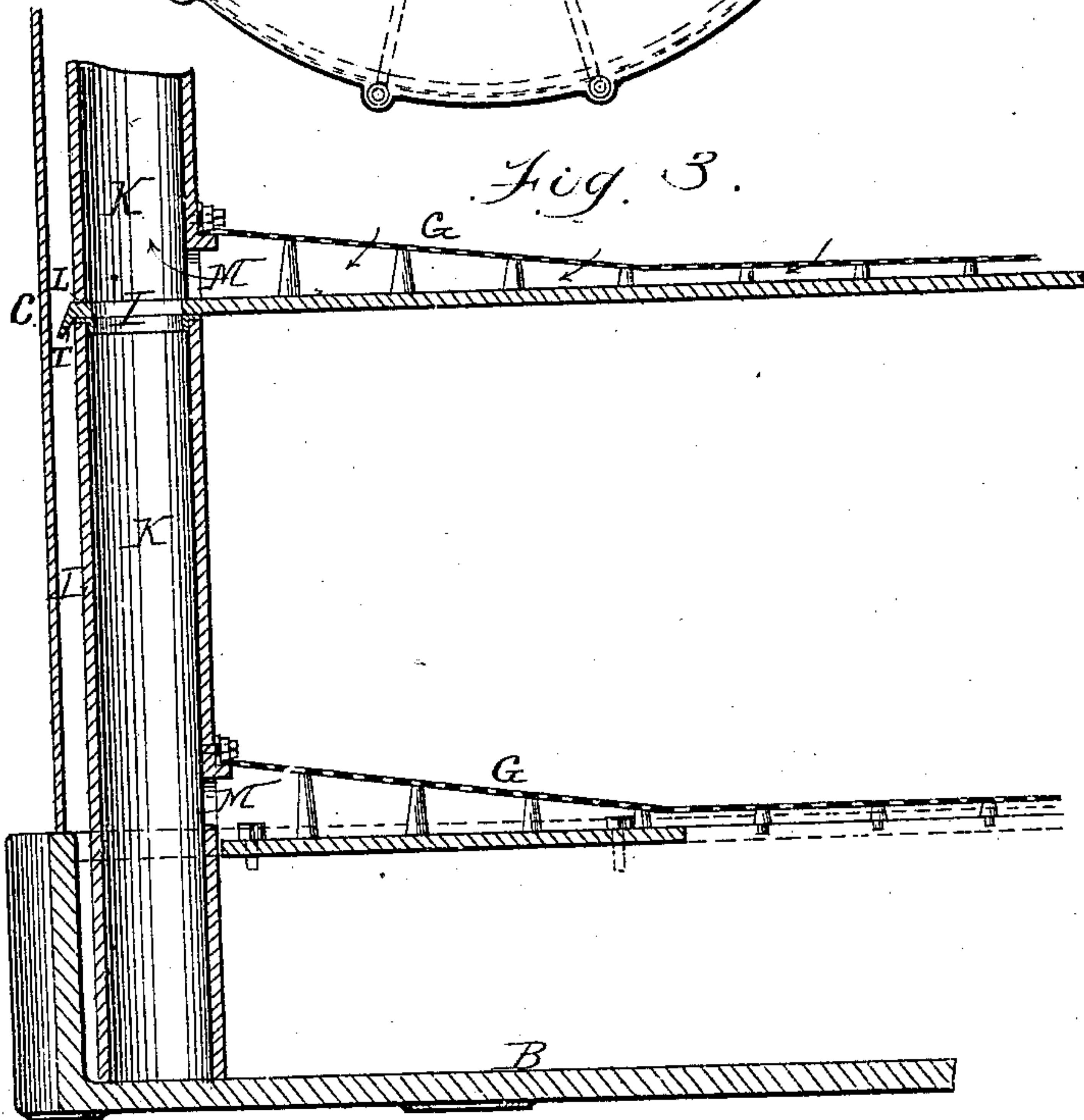


Fig. 3.



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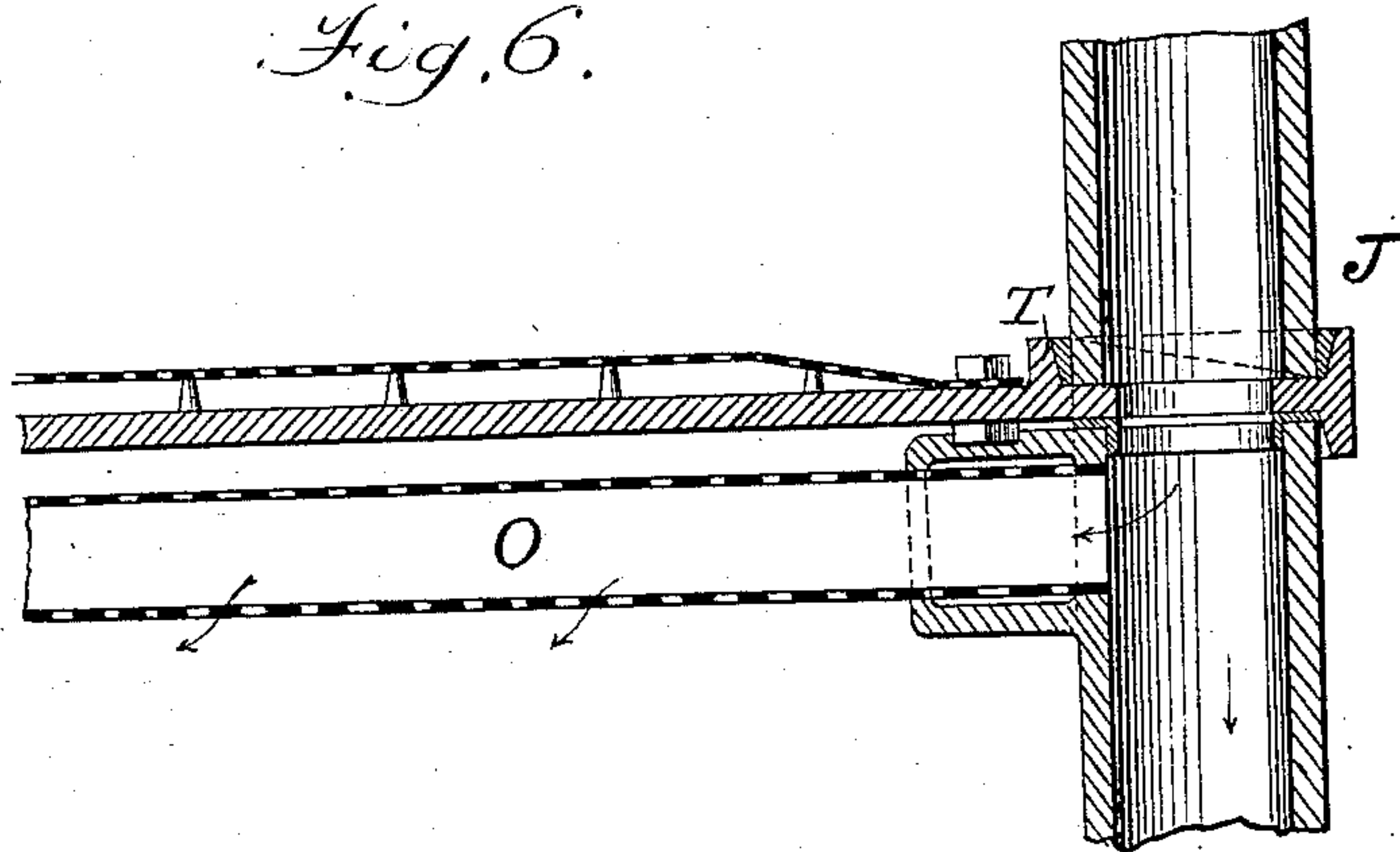
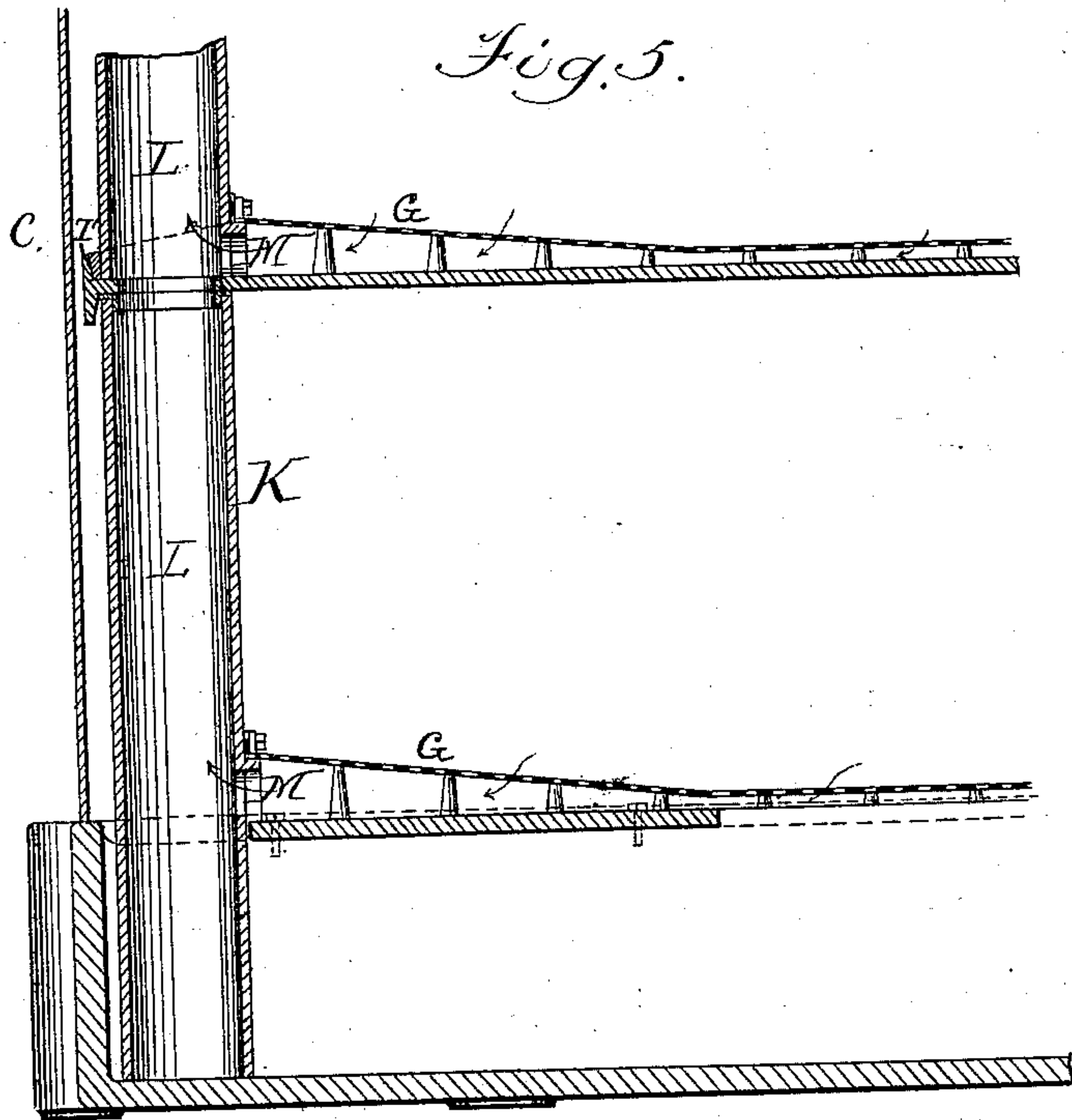
3 Sheets—Sheet 3.

J. W. HYATT.

FILTER.

No. 273,541.

Patented Mar. 6, 1883.



Attest;

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John W. Hyatt,
By his Attorney,
Rowland Cox.

UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY.

FILTER.

SPECIFICATION forming part of Letters Patent No. 273,541, dated March 6, 1883.

Application filed November 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Filters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention has relation to improvements in filters; and it consists in the apparatus hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a side elevation, partly in section, of a filter embodying the elements of my invention. Fig. 2 is a top view of same. Figs. 3, 4, 5, and 6 are enlarged detached views of various details of the apparatus.

A B denote the head and base of the apparatus, and C the body thereof. By preference the head and base will be of cast-iron and the body or cylinder of boiler-iron, which will be secured between the head and base by means of tie-bolts D passing through ears in the head and base, the bolts being on the outside of the body.

The interior of the apparatus is divided by the diaphragms E into a series of compartments, F, containing beds of sand or other filtering material, and each having an inlet and an outlet connecting with a common supply and delivery. The diaphragms E are cast-iron plates having, preferably, lugs upon their upper surface, upon which are secured perforated metal plates G, as indicated in section. Upon opposite sides of the diaphragms E are formed the apertures H I, which correspond in outline to the bore of the supply and delivery pipes J K. The supply and delivery pipes J K are composed of sections L, which are arranged between the diaphragms E and directly over the apertures H I, whereby a continuous pipe at each side of the filter and within the body C is formed. In the sections of pipe L constituting the delivery K are formed the outlet-ports M, which are covered by the perforated metal G. Adjacent to the outlet-ports M the lugs upon the diaphragms E are taller than at the other parts of the diaphragms, for the purpose of elevating

the perforated metal to form a bridge through which the filtered water can readily pass. The edges of the perforated metal G are secured by bolts, as indicated. The outlet-ports, which are formed in the sections L, are directly upon the upper surface of the diaphragms, while the inlets upon the opposite side of the apparatus are directly below each diaphragm, so that the water entering the apparatus will issue at the upper part of each compartment, and pass thence through the filtering material and away by means of outlet-ports. The inlet to the various compartments of the filter may be formed in several ways, two of which I illustrate in the drawings, one being by means of a rippling-plate, N, which will, preferably, be cast with the diaphragm E, as shown in Fig. 4. This rippling-plate will have an aperture formed through it corresponding with that in the diaphragm and with the bore of the supply-pipe J. The other means illustrated for letting the water into the compartments of the filter consists of the perforated box O, which will be secured to the shoulders formed on the sections constituting the supply-pipe J. The box O will be of rectangular form, its purpose being to permit the entrance of water to the filter, and at the same time prevent the elements of the filter-bed from escaping through it when the current is reversed for the purpose of cleaning the apparatus.

In many instances I contemplate using comminuted mica or analogous material in the form of flakes, or comminuted mica combined with sand and other like materials for the filter-bed, and in such cases it will be desirable to employ the perforated box O to prevent the escape of the mica, &c., when the current is reversed.

Upon the diaphragms E, and arranged to encircle the sections of the supply and delivery pipes J K, are formed flanges T, wherein the sections of the pipe L may be packed for the purpose of forming water-tight joints. At the center of each diaphragm E is formed an aperture, R, encircled by the cup-shaped flange S, through which apertures and flanges is inserted the central pipe, T', having subordinate washer-pipes U in each compartment of the filter.

In the head A are formed the inlet and out-

let to and from the filter. The base of the central washer-pipe rests in a seat formed upon the base B.

The cylinder C will be provided with hand-
5 holes V, leading into each compartment containing the filter-beds.

It is not sought herein to claim anything shown in Letters Patent granted to me on the 18th day of October, 1881, No. 248,468. In
10 said Letters Patent the sections forming the supply and delivery pipes are on the outside of the casing or body of the filter, while in my present application the said pipes are within the casing, and the object of this arrangement
15 is to insure a like expansion and contraction of all parts of the filter during its operation, so as to avoid the breaking of packed joints, the consequent leakage, &c.

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

1. The filter herein described, consisting of

the shell or casing secured between the head and base, and subdivided into suitable compartments by the diaphragms E, having apertures, over which the sections of pipe forming
25 the continuous supply and delivery are placed, the apertures and the sections of pipe being within the outer casing of the apparatus, substantially as set forth.

2. The filter herein described, consisting of
30 a casing or shell, the head and base, the diaphragms and the sections of pipe forming the supply and delivery, the supply and delivery being within the casing, substantially as set forth.

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

JOHN W. HYATT.

Witnesses:

CHAS. C. GILL,

HERMAN GUSTOW.