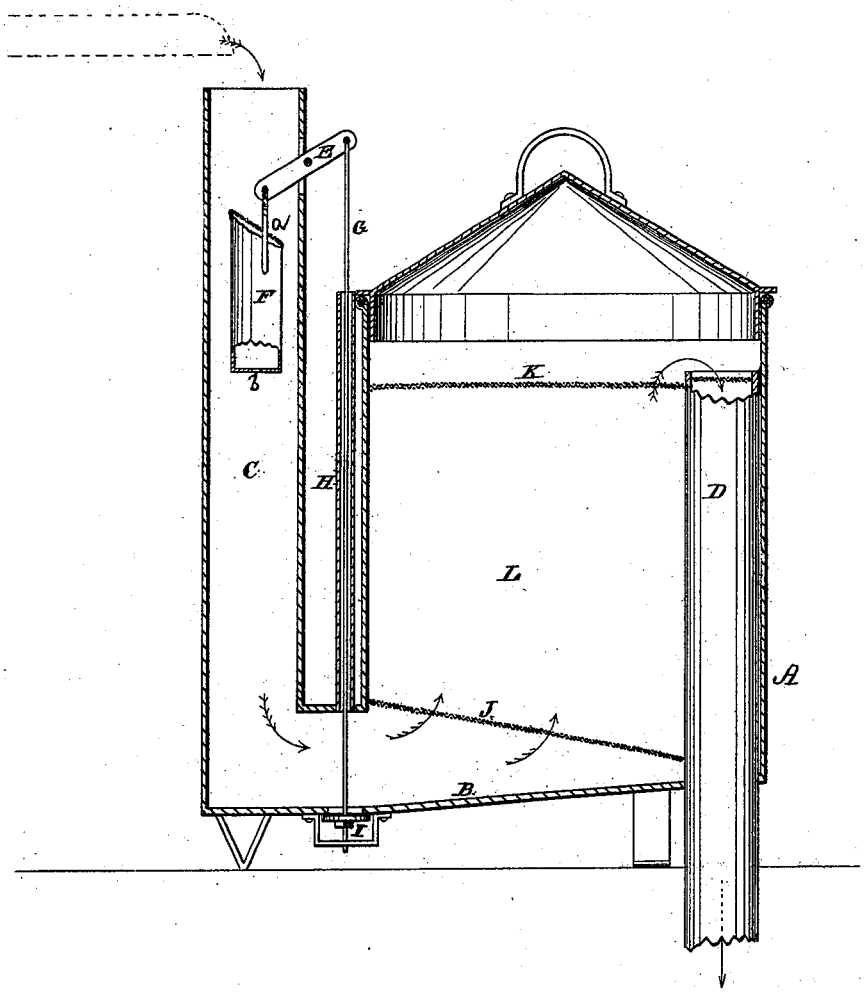
J. C. BANKS.
Filter.

No. 210,081. Patented Nov. 19, 1878.



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UNITED STATES PATENT OFFICE.

JOHN C. BANKS, OF CARLISLE, KENTUCKY.

IMPROVEMENT IN FILTERS.

Specification forming part of Letters Patent No. **210,081**, dated November 19, 1878; application filed October 10, 1878.

To all whom it may concern:

Be it known that I, JOHN C. BANKS, of Carlisle, in the county of Nicholas and State of Kentucky, have invented a new and Improved Filter; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to that form of filter which is provided with an automatic device for opening a valve to allow the sediment, &c., to readily pass away.

It consists, mainly, in such an arrangement of the valve that the weight of the water not only closes the valve, but opens it also; and in certain details of construction whereby this main feature of my invention is carried out.

In the accompanying drawing, showing a vertical section of a filter constructed according to my improvement, A represents the body of the filter, having an inclined bottom, B, inlet-pipe C, and outlet D.

At E is shown a lever working on a fulcrum at the side of the inlet-pipe C, and having hung at one end a cup, F, and at the other a rod, G, passing through a pipe, H, and provided with a valve, I, near its lower end, which valve closes an aperture either in the bottom of the filter or in a pipe connected therewith.

At J and K are diaphragms of wire-gauze or perforated metal, between which is the chamber L for the filtering medium.

The cup F is provided with a gauze covering, *a*, set diagonally, by which means nothing can enter the cup that would be likely to stop up the hole in the bottom, and the material strained out by the wire-gauze is prevented from lodging on the top.

The operation of this filter is as follows: Water enters at the top of pipe C, and, filling the cup F, causes it to descend, thereby closing the valve I tight and compelling the water to pass upward through the filtering-chamber and outlet-pipe, in the manner shown by the arrows.

When the water ceases to enter the inlet C the water in the cup passes out through a hole, *b*, in the bottom, and the pressure of the water in the filter, acting on the valve, causes it to open, thereby allowing a free passage for the water to pass through, carrying with it any sediment that may be in the bottom of the filter, which is made inclined, so as to be the more readily drained. The cup F and valve I should be made to balance each other, or nearly so, in order that the valve may remain open as long as any water remains in the filter.

Although I have shown the valve-rod arranged to pass through a separate pipe, yet it is obvious that, if preferred, the lever, &c., may be so arranged as to be entirely inclosed in the inlet, and thus the pipe H be dispensed with.

What I claim as new is—

1. The combination, with the filter, of a valve and counterbalance-cup, so arranged that the weight of the water will both open and close the valve, substantially as described.

2. The combination of the cup F, lever E, and valve I with the inlet-pipe C and the filter proper, having an outlet at the bottom, the cup and valve being made to counterbalance each other, substantially as described.

3. The combination of the inlet-pipe C, cup F, lever E, rod G, and pipe H, substantially as and for the purpose specified.

4. The cup F, provided with a strainer, arranged diagonally, and with an opening in the bottom, substantially as and for the purpose specified.

5. The combination of the diaphragms J K, inlet C, outlet D, cup F, lever E, and valve I, the whole arranged and constructed substantially as described.

JOHN C. BANKS.

Witnesses:
THOS. P. TRUEMAN,
A. LEVESQUE.