

S. & J. DEACON.

Paper-Pulp Washing-Machines.

No. 145,159.

Patented Dec. 2, 1873.

fig. 1.

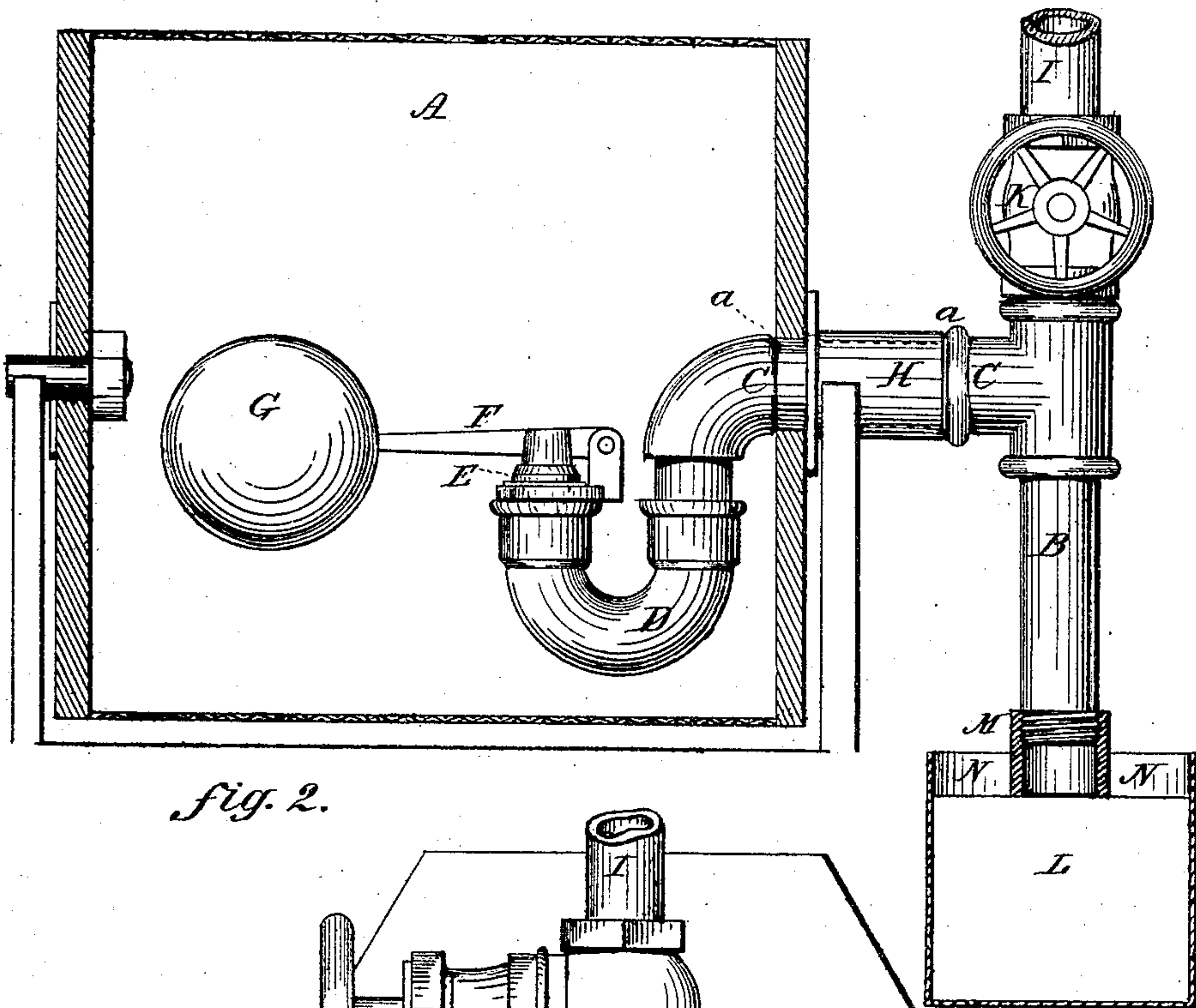
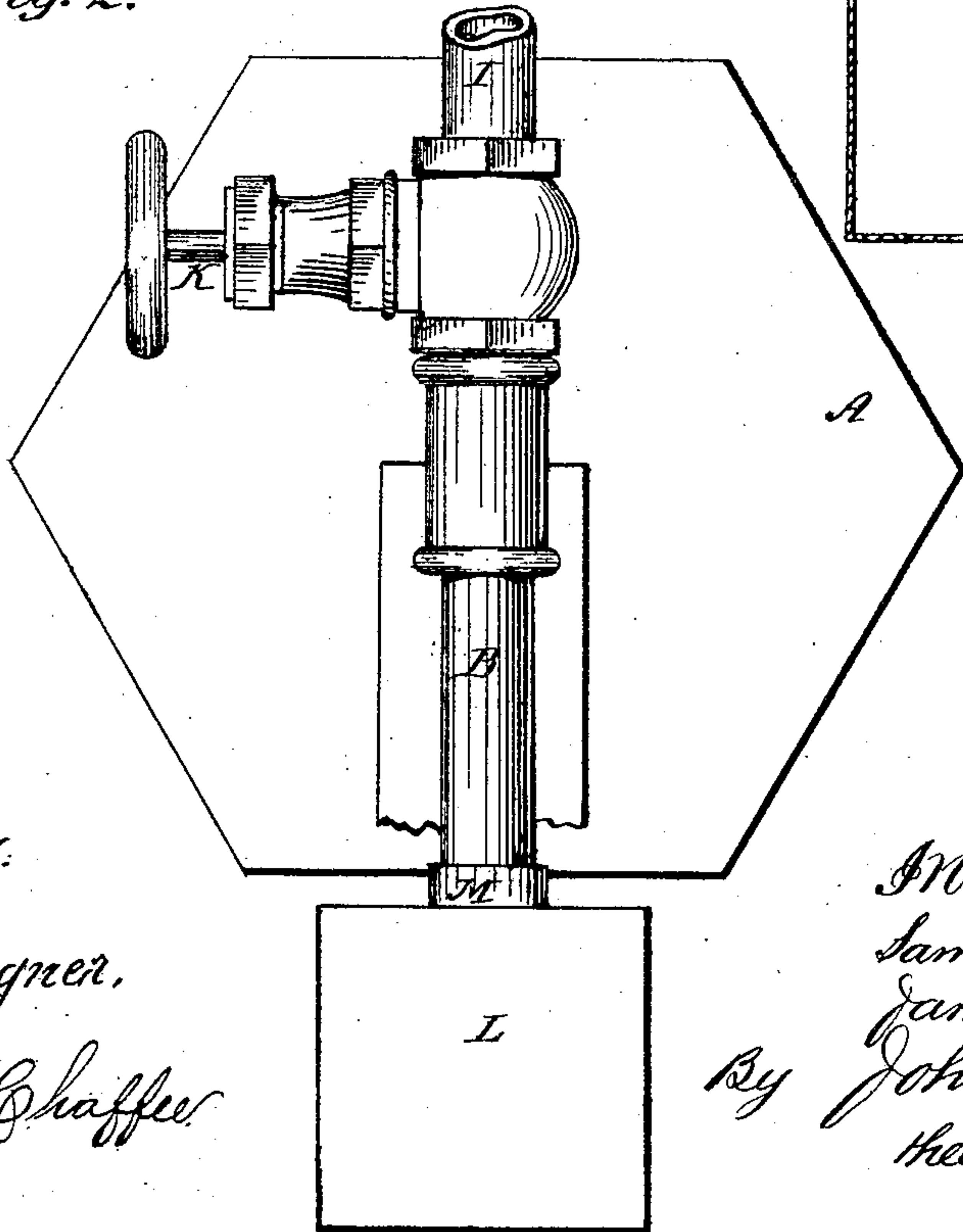


fig. 2.



Witnesses:

J. West Wagner.

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Inventor.

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UNITED STATES PATENT OFFICE.

SAMUEL DEACON AND JAMES DEACON, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN PAPER-PULP-WASHING MACHINES.

Specification forming part of Letters Patent No. **145,159**, dated December 2, 1873; application filed August 1, 1873.

To all whom it may concern:

Be it known that we, SAMUEL DEACON and JAMES DEACON, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Paper-Pulp-Washing Machines, of which the following is a specification:

This invention relates to that class of machines for washing paper-pulp wherein a revolving wire-gauze or perforated cylinder is employed for drawing or removing the water from the pulp; and it has for its object to dispense with the usual internal scoops or buckets employed for raising and discharging the impure or dirty water passing into the cylinder. To this end our invention consists in the combination, with a wire-gauze washing or draining revolving cylinder, of a siphon, the shorter leg or branch whereof is arranged through a tubular journal within the revolving cylinder, and provided with a valve, which is applied to a pivoted lever-arm, carrying a float, so that, when the water passing into the reticulated cylinder during the revolution of the same has risen to a certain height, the float will be raised thereby, and the valve opened for permitting the passage of the dirty water out through the siphon, which has previously been started or filled with water by connecting, through a stop-valve, its longer or outer leg with a suitable water-source.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a machine embracing our invention, and Fig. 2 an end elevation of the same.

In machines as at present constructed for washing paper-pulp there is employed a revolving perforated or wire-gauze cylinder, which operates in a vat containing the disintegrated pulp and water, and the object of which is to drain or remove from the pulp the dirty water, together with such impurities or foreign matters as will pass through the meshes or perforations of the cylinders. Cylinders of this description are generally provided with internal scoops or buckets, which serve to receive the dirty water and to discharge it into a central discharge-trough, and, as will be obvious, such a construction adds greatly to the cost and weight of the cylinder, and also serves to retard the operation of the latter by reason

of having to constantly lift the water by the scoops in order to effect its discharge. To overcome these defects, and to furnish simple and effective means for removing the impure water entering the cylinder, is the object of our invention, which we will now proceed to describe.

The cylinder A, which is made of wire-gauze or other foraminous material, mounted on a skeleton frame of any approved pattern, is located in the customary manner within a receiving vat or tank, and receives rotary motion from a suitable prime motor. In suitable proximity to one end of the cylinder is located a siphon, the longer or outer vertical leg B of which is provided with a horizontal branch or tube, C, from which extends a curved leg, D, approximating in shape to the letter U. At the upper end of the leg D is located a valve, E, which is attached to a lever-arm, F, pivoted to ears or projections on the leg D, and carrying at its outer or free end a float, G. The cylinder is provided with a tubular journal, H, attached to the head of the same by flanges and screws, and of such a form that the horizontal branch C of the siphon will freely pass through the same, while it also serves as a journal-bearing for the cylinder. For forming the connection of the siphon-tubes to permit the same to be applied to the cylinder, screw-threaded joints may be resorted to, and the horizontal branch may further be provided with shoulders or collars *a a*, situated on both sides of the cylinder-head, for preventing the longitudinal displacement of the siphon. The longer siphon-leg, located outside of the cylinder, is extended in an upward direction from the connecting-point of the branch tube C, as shown at I, and said extension is provided with a valve or cock, K, to open or close the communication with a suitable water supply or reservoir connected with the extension-tube. The lower end of the long siphon-leg is screwed into or otherwise connected to an open receptacle or cup, L, which possesses a screw-threaded central socket, M, and arms or bridge-plates N, diverging therefrom to the inner periphery of the cup.

When in operation the cylinder is revolved in the pulp-water, which causes the dirty water mixed with foreign matters to pass through

the perforations into the cylinder, and, when it has risen to a certain level, it will raise the float, thus opening the valve in the upper end of the curved siphon-leg, and permitting the water to escape through the passage thus opened. The siphon, previous to being used, is placed in an operative condition, or started by filling it with water from the reservoir connected to the extension-tube of the long leg, as heretofore described. As soon as the water in the cylinder has reached its natural level, corresponding with the fresh-water supply in the pulp-tanks, the float will resume its normal position, thus closing the valve and rendering the siphon inoperative.

In order to prevent the passage of air into

the siphon, I employ the receptacle or cup, which, being applied to the lower end of the long leg, and constantly filled with water, will fulfill the function related to a satisfactory degree.

We claim—

The siphon B C D, its automatic valve E, float G, and water-seal L, in combination with a revolving gauze cylinder, A, of a paper-pulp-washing machine, substantially as and for the purposes set forth.

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Witnesses:

B. S. HALE,
JAS. B. HALE.