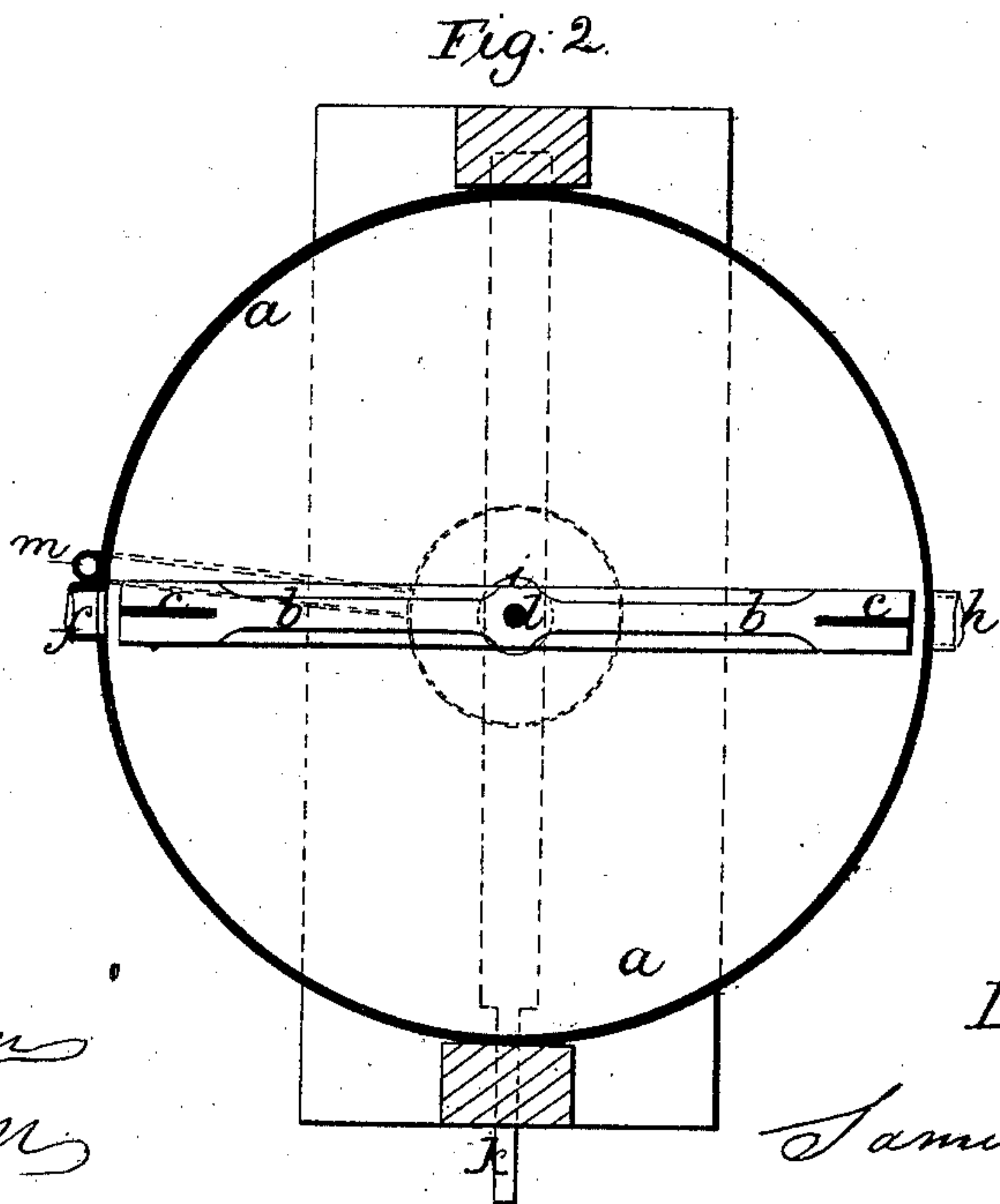
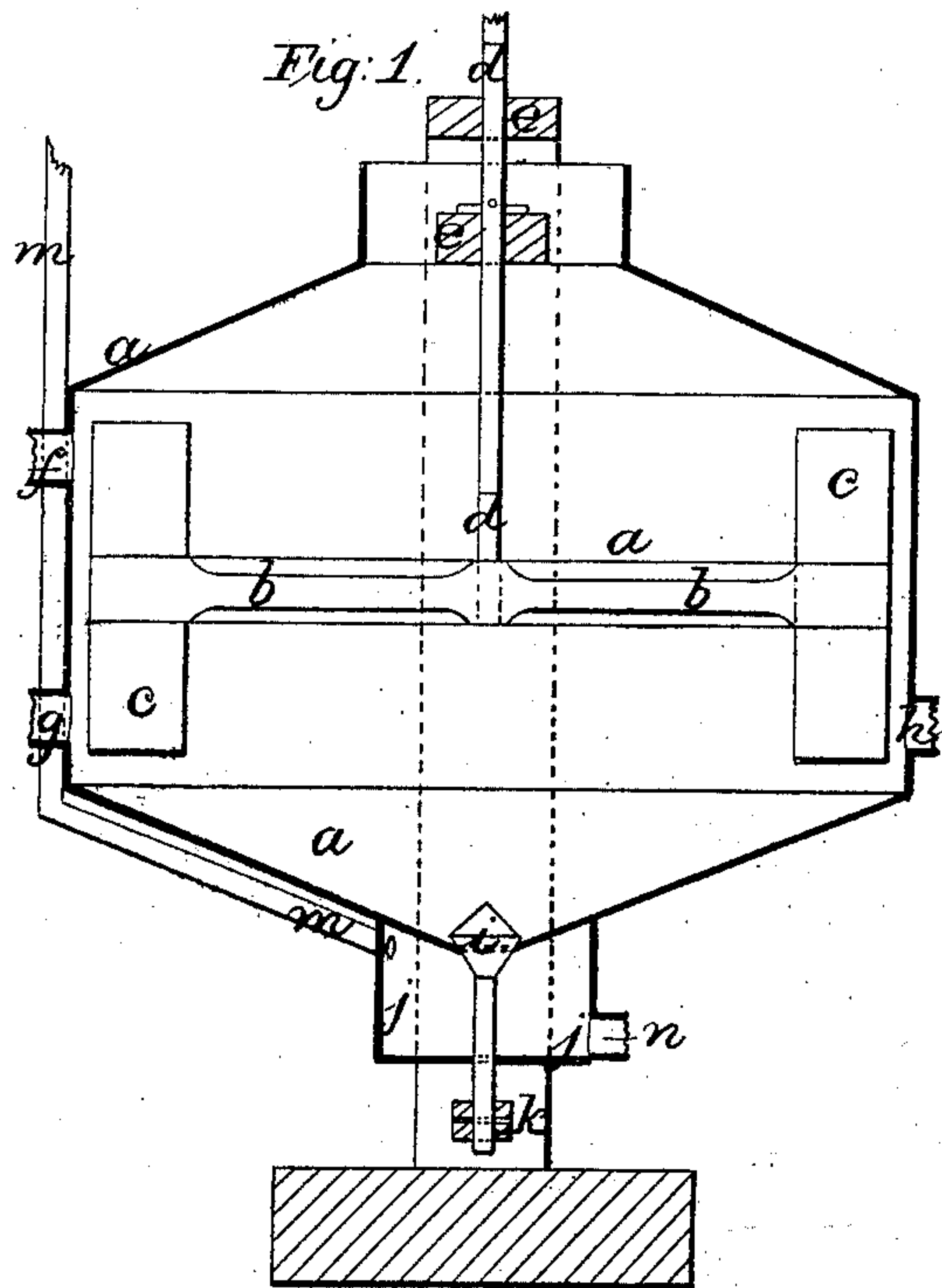


S. S. Crocker
Pulp Washing

N^o 34,945.

Patented Apr. 15, 1862.



Witnesses
William D. Joplin
W. H. Ammon

Inventor;
Samuel S. Crocker

UNITED STATES PATENT OFFICE.

SAMUEL S. CROCKER, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR CLEANSING PAPER-PULP.

Specification forming part of Letters Patent No. 34,945, dated April 15, 1862.

To all whom it may concern:

Be it known that I, SAMUEL S. CROCKER, of the city of Lawrence, in the county of Essex and State of Massachusetts, have invented a Paper-Pulp Cleanser; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention consists in an apparatus operating substantially like that herein described for the purpose of cleansing paper-pulp from such foreign matter as is of greater specific gravity than the said pulp, the object being to avoid passing into the paper machinery such substances as bits of needles, sand, &c., which injure said machinery, particularly the calender-rolls.

Figure 1 exhibits in vertical sectional elevation an apparatus embodying my invention, and Fig. 2 a horizontal section and plan of the same.

a represents a receptacle or tank, the body of which is best made cylindrical. The bottom must be made concave or inclined and provided at its lowest point with an outlet-valve *i*. In this tank any convenient stirring or agitating device may be operated. That shown consists of a bar *b*, provided at its ends with floats or paddles *c*. The bar is fixed to shaft *d*, which is hung and caused to rotate in bearings in the supports *e e*.

The tank is provided with three apertures, located nearly as shown, *f* being for the admission of pulp, *g* for admission of water for mixing with the pulp, and *h* for drawing off the mixture. All of these apertures are to be provided with suitable valves to regulate the flow through them. A small receptacle *j* is closely secured to the large one, and surrounds the lower side of valve *i*. This valve is operated from beneath by a stem which passes through a stuffing-box in the lower part of *j*, said valve and stem being raised and lowered by operating the lever *k*. The receptacle *j* is provided with a pipe *m*, by and through which water is thereunto supplied, and with an aperture *n*, through which *j* may be emptied of its contents. Both *m* and *n*

are provided with suitable valves for opening and closing them.

The operation of my invention may be described as follows: All the inlets and outlets of both the large and small receptacles being closed, the valve connected with *f* is opened and *a* is partly filled with paper-pulp from the "stuff-chest." If the pulp needs to be diluted, water is admitted by opening the valve connected with *g*. The valves connected with *f* and *g* being then closed, the stirrer is set in motion, by which the contents of *a* are thoroughly mixed and the lumps broken up, making the mixture uniform throughout. It will be evident that heavy particles, like sand, bits of needles, &c., will sink through the fluid or semi-fluid contents of *a* till they touch upon the inclined bottom of the large receptacle, where, being disturbed by the motion of the pulp, they will gravitate toward the lowest point of the bottom and will settle around valve *i*. It is evident that if now the valve *i* is opened the said heavy particles will fall into the small receptacle beneath, together with pulp enough to fill said receptacle; but it is desirable to separate the heavy particles from the pulp, while retaining the pulp within the large receptacle. This I do by opening the valve connected with *m* and filling *j* with water, subsequent to which, and after closing the valve connected with *m*, I raise the valve *i* by means of lever *k*. The heavy particles settled around *i* being disturbed by the movement of the contents of *a*, fall through the opening under valve *i* into *j*, while but little if any of the pulp in *a* changes place with the water in *j*. The valve *i* being then closed, the receptacle *j* can be emptied of its contents by opening the aperture *n*, and a stream of water introduced from *m* will aid in cleansing *j*. The pulp in *a* may now be drawn off for use through *h*, the aperture closed, the tank *a* again filled, and the operations described repeated at will. When the stirrer used is a rotary one and rotation is given to the contents of *a*, the surface of said contents will become concave by virtue of centrifugal force, and any light particles of foreign matter will float down the incline of the surface

to the center, so that they may be removed by skimming from the surface at the center, an aperture being left in the top of the tank for that purpose.

I claim—

The combination of the large and small receptacles arranged to operate together, substantially as set forth, for the purpose specified.

In witness whereof I have hereunto set my hand this 20th day of February, A. D. 1862.

SAMUEL S. CROCKER.

In presence of—

N. W. HARMON,
WILLIAM D. JOPLIN.