

H. PARKER.
MACHINE FOR COLLECTING SOLIDS FROM LIQUIDS.
APPLICATION FILED SEPT. 17, 1908.

974,989.

Patented Nov. 8, 1910.
3 SHEETS—SHEET 1.

Fig. 2

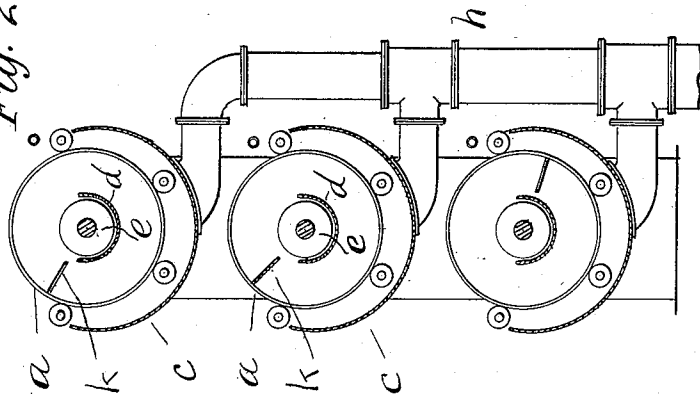


Fig. 1

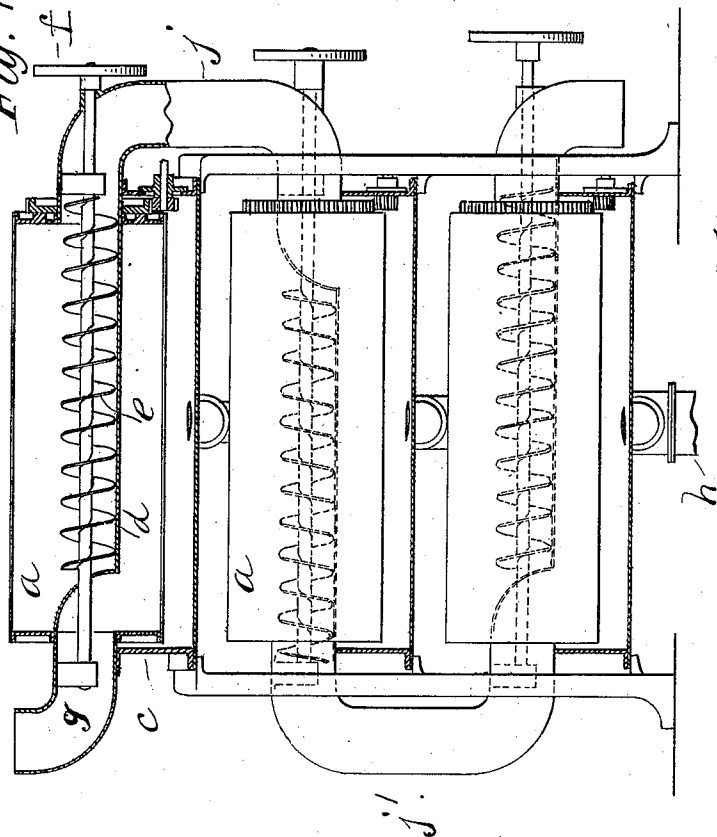
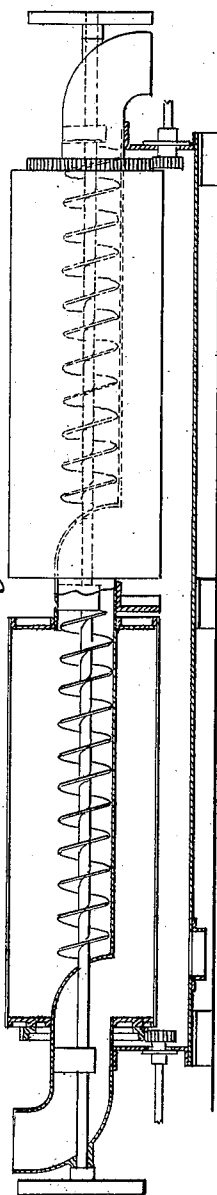


Fig. 5



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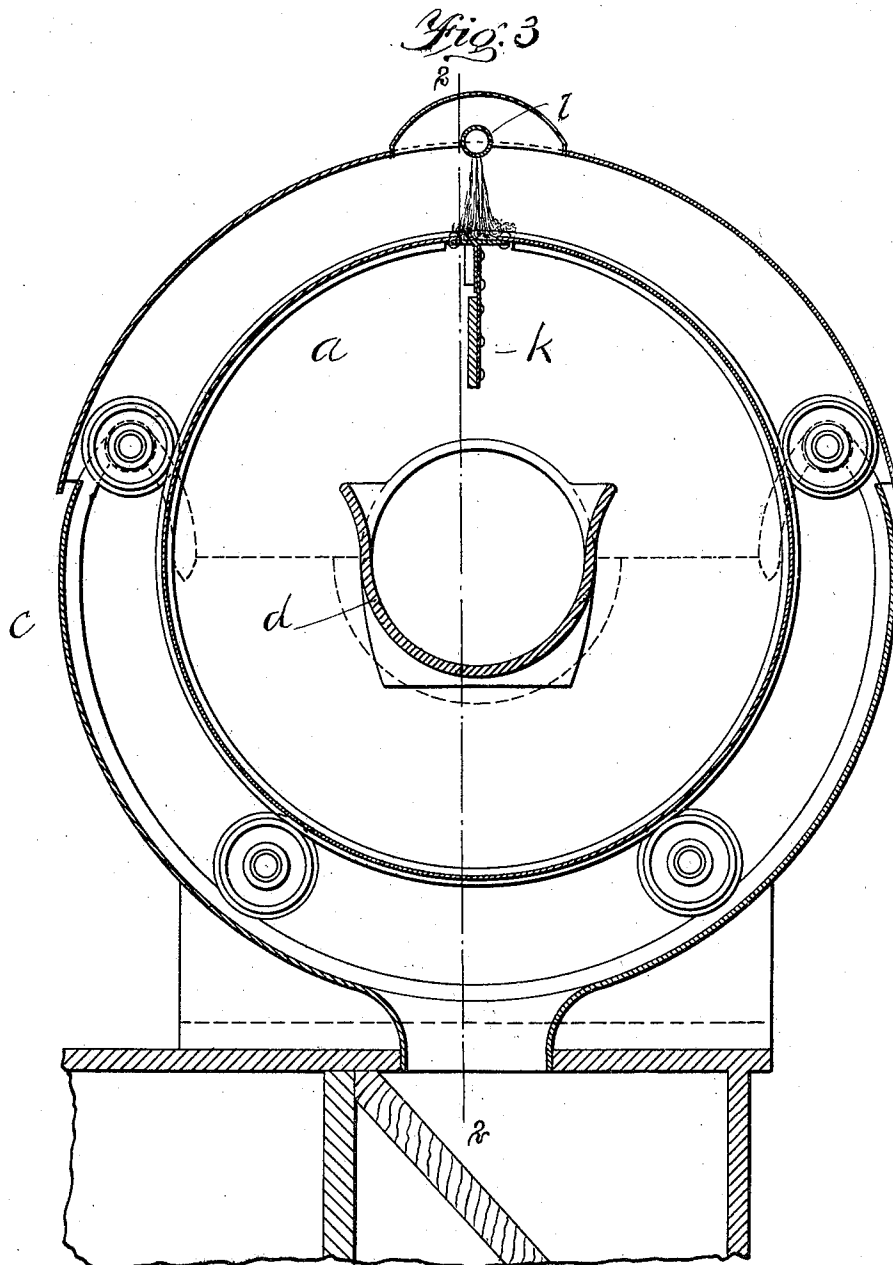
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3 SHEETS-SHEET 2.



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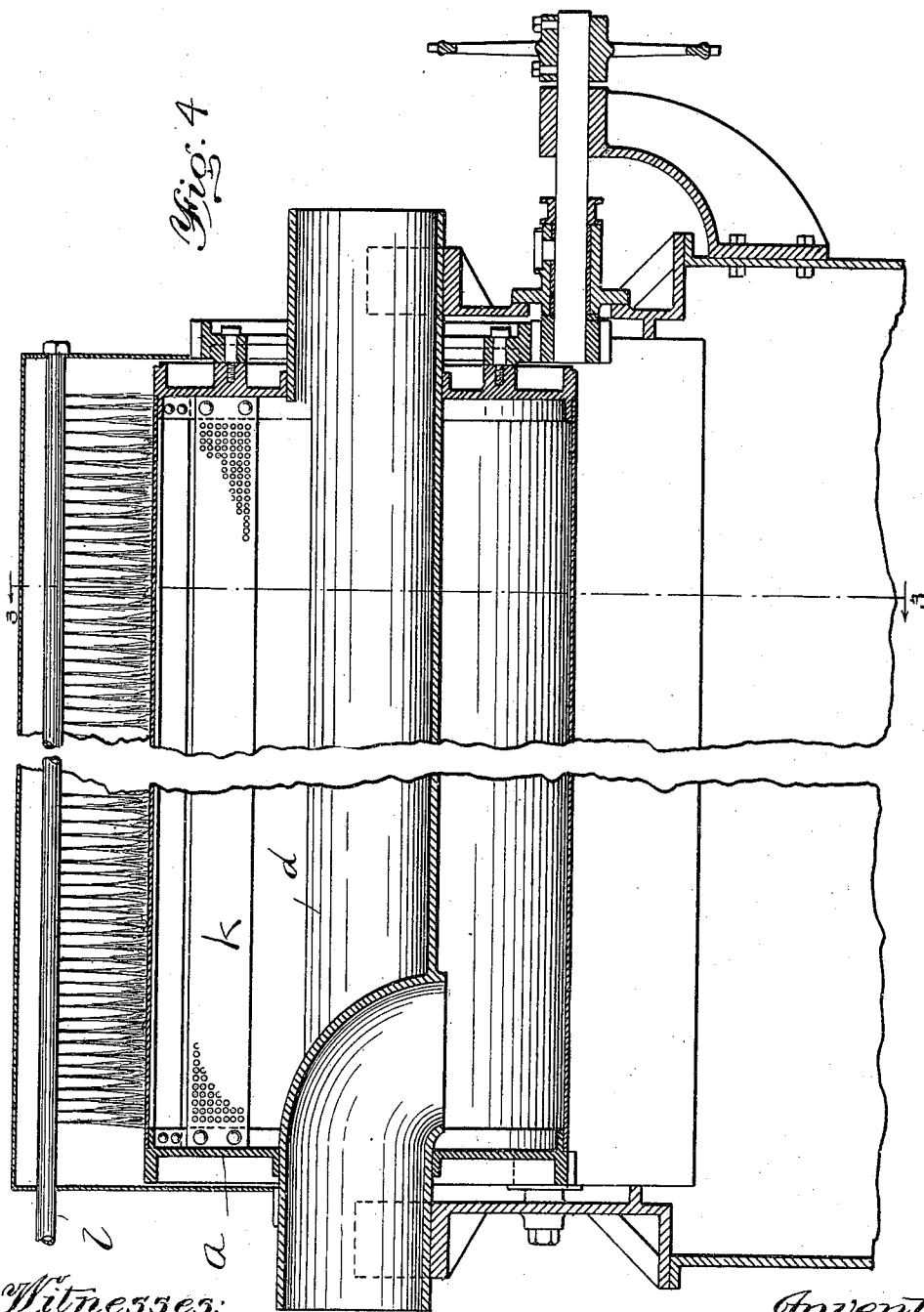
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HOWARD PARKER, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO IMPROVED PAPER MACHINERY COMPANY, OF NASHUA, NEW HAMPSHIRE, A CORPORATION OF MAINE.

MACHINE FOR COLLECTING SOLIDS FROM LIQUIDS.

974,989.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed September 17, 1908. Serial No. 453,509.

To all whom it may concern:

Be it known that I, HOWARD PARKER, a citizen of the United States, and a resident of Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Machines for Collecting Solids from Liquids, of which the following is a specification.

My invention is designed primarily for collecting paper stock which is held in suspension in water so that the stock can be dried or reduced in density preparatory to its use on a paper making machine. The machine is particularly well adapted for receiving the waste water which flows from a paper making machine, carrying with it a large amount of pulp, and collecting the pulp from this waste water and saving it so that it can be returned to the stuff-chest for further mixing with the newly prepared stock.

This machine is also applicable for other purposes than for extracting the pulp from the water in which it is carried and devices of this general character are now in use as water filters. When so used as a filter the action of the machine is somewhat reversed as in this case the solid material collected is refuse matter.

Referring to the drawings:—Figure 1 is a sectional side elevation of a machine embodying my invention. Fig. 2 is a sectional end elevation. Fig. 3 is a detail sectional end elevation on enlarged scale through one section of my machine showing a modification thereof. Fig. 4 is a sectional side elevation of the same. Fig. 5 is a sectional side elevation of a further modification.

Fig. 1 of the drawings shows one method of carrying out my invention. It is a machine made up of three units mounted one above the other, each unit comprising a cylinder *a* rotatably mounted in suitable journals in a vat *c*. Arranged centrally therein is the trough *d* provided with a conveyor *e* which is operated in any manner, as by the belt pulley *f* from which a belt may be run to a driving shaft, not shown. An inlet into the interior of the cylinder is provided at *g*. The cylinder is provided with a longitudinal scoop *h*.

Suitable mechanism is provided for rotating the cylinder. As the material enters the inlet and floods the interior of the cylinder

the water passes through the shell into the vat *c* depositing on the interior of the shell a layer of the solid material, as pulp, which is carried around with the cylinder as it revolves in the direction of the arrow until it gets to the upper part of the cylinder where it falls off into the trough *d*. In case the pulp does not adhere to the interior surface of the cylinder it will slide back until it comes in contact with the scoop *h* which carries it up until such time as the pulp will slide off of the scoop into the trough. The conveyer *e* being rotated, feeds the collected pulp or other solid matter out of the end of the trough.

As above stated each of the cylinders is alike in its construction, the trough from the first cylinder discharging into the interior of the second cylinder through the pipe *j*, and the trough from the second cylinder discharging into the interior of the third cylinder through the pipe *j'*. A common outlet *k* is provided for the water from the vats.

If desired a shower pipe *l* may be provided immediately over the top of the cylinder to wash the pulp down directly into the trough (Figs. 3 and 4) but in general practice the pulp will slide off into the trough or slide down the scoop and be deposited therein. The rate of revolution of the several cylinders may be varied, the second traveling slower than the first and the third slower than the second, thus giving a greater time for the extracting of the water. The rate of rotation can be so graduated that a definite dryness of the pulp can be secured.

In case this device were used as a filter it is apparent of course that the purified water would pass through the cylinders and the foreign matter and waste would be collected in the trough and disposed of in any convenient way. For instance troughs could be connected with the waste pipe *j*. The vat of one cylinder would be connected with the interior of the succeeding cylinder.

The arrangement of the modification shown in Fig. 5 is merely in setting the cylinders end to end instead of in a bank one above the other; the operation of the device is the same in each case.

I claim as my invention:

1. A machine of the character described comprising two or more vats, a cylinder rotatably mounted in each vat having the

shells thereof pervious to fluids but impervious to solids, a horizontally-extending non-rotatable trough arranged axially of each cylinder, each trough discharging axially of
5 its cylinder through one end thereof, an inlet for each cylinder through one end thereof, the corresponding end of the trough being closed to the inlet, a conveyer in each trough, connections between the discharge
10 end of each trough and the interior of the next adjacent cylinder, an outlet from each vat intermediate the ends thereof, an outlet from the trough of the last cylinder and extending throughout the length of the cylinder, and a scoop carried by each cylinder,
15 said scoop pervious to fluids and impervious to solids whereby the solids are collected on the inner faces of the shells and discharged into the troughs.

20 2. A machine of the character described comprising a vat, a rotatable cylinder there-

in, a non-rotatable trough axially-arranged within said cylinder and extending horizontally lengthwise thereof, an inlet into the interior of said cylinder through one end
25 thereof, the corresponding end of the trough being closed to the inlet, a conveyer in said trough, said cylinder having the shell thereof pervious to fluids but impervious to solids whereby the solids are collected on the inner
30 face of the shell, a scoop extending the length of the cylinder and secured to the inner face of said shell and being pervious to fluids but impervious to solids to carry the collected solids above said trough and de-
35 positing them therein, and a spray arranged in operative relation to said shell at a point over said trough.

HOWARD PARKER.

Witnesses:

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