

(No. Model.)

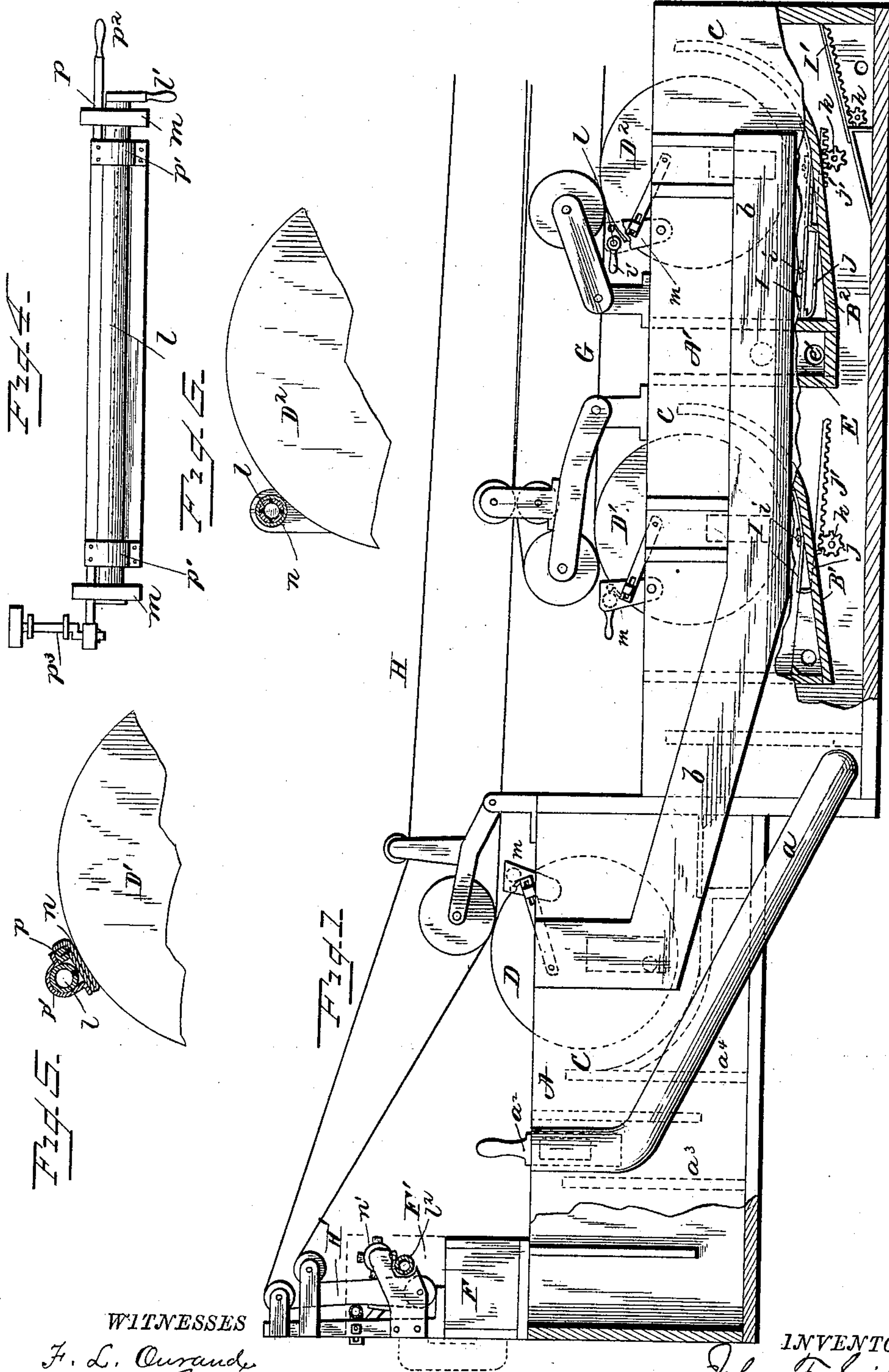
2 Sheets—Sheet 1.

J. F. SEIBERLING.

VAT FOR PAPER MAKING MACHINES.

No. 323,079.

Patented July 28, 1885.



WITNESSES

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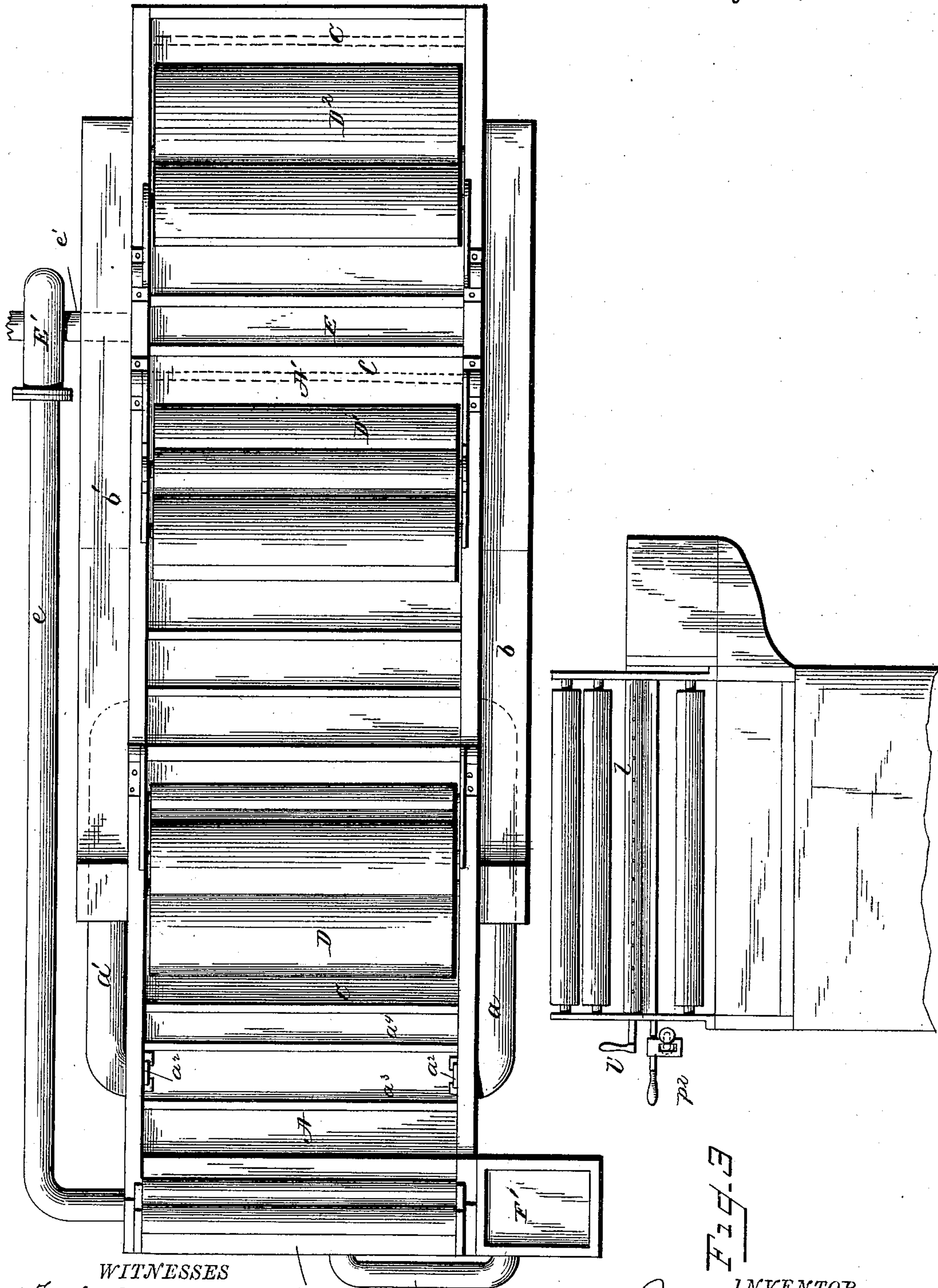
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WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN F. SEIBERLING, OF AKRON, OHIO.

## VAT FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 323,079, dated July 28, 1885.

Application filed May 19, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. SEIBERLING, of Akron, county of Summit, and State of Ohio, have invented a new and useful Improvement  
5 in Vats for Paper-Making Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

10 My invention relates, first, to a novel construction of vat, in which the rear making-cylinder is elevated above the plane of the other cylinder or cylinders in a manner similar to that described in Letters Patent granted  
15 to M. Seiberling, February 11, 1879, No. 212,155, whereby a single pump is made to force the exhaust-water from all the cylinders back into the vat or mixing-chamber, and whereby also a single pipe is made to connect  
20 both the upper and lower vats with said pump; second, to a novel construction of the covers to the receptacles for knots and other heavy substances, and to the means for operating the same, whereby less agitation of the contents  
25 of the receptacles is produced than with the devices heretofore used; and, third, to the means employed for cleaning the felts and cylinders, whereby I am enabled to clean them without stopping the machine, as hereinafter  
30 described.

In the accompanying drawings, Figure 1 is a side elevation of my improved vat, with the side walls partly broken away to show the arrangement of parts. Fig. 2 is a plan view of  
35 the same. Fig. 3 is an end elevation, with the lower portion broken away. Fig. 4 shows the cleaner in side elevation; and Figs. 5 and 6 show the cleaner in different forms, the one in section, and the other in end elevation.

40 A and A' represent the two parts of the outer tank or vat, made, by preference, in the form of rectangular water-tight compartments, and arranged one, A, on a higher plane and in such relation as to adapt it to feed the other  
45 by its overflow, as will be described.

Within the lower larger compartment, A', is arranged one or more inner tanks or vats, B', similar in form to the other compartment, A', except that its bottom is raised above, and,  
50 by preference, set at an inclination to the bottom of tank A', and terminates at one side in a curved side wall, C, conforming in curva-

ture to the adjacent side of the cylinder D', arranged in said vat or tank, and with the upper edge of said wall terminating below the  
55 plane of the upper edge of tank A' to adapt it to fill from overflow into it from the latter.

The tank A' may be enlarged to contain additional tanks or inner vats and cylinders, as shown at B<sup>2</sup> D<sup>2</sup>, and a similar inner vat may  
60 be placed in the tank or compartment A, in connection with the upper cylinder, D, if desired, this arrangement serving to give the knots and heavy foreign substances opportunity to settle in the outer tank, and thereby  
65 to present the pulp in much better condition to the making-cylinders than where the single or outer tank or vat only is employed.

The upper tank or vat, A, has two or more compartments or chambers, formed by partial  
70 partitions a<sup>3</sup> a<sup>4</sup>, for facilitating the thorough mixing of the pulp before it reaches the "making-cylinders," and is connected with the lower vat, A', by a pipe, a, (or a and a', one on each side, as shown in Fig. 2,) provided in the vat  
75 A, with a gate, a<sup>2</sup>, to regulate the overflow from vat A through the pipe a into the vat A'. The exhaust-water from the pulp passes into the cylinders, and thence through suitable openings at the ends thereof into a pipe-  
80 box or pipe, b, communicating with the several cylinders and with a box or close compartment, E, which at one end has a pump, E', of any suitable construction, connected with it at e', from which a water-pipe, e, leads  
85 to the mixing trough or box F, into which such exhaust-water is forced for use again, in a manner well understood. A pipe or box may be used on each side of the tank or vat,  
90 as indicated at b and b', Fig. 2, for facilitating the drawing off of the exhaust-water, both communicating through the compartment E and pipe e' with the one pump at E'.

The "stuff-box" is indicated at F', arranged above the mixing-box F, and connected with  
95 the latter by a stuff-pipe, f, and the mixing-box is in turn arranged above the compartment A of the vat, for facilitating the discharge of its contents into said compartment, in any suitable manner.

100 The arrangement of the "felts" or endless aprons G and H is similar to that described in Patent No. 212,155, referred to, except that for facility in cleaning I prefer to arrange a



portion of the latter over the mixing trough or box to travel in a vertical path, as indicated at H', so that the material taken therefrom, together with the water and acid used in cleaning, will fall into said box and be mixed with the contents thereof.

Above the mixing-box F is arranged the upper felt-washer or pipe or sprinkler,  $l^2$ , and felt-cleaner  $n'$ , so that the water from the pipe will drop into the mixing-box.

The receptacles for knots or other heavy substances, such as would be liable to injure the paper or straw board, are arranged in the vat in the same manner as described in my patent of February 17, 1885, No. 312,390; but the covers I of such as are in the inner vats, or such as work over curved sides, are jointed to adapt them to follow such sides, as shown—that is, they are composed of two or more parts or slats connected on their upper faces by hinges  $i$  in such manner as to permit them to partly fold upward in following the curved wall of the vat on which they rest. They are provided with rods  $j$ , attached at one end to the edge of the cover or its lower side, one at each end, and with their opposite ends projecting through perforations in the side wall of the receptacle, and provided with toothed racks  $j'$ , which engage with pinions  $k$  on a shaft, which at one end projects through the side wall of the vat, and is provided with a crank or other suitable means for operating it. Where the wall of the vat is not curved the joints in the cover will not be needed, and the covers may have racks applied directly to them at or near their ends, to engage with and be operated by a shaft with pinions, arranged as indicated at  $l'$ , or in other suitable manner.

In the construction of the cleaner for cleaning the cylinders or felts, I employ a suitable metal pipe,  $l$ , having a line or row of perforations on one side, and mounted in suitable supports,  $m$ , attached to the side walls of the vat. For convenience, the supports  $m$  are pivoted to the sides of the vat, or otherwise attached, in such manner that the pipe may be moved away from the felt or cylinder when not in use for cleaning it. To the pipe  $l$  is connected a suitable swab,  $n$ , made of felt, cloth, or other suitable material, nailed or otherwise secured to a bar or rod,  $p$ , and extending under the pipe or between it and the felt or cylinder to be cleaned, and adapted to rest in contact therewith when in use. This swab is, by preference, connected with the pipe by loops  $p'$   $p'$ , which adapt it, if desired, to slide endwise thereon for effecting the more thorough cleaning of the felt or cylinder, and may be provided with a handle, as shown at  $p^2$ , to rock the pipe to cause the acid to flow from the pipe onto the swab; or it may be connected with a crank and suitable gearing, as shown at  $p^3$ , actuated in any suitable manner, for imparting an endwise movement to the swab.

The swab may be made by wrapping the cloth or felt around the perforated pipe, as

shown in Fig. 6, and adapting the latter, through suitable connection with its supply-pipe, to be rotated in its bearings by means of a crank-handle,  $l'$ , or other suitable means. This latter construction is more suitable for the felt-cleaner; but the latter can be made in all respects the same as in the cylinder-cleaner.

The pipe  $l$  may be connected with a supply pipe or reservoir, in any suitable manner, for receiving its acid for cleansing purposes, and may be rocked, as described, for feeding the acid to the swab, or the swab may be vibrated in contact with the cylinder or felt for cleansing the same while said parts are in operation, thereby obviating the necessity for stopping the operation of the machine, and saving time.

Aside from the features particularly described, the construction may be the same as in the patent referred to, or similar to other machines in common use.

Having now described my invention, I claim as new—

1. In a paper-making machine, the combination of the lower vat and cylinder, the elevated vat and cylinder, and the exhaust-water conductor connecting said upper and lower vats, substantially as described.

2. The combination of the lower vat, A', the vat A, elevated above the plane of the lower vat and containing two or more pulp-mixing chambers, the overflow-gate  $a^2$ , and the pulp-conducting pipe  $a$ , extending from said overflow-gate to said lower vat, substantially as described.

3. The combination of the vat A, the mixing-box F, the stuff-box F', the stuff-pipe  $f$ , and the water-pipe  $e$ , all arranged substantially as described.

4. The combination of the mixing-box F, arranged on the end of the vat A, the washer  $n'$ , and the sprinkler  $l^2$ , the latter arranged above the mixing-box to adapt said box to receive the water from the sprinkler  $l^2$ , substantially as described.

5. The combination of the vat of a paper-making machine, the receptacle for knots and heavy foreign substances and the cover arranged to slide over said receptacle, the rack  $j'$ , and pinion  $k$ , connected with each end of said cover for operating the same, substantially as described.

6. The cover I, made in two or more parts, connected by hinges or a yielding connection, in combination with the curve bottom of the vat, substantially as described.

7. In combination with the making-cylinder of a paper-making machine, the acid receptacle or pipe  $l$  and the swab  $n$ , for the purpose stated.

8. In combination with the cylinder of a paper-making machine, the metallic pipe  $l$ , perforated on one side, the swab  $n$ , and the supports  $m$  at each end of said pipe and swab, substantially as described.

9. In combination with the vat and cylinder of a paper-making machine, the acid-re-



ceptacle pipe  $l$ , the swab  $n$ , and the adjustable supports  $m$ , said swab being arranged to be reciprocated, substantially as described.

10. The combination of the acid-receptacle pipe  $l$ , the swab  $n$ , and the sliding supports  $n'$ , for the latter, substantially as described.

11. The combination of the acid-pipe  $l^2$ , the swab  $n'$ , and the upper felt, H, substantially as described.

12. The combination of the acid-pipe  $l^2$ , the swab  $n'$ , the upper felt, H, and the mixing-box, arranged substantially as described.

In testimony whereof I have hereunto set my hand this 16th day of May, A. D. 1885.

J. F. SEIBERLING.

Witnesses:

REX. SMITH,  
E. T. WHITE.