

(No Model.)

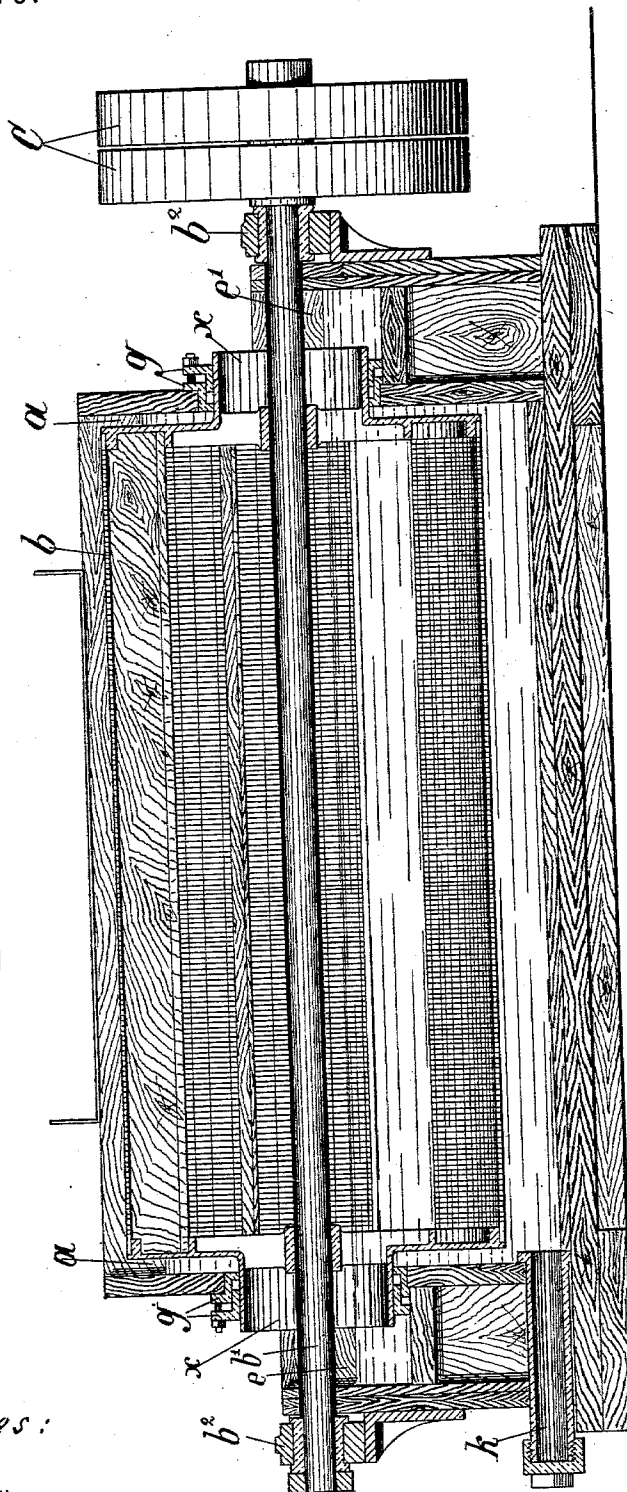
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C. WANDEL.
STRAINER FOR CHEMICAL WOOD PULP.

No. 478,179.

Patented July 5, 1892.

Fig. 1—



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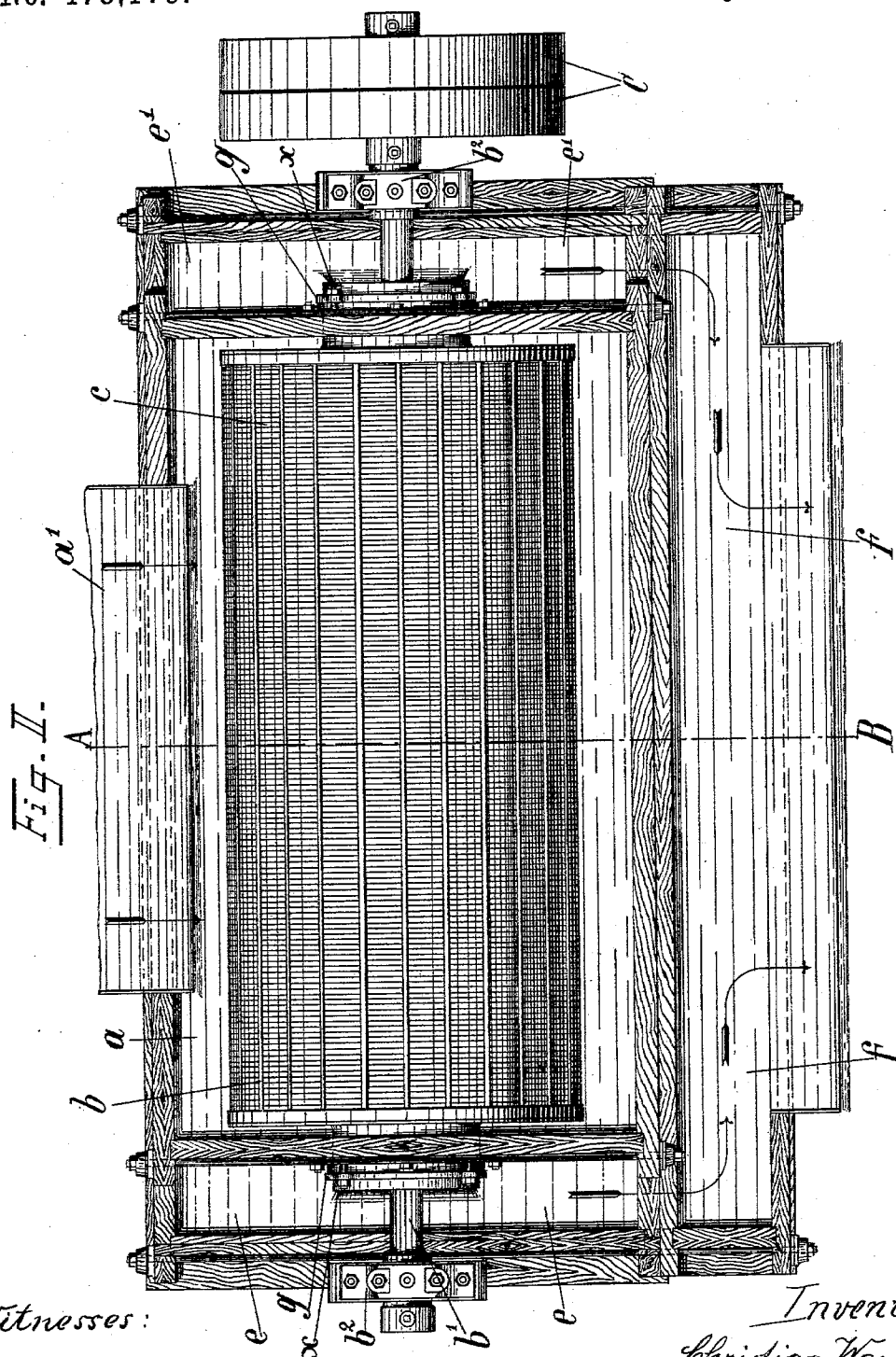
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C. WANDEL.
STRAINER FOR CHEMICAL WOOD PULP.

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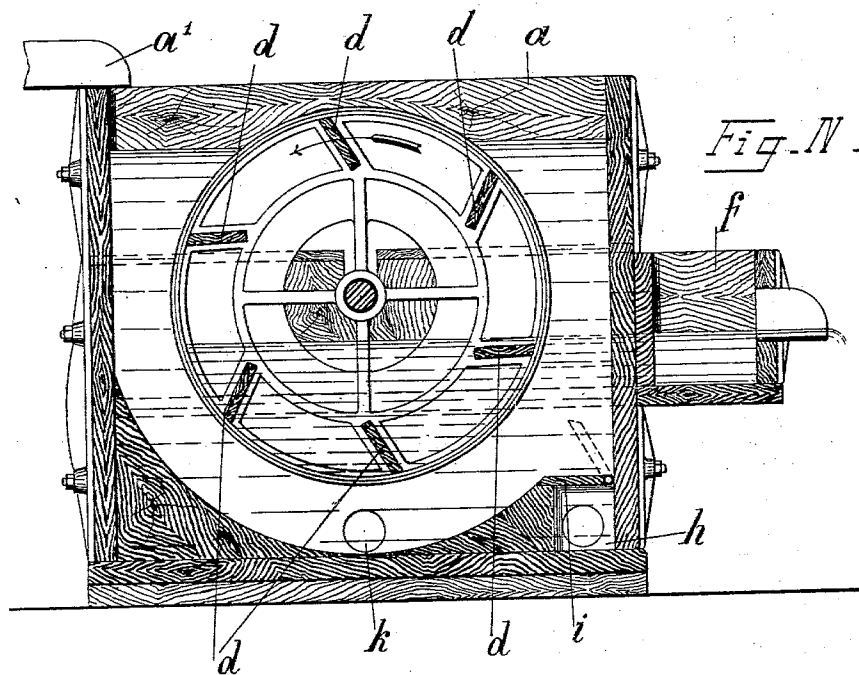
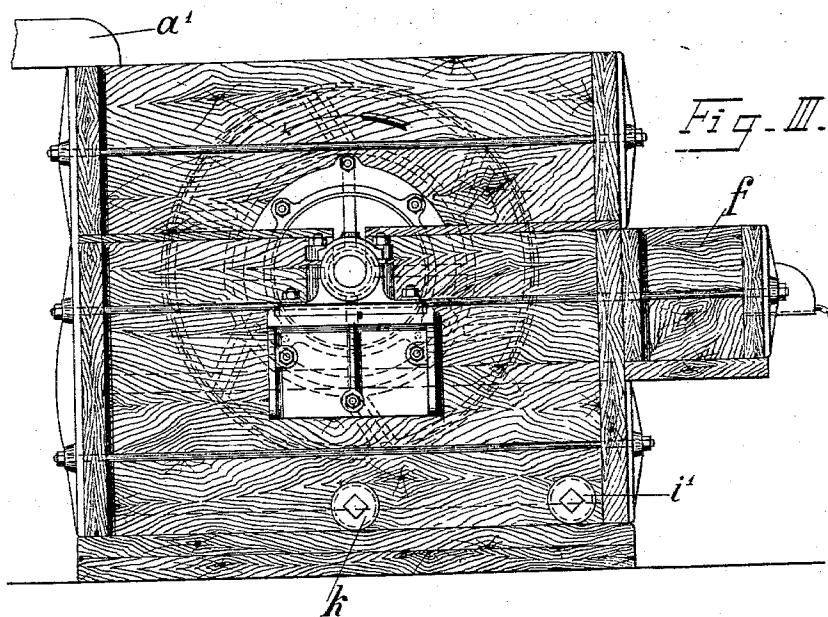
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C. WANDEL.
STRAINER FOR CHEMICAL WOOD PULP.

No. 478,179.

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UNITED STATES PATENT OFFICE.

CHRISTIAN WANDEL, OF REUTLINGEN, GERMANY.

STRAINER FOR CHEMICAL WOOD PULP.

SPECIFICATION forming part of Letters Patent No. 478,179, dated July 5, 1892.

Application filed July 26, 1889. Serial No. 313,796. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN WANDEL, a subject of the King of Württemberg, and a resident of Reutlingen, Germany, have invented certain new and useful Improvements in Strainers for Chemical Wood Pulp, of which the following is a full, clear, and exact description.

My present invention consists of a strainer for wood pulp for use in the paper industry; and its object is to remove all impurities from the said pulp and thus sort out the finest part of the same, which may then be employed for manufacturing all the superior sorts of paper up to the very finest qualities, while the coarser pulp, with the impurities contained therein, may be employed either in the same state in which it is separated or after again having been sorted for making packing-paper and inferior papers generally. I attain this object by means of the apparatus hereinafter more particularly described, and which consists, mainly, of a rotating cylinder provided with fine slots along its entire surface and having interior wings, such cylinder being caused to revolve in a vat or trough containing the unsorted pulp mixed with a large quantity of water. The trough is provided with suitable inlets for the pulp and water, which are caused to pass through the slotted cylinder, by which means all the coarser parts and impurities are separated out, as the slots in the cylinder are not wide enough to allow them to pass through.

In order to make this specification more easily intelligible, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views.

Figure 1 is a longitudinal section through the center of the apparatus. Fig. 2 is a plan; Fig. 3, an end elevation, and Fig. 4 a section on line A B in Fig. 2.

The pulp mixed with a large quantity of water is passed into the trough *a* through the inlet *a'*. In this trough *a* is mounted the cylinder or drum *b*, which is perforated throughout with slots or fine slits *c*, said cylinder being mounted on the horizontal shaft *b'*, running in the bearings *b² b²*, arranged at each end of the trough. The drum *b* has circular outlets at each end concentric with the shaft

and opening into the channels *e e'*, which join to form one common channel *f* in front of the apparatus, Fig. 2.

In order to prevent communication between the chamber or trough *a* and the outlet-channels *e e' f*, the drum ends are mounted in the stuffing-boxes and glands *g g*, so that the drum-perforations form the only communications between the chamber *a* and the outlets. The drum *b* is further provided with interior longitudinal blades *d d*, arranged as shown in Fig. 4. These blades run the whole length of the drum and are made to slant inward at an angle preferably of about forty-five degrees to a tangent passing through their point of juncture with the inner periphery of the drum. At the bottom of the trough *a* a channel or gutter *h* is arranged, having a hinged cover *i*. When the apparatus is at work, this cover is open and all the coarser particles of pulp, as also the impurities which are unable to pass the perforations of the drum, sink to the bottom of the trough and by the motion of the drum will be carried into the gutter *h*. By closing the cover *i* and removing the plug *i'*, in Fig. 3, the gutter *h* can be emptied without interrupting the working of the machine. The trough is also provided with the outlet *k*, by means of which it can be cleaned out.

The action of the device is as follows: The pulp suspended in water is filled into the chamber or trough *a*, so as to keep the liquid-level up to about the height shown in Fig. 4. The drum is set in quick rotation by means of suitable connections and sheave-pulleys C C. The wings or fans *d d* now suck the water and pulp through the slotted drum *b*, which, however, only admits the finest particles of cellulose, keeping out all coarser particles and impurities. The wings on the interior of the cylinder have the purpose of preventing the pulp from depositing at the bottom, and, furthermore, of keeping up a sharp circulation of the liquid toward the center of the drum—*i. e.*, toward the outlets—thus preventing the finer particles which have entered the drum from eventually passing out again at the bottom. As the outlets of the drum are considerably larger than the inlets (slots *c*) to the same, the liquid-level in the trough *a* will be always higher than that in the drum, so

that the possibility of particles escaping which have once entered the drum through the slots is excluded, the only exit being at *x x*.

Having now particularly described and as-
5 certain the nature of my invention, what I claim is—

1. In an apparatus for straining chemical wood pulp, the combination of the trough *a*,
having mounted therein a rotary drum *b*, per-
10 forated with slots *c* and provided with interior wings *d d*, said drum having centrally-arranged outlets in its ends leading out of the trough *a*, stuffing-boxes and glands *g g*
15 for preventing communication between the drum-outlets and the interior of the trough *a*, and suitable means for rotating the drum *b*, substantially as described.

2. In an apparatus for straining chemical wood pulp, the combination of the trough *a*, having outlet-passages *e e' f* and having the
20 gutter *h* and cover *i*, arranged as described, and clearing-hole *k* with a rotary drum *b*, having perforations *c* and interior wings *d d* and having its centrally-arranged end outlets *x x*
25 communicating with the outlet-passages *e e'* of the said trough *a*, the stuffing-boxes and glands *g g*, and suitable means for rotating the said drum, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHRISTIAN WANDEL.

Witnesses:

CHR. GRÖSINGER,
EMIL REEG.