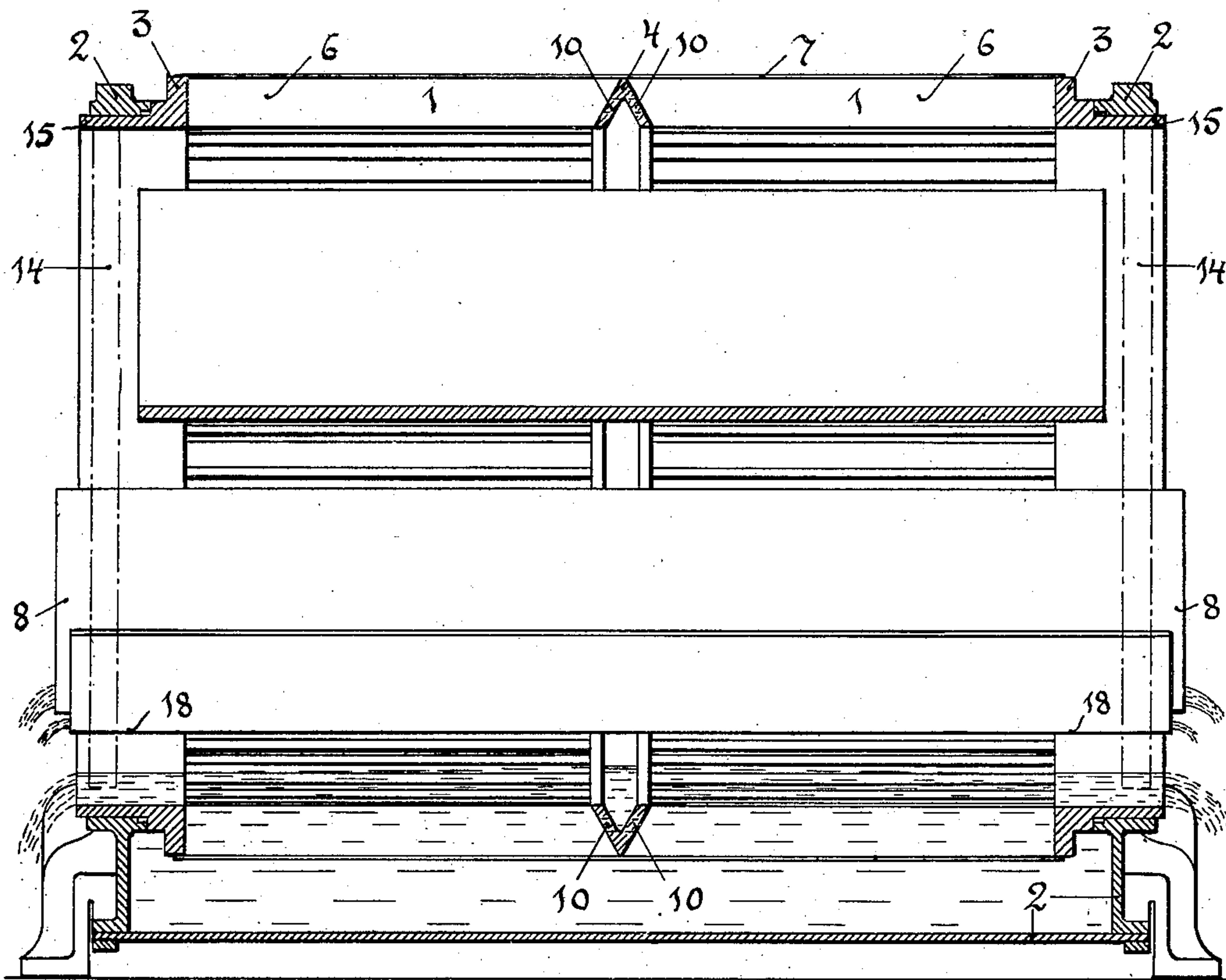


C. A. JOHNSON.
 ROTATING PULP STRAINER.
 APPLICATION FILED SEPT. 25, 1907.

917,305.

Patented Apr. 6, 1909.
 2 SHEETS—SHEET 1.

Fig. 1



Witnesses

August Johnson
Emil Wahleberg

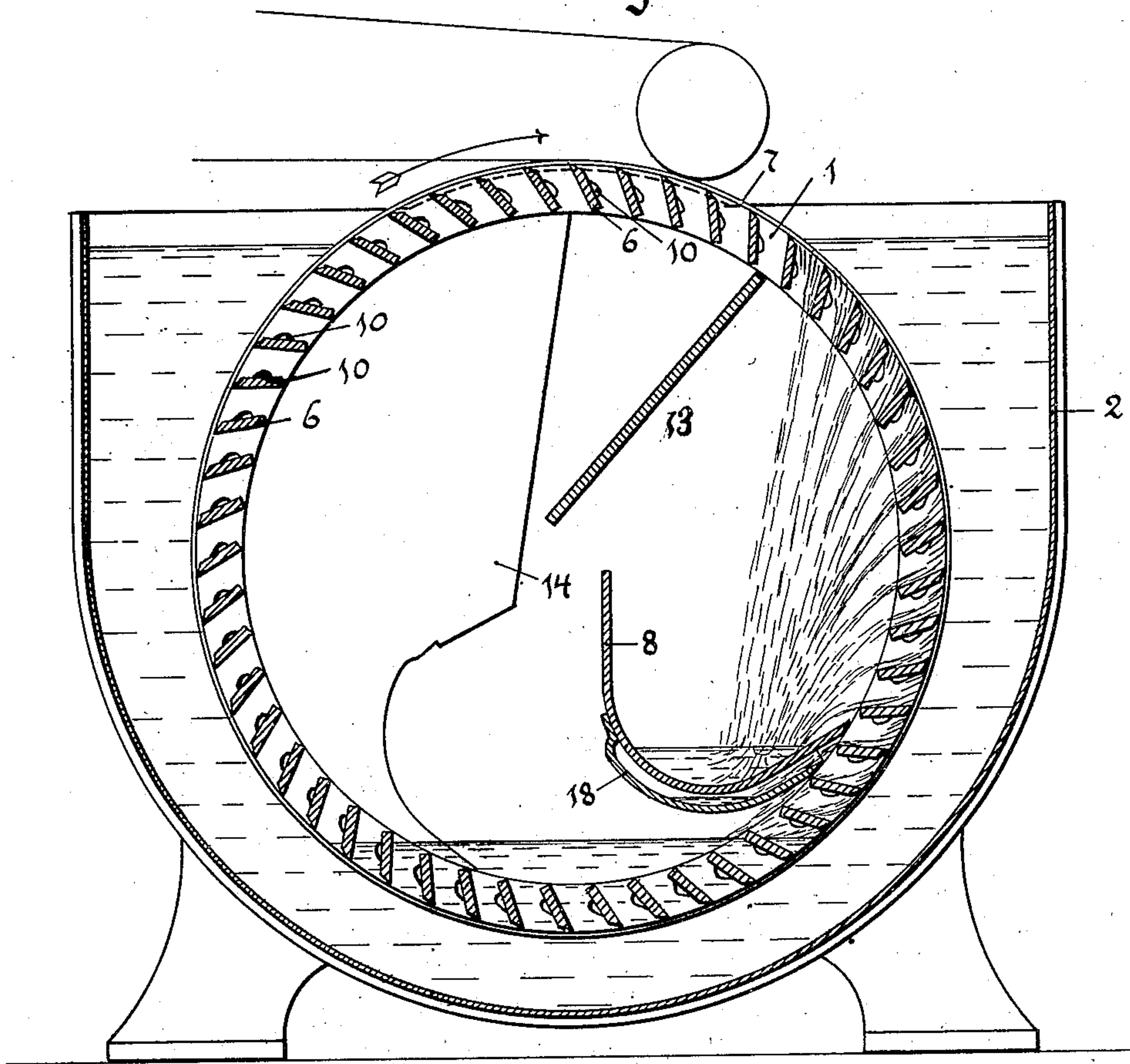
Inventor
Carl A. Johnson
 by *Ordance*
Att'y

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Fig. 2



Witnesses

August Johnson
Emil Wahlberg

Inventor
Carl A. Johnson
by *[Signature]*
Att'y

UNITED STATES PATENT OFFICE.

CARL ARVID JOHNSON, OF STOCKHOLM, SWEDEN.

ROTATING PULP-STRAINER.

No. 917,305.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed September 25, 1907. Serial No. 394,560.

To all whom it may concern:

Be it known that I, CARL ARVID JOHNSON, a subject of the King of Sweden, and resident of Stockholm, in the Kingdom of Sweden, have invented new and useful Improvements in Rotating Pulp-Strainers, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof.

10 This invention relates to improvements in rotating straining-cylinders for wood pulp and the like.

In the known method of removing water from wood pulp by means of rotating straining-cylinders a smaller part of small fibers always follows with the water, and this is especially the case at the part of the circumference of the cylinder diving into the mixture of water and pulp, due to the fact that the filtering-cloth has not yet obtained any layer of wood pulp of sufficient thickness to serve as a filter for the water to be removed. On account of the size of this part of the filtering-cloth being, to a great extent, dependent on the thickness and quality etc. of the mixture of water and wood pulp, it is necessary to make it possible to increase or diminish this part as desired and at the same time collect the water from this part separately in order to again mix it with the pulp mixture continuously supplied to the strainer or otherwise utilize fibers of pulp contained in the said incompletely filtered water.

35 In straining-cylinders hitherto employed a conduit for collecting the incompletely filtered water has been placed within the cylinder, said water being led to the conduit by laths extending inwardly from the filtering cloth in radial directions. This arrangement, however, does not fulfil the conditions above stated regarding the adjustment of the size of the part of the strainer from which the water is gathered, for if the laths extend radially, no water can be drawn off from a part situated beneath a horizontal plane through the axis of the cylinder.

The object of the present invention is to provide an arrangement in rotating straining-cylinders by which the incompletely filtered water from a greater or less part of the circumference of the cylinder can be collected separately and at the same time the size of this part can be adjusted at any time during working.

The invention consists, chiefly, in the com-

bination with a straining-cylinder having a filtering-cloth, of laths set at an angle to the respective radius, and a conduit placed within the cylinder in such a position as to collect the water percolating through the upper part of the downwardly moving side of the cylinder. Suitably, the conduit is mounted in such a manner as to be adjustable about the axis of the cylinder. Preferably, the conduit is provided with a double bottom so that samples may be taken from the conduit formed by the lower bottom, which will thus be situated between the part of the strainer collecting water incompletely freed from fibers and the part of said strainer through which the water is led off. By such samples it may be determined how the conduit is to be adjusted. Further, the straining-cylinder may be provided with an open ring extending around about the said cylinder, said ring being adapted to lead the water elevated by the upwardly moving part of the cylinder between the laths and the filtering cloth to the bottom of the cylinder.

The invention further comprises the construction and combination of parts hereinafter more particularly described.

Referring to the drawings, Figure 1 is a side elevation and partial longitudinal section of a straining-cylinder and a conduit arranged according to this invention. Figure 2 is a cross-section of the same device.

In the drawings, the straining-cylinder 1 inclosed in a vat or receptacle 2 rotates in the direction of the arrow. The strainer is composed of the rings 3, 3 and 4, which are connected together by the laths 6 set at an angle to the respective radius. When the strainer rotates and the vat is filled with pulp mixed with water, the latter percolates through the filtering-cloth 7 placed around the strainer 1. The water from the upper part of the downward moving side of the strainer, which contains a quantity of smaller fibers, flows down along the laths 6 in the collecting conduit 8. The water escaping from the other part of the strainer 7 which does not contain any fibers of wood pulp, since it has been filtered through the thick layer of fibers deposited on the filtering-cloth 7, flows off through the open ends of strainer. The collecting conduit, which is suitably adjustably secured to the shaft, consists of a conduit of any suitable form and may, suitably, be provided with a double bottom for removing samples from different parts of the strainer. By

turning the said conduit 8 around the geometrical axis of the cylinder the straining surface of the upper part of the downward moving side is increased or decreased. It appears from the drawing that the obliquely set laths 6 and the possibility of adjusting the conduit 8 allow the filtering surface to be extended a good way beneath the horizontal plane through the axis of the cylinder.

In order to allow the water between the laths 6 and the filtering-cloth 7 at the upward moving side of the cylinder to run off I provide a ring 4 having openings 10. When the cylinder rotates and the water between the laths 6 and the filtering-cloth 7 at the upwardly moving side is elevated above the lower water surface within the strainer, this water runs off through the openings 10 into the ring 4, whence it runs to the lower water surface and escapes through the open ends of the strainer.

It is not necessary that the conduit 8 is adjustable as it may be stationary, in which case the lower edge of the conduit should be situated sufficiently low beneath the center of the cylinder.

When the pulp mixture in the box 2 is thick or when a less production is desired, the conduit 8 should be placed higher. At the same time it is desirable to raise the surface of the escaping water for one thing in order to diminish the water pressure against the filtering cloth and for the other in order to decrease the effectivity of the strainer. To this end a gate 14 is provided, which is adapted to be turned along the circumference of the discharge pipe 15. It appears from the drawing that the surface of the escape water rises, when the gate 14 is turned downward.

In order to prevent the water which is pressed out from the pulp as well as that entering through sprinklers, or the like, that may be provided, to run down into the conduit 8 a guard-plate 13 is, suitably, placed above the said conduit, said guard-plate being, preferably, adjustable in different positions.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a straining-cylinder having a filtering-cloth, of laths set at an angle to the respective radius, and a conduit placed within the cylinder in such a position as to collect the water percolating through the upper part of the downwardly

moving side of the cylinder, substantially as and for the purpose set forth.

2. The combination with a straining-cylinder having a filtering-cloth, of laths set at an angle to the radius, and a conduit adjustably placed within the cylinder so as to allow it to be placed in a position for collecting water from a desired part of the downward moving side of the cylinder, substantially as and for the purpose set forth.

3. The combination with a straining-cylinder having a filtering-cloth, of laths set at an angle to the radius, a conduit adjustably placed within the cylinder for collecting water from a desired part of the downward moving side thereof, and a bottom situated beneath the said conduit, substantially as and for the purpose set forth.

4. The combination with a straining-cylinder having a filtering-cloth, of laths set at an angle to the radius, a conduit adjustably placed within the cylinder for collecting water from different long parts of the downward moving side of the cylinder, and a ring extending around the circumference of the cylinder, said ring having openings permitting the water between the laths and the filtering-cloth, at the upwardly moving side of the cylinder, to run down to the bottom thereof, substantially as and for the purpose set forth.

5. The combination with a straining-cylinder having a filtering cloth, of laths set at an angle to the radius, a conduit adjustably placed within the cylinder for collecting water from a desired arc of the upper part of the downwardly moving side thereof, and a gate adapted to be turned about the axis of the cylinder for shutting off part of the discharge pipe, substantially as and for the purpose set forth.

6. The combination with a straining-cylinder having a filtering cloth, of laths set at an angle to the radius, a conduit adjustably placed within the cylinder for collecting water from different arcs of the upper part of the downwardly moving side of the said cylinder, and a guard-plate situated above the said conduit, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL ARVID JOHNSON.

Witnesses:

AUGUST SÖRENSEN,
KARL RUNESKOG.