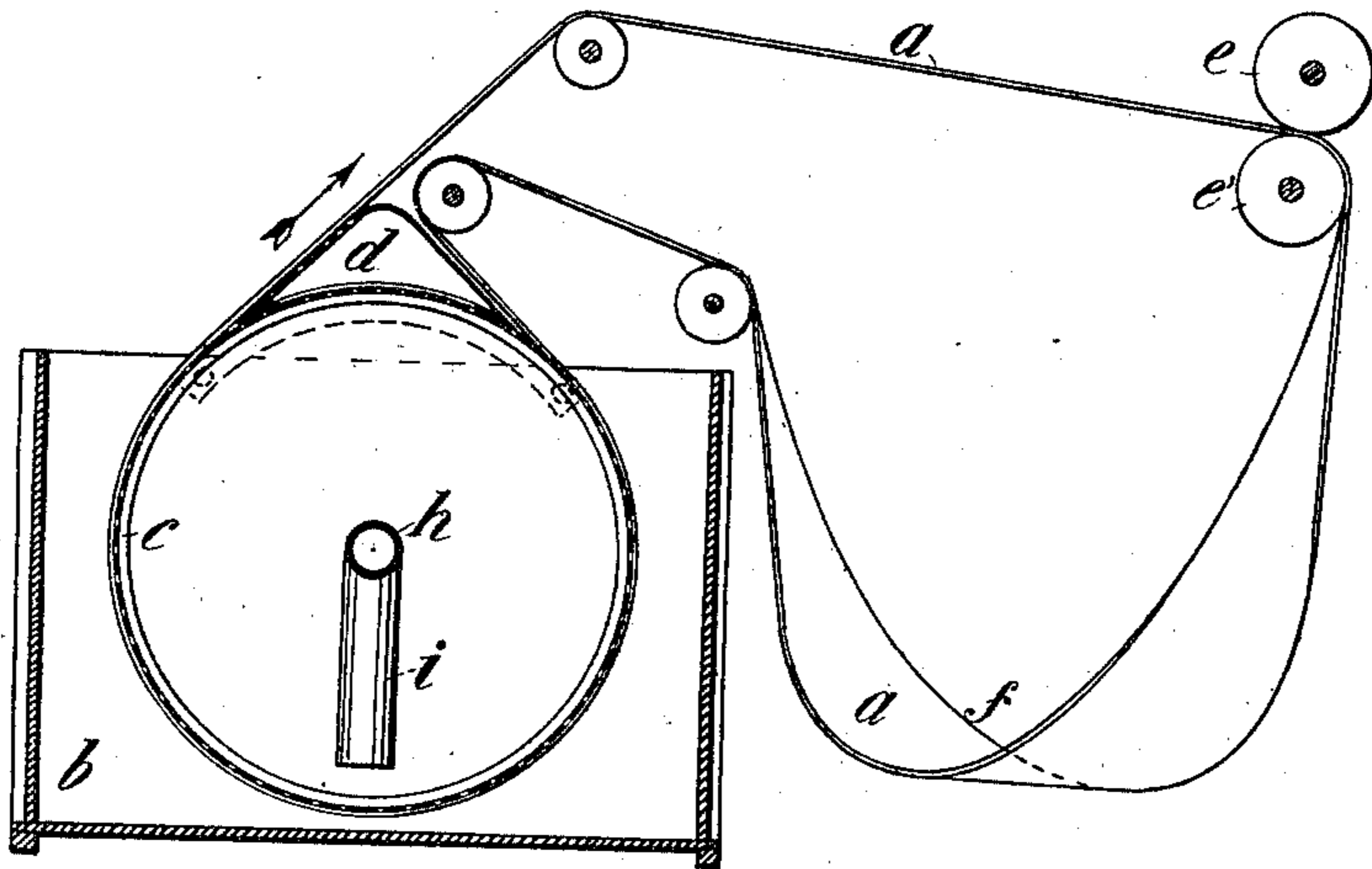


No. 736,596.

PATENTED AUG. 18, 1903.

J. GRÖNDAHL.
PAPER MAKING MACHINE.
APPLICATION FILED SEPT. 2, 1902.

NO MODEL.



Witnesses:

E. B. Bolton
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UNITED STATES PATENT OFFICE.

JOHANNES GRÖNDAHL, OF BÆGNA, NEAR HÖNEFOS, NORWAY.

PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 736,596, dated August 18, 1903.

Application filed September 2, 1902. Serial No. 121,881. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES GRÖNDAHL, a subject of the King of Sweden and Norway, residing at Bægna, near Hønefos, Norway, have invented certain new and useful Improvements in Paper-Making Machines, of which the following is a specification.

My invention relates to apparatus used in paper, cellulose, and wood-pulp factories for gathering up the fibers in the water which runs off from the machinery that forms paper or cardboard out of the pulp. According to my invention I direct this water to an apparatus comprising a movable endless felt, on which the fibers deposit, while the water passes through the pores of the felt. The fibers thus gathered on the felt are by suitable means removed therefrom and utilized, and the water is in this manner quite clear and free from pulp when it leaves the factory.

My invention consists in suitable means for carrying out such process, and in the annexed drawing I have shown a diagram of one form of apparatus, showing a vertical section of the same.

In the drawing, *a* represents an endless felt, *b* a tank, and *c* a cylinder constructed about as the cylinders in the usual cylinder-machines. The felt is carried over this cylinder and over suitable guide-rolls, as shown. The felt also passes between a pair of rollers *e e'*, where the pulp gathered on the felt is removed in the well-known way. Above the cylinder, which is perforated, as usual, on its cylindrical surface, is mounted a hollow bridge-piece *d*. The latter is perforated on the faces in contact with the felt. The cylinder is journaled on a hollow shaft *h*, which has a downwardly-projecting branch *i*, form-

ing a connection through which the water gathering in the bottom of the cylinder may be removed. The cylinder turns freely on the said hollow shaft. The bridge-piece *d* serves to cover the upper part of the cylinder which is not covered by the felt, so that air shall not be sucked into the cylinder. As the cylinder rotates and the felt is moved with it in the direction of the arrow, pulp will be deposited on the felt and removed by the roller or other suitable means. Some pulp may still adhere to the felt, and in order that this pulp shall not fill up the pores of the felt and make it less permeable for water I prefer to make use of a felt which is twisted, as indicated at *f*, in such manner that the two sides of the felt are alternately utilized as a pulp-gathering surface. The other side will then be cleansed from adhering pulp by the water passing through the felt. This arrangement is of great importance for the uniform and economical working of the apparatus.

I claim—

In an apparatus for separating fibers from water running off from paper-making and similar machinery the combination with an endless felt of means for supporting part of such felt in such way as to form a sifter for the water to be treated; and means for removing the fibers deposited on the felt, said felt being twisted so that the two sides of the felt are alternately exposed to the water to be treated.

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

JOHANNES GRÖNDAHL.

Witnesses:

ALFRED J. BRYN,
O. MÜLLER.