

UNITED STATES PATENT OFFICE.

HUBERT NIESAN, OF KAUKAUNA, WISCONSIN.

SUCTION-ROLL FOR PULP OR PAPER MILLS.

SPECIFICATION forming part of Letters Patent No. 516,507, dated March 13, 1894.

Application filed May 24, 1888. Serial No. 274,955. (No model.)

To all whom it may concern:

Be it known that I, HUBERT NIESAN, of Kaukauna, in the county of Outagamie, and in the State of Wisconsin, have invented certain new and useful Improvements in Suction-Rolls for Pulp or Paper Mills; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to suction-rolls for pulp and paper mills; and it consists in certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a vertical longitudinal section of a suction-roll constructed according to my invention; Figs. 2 and 3 vertical transverse sections respectively taken on lines 2—2 and 3—3 Fig. 1; Fig. 4 a vertical longitudinal section of another form of my suction-roll; Figs. 5 and 6 vertical transverse sections respectively taken on lines 5—5 and 6—6 Fig. 4, and Fig. 7 a portion of what is termed a "wet machine" with my suction-roll in position for use.

Referring by letter to the drawings A represents a stationary plate provided with an annular flange A' and a squared projection B the latter being designed to fit a corresponding socket in an arm C that is secured to the pulp tank D best illustrated in Fig. 7. The plate A is preferably made in two sections, and these sections have opposing ears E that are clamped together by means of bolts F, as illustrated in Figs. 2 and 5. Turning loosely in the projection B on the plate A is a shaft G and fast on this shaft is the headed end H' of a cylinder H the other end of the latter being fitted inside of the flange A' on said plate so as to form a joint that is practically air tight, but still is free to turn.

In Fig. 1, I show the flange A' of the plate as provided with a shoulder against which comes the opposing end of the cylinder H, while in Fig. 4, I show said flange turned over a rib on said end of the cylinder, but I do not confine myself to the constructions shown, as various other means may be employed to accomplish the same result. The cylinder H is foraminous throughout its length and is provided with a series of chambers I.

In one form of my suction-roll, as shown by Figs. 1, 2, and 3, the chambers I in the cylinder H are formed by a polygonal shell K having inwardly curved sides the meeting points

of which come flush with the inner side of said cylinder. In this form of the suction-roll one end of the shell is secured to the headed end of the cylinder and the other end supported by a spider J that is fast on the shaft G.

In the form of suction-roll shown in Figs. 4, 5 and 6, the shell K is cylindrical and radiating therefrom at suitable intervals apart are a series of plates L whose outer ends come flush against said cylinder.

As shown in Figs. 1 and 2, I provide the flange A' of the stationary plate A with an exhaust-pipe M, and in Figs. 4 and 5, I show a similar pipe let into said plate near its circumference.

In the operation of my invention, the usual felt or wire-cloth apron N, that takes the pulp from the roller O in the tank D, passes over the foraminous cylinder H, and as the latter is revolved, the chambers I successively come into communication with the exhaust pipe M, and thus a suction is created that draws the moisture from the stock, this moisture being carried off through said exhaust-pipe to a suitable point of discharge.

While I have shown and described one end of the foraminous cylinder as being closed it is obvious that a construction similar to that at the opposite end may be substituted thus enabling me to draw from both ends of said cylinder.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A suction-roll for pulp and paper mills, that comprises a stationary plate provided with an annular flange, a foraminous cylinder having an open end fitted inside of said flange, a shell arranged within the cylinder and forming therewith a series of continuous longitudinal chambers, a shaft rigidly connected to the cylinder and shell in line with the axis thereof, and an exhaust pipe connected to said plate to be successively passed by the chambers, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Centralia, in the county of Wood and State of Wisconsin, in the presence of two witnesses.

HUBERT NIESAN.

Witnesses:

E. B. ROSSIER,
G. F. STEELE.