

is provided for extracting as much of the water from the felt and pulp as possible before it passes between the press rolls. The box extends the whole width of the felt, and is tightly closed up, except the top, where it is perforated with small holes. A pipe connects this box with the draft tube of the water wheels, or to a power-driven suction pump. As the felt passes over the box the water is sucked down into it, leaving the felt much drier. In large mills where there are many wet machines running, it is by far the best method to connect the suction or draft boxes with a power-driven suction pump, as any considerable amount of air let into the draft tubes of the water wheels means a loss of head, which is very expensive when it means a decreased output. The vat is made of 3-inch pine bolted together, and provided with sprays as usual. The cylinder mould, which revolves in the vat, consists of a number of brass spiders mounted on a shaft, and covered with brass wire cloth. It is driven by contact with the couch roll. The felt, in its path, passes the stretch roll in front of the machine, goes down under the two rolls near the floor, up past the beater and cleaning sprays, through the squeeze rolls and back under the couch roll. From here it passes over the guide roll, past the suction box and through the large press rolls, and so back to the stretch roll in front.

Fig. 12 shows the interior of the Chicoutimi Pulp Company's wet machine room. This is the usual arrangement of wet machines in either large or small mills. The machines are driven from a main shaft supported by the roof trusses. In the right foreground is shown the hydraulic press, which is used to force some of the water from the pulp. The screens and pulp trough are placed back of the wet machines. There are eight wet machines installed in this mill, handling about 90 tons of wet pulp per day.

OPERATION.—The pulp and water, as it comes from the screen, passes to the vat of the wet machine. In this vat revolves the cylinder mould. The vat and mould are so designed that the water cannot flow out of the vat until it has passed through the meshes of the wire covering on the mould; or in other words, the outlet of the vat is led from the inside of the mould. The pulp, being in suspension in the water, cannot pass through, and is spread in a thin layer over the surface of the mould, which, by its revolution, carries the pulp up under the couch roll, and in connection with the running felt. The pulp, on contact with the felt, fastens itself thereon, leaving the wire com-

and allowing the roll to make one revolution, the sheet falls free in his hands. The other method is by use of a doctor and knife, such as is shown in Fig. 11. The machine hand, in this case, simply presses on the handle, which brings the knife against the roll, severing the pulp. The sheet unrolls as before, and is thrown on the table and folded. The first method has many objections to it, aside from the difficulty of cutting a straight edge. A

When the stuff pump is driven from the grinder shaft, the variations in its speed may cause considerable difficulty in keeping the water level constant. No trouble will be found in doing this if the variations in the speed of the stuff pump are small. When the wire of the cylinder mould gets dirty or gummed up, its capacity is limited considerably. It may be cleaned by rubbing with coal oil and playing upon it with a spray of water. Situated



FIG. 11—STANDARD 72-INCH WET MACHINE.

workman, if he is in any way nervous, is apt to stick the pin into the felt, which completely ruins it.

When the pulp is coming very fast and is allowed to roll up too thick, the workman may not be able to drive the pin across the roll at one sweep. On making a second attempt the roll has advanced, and there is great danger of his dropping the pin over the roll. It is now certain to pass between the press rolls, cutting a hole in the felt and ruining the fibre of the under roll. Numbers of felts have been needlessly spoilt in this manner, as the injury could

close to the wire gauze is a brass pipe into which have been drilled a number of fine holes. It is supplied by the low pressure system before mentioned. The spray is allowed to play upon the wire of the cylinder mould, keeping it comparatively clean.

The life of a felt varies considerably with the treatment it has received and the quality of its manufacture. The gray Canadian felt is a better one to carry the stock, and will last longer than the white American ones. When a felt is new, the carrying capacity, at a speed of 50 feet per minute, is about 5½ tons dry per 24 hours, and will

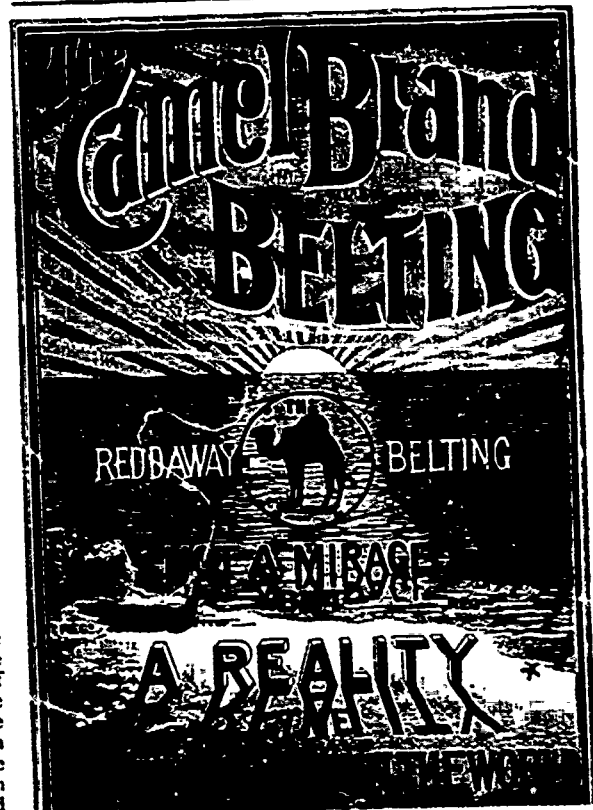


FIG. 12—VIEW OF PORTION OF WET MACHINE ROOM, CHICOUTIMI PULP COMPANY.

paratively clean. By the motion of the felt the pulp is carried over the machine, and, after going over the suction box, where a certain amount of the water is drawn off, it passes between the large press rolls. These rolls being very heavy, and also being pressed together by the powerful springs, force out much of the water. The pulp on coming through leaves the felt and sticks to the top roll, where it is allowed to accumulate by the addition of a number of layers. When it has arrived at a proper thickness, it is cut off. There are two methods of removing the pulp from the top roll. One is by means of a short sharpened pin made of hardwood. The operator sticks the point of the pin under the pulp, and by a quick motion across the face of the roll cuts a gash in pulp the whole width of the machine. By grasping the lower edge

have been prevented by the use of a knife. With the doctor the heaviest layers can be cut off as easily as the lighter ones. The knife is apt to crinkle up the edge of the sheet, but this disadvantage is partly offset by the straight edge obtained. The sheet is folded so that there are no edges showing from the outside, making, when folded, a bundle about 24" x 18" x 8 layers thick. The sheet from a 16-inch roll will be 50 inches wide, the length depending on the width of the machine. The standard width adopted by most builders of wet machines is 72 inches, which is large enough. If larger than this there would be difficulty in throwing the sheet.

The pulp vat at the back of the machine is provided with inlet and discharge valves or gates, by which the wet machine man can regulate the level of the water in it.



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