

about 45 degrees. The spiral method, in which the wound is run spirally round the tree, is often used. In any method the cut extends just beneath the outer bark of the tree.

At the base of the main trough a cup is set to catch the flow. Every day the collector cuts a thin slice of bark from the lower edge of each lateral trough, opening the clogged passages and renewing the flow. More than a hundred trees are on a "path," the last one bringing the collector back to his hut; and from there he retraces his steps, emptying the cups into a bucket. Often he travels many miles in his day's work. Returning to camp, he starts on the real work of the day—coagulating the rubber. This must be done at once, for the latex spoils quickly.

Coagulating Rubber

The South American has used the same method of coagulation for hundreds of years. He has a sort of furnace, which resembles a jar without ends. A fire is built beneath it, and when this is burning vigorously some palmetto nuts are thrown on, and soon a thick black oily smoke is pouring out. He takes a paddle, dips it into the bucket of latex, and turns it over and over in the smoke until it is covered with a thin layer of rubber. Again and again the paddle is dipped in the bucket, until the ball at the end is so large that it cannot be handled. At this stage it is removed and a pole pushed through it.

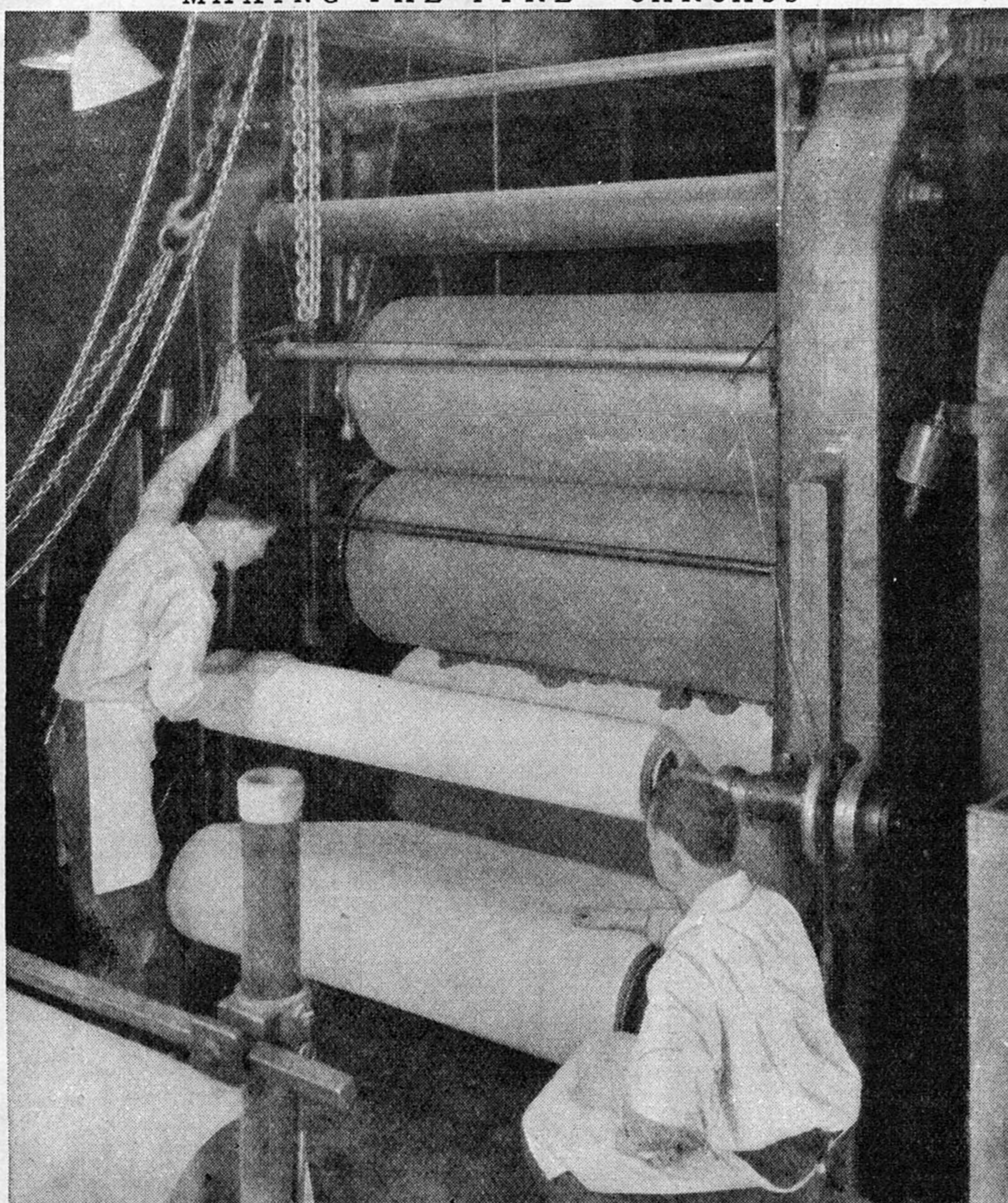
Resting the pole on two forked sticks that have been driven into the ground, the worker turns the ball over and over while more latex is slowly poured on. Larger and larger grows the ball, until a mass about the size of a ham is formed. This is then cut off the stick, and the crude rubber is ready to be sent to the nearest river port. Sometimes these "hams" weigh many pounds, and represent many days' tapping.

In other parts of the world different methods of collection are used. Much of the African rubber comes from climbing shrubs. The natives, after tapping the vines, sometimes catch the milky juice and smear it over their naked bodies, and when it has hardened pull it off and roll it into balls. In some parts of Asia and Africa the latex is coagulated by means of alum, and in others by boiling it in water.

In Mexico and Central America the rubber-producing *guayule* bushes are cut down and ground into pulp, which is churned in water for several hours. Finally the fibre particles sink and the rubber rises to the top and is skimmed off.

On plantations 250 Para trees can be raised to one acre. They begin to produce at the age

MAKING THE TYRE "CARCASS"



The foundation of a motor tyre is called the "carcass." It is made of the finest cotton, and the rubber after being milled is forced into the fabric and round every thread of it by the tremendous pressure of great rollers.

of about six years. Plantation rubber is gathered and coagulated under ideal conditions, and is shipped to the market practically free from dirt and foreign matter.

Cleaning and Testing Crude Rubber

In whatever form the crude rubber comes to the factory, the first thing that must be done is to clean it thoroughly and test it, as rubber varies greatly in composition. Until it is used it is stored in a cool dark place, usually underground. The crude rubber is first steamed into a soft plastic mass, and thoroughly washed by being passed through heavy rollers, which mash and knead it between their hot surfaces while water is sprinkled on from above. Finally it comes out looking much like a thin piece of sheet sponge. Vacuum driers take this spongy