

# UNITED STATES PATENT OFFICE.

EDWARD PARTINGTON, OF GLOSSOP, ENGLAND.

## PROCESS OF TREATING SULFITE PULP.

SPECIFICATION forming part of Letters Patent No. 531,856, dated January 1, 1895.

Application filed July 16, 1894. Serial No. 517,716. (No specimens.)

*To all whom it may concern:*

Be it known that I, EDWARD PARTINGTON, a subject of the Queen of Great Britain and Ireland, residing at Glossop, in the county of Derby, England, have invented Improvements in Processes of Treating Sulphite Pulp Used in the Manufacture of Paper and the Like from Wood, of which the following is a specification.

This invention has for its object the purification of wood pulp (known in the trade as "sulphite pulp") in the process of its manufacture.

In the manufacture of "sulphite pulp" from wood, after the wood has been digested, and washed with water, there is found in the pulp a certain amount of pitchy or resinous matter which is not perfectly soluble in water, but which adheres more or less to the wood fibers in very minute particles and also to those vessels or other parts of the machinery in which the fibers are being treated, eventually forming thereon a black coating of a pitchy nature, which becomes smeared or rubbed off the surface by the action of the moving pulp and forms dirty specks which deteriorate the value of the pulp. This insoluble matter is not in the wood itself, nor visibly present in the sulphite pulp when digested, but appears to be a by-product developed when the pulp is submitted to the opening process in which the fibers are rubbed together. In order to prevent the formation of these partly insoluble specks in the pulp, and the partial coating of the vessels or parts of the machinery with the pitchy or resinous matter previously named, according to my invention I add petroleum or paraffin oil (or other suitable hydrocarbon) to the partly washed pulp in sufficient quantities to render soluble the minute particles of pitchy or resinous matter in the pulp which may then be washed out in the usual way known to paper makers. I find that the proportion of petroleum or paraffin oil most useful for this purpose is about six to eight quarts to one ton of air dried pulp. If the boiling has been carried on a long time in the digester it requires a little less oil than when the pulp has not been so well boiled, but I find the above proportion is about the average quantity required per ton.

By the use of this invention the vessels and other machinery used in the washing, cleansing and treating of "sulphite pulp" can be kept perfectly clean, and free from the objectionable coating of the pitchy or resinous matter and the pureness and quality of the pulp will be greatly improved.

The method of applying the oil to the pulp can be varied to a considerable extent. For example it can be added to the pulp when it is passing through the "pulp opener" by dropping in the oil with the pulp as it enters, after which it is well mixed with the pulp and comes in contact with and dissolves the pitchy or resinous matter; or, the oil may be added in given proportions to quantities of pulp put into washing engines, cisterns or the like, with the object of mixing and triturating the same. The most effective way however I find is to apply the oil to the pulp while the fibers are being rubbed or separated by suitable machinery like a pulp opener, rag engine or "Hollander."

The oils which I use for the purposes of my invention are mineral hydro-carbon oils such as petroleum or paraffin (either crude or refined) preferably of a specific gravity of .800 to .850 and with a flashing point of from 80° to 120° Fahrenheit.

I claim as my invention—

The improvements in the treatment of "sulphite pulp" used in the manufacture of paper and the like from wood, consisting in the application or addition to such "sulphite pulp" during the process of manufacture of the paper stock from the "sulphite pulp," of petroleum or paraffin oil or other suitable mineral hydrocarbon oils for the purpose of removing or preventing the formation of partly insoluble specks of a pitchy or resinous nature in the said pulp, and thereby preventing the partial coating or fouling of the vessels or other parts of the machinery therewith.

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

EDWARD PARTINGTON.

Witnesses:

CHARLES A. DAVIES,  
JNO. HUGHES.