UNITED STATES PATENT OFFICE.

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METHOD OF WATERPROOFING VULCANIZED FIBER.

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To all whom it may concern:

Be it known that I, JAMES McINTOSH, a citizen of the United States, residing in Norristown, Pennsylvania, have invented Methods of Waterproofing Vulcanized Fiber, of which the following is a specification.

One object of my invention is to provide a relatively simple, inexpensive and commercially practical method of introducing oil into parchmentized or vulcanized fiber.

In accordance with my invention vulcanized fiber manufactured in the usual way is washed, and, when in a condition substantially saturated with water and free from parchmentizing chemicals, is placed in a suitable vessel containing a waterproofing liquid such as oil, asphalt or the like.

In a typical case I utilize linseed oil and after placing the vulcanized fiber to be treated in a closed container with said liquid, preferably subject it to a vacuum in order to remove the air which it contains. Thereafter I place said container under a pressure of from seventy-five to one hundred and fifty pounds to the square inch, with the result that the waterproofing liquid is driven into the fiber where it remains together with the greater proportion of the water originally held. Thereafter the treated fiber or object made therefrom is removed and after the surplus liquid has been drained off, is placed in a suitable drier, where the contained water is driven off.

I have found that the above process requires a time depending on the thickness of the fiber under treatment taking, in the case of one-quarter inch fiber, about twenty-four hours in the container, under a pressure of one hundred pounds to the square inch. Obviously fiber of increased thickness will require a greater time, it being necessary that the oil be introduced into the fiber while this is in its expanded condition before it shrinks by reason of the removal of the water.

By the above process I am enabled to materially reduce the expense of impregnating fiber with such material as oil, since I have discovered that it may be utilized in place of a process which involves the preliminary impregnation of the fiber with some liquid serving as a vehicle for subsequently carrying in the oil or other waterproofing liquid. By the above process however, it is possible to directly introduce the water-proofing liquid and thereby effect a material saving of time and cost of manufacture.

I claim:

1. The method which consists in immersing wet vulcanized fiber in a water-proofing liquid until it has become impregnated therewith; and thereafter drying said fiber to free it of the water.

2. The method which consists in immersing wet vulcanized fiber in a water-proofing liquid; and subjecting said liquid to a relatively high pressure to facilitate its penetration of said fiber; and removing the water from the fiber.

3. The method which consists in immersing wet vulcanized fiber in a water-proofing liquid; subjecting said liquid and fiber to a vacuum to remove the air; subjecting said liquid and fiber to a pressure above the atmosphere to facilitate its impregnation with the liquid; and removing the water.

JAMES McINTOSH.