

UNITED STATES PATENT OFFICE.

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PROCESS OF INDURATING AND WATERPROOFING ARTICLES.

SPECIFICATION forming part of Letters Patent No. 506,623, dated October 10, 1893.

Application filed February 21, 1893. Serial No. 463,231. (No specimens.)

To all whom it may concern:

Be it known that I, STEPHEN R. BRADLEY, a resident of Nyack, in the county of Rockland and State of New York, have invented a new and useful Process of Indurating and Waterproofing Articles, &c., of which the following is a full, clear, and exact specification.

The object of my invention is to harden and makewater-proof, articles manufactured from paper or wood pulp, and it consists in the steps hereinafter fully described and claimed whereby the pulp is taken from the tank in a thin layer and mixed or treated with the indurating or water-proofing compound during the process of forming the article.

In accomplishing my invention, the fiber wood, paper or the like is first made into a pulp in the usual manner. The pulp is then taken from its receiver or vat in a thin layer by means of a suitable roller, such as commonly used in paper-pipe making machines, for instance, the machine described in United States Letters Patent No. 408,092, of July 30, 1889. From this roller, the lower side of which is immersed in the mass of pulp, the thin layer of pulp is taken off and partially dried or treated by means of another suitable roller, as shown and described in the above patent. From this second roller the thin layer of partially dried or treated pulp is taken off by a third roller around which the thin layer may be wound several times until the article thus formed is of sufficient thickness. During this process of winding the thin layer of the pulp I distribute, preferably at a point above that roller (upon which the several layers are wound) and pref-

erably over the entire surface of the sheet of partially dried pulp, a thin coating of indurating or water-proofing substance which is wound in between the thin layers. This water-proofing or indurating substance is in an undissolved and finely divided or powdered state. After the article formed is sufficiently thick it may be removed from the roller in the usual way and subjected to a temperature sufficiently high to melt the indurating or water-proofing substance, whereupon, a uniform, firm and homogeneous article is formed of the pulp and the indurating or water-proofing substances. In this process, the articles are equally water-proofed and strengthened throughout and the articles may be made of a definite thickness or any desired thickness, and the indurating or water-proofing substances will be distributed universally and evenly through the entire article.

Having thus described my invention, what I claim is—

The herein described process or method of indurating wood or other fiber, which consists in forming a thin layer of pulp and applying to the surface of this layer of pulp an indurating or water-proofing compound in a finely divided state, and winding the layer around a suitable roll or form in such a manner that between each layer is interposed the indurating or water-proofing substance, substantially as described.

STEPHEN R. BRADLEY.

Witnesses:

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