UNITED STATES PATENT OFFICE.

FRANK. E. KEYES, OF LOCKPORT, NEW YORK, ASSIGNOR TO THE UNITED INDURATED FIBRE COMPANY, OF PORTLAND, MAINE.

COMPOSITION FOR WATERPROOFING PULP AND OTHER FIBROUS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 458,534, dated August 25, 1891.

Application filed September 3, 1890. Serial No. 363,850. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK. E. KEYES, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Compositions for Waterproofing Pulp and other Fibrous Articles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a composition of matter for waterproofing pulp articles, to be used in that process wherein the pulp is saturated with an oxidizing compound and then subjected to a high degree of heat, whereby the compound is oxidized within the pores of the pulp. Linseed-oil has hitherto formed the chief material used for this purpose. It is an oxidizing oil well adapted to the process and oxidizes into a hard and tough gum, giving the fiber great strength and toughness. Its high cost, however, has led to the use of rosin as a means of cheapening the cost of the bath; but when rosin alone or dissolved naphtha was introduced with the linseed-oil it resulted in rendering the pulp brittle in proportion to the amount used. I have discovered that rosin may be rendered available for this use and its objectionable qualities removed by the use of cotton-seed oil, which, though an oxidizing oil, is oxidized with such difficulty as to be for practical purposes a non-oxidizing oil. The cotton-seed oil softens up the rosin and frees it from brittleness, at the same time becoming partially oxidized, while the linseed-oil is present to supply the necessary strength and toughness.

My invention therefore consists of the composition of matter for waterproofing pulp, composed of rosin, linseed-oil, and cotton-seed oil.

In carrying out my invention I make use of varying proportions, according as the goods require more or less elasticity. As an example, I take sixty per cent. of rosin, which I dissolve for the purpose of facilitating its mixture with the other ingredients in thirty per cent. of naphtha, and then add ten per cent. of boiled linseed-oil. To this mixture is added thirty per cent. of crude cotton-seed oil. The mixture is heated to 150° Fahrenheit and the ware soaked in it. After soaking, the ware is allowed to stand exposed to the air to remove the bulk of the naphtha, and it is then baked at a temperature of 250° until the mixture is thoroughly oxidized within the body of the pulp. The ware treated with this material is hard and tough, and is without brittleness incident to the presence of rosin, and at the same time it is much cheaper than the material hitherto used for this class of work.

I claim—

The herein-described composition of matter for waterproofing pulp and other fibrous articles, which consists of a mixture of rosin, linseed-oil, and cotton-seed oil, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK. E. KEYES.

Witnesses:
THOMAS M. MCGRATH,
CHAS. E. FOLGER.