

UNITED STATES PATENT OFFICE.

JOHN WILLIAMSON, OF GLASGOW, SCOTLAND.

PACKING FOR STUFFING-BOXES.

No. 830,394.

Specification of Letters Patent.

Patented Sept. 4, 1906.

Application filed January 3, 1906. Serial No. 294,472.

To all whom it may concern:

Be it known that I, JOHN WILLIAMSON, a subject of the King of the United Kingdom of Great Britain and Ireland, residing at Glasgow, Scotland, have invented a certain new and useful Improvement in Packing for Stuffing-Boxes, of which the following is a specification.

This invention, which relates to packing for stuffing-boxes of pumps, steam-engines, hydraulic rams, and the like, has for its object the provision of means to prevent the rapid deterioration of vegetable fibers of such packing under the influence of water moving at high pressures or steam acting at high temperatures. This purpose I attain by tanning the vegetable fibers composing in part the packing material.

It is to be understood that although I have described my improvements as being specially applicable to high-pressure pumps and engines, yet it is also applicable to pumps and engines moving at low pressures and temperatures and to propeller-shafts and the like.

In carrying out my invention I take fibers such as flax, hemp, jute, cotton, or other suitable vegetable fibers. These may be in the state of yarn or gaskin or they may be plaited or twisted up into a square, round, or other section or woven in the form of cloth or tape, as is usual in making up packings. I immerse them in an infusion of cutch or other astringent vegetable matter containing tannic acid (tannin) kept at boiling

temperature for three hours or so. The tanned material is then wrung out, hung up to dry, and when dried is ready to be made into the form of packing desired, or, if already formed, it is ready to be saturated with tal- low or other lubricant.

I find a very good proportion of tanning material to use is at the rate of one pound cutch to ten pounds water, adding more water as evaporation takes place during boiling; but the proportions may vary very considerably, as the tanning may be wanted either heavy or light. The time of boiling may also vary considerably. Indeed, a very good tanned material may be obtained by allowing the fibers to remain in a cold infusion of cutch for some hours. A mordant may be used.

Having now described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A stuffing-box packing consisting of a vegetable fiber having an astringent chemically combined with the albumen thereof.
2. A stuffing-box packing consisting of a vegetable fiber subjected to a boiling solution of tannin.

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

JOHN WILLIAMSON.

Witnesses:

WALLACE FAIRWEATHER,
JNO. ARMSTRONG, Jr.