

UNITED STATES PATENT OFFICE.

HARRY FEDER, OF NEW YORK, N. Y.

PROCESS OF WATERPROOFING TWINE.

No. 812,837.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed August 26, 1903. Serial No. 170,800.

To all whom it may concern:

Be it known that I, HARRY FEDER, a citizen of the United States, and a resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Process for Waterproofing Twine, of which the following is a specification.

My invention relates to a process for waterproofing twine; and it consists, broadly, in treating a flat strip, from which the twine is to be formed, with a product—such, for example, as casein—before the strip is twisted, and subsequently, after the strip is twisted into twine, treating the twisted strip or twine with formaldehyde.

In carrying my process into practical effect a strip of material, in the present instance paper, is passed through a machine for treating and twisting the strip—such, for example, as the machine shown, described, and claimed in Patent No. 551,615, granted to George L. Brownell December 17, 1895—and during its progress, before it is twisted, it is saturated or treated with a product, such as casein, and after it has been tightly twisted into twine it is submitted to the action of formaldehyde by passing it through a body of the formaldehyd, which acts upon the casein, converting it into a water and moisture resisting compound.

If the paper is treated with both the casein and formaldehyde before it is twisted, the twisting can not be accomplished in a satisfactory manner, as the strip will resist moisture during the winding and tend to unwind

and if treated after it is twisted the coating will be external only and liable to crack and admit moisture.

The casein should be applied to the strip in the form of a solution which is sufficiently thin to permit the strip to pass through it and become permeated with it without any considerable superfluous quantity adhering to the surface of the strip as it passes out from the solution, although the particular consistency of the solution is not important and may be varied as the porosity of the strip varies. This first treatment of the strip both moistens it and charges it with the casein, so that it twists into a close compact twine and retains its twisted condition during the subsequent treatment with formaldehyde, which treatment sets it and renders it absolutely waterproof, while at the same time it is stiffened, strengthened, and rendered resilient.

What I claim is—

The process of waterproofing twine consisting in treating a strip of material with casein and subsequently, after twisting the strip into a twine, treating the twisted twine with formaldehyde.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 4th day of August, 1903.

HARRY FEDER.

Witnesses:

FREDK. HAYNES,
HENRY THIEME.