

UNITED STATES PATENT OFFICE.

WILLIAM MCK. MORRIS, OF YARDVILLE, NEW JERSEY.

FABRIC.

SPECIFICATION forming part of Letters Patent No. 453,345, dated June 2, 1891.

Application filed July 25, 1890. Serial No. 359,923. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM MCK. MORRIS, a citizen of the United States, residing at Yardville, county of Mercer, and State of New Jersey, have invented a new and useful Improvement in Fabrics, of which the following is a full, clear, and exact description.

My improved fabric is stiff, of an elastic surface, can be economically made, and can be used for purposes where now a less efficient and more expensive material is used, and it is especially well adapted for use in forming cotton-roving cans, spool-heads, spool, roving, filling, and other boxes, &c.

My fabric consists of canvas or duck well and thoroughly sized to give it the desired stiffness. If this canvas were left in its sized condition, in use it would crack, the sizing break, and the material lose its effectiveness. So I cover this sized material with a coating of rubber, in the manner hereinafter described, which gives an elastic exterior and prevents the sizing from cracking or breaking off the material.

My improved fabric can be comparatively cheaply made, and is firm, with a yielding exterior. If one layer of duck or canvas sized and rubber-coated is not of sufficient strength for the purpose desired, I can put two or more layers of my improved fabric upon one another and by pressure force the said layers together, so that they will form one piece of cloth.

I manufacture my improved fabric in the following manner: I take duck or canvas and size the same very thoroughly by passing it through a sizing-machine under tension. The size I use is composed of one half common glue, the other half hot water, although any other sizing-mixture may be used. It may be desirable to size the yarn used for both the warp and weft of the duck or canvas before said canvas or duck is woven, as this will give the material greater stiffness. I then put said sized duck or canvas through what is known as the "process of frictioning." What is known as "friction" is composed of very soft grades of rubber and other materials, so that when it is worked in a grinder or between heated rolls it becomes of about the consistency of soft putty. When it is in this state, and of course necessarily very warm, it

is placed between the two top rolls of the friction-calender, one roll being directly above the other and revolving in a vertical frame. The duck or canvas treated as hereinbefore described, after being stretched and dried and under a strong tension, is placed below the bottom roll of the friction-calender. The canvas or duck is then started through the friction-calender. The soft-rubber friction having been placed between the two top rolls, feeds slowly and covers the center roll all over with the soft friction, and when this comes in contact with the duck or canvas it is spread on the duck or canvas on one side. After one side is thus spread the operation is repeated on the other side. Only a small amount of this rubber is spread on the surface of the canvas or duck, the object of my improvement being to form an outer surface of this rubber to act as a protection to the sized interior and form a yielding exterior. When one thickness of this sized duck or canvas is not of sufficient thickness, I take two or more pieces of my improved fabric and put them, surface to surface, together and subject the layers so arranged to great pressure, which causes them to adhere permanently to each other, the rubber entering the interstices of the fabrics and binding them closely together. The rubber is vulcanized after it is placed on the surface of the fabric.

My improved fabric has all the advantages of sized duck or canvas without any danger of the sizing cracking or the fabric breaking.

Having now fully described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. As a new article of manufacture, a canvas or duck fabric sized and having its outer surface coated with rubber.

2. As a new article of manufacture, a fabric composed of a series of layers of duck or canvas sized and rubber-coated, the whole being held together by the rubber being forced into the interstices of the duck or canvas.

In testimony of which invention I have hereunto set my hand.

WM. MCK. MORRIS.

Witnesses:

GEO. W. REED,
FRANK S. BUSSEY.