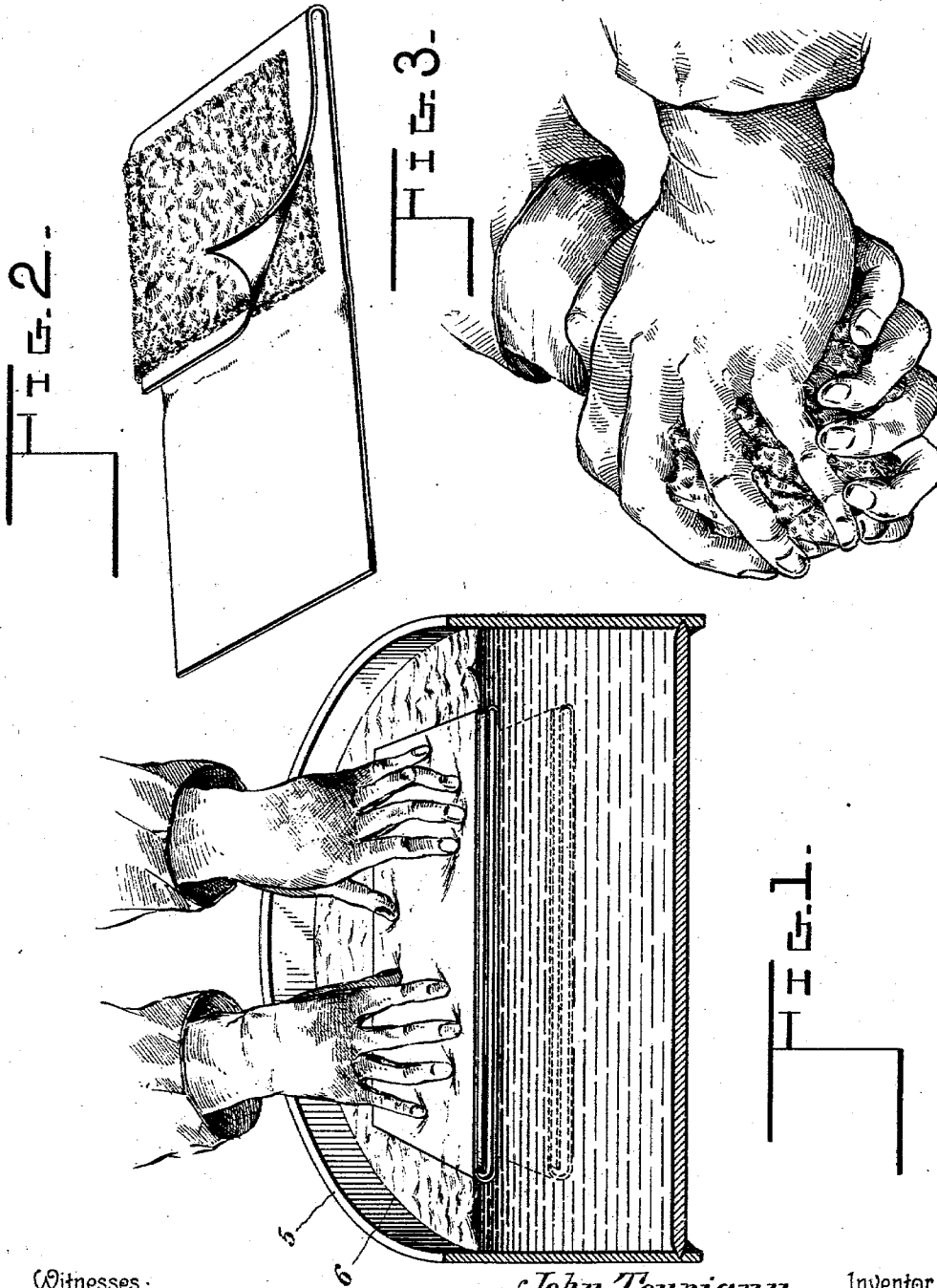


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J. TOURIGNY.
PROCESS OF MAKING WOOL FABRICS.
APPLICATION FILED JAN. 21, 1901.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN TOURIGNY, OF WINDSOR MILLS, CANADA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE LAINEAU MANUFACTURING CO., A CORPORATION.

PROCESS OF MAKING WOOL FABRICS.

SPECIFICATION forming part of Letters Patent No. 720,857, dated February 17, 1903.

Application filed January 21, 1901. Serial No. 43,991. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN TOURIGNY, a subject of Her Majesty the Queen of Great Britain, residing at Windsor Mills, county of Richmond, Province of Quebec, Canada, have invented certain new and useful Improvements in Processes of Making Wool Fabrics; and I do hereby declare that the following is 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 process for making wool fabrics; and the object in view is to produce a method by which wool fabrics or wool articles may be manufactured without first spinning and weaving the wool, thereby effecting an enormous saving in the cost and time of manufacture.

A further object is to produce a fabric or article which is practically waterproof, which retains the warmth of the body when made into articles of apparel, which is very strong, so that it will not be liable to tear when subjected to strain, which is pliable and free from stiffness or rigidity common to articles made of felt, and which is durable as respects the wear due to friction and usage of the fabric or articles made in accordance with this invention.

With these ends in view the invention consists in a process of making wool fabrics or articles, which will be hereinafter fully described and claimed.

The process which I have invented may be carried out by hand-labor, or machinery may be used in the treatment of the material for the production of the fabric, or hand-labor and machinery may both be employed in practicing the process.

To enable others to understand this invention, I have illustrated a part thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a sectional elevation illustrating the step of matting the wool, which is employed in lieu of the steps of spinning and weaving the wool as ordinarily practiced. Fig. 2 is a view of the pattern and the carded wool laid thereon previous to treatment of

the latter in accordance with the matting step of the process. Fig. 3 represents the treatment which is given to the article subsequent to the matting step and in order to "full" the fabric.

In carrying my process into effect I prepare a suitable pattern if it is desired to manufacture an article such as a hand-mitten, a woolen sock, or any other article of wearing-apparel. This pattern should be of a material which will permit liquid to percolate freely therethrough, and I prefer to employ fabric of any kind for this purpose. The fabric pattern having been provided as described, I select a suitable quantity of carded wool, preferably short lamb's wool. This wool is spread uniformly over the entire surface of the pattern, and the latter is folded or arranged so as to inclose the carded wool and to confine or retain the same at all times in a layer of uniform thickness over the pattern. I next prepare a liquid bath, which may be of a saponaceous nature, said bath consisting of water and soap which is placed in a vat or other receptacle, as indicated at 5 in Fig. 1, said bath filling the receptacle up to the level indicated by the dotted line 6. I do not, however, limit myself to this kind of a bath, because I am aware that other liquids may be substituted for the soap and water.

Having prepared the materials for carrying the invention into effect, I next proceed to manipulate the pattern and wool with a view to matting the wool while it is retained in its proper form and shape to produce the article of a desired nature. This step is practiced by immersing the pattern and wool in the bath, as shown by Fig. 1, and by moving or working the pattern and wool back and forth in the bath, so as to cause the liquid to flow through the pattern and act upon the fibers of the wool with a view to indiscriminately intermingling or mixing the wool fibers together, so that they will cross each other in all directions, and thereby firmly mat, or, as it may be termed, "knit" or "weave," said wool fibers into a substantial fabric. Practical experiments which I have conducted have demonstrated the efficacy of the matting

step of my practice, because I have produced articles which are made entirely of interwoven wool and in which the wool fibers are so strongly interwoven that it is difficult to tear or pull apart the fabric. The matting of the wool fibers is obtained solely by working the pattern and wool back and forth in the bath for a proper length of time, which may vary from five minutes to a half an hour, although it is not necessary in many instances to treat the material to the longer length of time herein stated. The matting having been completed, the pattern and the article are withdrawn from the bath, and the latter is unfolded, so as to permit removal of the matted embryo article or fabric. I next proceed to full the article, paying special attention to the condition of the wool at the places where seams are ordinarily provided—as, for example, in a hand-mitten the sides and thumb of the wool article receive special attention by fulling the same in order to avoid undue thinness or attenuation at the place where the article is liable to wear through. The fulling along the places where seams are ordinarily provided is effected by first applying thoroughly thereto the soap, so as to secure a thick lather, and then such parts are rubbed by hand in the usual way of fulling fabrics, which is well known to those skilled in the art. Having fulling the places where seams are ordinarily provided in other articles, I now subject the entire article to the fulling, which consists in squeezing or working the fabric in the hands, as graphically represented by Fig. 3. This fulling step is continued until the fabric attains the desired thickness or fullness at all places, and such fulling step of course reduces the size or area of the article, while increasing the thickness thereof. The fulling step having been completed, the article is thoroughly washed in clean water, so as to eliminate the saponaceous liquid therefrom, and the article is now dried and is ready for delivery or use.

In producing a wool fabric or sheet according to this invention I employ a layer of cloth or other fabric, upon a part equal to one-half of which is deposited a layer, uniform in thickness, of carded wool. The other half of the cloth is folded upon the layer of carded wool, and the pattern thus produced is immersed in the liquid bath and worked back and forth therein to carry out the matting step of the process. The work is then removed, and the pattern-cloth is taken away from the matted wool, and the embryo fabric is then fulling to the proper thickness, as hereinbefore described.

It should be remarked that when the pattern fabric is laid or folded over the layer of carded wool previous to immersing the work in the bath the edges of the pattern fabric

should be united together—as, for example, by sewing them—in order to prevent the wool from escaping during the step of matting the same.

From the foregoing description, taken in connection with the drawings, it will be understood that my invention may be employed in the manufacture of wool articles or in fabric sheets. Any kind of wool articles may be produced, among which I may mention wool boots or socks to be worn over the shoes or boots in place of the ordinary felt boot, hand-mittens, wool moccasins to take the place of the ordinary chamois moccasin worn inside of a boot, and many other articles of wearing-apparel. I do not limit myself to the kind of article which may be produced by my invention—that is, whether it be a mitten, a boot, or any other article—and it is to be understood that the article may be made direct by the process, or the fabric may be manufactured in sheets and subsequently made into the article.

Having thus described my invention, what I claim as new is—

1. The herein-described process of manufacturing wool fabrics or articles which consists in spreading a layer of wool uniformly over a flat fibrous pattern, inclosing said layer in the pattern, immersing the pattern and layer in a liquid bath, manipulating the same by hand-pressure back and forth in said bath to mix the fibers indiscriminately together, removing the embryo article or fabric from the pattern, then first fulling predetermined places therein by hand manipulation and then fulling the entire article or fabric by pressure, as set forth.

2. The herein-described process of manipulating wool fabrics or articles, which consists in spreading a layer of wool uniformly over a flat fibrous pattern, then folding said pattern to inclose said layer of wool in uniform thickness over the pattern, immersing the pattern and its inclosed layer in a liquid bath, moving the pattern and layer back and forth in said bath by hand manipulation and pressure while the pattern and layer are submerged, causing the liquid to act on the wool by percolation through the pattern, then withdrawing the pattern and the article from the bath, unfolding the pattern and removing the matted embryo article or fabric, then fulling the article at predetermined places and subsequently fulling the entire fabric, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN TOURIGNY.

Witnesses:

ALEXINA BÉGIN,
N. ROUSSAU.