UNITED STATES PATENT OFFICE.

ETTIE MENOWSKY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-TENTH TO GREELEY & ROGERS, OF SAME PLACE.

ANIMAL-TISSUE PAPER AND PROCESS OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 552,497, dated December 31, 1895.

Application filed April 8, 1895. Serial No. 544,994. (Specimens.)

To all whom it may concern:

Be it known that I, ETTIE MENOWSKY, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a certain new and useful Article of Manufacture and Process of Making the Same; and I do hereby declare that the following is a full and exact description thereof.

My invention relates to the preparation and treatment of animal tissues, and its objects are to remove therefrom extraneous substances and to render them suitable for use in the various ways to which such substances may be put.

For want of a better term I have called the new article produced "animal-tissue paper," as it is made from animal tissues and possesses generally speaking the properties of paper and is used as such.

With this end in view I obtain tissues from the bodies of bullocks, cows, hogs, or other animals and treat the same in the manner hereinafter to be described, and I thereby obtain sheets of material which I have found to be of great use in the art.

The fibrous tissue known as the dorso-parietal peritoneum, or the tissue to which the leaf fat in animals adheres, is treated by me, first, with hot water, in which it remains until soft and until all foreign matter, such as fat, dirt, &c., adhering thereto, is in a state to be easily removed. The length of time necessary for the tissue to remain in the hot water can best be ascertained by practice, and depends upon the condition in which the tissue is before treatment, but should be sufficient for the purpose above stated. The tissue will then be found with a white creamy appearance, and is to be removed from the hot water and while still wet stretched on a smooth surface such as a smooth board or other convenient material. The best method I have hitherto found for this is to pull the tissue out by hand and attach one side by means of a clamp to the board and make use of a movable clamp temporarily attached to the other side of the tissue for the purpose of exerting pressure to draw the tissue out and stretch it. At the same time that this is being done I apply to the tissue by means of a sponge or otherwise a solution of chloride of sodium in dilute alcohol. I find that this solution is the most convenient and yields practical results, but its equivalent may be employed, and for this purpose I have used a dilute solution of ammonia. I do not restrict myself to the above-named chloride of sodium, for a chloride of ammonium will also act in the same manner; nor do I desire to restrict myself to the use of the combined salt and alcohol, for the separate application of these substances may also yield good results. After this treatment I scrub the tissue with a hard brush and again sponge the same with the above-mentioned solution, whereby I find that a large part of the loose particles of fiber can be removed or at least rolled up into little bunches scattered over the surface. These I completely remove by pressure of a blunt edge, such as a flat strip of wood, metal, or other suitable material, and in applying the pressure I am able to still more stretch the tissue. It will be found that these loose particles of fiber are on one side of the tissue more than on the other. In fact in some tissues there is a smooth side, and it is to the opposite side that this treatment is to be applied.

The treatment of sponging, scrubbing and pressing with a blunt edge as above described may be repeated more than once, and it will be evident that whether it be carried out one or more times depends largely on the condition of the tissue. It may now be left to dry with the clamps drawn apart and stretching the tissue, after which it will be found to be translucent, but somewhat crisp and liable to be creased and marked, if folded. To give it a soft and pliable consistency, the side which has been prepared is now rubbed with a very small quantity of vegetable or mineral wax, paraffine, vaseline or similar substance, which will endue it with the property of still greater translucency and at the same time render it quite soft, after which it may be removed from the stretching-board and used for such purposes as the making of tracings, stencils, covering bottle-stoppers to prevent air from reaching the contents of the bottles, transparent and waterproof envelopes, as substitute for cork soles laid in between the layers of leather, the packing of perishable goods, drugs, &c. I find that tissues so prepared are

waterproof, and the uses to which such a material may be put are many. For instance, it may be made into log books, and may be used as a material on which to write documents which are liable to be wet.

It will be understood that my new product or material may be readily dyed or otherwise variously colored and utilized in the manufacture of paper flowers, and for such other purposes as may prove desirable in the employment of colored substances of the character hereinbefore described.

For the purpose of obtaining a thicker material, I soak the tissue in a strong brine consisting of a solution of chloride of sodium or other salt. The action of this brine is to thicken the tissue, making it at the same time much less transparent, and it is to be understood that this treatment takes the place of the application of the wax, paraffine, vaseline or similar substance, which may have the effect of rendering the tissue more transparent. In this condition—that is, after having been soaked in the brine—the tissue is, as I have stated, less transparent and therefore much more suitable to be written on, the writing being naturally more distinct on a non-transparent ground.

The duration of the treatment with strong brine may be from four to six hours or longer, and the only operation to be performed thereafter is to remove the superfluous salt adhering to the surface of the tissue. In either case the tissue will be found waterproof.

What I claim is—

1. As a new article of manufacture, an animal tissue paper made of the dorso-parietal peritoneum fibrous tissue or the tissue to which the leaf fat adheres, and from which tissue the oleaginous matters have been removed; substantially as described.

2. As a new article of manufacture, a substance possessing the qualities of paper and formed of the stretched and cleaned dorso-parietal peritoneum fibrous tissue or tissue to which the leaf fat of animals adheres; substantially as described.

3. The herein described method of producing animal tissue paper from the dorso-parietal peritoneum tissues of animals, said process consisting in first treating with hot water to remove the fat and soften them, then stretching the same while in a wet or moist condition, then treating with an alkaline solution and an alcohol, then subjecting said tissue to the action of brine, and, finally, drying the same; substantially as described.

4. The herein described process of producing animal tissue paper from the internal dorso-parietal peritoneum tissues of animals, said process consisting in first treating the tissue with hot water to remove the fat and soften them, second, stretching the same while in a wet or moist condition, then treating with a solution of chloride of sodium in dilute alcohol, then subjecting the tissue to a solution of brine, and, finally, drying the same; substantially as described.

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

ETTIE MENOWSKY.

Witnesses:
A. N. JESBERA,
E. M. SHUSTER.