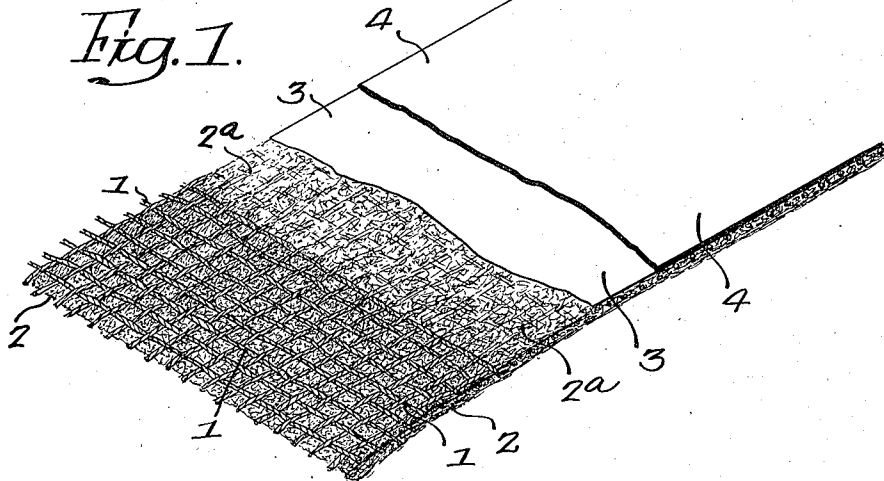


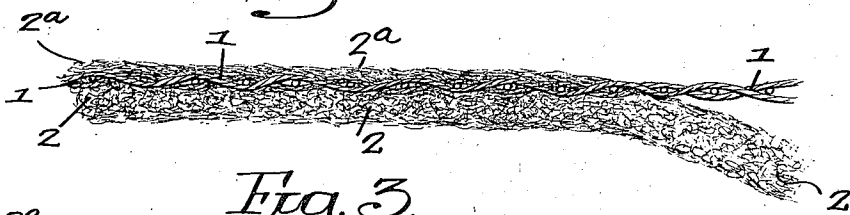
1,159,155.

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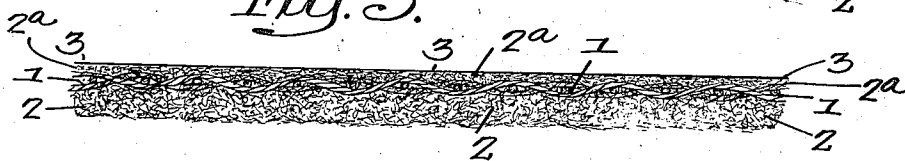
*Fig. 1.*



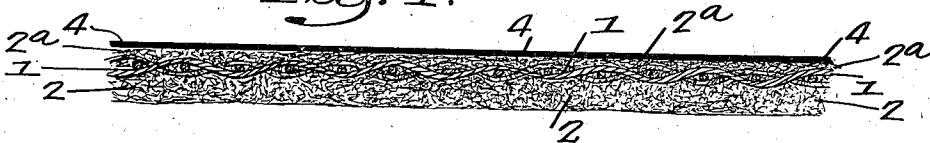
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## COATED FABRIC.

1,159,155.

Specification of Letters Patent.

Patented Nov. 2, 1915.

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*To all whom it may concern:*

Be it known that I, WILLIAM G. AYRES, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Coated Fabrics, of which the following is a specification.

My invention relates to coated fabrics; and the object of my invention is to provide a cheap and simple form of factitious leather having a substantial body possessing a high degree of strength with a flexible, impermeable coating or facing, and while having the desirable characteristics of coated fabrics of the same general character, being much simpler and cheaper to manufacture.

The structure or article forming the subject of my invention includes a layer or core of open mesh burlap, or similar open mesh fabric of any desired character, preferably cheap, through which has been pricked, in any usual and well known manner, a fibrous batting; such batting being composed preferably of cheap fibrous material of animal or vegetable origin, shoddy and the like, and having, by preference, a relatively long fiber. This batting or mass of fibrous material is pricked in through the open mesh fabric core, and when this operation is accomplished, the fabric and fibrous body comprises a fabric core, which may be the burlap, with a relatively thick layer of intermeshed and matted fibers on one side of the same and a relatively thin layer of intermeshed and matted fibers on the opposite side of said core; the respective layers being connected together by the fibrous portions which pass through the interstices of the open mesh fabric core. In a structure of this character, however, there is no real bond between the pricked in portions on the respective sides of the fabric core, and it is a comparatively easy matter to strip the thicker layer of fibers from the said fabric core, and to pull through the latter the thinner layer of fibers.

The main object of my invention, therefore, is to provide means whereby I can transform this type of a pricked-in fabric into a factitious leather, and at the same time lock the thinner layer or pricked-in portion of the fibrous mass on one side of the core and thereby insure the retention of it as well as the thicker mass to said core.

For this purpose, I apply to the thinner layer of fibers a coating or coatings of a suitable cellulosic body, which is applied in a manner more particularly set forth hereinafter. These and other features of my invention will be more fully pointed out hereinafter, reference being had to the accompanying drawing, in which:

Figure 1, is a perspective view, partly in section, of a finished fabric made in accordance with my invention; Fig. 2, is a sectional view showing the pricked-in material before the coating has been placed thereon; Fig. 3, is a similar sectional view showing the fabric after the preliminary coating has been applied, and Fig. 4, is a similar sectional view showing the finished and coated fabric.

In carrying my invention into effect, I take a piece of woven fabric of suitable open mesh and through the interstices or meshes between the threads of the same I prick a suitable fibrous batting; the fibrous portions pricked through the open mesh fabric being less in volume than the main body of such fibrous batting. After this operation has been concluded, the core of woven fabric will have portions of the batting on both sides of the same; one somewhat thicker than the other, which portions are relatively locked together by the fibrous parts which pass through the fabric, and both surfaces are subsequently flattened and partially felted by suitable means.

In view of the fact that the mass of fibers pricked through is relatively less than the mass of fibers on the side from which the pricking is accomplished, there is grave danger of the thinner layer of fibers pulling out and the thicker mass of pricked-in fibers being pulled away from the core through the meshes of the same. I overcome this objection, however, by coating the surface having the thinner layers of fibers, which have been pricked through the core, with a suitable enamel body, or composition of any desired character, preferably a colloidal body of a cellulosic nature, which will form an impervious coating for the fibrous material, and will at the same time provide a means of permanently locking those portions of the fibers which have been pricked through the meshes of the woven fabric. In effecting this coating, I prefer to employ two steps.

To this end the layer of fibers on one or both sides of the fabric core which is to be finished with the waterproof coating is coated with a thin bodied liquid coating of a cellulosic nature, and while still wet or damp this coated surface is subjected to pressure. This operation will have the effect of laying and holding down all of the fine, loose ends or threads of the fibers flat and smooth against the surface of the fabric; thus preparing such surface for the reception of the final finish coating and avoiding all danger of such fine hairs showing through the same.

In the drawing, 1 represents the open mesh fabric core; 2 the thick mass of fibers on one side; 2<sup>a</sup> the thinner mass of fibers on the other side and which have been pricked through the fabric; 3 the preliminary coating to lay the fine threads or fibers, and 4 the final impervious coating which forms the finish surface of the fabric and which may be stamped or pressed to imitate the grain of various kinds of leather.

It will be understood, of course, that the core which I may employ is in every instance a fabric, preferably woven, having a relatively large thread with a suitable mesh that will permit the fibers to readily pass through the same in the pricking-in operation, and it may be of any suitable, though preferably cheap, material and with a coarse mesh. The fibrous batting which is pricked through this fabric core may be of animal, vegetable, or mineral origin, and the thickness of the batting employed will depend largely upon the use to which the finished product is to be put.

The coating material, both preliminary and final, may be of any suitable character common to fabrics of this general character, but in all instances it is preferably waterproof and of a colloidal nature. It may, of course, be of any desired color, and while such coating material is usually applied to one face only of the fibrous body, it may be applied to both faces of the same without limiting the scope of my invention or the breadth of the claims, and it may be applied to either face.

The coating material, whatever its nature, may be finished by pebbling the same for the purpose of imitating the grain of various kinds of leathers, and its surface may be treated in any way for ornamental purposes, either as to configuration or finish so long as such treatment does not affect its water-proofing qualities, its elasticity, or disturb the fibrous body receiving such coating layer.

As the coating material, I may employ a suitable body having a cellulosic base, and it will be understood, of course, that the coating material, of whatever nature, may be applied at a single operation, or it may be

applied in a number of successive layers, with or without drying intervals, depending upon the amount of surface necessary or desirable to accomplish the purpose I have in view, or the use to which the fabric is to be put. Of whatever nature, such coating material is preferably elastic so that it may yield with the mass of fibers constituting the body of the coated fabric or factitious leather, and avoid cracking of such surface no matter what the nature or finish of such surface may be.

While I have more particularly referred to a special form of fabric or fibrous body having a core through which fibrous material is pricked as the base of my improved coated fabric, I do not wish to be limited to the use of such fabric or fibrous body. In some instances, I may coat the surface or surfaces of ordinary felted bodies in which no core is present; the coating being applied at two distinct operations, with an intervening step of subjecting the first coating to pressure while it is wet or damp so as to properly prepare the fabric face to receive the final or finish coating and avoid the danger of the fine threads or hairs of the fibrous body or sheet constituting the base of the fabric appearing through it.

I claim:

1. As a new article of manufacture, a coated fabric comprising a fabric body or core, a mass of fibrous material on both sides of said core and connected through the core, a preliminary coating of colloidal material on one face of said fibrous material to lay the fibers of the body perfectly smooth, and a finish coating applied to the preliminarily coated surface.

2. As a new article of manufacture, a coated fabric comprising a fabric body or core, a thick mass of fibrous material on one side of said core, a thin mass of fibrous material on the opposite face of said core, said fibrous masses being connected to each other through the core, a preliminary coating of colloidal material on one face of said fibrous material to lay the fibers of the body perfectly smooth, and a finish coating applied to the preliminarily coated surface.

3. As a new article of manufacture, a coated fabric comprising a body or core of coarse burlap, a mass of fibrous material on both sides of said burlap and connected through the same, a preliminary coating of colloidal material on one face of said fibrous material to lay the fibers of the body perfectly smooth, and a finish coating applied to the preliminarily coated surface.

4. As a new article of manufacture, a coated fabric comprising a body or core of coarse burlap, a thick mass of fibrous material on one side of said burlap, a thin mass of fibrous material on the opposite face of said burlap, said fibrous masses being con-

5 nected to each other through the meshes of the burlap, a preliminary coating of colloidal material on one face of said fibrous material to lay the fibers of the body perfectly smooth, and a finish coating applied to the preliminarily coated surface.

10 5. The process of making a coated fabric comprising a fabric body or core having masses of fibrous material on both sides of the same connected to each other through the meshes of the core, which consists in applying colloidal liquid coating material to one face of said fabric, and subjecting such face to pressure while the coating is still wet or damp to lay the fibers covered thereby.

20 6. The process of making a coated fabric comprising a fabric body or core having masses of fibrous material on both sides of the same connected to each other through the meshes of the core, which consists in applying colloidal liquid coating material to one face of said fabric, subjecting such face to pressure while the coating is still wet or damp to lay the fibers covered thereby, and then applying a coating of elastic waterproof material to the preliminarily coated face of fibrous material.

30 7. The process of making a coated fabric comprising a fabric body or core having masses of fibrous material on both sides of the same, said fibrous masses being connected to each other through the meshes of the core, which consists in pricking said fibers through the meshes of the core, applying a colloidal liquid coating to one face of said fabric, and subjecting such face to pressure while the coating is still wet or damp to lay the fibers covered thereby.

40 8. The process of making a coated fabric comprising a fabric body or core having a thick mass of fibrous material on one side of the same and a thin mass of fibrous mate-

rial on the opposite side of said burlap, said fibrous masses being connected to each other 45 through the meshes of the core, which consists in pricking said fibers through the meshes of the core, applying a colloidal liquid coating to the face of said fabric having the thin layer of fibers, and subjecting 50 such face to pressure while the coating is still wet or damp to lay the fibers covered thereby.

9. The process of making a coated fabric comprising a body or core of coarse burlap 55 having masses of fibrous material on both sides of the same, said fibrous masses being connected to each other through the meshes of the burlap, which consists in pricking said fibers through the meshes of the burlap, 60 applying a colloidal liquid coating to one face of said fabric, subjecting such face to pressure while the coating is still wet or damp to lay the fibers covered thereby, drying the same, and then applying a coating 65 of elastic waterproof material to the preliminarily coated face of fibrous material.

10. The process of making a coated fabric comprising a body or core of coarse burlap 70 having a thick mass of fibrous material on one side of the same and a thin mass of fibrous material on the opposite side of said burlap, said fibrous masses being connected to each other through the meshes of the burlap, which consists in pricking said fibers 75 through the meshes of the burlap, applying a colloidal liquid coating to the face of said fabric having the thin layer of fibers, subjecting such face to pressure while the coating is still wet or damp to lay the fibers 80 covered thereby, drying the same, and then applying a coating of elastic waterproof material to the preliminarily coated face of fibrous material, which coating serves to lock the fibers to the core.

WILLIAM G. AYRES.