

G. A. LOWRY.

FABRIC AND METHOD OF MAKING SAME.

APPLICATION FILED FEB. 23, 1904. RENEWED DEC. 24, 1904.

Fig. 1.

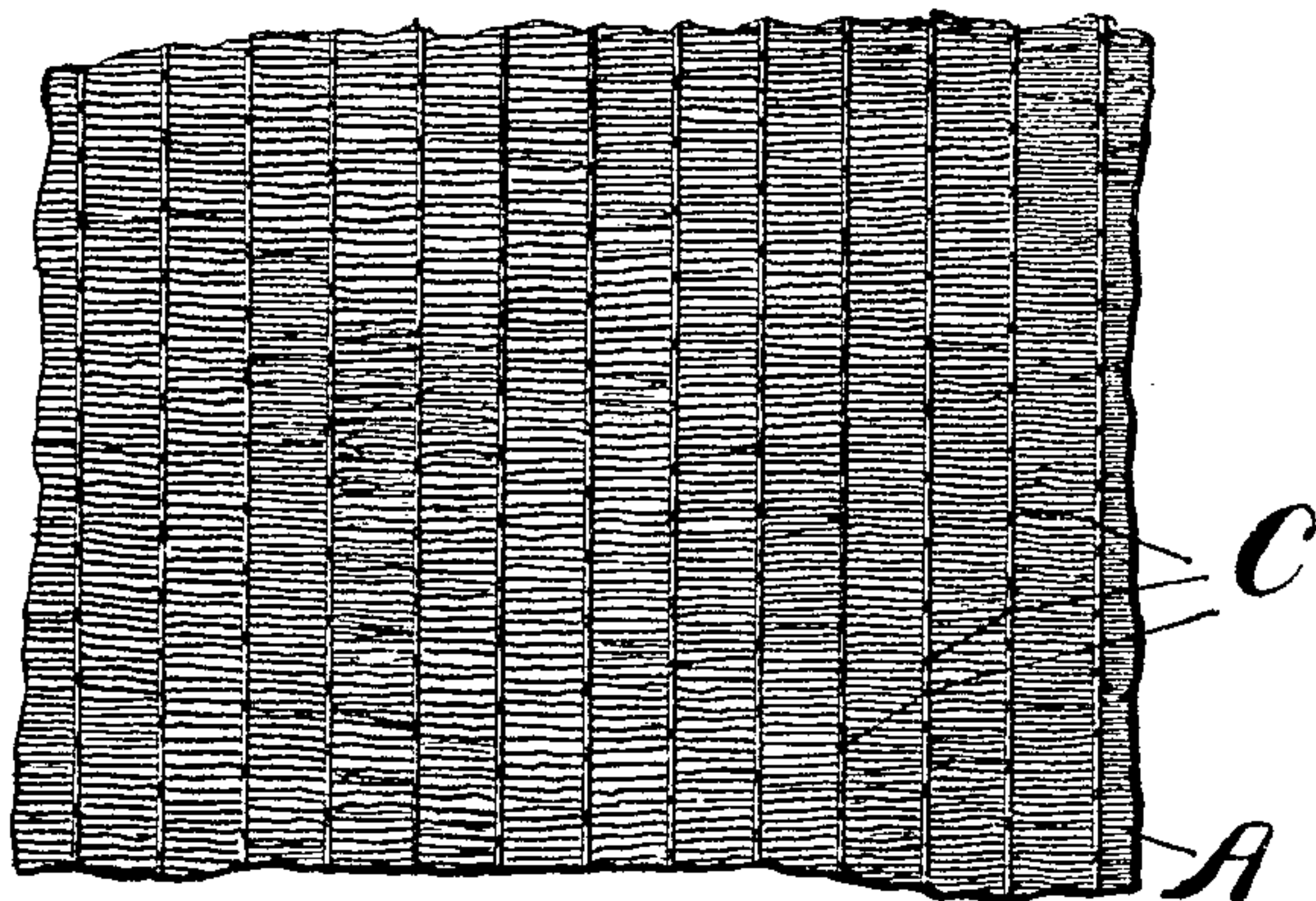


Fig. 2.

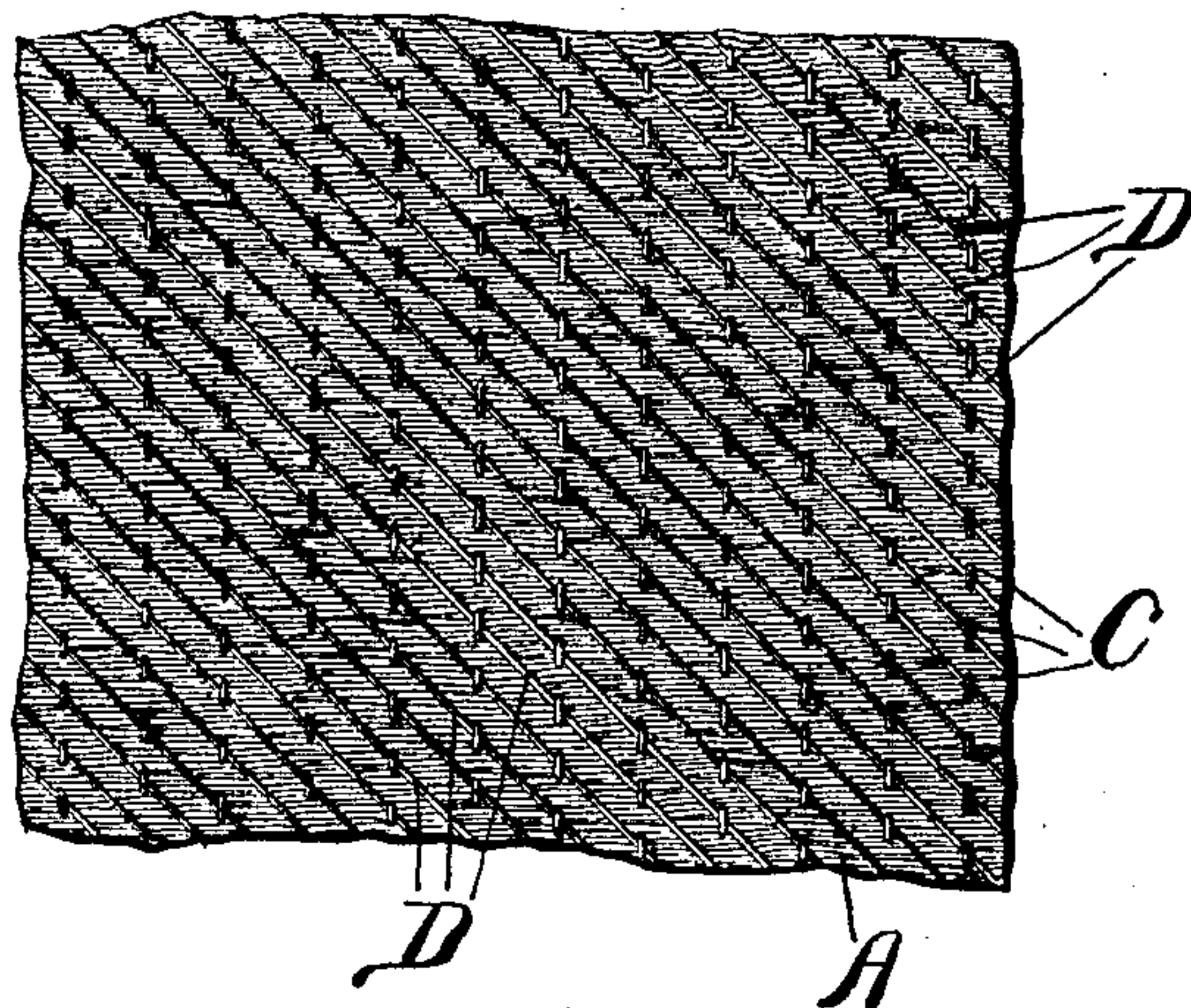


Fig. 3.

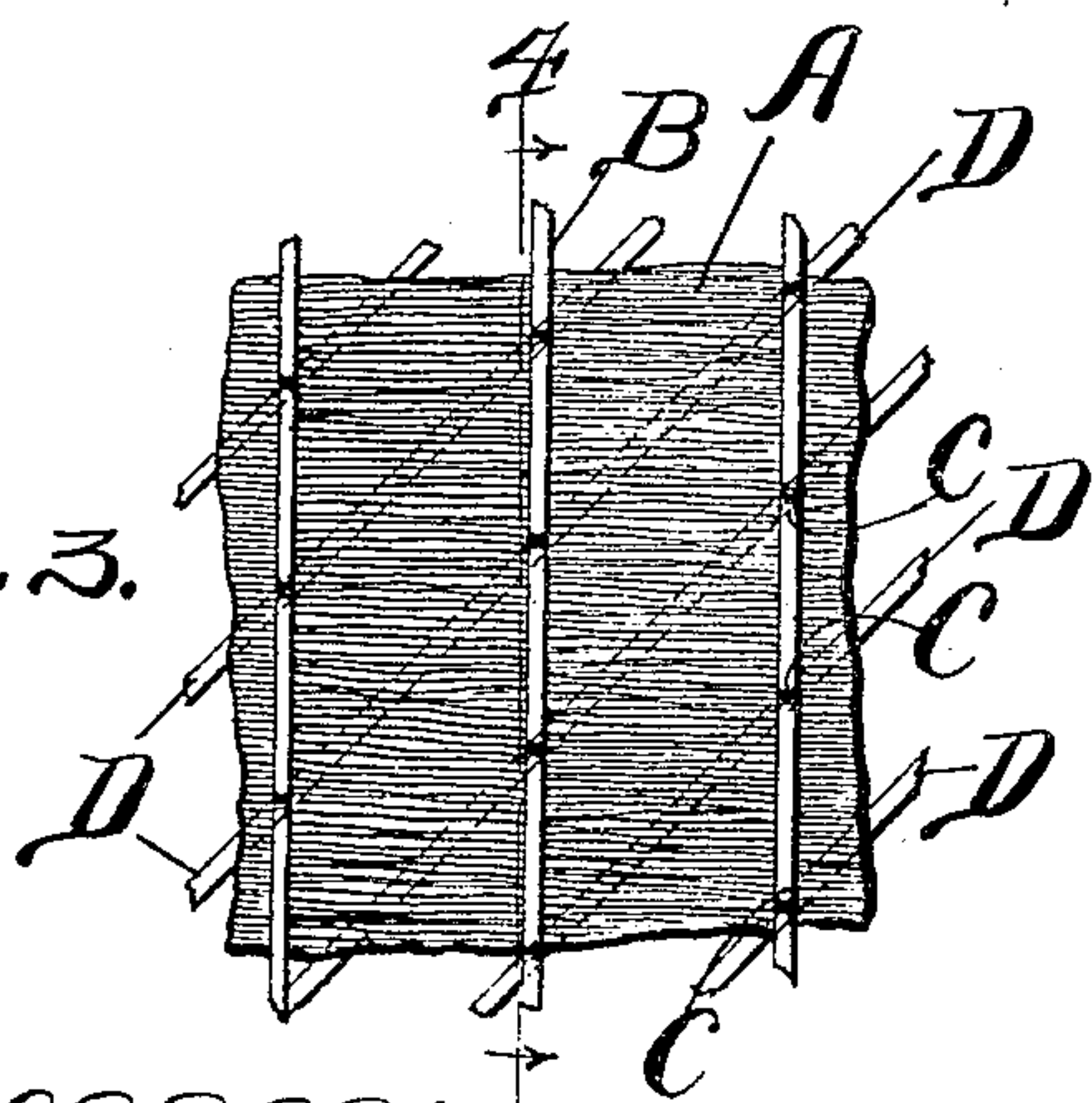
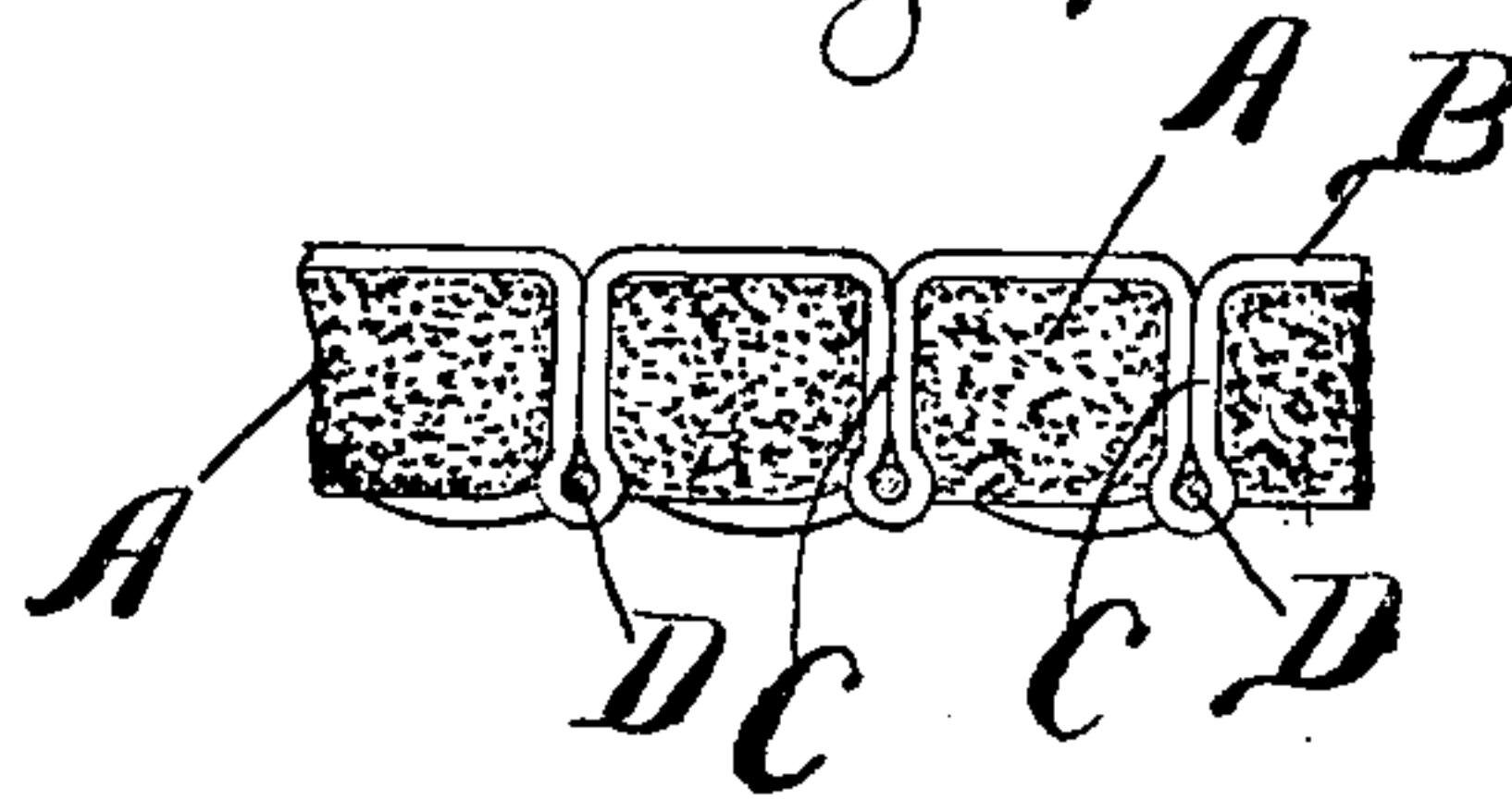


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS.

FABRIC AND METHOD OF MAKING SAME.

No. 795,291.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed February 23, 1904. Renewed December 24, 1904. Serial No. 238,230.

To all whom it may concern:

Be it known that I, GEORGE A. LOWRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Fabric and Method of Making Same, of which the following is a specification.

This invention relates to fabrics having the body thereof composed of grass, straw, or the like and method of making the same.

The object of the invention is to produce a fabric having a body portion composed of the stems, stalks, or spears of grass, straw, or the like and which is simple in the construction thereof.

A further object of the invention is to produce a fabric of the character referred to having a body portion which is yielding and which presents a smooth, even, and yielding bearing-surface to the threads employed in binding the stems, stalks, or spears together into an integral fabric.

A further object of the invention is to produce a fabric of the character referred to wherein the binder-threads are applied thereto in a manner to secure an efficient binding effect throughout the body portion and without any weaving operation in the production of such body portion and without the employment of woven or spun material to form the body portion.

A further object of the invention is to produce a fabric of the character referred to wherein the body portion is held or bound together by suitable binder-threads applied thereto, with a portion of the binder-threads arranged in diagonal parallel lines transversely or inclined with respect to the length of the stems, stalks, or spears employed to form the body portion, whereby adjacent threads or binders serve to bind together adjacent portions of the body of the fabric and in lapping relation with respect to each other.

A further object of the invention is to utilize waste grass, straw, or the like which is unfit for other use in the manufacture of commodities such as mats, rugs, carpets, mattings, or other fabrics.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, relative arrangement, and method of operation, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in top plan of a fragment of fabric produced by and embodying the principles of my invention. Fig. 2 is a view in bottom plan of the same. Fig. 3 is an enlarged fragmentary view similar to Fig. 1, illustrating the manner of application of the binder-threads to bind the body portion of the fabric together. Fig. 4 is a broken view in section on the line 4 4, Fig. 3, looking in the direction of the arrows.

In various sections throughout the country are vast areas of marshland upon which is grown immense quantities of marsh-grass, and in certain sections of the country throughout wide areas vast quantities of straw are produced, especially in the wheat-growing sections of the country, and which straw is burned or otherwise destroyed in order to get rid of it. In efforts heretofore made to utilize these vast quantities of marsh-grass, straw, and the like the stems, stalks, or spears of the grass have been formed into twine and the twine has been woven into fabrics, mats, rugs, carpets, and the like. Much the larger part of the vast quantities of marsh-grass, straw, and the like available for use in the manufacture of useful and merchantable commodities is unsuitable for utilization in this manner, being unable to stand the manipulation necessary to form the same preliminarily into twine or to weave the twine into fabric by reason of the joints in such stems, stalks, or spears, and consequently the manufacture of mattings, carpets, or other fabrics out of material of this nature has been limited to the use of unjointed grasses. Moreover, where the stems, stalks, or spears of grass, straw, and the like are first formed into a twine and then such twine is woven into fabrics the twine presents substantially a solid unyielding body or surface for the threads employed to bind such twine together into a woven fabric to rest upon or to bear against. Consequently excessive wear is imposed upon such threads or other binder employed for this purpose, which rapidly wears the same out. In accordance with the principles of my present invention I propose to produce a fabric having a body portion composed of the stems, stalks, or spears of grass, straw, and the like without first forming such stems, stalks, or spears into twine or similar form and then weaving the same. Therefore I propose to effect a saving in the

expense incident to the manufacture of the stems, stalks, or spears of grass into twine, and at the same time I am enabled to employ the jointed as well as the unjointed grass, straw, and the like, thereby effecting a large saving in the material employed, as in accordance with the principles of my invention there is practically no loss from grass harvested, as is the case with the practice at present employed of first forming the stems, stalks, or spears into twine form.

In carrying out my invention the stems, stalks, or spears are condensed or compacted into the form of a flattened mass or mat of the desired thickness and density throughout and preferably, though not necessarily, with the stems, stalks, or spears arranged in substantially parallel relation with respect to each other to form the body portion of the fabric.

In the drawings, reference-sign A designates the body of the fabric thus formed and composed. If desired and in order to secure uniformity of thickness or density of the mats throughout, the stems, stalks, or spears composing the body portion may be arranged with their butt-ends projecting in alternately-opposite directions; but I do not desire to be limited or restricted in this respect. While the body portion thus formed is maintained in condensed and compacted condition, I apply thereto a binder in such manner as to bind the same into an integral mass or fabric. This binder may be in any suitable or convenient form—such, for instance, as binder-threads—and one of the important features of my present invention is the manner of applying the binder-thread so as to efficiently bind the stems, stalks, or spears of grass, straw, or the like into an integral fabric. In practice and as shown in the drawings I employ two sets of binding-threads. The threads of one set are designated by reference-sign B, and which for distinction I will term the “needle-threads,” which are provided with loops C, formed therein and projected through the mass of stems, stalks, or spears composing the body portion of the condensed and compacted mass of material, as most clearly shown in Fig. 4, said needle-threads being arranged to extend transversely across the lengths of the stems, stalks, or spears composing the body portion of the fabric. The threads of the other set are designated by reference-sign D, and they extend in straight lines parallel with respect to each other, bearing against the under side or surface of the mass of material and through the loops C, formed in the needle-threads, and diagonally or inclined with respect to the length of the stems, stalks, or spears composing the body portion. These threads for distinction I will designate the “shuttle-threads.” In this manner

it will be seen that the binder-threads are so applied to the body of the fabric that one set of said threads will lie upon one of the sides or flattened surfaces of the body portion and the other set of threads will extend in straight parallel lines inclined or diagonal with respect to the line of the first-mentioned set of threads. It will also be seen that each of the threads of one set—namely, the needle-threads—are formed into loops at intervals, which loops pass through the body of the mass of material and receive there-through the other set of threads, thereby efficiently binding the mass of material into an integral fabric, and since this body portion is composed of condensed and compacted stems, stalks, or spears of grass, straw, or the like it will be seen that such body portion presents a yielding surface, to which the binder-threads are applied. It will also be seen that it is unnecessary to take into account the joints of the stems, stalks, or spears, thereby enabling me to utilize the various kinds of grass—such as is grown on the marshes—and without the necessity for selecting therefrom only certain parts or portions thereof, as has been the case heretofore, hence enabling me to utilize all of the grass harvested from the marsh. It will also be seen that I am enabled to employ straw or similar material which is otherwise wasted and which cannot be otherwise formed into twine or woven into a fabric.

In order that the shuttle-threads D may not be pulled through the body portion of the fabric by the pull or strain exerted upon the looped threads during the operation of applying the same to the fabric and in order to secure an efficient binding effect upon the material composing the body of the fabric, I prefer to avoid applying the shuttle-threads in lines parallel with the lengths of the stems, stalks, or spears. Therefore in accordance with the principles of my invention I propose to apply the shuttle-threads D to the mass of grass, straw, or the like composing the body portion of the fabric and, as above indicated and as shown in the drawings, in straight parallel lines inclined or diagonal with respect to the length of the stems, stalks, or spears, so that each shuttle-thread will be caught in or will be passed through loops formed in a plurality of successive rows or lines of needles. In this manner the stems, stalks, or spears contained in that portion of the body which lies between two adjacent loops in the needle-thread is bound to the body of the fabric or to the portions thereof lying on opposite sides of the same and at various points throughout the length of the stems, stalks, or spears contained in such portion, said portion being bound alternately to the adjacent portions of the body on opposite sides thereof. This result, it will be observed, is secured by reason

of the fact that successive shuttle-threads are arranged in straight parallel lines inclined with respect to the length of the stems, stalks, or spears of grass passing through loops formed in the successive needle-threads and intersecting or traversing the stems, stalks, or spears contained between adjacent loops of a needle-thread, and it will be seen that each of such portions referred to is bound by the shuttle-threads to the portion of the body of the fabric lying adjacent thereto and alternately on opposite sides thereof.

From the foregoing description it will be seen that I produce an exceedingly inexpensive, simple, and durable fabric adapted for use as a carpet, mat, rug, or similar commodity, wherein I am enabled to utilize waste material—such as grass, straw, or the like—which is available in practically unlimited quantities and without the necessity of forming the same into twine preliminary to the manufacture of the fabric and which fabric presents a soft yielding body having smooth surfaces.

Having now set forth the object and nature of my invention and the method of carrying the same into practical operation and having described the construction of the article resulting from such method of operation, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In the manufacture of fabrics having a body portion composed of stems, stalks or spears of grass, straw or the like, the method which consists in condensing or compacting the stems, stalks or spears into a flattened mass of substantially the ultimate width of the fabric to be produced and then applying binder-threads thereto, certain of said binder-threads being applied in straight parallel lines in diagonal or inclined relation with respect to the lengths of the stems, stalks or spears, as and for the purpose set forth.

2. In the manufacture of fabrics having a body portion composed of stems, stalks or spears of grass, straw or the like, the method which consists in condensing such stems, stalks or spears into flattened or mat form of the desired thickness and density, and then applying needle and shuttle binder-threads thereto, the needle-threads being formed into loops, the loops being projected through the body of the mass of stems, stalks or spears, and the shuttle-threads being applied in straight parallel lines in diagonal relation with respect to the lengths of the stems, stalks or spears, and through the loops formed in the needle-threads, as and for the purpose set forth.

3. In the manufacture of fabrics, the method which consists in condensing or compacting the loose untwisted or unwoven ma-

terial into a flattened mass of the desired density, and then applying binder-threads thereto in straight parallel lines inclined with respect to each other, as and for the purpose set forth.

4. As a new article of manufacture, a fabric having a body portion composed of stems, stalks or spears of grass, condensed and compacted into flattened mat formation, and having binder-threads, certain of said threads having loops formed therein, said loops extending through the mass, and the other binder-threads lying against the opposite side of the mass and passing through said loops in lines diagonal or inclined with reference thereto, as and for the purpose set forth.

5. As a new article of manufacture, a fabric having a body portion composed of stems, stalks or spears of grass, condensed and compacted into a flattened mass of the desired density and thickness, and having needle-threads and shuttle-threads for holding the same into an integral fabric, the needle-threads being arranged in straight parallel lines transversely across the length of the stems, stalks or spears, and having loops projecting through the mass, the shuttle-threads lying against the opposite surface of the mass in straight parallel lines inclined with respect to the length of the stems, stalks or spears of grass, and passing through the loops formed in the needle-threads, as and for the purpose set forth.

6. As a new article of manufacture, a fabric having a body portion composed of loose untwisted and unwoven material condensed and compacted into a flattened mass, and having a set of binder-threads, each having a series of loops formed therein, said loops projecting through the body of the mass, and a set of binder-threads applied to the other surface of such mass and in straight parallel lines inclined relatively to the line of the first-mentioned binder-threads, and passing through said loops, as and for the purpose set forth.

7. In the manufacture of fabrics, the method which consists in compacting loose, untwisted or unwoven material, and then binding such mass into an integral body by threads extending in straight parallel lines inclined with respect to each other, as and for the purpose set forth.

8. In the manufacture of fabrics, the method which consists in assembling stems, stalks or spears of grass, straw or the like, then compacting such mass, and finally binding together individual bunches thereof by threads extending in straight parallel lines inclined with respect to each other, as and for the purpose set forth.

9. In the manufacture of fabrics, the

method which consists in compacting stems, stalks or spears of grass, straw or the like into a mass, and then applying binders to bind together individual bunches to form the fabric, such binders being applied in lines inclined with respect to each other, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 11th day of February, 1904, in the presence of the subscribing witnesses.

GEORGE A. LOWRY.

Witnesses:

C. H. SEEM,
S. E. DARBY.