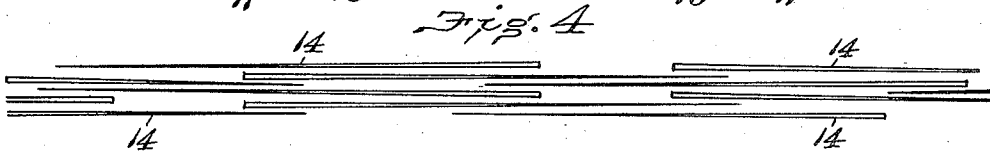
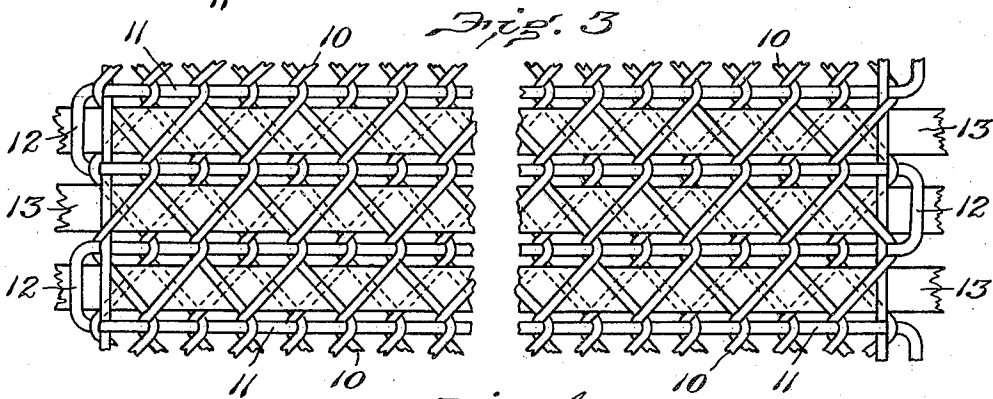
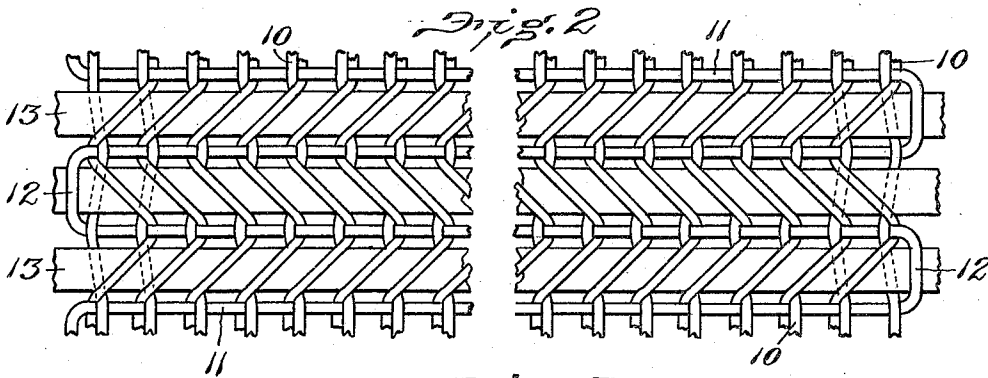
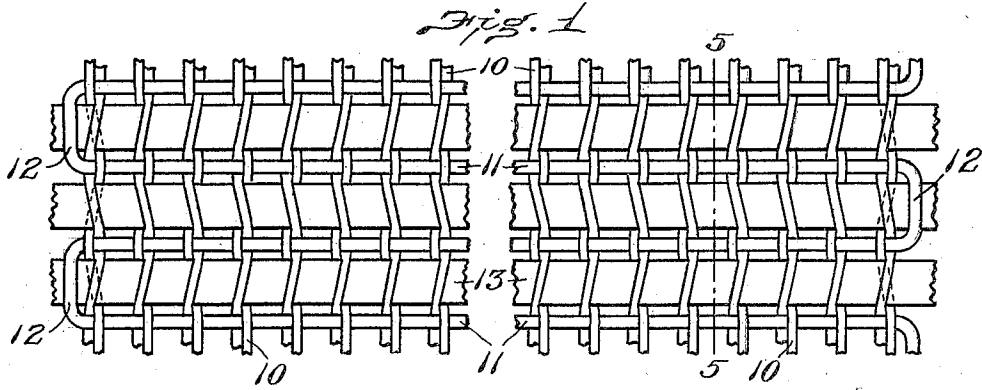


T. BRINDLE.
WOVEN FABRIC.

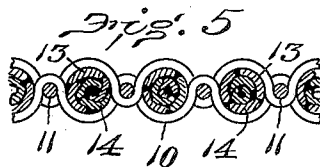
APPLICATION FILED NOV. 22, 1911.

1,057,477.

Patented Apr. 1, 1913.



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UNITED STATES PATENT OFFICE.

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WOVEN FABRIC.

1,057,477.

Specification of Letters Patent.

Patented Apr. 1, 1913.

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To all whom it may concern:

Be it known that I, THOMAS BRINDLE, a citizen of the United States, and resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Woven Fabric, of which the following is a specification.

This invention relates to woven fabric.

One of the characteristic features of the fabric is that the warp strands are crossed laterally, and interlocked with each other for the purpose of making the fabric more firm than if the warp strands ran in parallel planes instead of being interlocked.

Another characteristic feature is the use of fillings interwoven with the warp members and interspersed between the weft members. The weft members are formed from a continuous strand extending back and forth across the series of warp members and interwoven therewith in such a manner as to form selvages and bind the warp members together.

The fillings are separate and detached from each other and may be made of various materials without being spun or twisted.

Of the accompanying drawings, which illustrate a variety of forms in which the invention may be embodied: Figure 1 represents the two side marginal portions of a piece of woven fabric, the intermediate portion being broken out. Fig. 2 represents a similar view of a piece of fabric of which some of the warp members are offset to produce a pronounced zigzag pattern. Fig. 3 represents a similar view of a piece of fabric of which the warp members are offset to form a diamond-shaped pattern. Fig. 4 represents conventionally an arrangement of units of which the fillings are composed. Fig. 5 represents a section on line 5—5 of Fig. 1.

The same reference characters indicate the same parts wherever they occur.

The scale of the drawings is considerably larger than actual size.

Referring first to Figs. 1 and 5, the warp members are indicated at 10, and the weft members are indicated at 11. The weft members are formed by a continuous strand which extends back and forth across the series of warp members and which is interwoven therewith and which is looped, as indicated at 12, to bind in the outer warp

members to form selvages. The warp members in this form are arranged in pairs, and the two members of each pair are offset laterally so as to be interlocked with each other in addition to passing under and over the several transverse members with which they are interwoven. Each warp member is therefore given a slight lateral zigzag form, which, however, is not particularly noticeable, because of the slight degree of lateral offset. Fillings 13 are interspersed between the weft members 11 and are interwoven with the warp members. Each filling in the forms illustrated lies between two weft members 11, and each weft member lies between two fillings, the fillings and weft members being inserted alternately. The purpose of the fillings is to give bulk to the fabric. The fillings may be made of a variety of materials, such as grass, straw, rush, excelsior, or jute. The fabric is especially adapted to the use of long grass, which may be procured in lengths of fifteen to twenty-five inches. As shown by Fig. 5, each filling is composed of a bundle of units 14, each unit in this instance representing a blade of grass. The cross section of the filling member includes any desired number of units, five or six being a convenient number. When the length of the units is less than the desired width of the fabric their ends may be lapped, as represented conventionally by Fig. 4. In this figure each unit represents a blade of grass which is relatively broad at its base and which tapers naturally to a fine point at the opposite end. It will be observed that the small end of one unit is lapped with the large end of another unit, with the idea of forming a composite filling whose cross section will be nearly uniform at all points. When the units are arranged in this manner they are sufficiently bound together by the warp members when interwoven in the fabric to dispense with being twisted or spun. Fabric comprising fillings of this character is especially adapted for floor mats and rugs. The strands which form the warp members and weft members are preferably smaller than the fillings. The location of the weft members 11 is such that these members are not subjected to wear. This is because the filling members, being of substantially greater diameter, project above and below the weft members and support any article which may be standing upon the

5 fabric, without permitting such article to engage the weft members or the portions of the warp members which are looped about the weft members. The immunity of the
 10 weft members from wear permits the use of relatively fine and inexpensive yarn or thread, since the only strain to which the weft members are subjected is that of binding in the outer warp members to form sel-
 15 vages. The crossing or zigzag arrangement of the warp members makes the fabric much firmer than if the warp members extended in parallel planes. The drawings show considerable space between the pairs of warp
 20 members, but this space may, of course, be much less in actual practice.

In the form shown by Fig. 2, the component parts are precisely the same as those described. The only difference as shown by
 25 Fig. 2, is that one of the warp members of each pair is offset so as to be looped over a warp member of an adjacent pair. This arrangement of warp members produces a decided zigzag or herring-bone pattern.

25 In the form shown by Fig. 3, the several parts are also the same as those described. The offsetting of the warp members in this form is carried to a greater extent than that shown by Fig. 2. In Fig. 3, the warp
 30 members which pass over the fillings are offset equally but in opposite directions, while those which pass under the fillings are offset in a similar manner. This arrangement of warp members produces a
 35 diamond-shaped pattern which is the same on both sides of the fabric. The warp members, in addition to being interlocked with each other, are interwoven as desired with the weft members and fillings.

40 No attempt has been made to illustrate all the forms or patterns in which the here-indescribed fabric may be embodied. One advantage of the fabric as described is that blades of grass or other similar units may
 45 be used without being previously spun, twisted or otherwise combined with other units. The units may be laid into the warp in a comparatively loose state, thus avoiding considerable expense which would other-
 50 wise be involved in preparing the fillings. The fact that the fillings are disconnected from each other does not work any infirmity into the fabric, because the warp members are sufficiently bound together by being in-

55 terlocked with each other and by being woven with the continuous strand which forms the weft members. This strand, of course, may be carried back and forth by a shuttle in the usual way. The interlocking of the warp members contributes to make a
 60 firm fabric out of loose fillings.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all the forms in
 65 which it may be made or all the modes of its use, what I claim is:

1. A woven fabric comprising longitudinal members, and transverse members interwoven therewith, each of said longitudinal
 70 members extending over alternate transverse members and under the intermediate transverse members, and each of said transverse members extending over alternate longitudinal members and under the intermediate
 75 longitudinal members, said longitudinal members being offset laterally and interlocked with each other.

2. A woven fabric comprising longitudinal warp members, relatively fine trans-
 80 verse weft members, and relatively coarse transverse filling members, said longitudinal and transverse members being interwoven with each other, each warp member passing under some of the transverse members and
 85 over the other transverse members, said warp members being offset laterally and interlocked with each other.

3. A woven fabric comprising warp members and transverse members, some of said
 90 transverse members being a continuous strand extending back and forth and having loops forming selvages, the other transverse members being separate fillings interspersed between the connected transverse members,
 95 each of said warp members extending over alternate transverse members and under the intervening transverse members, said warp members being crossed laterally with each other and interlocked by alternate trans-
 100 verse members.

In testimony whereof I have affixed my signature, in presence of two witnesses.

THOMAS BRINDLE.

Witnesses:

W. P. ABELL,

P. W. PEZZETTI.