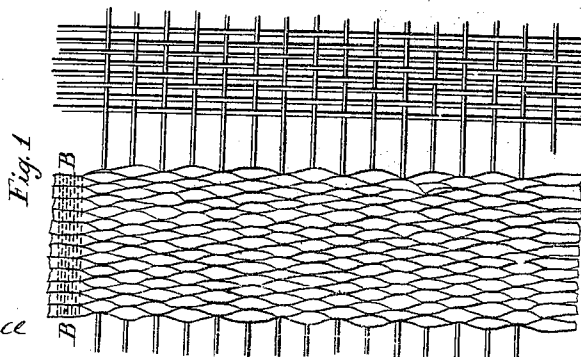
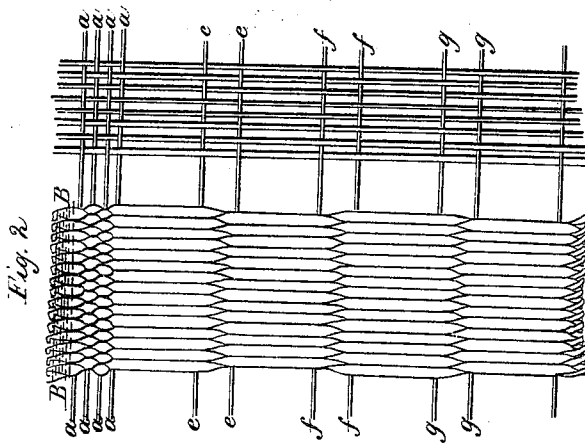
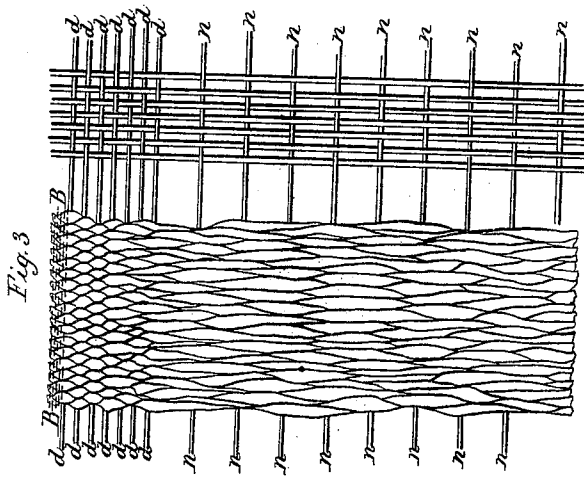


I. Lindsay.
Woven Fabric.

N^o 76,783.

Patented Apr. 14, 1868.



Witnesses
James A. Brunell
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Inventor
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United States Patent Office.

ISAAC LINDSLEY, OF PAWTUCKET, RHODE ISLAND.

Letters Patent No. 76,783, dated April 14, 1868.

IMPROVEMENT IN WOVEN FABRIC FOR FLOOR-MATTING, &c.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC LINDSLEY, of Pawtucket, in the county of Providence, and State of Rhode Island, have invented a new and improved Woven Fabric for Carpeting and similar purposes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents my improved fabric in plain weaving.

Figure 2 represents a similar fabric produced by another kind of weaving that is well adapted to the purposes for which it is designed.

Figure 3 represents a fabric produced by yet another kind of weaving, and finished by pressing.

Similar letters indicate corresponding parts in all the figures.

My invention consists of a woven fabric, of which the weft is of straws of rye, oats, or other cereals, suitably prepared and interwoven with a continuous warp of flax or hemp yarns, threads, or twines, in such a manner as to place the straw or weft upon the exterior of the fabric, and the warps within, between the two surfaces of straw.

My invention also consists in the mode of securing the ends of the weft described in a selvage at each edge of the fabric, by means of one or more rows or courses of machine-stitching near to and at suitable distances asunder at the edges.

The straw of rye, wheat, oats, and other cereals, has upon its exterior a hard enamel, which affords greater resistance to wear than the rushes or grass now used in imported India matting, and this straw is produced so extensively in this country for the sake of the grain-product as to afford almost an unlimited supply, at a cost which is quite insignificant compared to its value, if some means be employed to utilize the same in an article of manufacture for which there is constant demand. With this object in view, I have essayed to make this material useful as the weft of matting or carpeting for household purposes, and have succeeded, by combining the same, in weaving, with a warp of flax or hemp threads or twines, in producing a fabric for this purpose which is very much cheaper, and, owing to the peculiar nature of the straw weft, is far more durable and lasting than the imported India matting, and can be produced in the same widths as the latter, viz, three quarters, four quarters, and five quarters wide, and in a great variety of textures and colors.

To enable others skilled in the art to make and use my invention, I will proceed to describe the manner in which I have carried the same into effect.

The straws I first assort into lots of equal length, and with the heads together. I then remove all the heads and shives or leaves from the stalk, by drawing the same over one or more knives or blades in direction from the heads to the butts of the straw. I then mingle two equal lots of equal lengths, with their ends reversed, that is, the head ends mingled with an equal number of butt ends, so that in weaving the quantity as combined, the larger butt ends shall not take up an excess of warp on one side of the fabric, and make the weaving one-sided, and at an angle with the warps.

The warps I prepare of coarse threads or twines, of the cheaper quality of wrapping-twine, of flax, or hemp, cotton being more expensive, and beam the same in the usual way. This beam is then placed in a loom of suitable width, and furnished with suitable mountings of harnesses and harness-gear for operating the warps by distinct and separate sets, so as to form overshots of the weft upon both sides of the warp, and thereby conceal the warp between the successive shoots of weft, and at the same time economize the warp by using a fewer number of warp-threads. At each edge I employ a greater number of warp-threads, and operate the same by separate sets of heddles, so as to produce plain weaving at each, and thereby form a selvage of closer texture for the purpose of binding the ends of the weft firmly together at the edges, and making the fabric more firm in consequence. This arrangement of the warps is shown in figs. 2 and 3 of the drawings. In fig. 2, *a a a a* are the four selvage-warps, and *e e, f f, g g* are pairs of body-warps. The weft is interwoven at the selvage in plain weaving, over and under, and the overshots of weft extend over the inner selvage-warps, and

the adjoining one of the pair of body-warps, and over the adjoining warps of each two pairs, so that when the weft is beaten up in the usual manner, the weft is upon the outside of the fabric, and the warps are concealed and protected within upon both sides. In fig. 3, seven selvedge-warps, *d d d d d d*, are employed, and single warps *n n n n*, &c., at regular and equal distances, of about three-fourths or one inch asunder, are employed in the body of the fabric, the overshots of weft extending over two and under one of the body-warps, which, when beaten up, conceal the warps between the weft upon each side.

After the fabric is woven, it is moistened by steaming it or otherwise, and afterwards pressed between sheets of stiff paper or card-board, or between heated metal surfaces, which gives a smooth, even surface and finish to the fabric. When the body of the fabric is woven plain, (over and under,) as shown in fig. 1, and without selvedge, the weft may be confined and secured together by stitching one, two, or more rows or courses, *B B*, next to the edge, by means of a sewing-machine, which will make the fabric firm, and not liable to separate at the edges. Even in case the fabric is woven with a selvedge, as shown in figs. 2 and 3, it is of advantage to confine the extreme end of the weft by one or more courses of machine-stitching, *B B*.

In preparing the weft, and just before it is placed in the warp, it should be moistened by sprinkling it with water, or by immersing it, and by wrapping it in moist cloths, in order to soften the fibre, and enable it to conform to the position it is to occupy in the warp without cracking or breaking.

The continuous warp of the material described renders the fabric more supple, and at the same time much firmer and stronger than the "India matting," and more nearly to resemble carpetings; and, besides, the fabric may be cut off in any desired lengths, and cannot be pulled apart by stretching it to the floor, as is the case with the "India matting," in which the warp is in lengths or pieces, which lap by each other or protrude upon one side of the fabric.

What I claim, and desire to secure by Letters Patent, is—

1. The method herein described of preparing and assorting straw for weft of, and weaving the same into a fabric.
2. I claim the woven fabric herein described, composed of a weft of straw, prepared, sorted, woven, and finished, as set forth.
3. I claim the mode herein described of forming the selvedge of a woven fabric, by securing the ends of the weft by one or more rows or courses of machine-stitching, as set forth.

ISAAC LINDSLEY.

Witnesses:

ISAAC A. BROWNELL,
M. E. LINDSLEY.