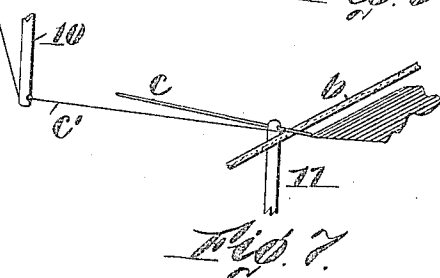
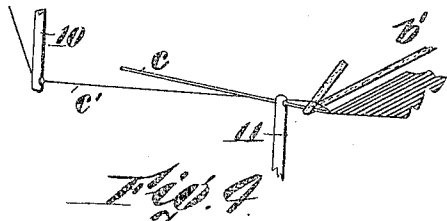
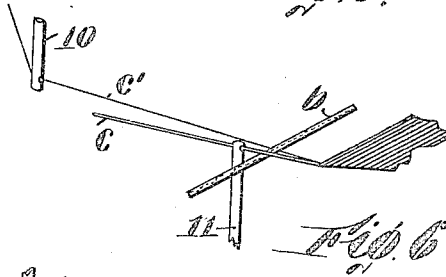
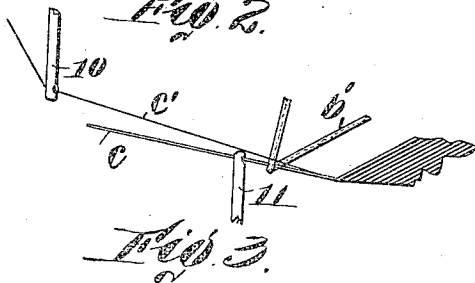
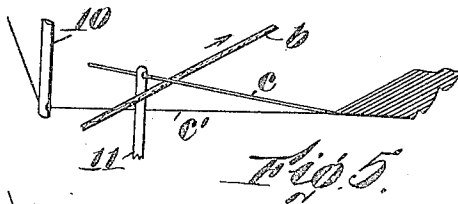
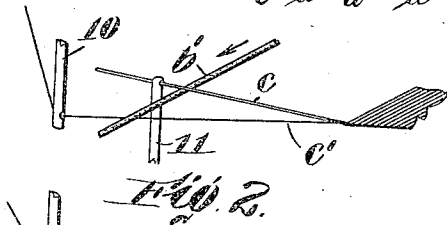
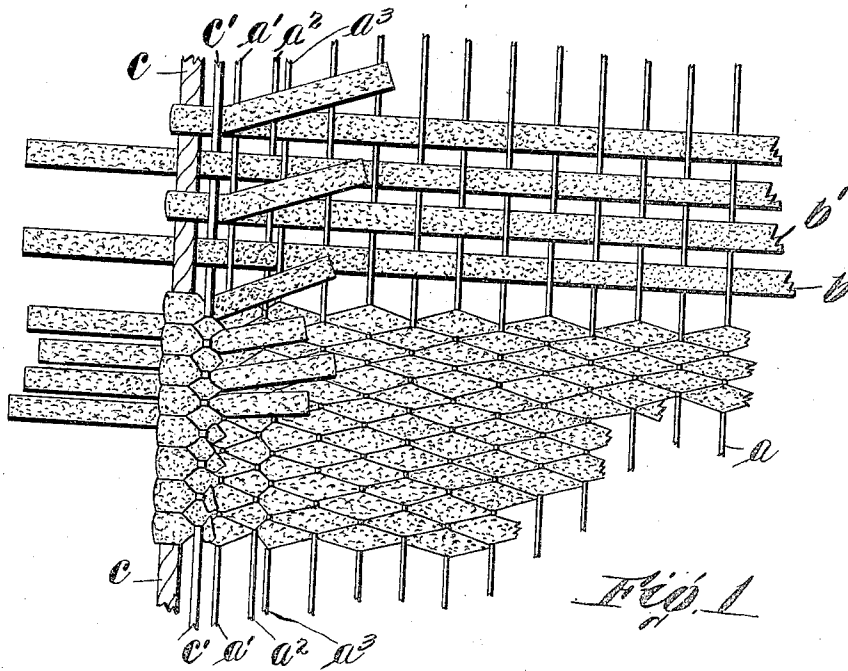


D. F. LUCIER.
 SHORT WEFT FABRIC AND METHOD OF MAKING THE SAME.
 APPLICATION FILED JAN. 25, 1908.

957,356.

Patented May 10, 1910.



Witnesses:

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SHORT-WEFT FABRIC AND METHOD OF MAKING THE SAME.

957,356.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed January 25, 1908. Serial No. 412,567.

To all whom it may concern:

Be it known that I, DAVID F. LUCIER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Short-Weft Fabric and Method of Making the Same, of which the following is a specification.

This invention relates to a fabric made of short weft lengths such for example as straw matting, grass and fiber carpets, and the like, and to a method of making the same.

Short weft fabrics have been made heretofore with several longitudinal selvage strands necessarily employed for the purpose of securely tying the ends of the weft.

One of the principal objects of this invention is to provide a form of selvage in which the number of longitudinal selvage strands can be materially reduced, thus decreasing the cost of the product. In order to accomplish this, and at the same time to provide for securely tying the ends of the in-coming and out-going weft strands at the selvages, the fabric is made according to this invention with two longitudinal selvage strands, an outer one and an inner one, the outer one being coarse, and the inner one finer, but still preferably considerably coarser than the warp.

Further objects of the invention are to provide an improved way of tying both ends of the weft strands into the selvages and in fact to provide a double tie therefor located partly in the selvage and partly in the body of the fabric itself; and to provide an improved method of weaving such a fabric and apparatus therefor.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings which show certain forms in which the invention may be embodied, and in which—

Figure 1 is a plan of a preferred form of the fabric showing the under or wrong side thereof but the side which appears at the top as the fabric is produced on the loom and Figs. 2, 3, 4, 5, 6 and 7 are diagrammatic views showing different steps in the process of making the selvage and tying the end of the weft into the fabric.

Referring to the drawings, this invention is shown as applied to the making of a fabric comprising warp strands or threads a ,

two series of short length weft strands b b' , and two kinds of selvage strands c — c' on each edge. The outer longitudinal selvage strand c is preferably formed of a coarse strong cord, and the inner selvage strand c' of a finer cord but preferably stronger than the warp. Next to the strand c' is the first warp strand a' . The strands c — c' and a' are placed quite close together for a purpose which will appear hereinafter. The second warp strand a^2 is spaced from the strand a' almost as far as the ordinary warp strands are spaced from each other, but the third warp strand a^3 is located close to the strand a^2 and about as far from the strand a' as the distance between the warp threads in the fabric in order to tie the weft as will appear later on. The warp and selvage strands being located in the loom in the usual way, except for the above mentioned features, the weft b and b' is introduced in any desired way to produce the fabric.

The weft strands preferably, as is usual, are introduced alternately from the opposite edges. As is understood in this art the weft strands which are made of grass, straw, or the like, usually are soft at their lower or butt ends and are comparatively hard and stiff at their upper ends. Now in order to accomplish the desired results in this kind of fabric, it is preferred to introduce the weft with their soft ends forward so that they may be bent around as will be described hereinafter, without breaking them. Assuming now that one of the strands b' is introduced from the right in Fig. 1, when it reaches the edge of the fabric it is brought over the strand a^3 under a^2 , over a' , and under both c and c' . It is at this point that the softness of the end of the fabric comes into play, for here the strand is brought entirely around the outer selvage strand c and back into the fabric under the strand c' . It is to be understood that in this description the fabric is considered as it is made on the loom, but the upper side of the fabric as indicated in this paragraph is the wrong or underside when it is in use. The free end of this strand b' is thus tied to the fabric, as indicated, and brought out between the strands c' and a' where it is cut off as indicated at the bottom of Fig. 1. At the top of this figure the strands are indicated as just woven before being beaten up by the lay. The opposite edge of the fabric is not

herein illustrated, as the opposite end of the strand b' will be exactly the same as this end of the strand b which passes under the selvage strand c over the strand c' and then alternately under and over the warp strands. This strand b is cut off on the right side of the fabric between the strands c and c' , so that it does not produce an unsightly appearance on the right side of the goods.

It will be observed that on account of the positions of the selvage strands and the first three strands of the warp all the weft is tied in the fabric between the strands a^2 and a^3 , and again between the strands c' and a' , and in addition the alternate strands which are bent over the outer strand of the selvage are again tied into the fabric between the strands c' and a' . In this way a firm selvage is secured, the ends of the fabric being tied into the same without the use of the usual number of selvage strands, the number employed being reduced to two. It may be considered that an additional warp strand a^2 is introduced between the strands a' and a^3 which are about the usual distance apart, but otherwise there is nothing introduced to take the place of the additional selvage strands which are usually employed, but the firmness of the selvage is preserved as has been stated.

It will be understood that preferably the strands b and b' are located alternately along the fabric, but they may be placed in any other order if desired.

The method by which the end of the strand b' is woven into the fabric in this way will now be described, reference being had particularly to Figs. 2 to 7 inclusive. When the weft b' has passed over the warp strand a' it then passes under the strand c as shown in Fig. 2. At this time the strand c' is held by the leno needle 10 which controls it below the position of the warp strand b' . Means is provided whereby the next step is to raise the leno needle 10 as shown in Fig. 3 so as to bend the end of the strand b' upwardly, then the needle 10 passes over the strand c to the position shown in Fig. 4. During this operation the reed needle 11 which is supported by the lay and which controls the strand c moves forwardly with the lay as is indicated in Figs. 2, 3 and 4 to beat up the strand b' which has just been woven in. It then moves back with the lay to the position shown in Fig. 5, and leaves a shed through which an incoming strand b can be introduced. Then the leno needle 10 is raised and brought outside the strand c first to the position shown in Fig. 6 and then to the position shown in Fig. 7 where the next strand b' is introduced from the opposite side, the lay having beaten back and brought the needle 11 to the position shown in Fig. 2. It will be seen, therefore, that as the needle 11 beats back and

forth with the lay, the needle 10 starting from a position outside of and below the top of the needle 11, moves upwardly over the top thereof and inside the same, while the latter is moving up to beat up the weft. This position is retained while the reed needle 11 beats back to the position shown in Fig. 5, and then it commences to come up and out over the top thereof, then down into the position shown in Fig. 2 on the outside of the reed needle while the latter is beating up a second weft strand. It then remains in this position while the reed needle beats back with the lay, so that the parts assume the position shown in Fig. 2.

While I have illustrated and described a preferred embodiment of the invention, I am aware that it may be carried out in many other forms than that shown without departing from the scope thereof as expressed in the claims. Therefore, I do not wish to be limited to details shown, but

What I do claim is:—

1. A fabric having a selvage comprising two longitudinal strands or threads, and filling, certain strands of which pass over the inner selvage strand and over and entirely around the outer selvage strand, the ends passing back over the inner selvage strand, and under the body of the same filling strand.

2. A fabric having a selvage comprising two longitudinal strands or threads at the extreme edge thereof, a certain strand of which passes over the inner selvage strand, over and entirely around the outer selvage strand, and back over the inner selvage strand, the free end being left on the under or wrong side of the fabric between said inner selvage strand and the first warp strand, said free end being cut off at this point.

3. A fabric having a selvage comprising two longitudinal strands or threads at the extreme edge thereof, and filling, every alternate strand of which passes over the inner selvage strand and over and entirely around the outer selvage strand, the end passing back between the inner selvage strand and the body of said filling strand, and the remainder of the filling strands of which pass under the inner longitudinal selvage strand and over the outer longitudinal selvage strand.

4. A fabric having a selvage consisting of two longitudinal strands or threads at the edge beyond all the warp, and filling, every alternate strand of which passes entirely around the outer selvage strand, and back between the inner selvage strand and the body of said filling strand, the free end being left on the under or wrong side of the fabric between said inner selvage strand and the first warp strand, said free end being cut off at this point, and the remainder of

the filling strands of which pass under the inner longitudinal selvage strand and over the outer longitudinal selvage strand, and are cut off between the two longitudinal selvage strands on the right side of the fabric.

5. A fabric having a selvage comprising two longitudinal strands or threads, and filling, every alternate strand of which passes around the outer selvage strand, and back over the inner selvage strand, and the remainder of the filling strands of which pass under the inner longitudinal selvage strand and over the outer longitudinal selvage strand, the first warp strand of the fabric being close to said inner longitudinal selvage strand, and the second and third warp strands being spaced therefrom but located close together, whereby the filling is firmly held by said warp and selvage strands.

6. A fabric having a selvage comprising two longitudinal strands or threads, and filling, every alternate strand of which passes around the outer selvage strand, and back over the inner selvage strand, said fabric also having warp strands or threads, the first of which is located adjacent to the inner longitudinal selvage strand, and the second and third of which are spaced therefrom and located close together.

7. A fabric having warp strands or threads, the second and third of which from the edge are close together and provided with two longitudinal selvage strands located near the first or outer warp strand, the outer selvage strand being coarser than the other longitudinal strands of the fabric.

8. A fabric comprising warp strands or threads, selvage strands or threads parallel with the warp, and transverse short wefts, each extending across the fabric, said transverse wefts having their softer ends alternating at the opposite edges, said softer ends of the weft strands passing outwardly under the two outer longitudinal strands on the loom and being turned up around the outside of the outer selvage strand and then down and back into the fabric.

9. A method of weaving fabrics which consists in providing a warp and two selvage threads or strands at the edge thereof, and introducing short wefts alternately from the opposite edges with their soft ends forward, and bringing their forward soft ends outwardly around and under the two outer

selvage strands, and then up and back into the fabric over the outer selvage strand and securing them therein under the second or inner selvage strand.

10. A method of making fabrics from short wefts which consists in providing a warp and two selvage strands at the edge thereof, introducing short weft lengths therein, bringing the forward ends of certain of said weft lengths entirely around the outer selvage strand, and tying the same into the fabric by weaving said ends therein parallel with the filling between the outer selvage strand and the first warp strand on one side, and the inner selvage strand on the other side of the weft, and introducing every alternate weft strand from the opposite end of the fabric so as to leave its projecting end on the opposite side of the projecting end of the outer weft strand and between the outer selvage strand and the inner selvage strand.

11. A method of weaving which consists in providing an outer and an inner longitudinal selvage strand or thread, controlling the outer strand, independently controlling the inner strand, moving the outer strand back and forth with the lay, and moving the inner strand over the outer strand first in one direction and then in the other leaving the entire inner strand parallel with the outer strand and alongside it, and weaving in the weft alternately above and below the inner strand.

12. A method of weaving which consists in providing an outer and an inner longitudinal selvage strand or thread, moving the outer strand back and forth with the lay, and moving the inner strand over the outer strand first in one direction and then in the other, while the lay beats up, and moving the inner strand down below the outer strand first on one side and then on the other while the lay beats back from the woven fabric leaving the entire inner strand parallel with the outer strand and alongside it, and weaving in the weft alternately above and below the inner strand.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

DAVID F. LUCIER.

Witnesses:

LOUIS W. SOUTHGATE,
C. FORREST WESSON.