No. 686,230. Patented Nov. 5, 1901.

C. H. LANDENBERGER.

WOVEN FABRIC.

(Application filed July 29, 1901.)

(No Model.)

Fig. 1.

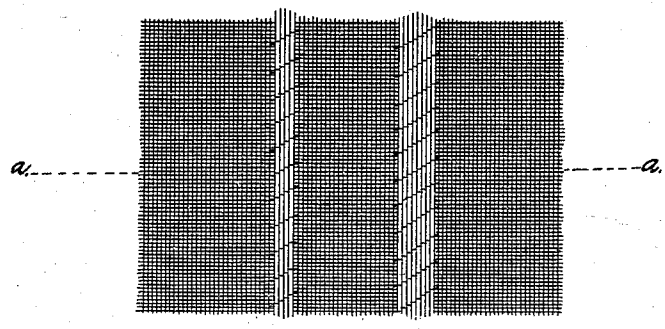


Fig. 2.

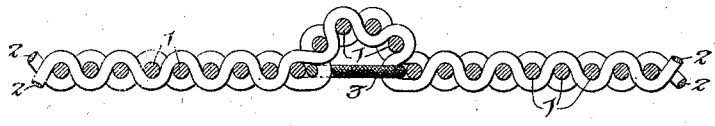
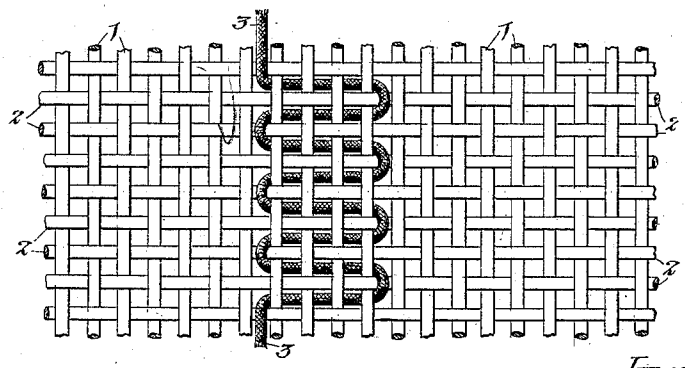


Fig. 3.



Witnesses:-
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. LANDENBERGER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE FIRM OF F. A. BOCHMANN & COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

WOVEN FABRIC.

SPECIFICATION forming part of Letters Patent No. 686,230, dated November 5, 1901.

Application filed July 29, 1901. Serial No. 70,087. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LANDENBERGER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Woven Fabrics, of which the following is a specification.

The object of my invention is to produce hollow ribs or tucks in a piece of woven fabric during the operation of weaving the same, an object which I attain by the use of warp-threads, each engaging with the weft-threads first on one side and then on the other side of a group of ordinary warp-threads and under such tension as to draw together or bunch the intervening web, so as to cause the same to rise and form the desired hollow rib on the face of the fabric.

In the accompanying drawings, Figure 1 is a view of a piece of woven fabric having hollow ribs or tucks formed thereon in accordance with my invention. Fig. 2 is an exaggerated section of part of the fabric, taken on the line *a a* or in the direction of the weft-threads; and Fig. 3 is an exaggerated view of a number of the warp and weft threads, showing the method of interweaving the same in carrying out my invention, the threads being separated from each other, so that the course of each thread can be more clearly seen.

Heretofore in producing a ribbed effect upon a woven fabric it has been usual to employ a cord of any desired thickness running either in the direction of the warp or the weft and overlaid and tied down by the weft-threads or warp-threads of the fabric. In carrying out my invention I dispense with the necessity of using such a filling-cord and form a hollow rib or tuck in the fabric in the following manner:

In Fig. 3 of the drawings, 1 represents the ordinary warp-threads of the fabric, and 2 the weft-threads, these two sets of threads being interwoven to produce a woven fabric of any desired character, so far as the general weave is concerned. At intervals throughout the fabric, however, I employ warp-threads 3, each of which after engaging with one or more of the weft-threads is carried laterally under any desired number of regular warp-threads 1 before engaging with a subsequently-inserted weft thread or threads. Thus, as shown in Fig. 3, the warp-thread 3 passes under four of the regular warp-threads 1 between its successive interweavings with the weft-threads 2. If, therefore, this warp-thread 3 is under considerable tension, it will have a tendency to straighten out when the opportunity affords, and consequently the bights of the waved thread will approach each other with the effect of bunching and raising up the web of fabric formed by the interwoven warp and weft threads 1 and 2 lying between the points of engagement of the warp-thread 3 with said weft-threads 2, the effect being the production of a hollow rib or tuck upon the face of the fabric, as shown in Fig. 2. In order to increase the effect of this rib or tuck, it is preferable to differentiate the weave of the strip of fabric composing the same from that of the fabric flanking the same. For instance, the flanking fabric may be woven plain and the strip of fabric forming the rib or tuck may be woven with some form of twill, as shown, for instance, in Fig. 1. By this means tucks similar to those produced in woven fabric by a special and subsequent tucking operation can be formed during the weaving of the fabric, and the necessity of resorting to cords for the purpose of forming raised ribs on the fabric is wholly obviated, in either case materially reducing the expense of the fabric and, as compared with the corded fabric, reducing the weight of the same, and therefore rendering it more acceptable for many uses.

The threads 3 may be warp-threads controlled by doup-heddles or they may be threads introduced by the operation known as "lappet-weaving."

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A woven fabric having a hollow rib or tuck produced by a zigzag thread including in its lateral spread a group or series of warp-threads, and under such tension as to cause the fabric having said warp-threads to bunch or buckle, substantially as specified.

2. A woven fabric having a hollow rib or tuck produced by a warp-thread engaging

with the weft-threads first on one side and then on the other side of a group of regular warp-threads, and under such tension as to cause the intervening fabric to bunch or buckle, substantially as specified.

3. A woven fabric having a hollow rib or tuck formed thereon by a zigzag thread, including in its lateral spread a group of warp-threads, and under such tension as to cause the fabric having such warp-threads to bunch or buckle, the character of weave in the rib or tuck being differentiated from that in the body of the fabric, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. LANDENBERGER.

Witnesses:

F. E. BECHTOLD,

JOS. E. KLEIN.