

Aug. 3, 1937.

J. W. M. H. REGOUT

2,089,070

BLANKET FABRIC

Filed Nov. 26, 1935

2 Sheets-Sheet 1

Fig. 1.

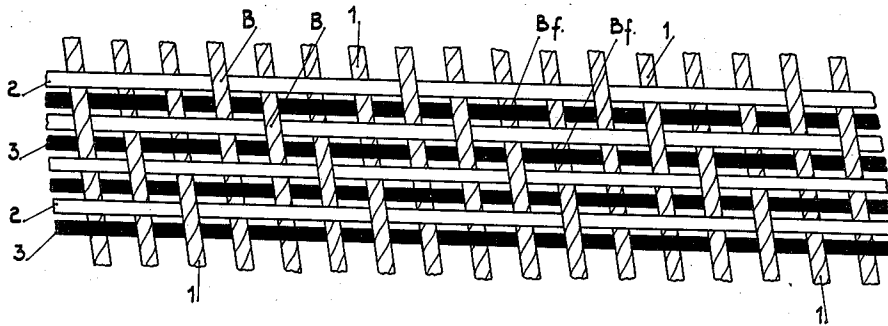


Fig. 2.

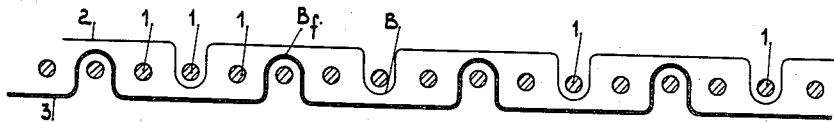


Fig. 3.

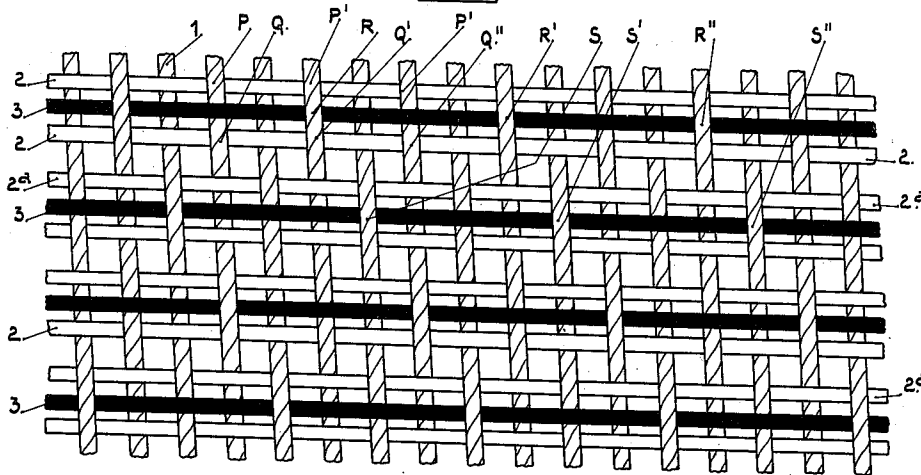
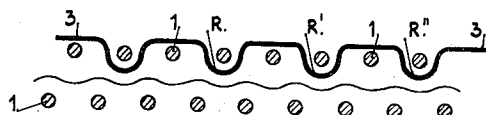


Fig. 4.



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Fig. 5.

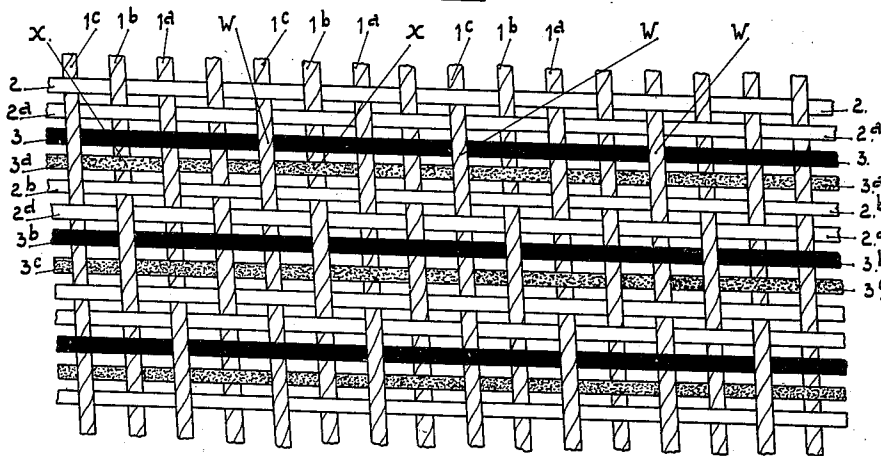


Fig. 6.

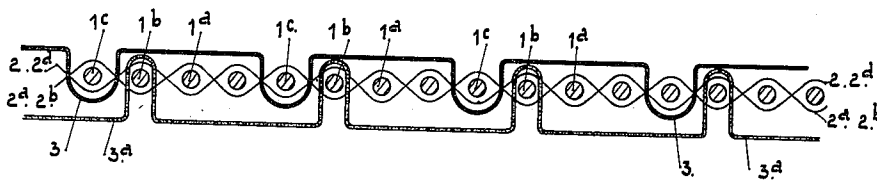
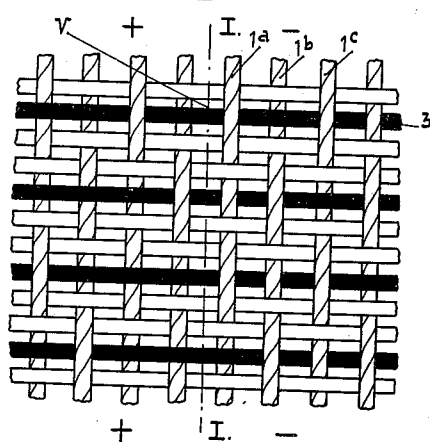


Fig. 7.



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UNITED STATES PATENT OFFICE

2,089,070

BLANKET FABRIC

Jules Willem Marie Hubert Regout,
Maastricht, NetherlandsApplication November 26, 1935, Serial No. 51,559
In the Netherlands February 16, 1933

2 Claims. (Cl. 139—418)

My invention relates to a blanket and a method for weaving said blanket by means of a Jacquard-machine. The expression "blanket" here also includes similar fabrics, such as plaids.

5 In the known methods for weaving blankets one has in view to obtain clear and pronounced Jacquard effects, i. e. at the positive as well as at the negative side of the fabric one aims at bringing the design or pattern into the foreground. For this purpose it is known to shoot in alternatively an upper weft thread and a lower weft thread, the one thread being white and the other coloured.

10 The fabric thus produced is loose, so that the fulling operation is rendered as easy as possible.

15 The object of my present invention is a novel method of producing blanket fabric whereby economy is effected in the amount of coloured weft threads used, whereas the pattern is kept distinct and clear. Another object of the invention is the production of blanket fabric according to said novel method which is of closer texture, although the total weight of the blanket, compared with a known blanket of the same dimensions is less. Hence the method according to the invention enables the manufacture of a cheaper product.

20 With these objects in view according to my invention the fabric is built up as follows: first two binding weft threads are shot in, said threads being interlaced with the warp threads in the manner of a tabby binding, or the known one-by-one weave. After the shooting in of said binding weft threads the figure weft is shot in and thereafter again a pair of binding weft threads is shot in, having also a linen binding, whereas care is taken that the binding points of the two binding weft threads on either side of the figure weft are equally positioned in the direction of the weft and that the figure weft lies loosely (i. e. not bound) over at least three warp threads and is bound by warp threads, which lie loosely over the figure weft and the two binding weft threads at either side of the figure weft. These operations are repeated during weaving a blanket according to my invention.

25 The fabric obtained by means of my novel method is closer than that of the above described known blankets and the fulling operation renders said fabric more compact and thicker. The figure weft at the positive side is brought more in the foreground and at the negative side is almost fully invisible. Compared with the above described known blankets it is therefore possible to effect economy in the amount of coloured weft

threads used and yet to obtain the same effect of colour. My novel product is stronger and more durable, whereas the shrinkability of the fabric is decreased.

30 In the weaving method according to my invention uncovered and therefore visible binding points of the coloured weft thread at the negative side of the fabric may be substantially avoided, because said points of the coloured figure weft thread can be covered by the binding weft threads positioned at either side of said figure weft thread, it being possible to move these binding threads towards each other along the warp threads and to thus cover the binding point of the figure weft thread at the negative side of the fabric. This possibility of moving the two binding threads towards each other is due to the fact that the binding points of said binding threads are equally positioned (not shifted) in the direction of the weft.

35 For maintaining this advantage also when passing across from the positive to the negative side of the fabric, it is necessary in this passing across to use another method than in the above described known blanket. Where in said blanket a figure weft thread passes across from positive to negative, e. g. in a definite lash the first warp thread should be lifted in the loom, as well as the second and the fourth, whereas the third is lowered. This fixed rule is preferably not used for the passing across from positive to negative in the blanket according to the invention, because when using said rule uncovered binding points would be formed. For avoiding this difficulty, the binding points may be shifted, e. g. as follows: when a figure weft thread passes across from positive to negative the first three warp threads are lifted and the fourth is lowered. It is assumed, that in doing so the last three warp threads, which are crossed by said weft thread in the positive part, were lowered.

40 By using the binding weft threads, which are bound together with the warp threads in the manner of the tabby binding having the largest possible number of binding points, a blanket is obtained which is stronger, has less weight than the known blankets and is yet of closer texture. The pattern is kept distinct and the background more subdued respectively at the positive and the negative sides. The fulling operation is rendered as difficult as possible, so that the woolen fibres are more intensively compressed and the shrinking of the fabric is decreased. Besides less coloured weft threads are used,

whereas a clear and well-contoured pattern is maintained.

It may be mentioned here, that it is already known to weave blankets, in which first two white weft threads and subsequently a coloured figure weft thread are shot in or in which three white weft threads and one colored weft thread are subsequently woven in, but this was done with another binding, so that the result obtained was very different and the advantages of the method according to this invention were not obtained.

In a very important modification of my invention the figure weft instead of one weft thread consists of two weft threads, which are interlaced with the warp threads the one beside the other, one of said threads forming the pattern respectively the background at one side and the other forming the pattern, respectively the background at the other side of the fabric.

By means of this modification in which the use of one additional figure weft thread is essential it is possible to obtain several effects, while using only a single set of Jacquard cards, containing a record of the pattern to be formed.

The first effect is obtained by having the additional figure weft thread appear at the negative side of the fabric and by choosing for said thread a coloured one. Eventually additional figure-weft-threads, which are alternatively white and coloured may be shot in for obtaining a less pronounced colour effect. By doing so a blanket having a less or more coloured background is obtained.

A second effect may be obtained by shooting in the additional figure-weft-thread in the same manner as described when discussing the first effect, but by using for this additional figure weft thread only white thread. In this manner a blanket having a white background is produced.

Also in the above-mentioned important modification of the method according to my invention considerable economy in the use of coloured weft threads is obtained. If e. g. according to a known method a blanket should be made having a coloured background, this can be done by shooting in instead of one white thread, one coloured thread, one white thread, one coloured thread: one white thread, one thread of the colour A, one thread of the colour B, one thread of the colour A. The colour B then forms the background. In this method three-quarters of the threads are coloured.

If however the above-mentioned method for producing the first effect is used, subsequently three white threads, one coloured thread, two white threads, two coloured threads are shot in, only three-eighths of the threads are coloured. It is assumed here, that alternatively a coloured and a white additional weft thread are shot in.

For obtaining the same result therefore in the prior art method twice as many coloured threads are shot in as are required by the novel method.

It is of importance to enable the weaving of blankets of different closeness, by varying the number of threads shot in per unit of warp length. The blankets having only one figure weft thread between two pairs of binding weft threads are much looser in texture than those in accordance with the first and second effect. This looseness however does not decrease the distinctness of the pattern.

A softer blanket is also obtained if at every time the shooting in of one or both the threads, which are bound together with the warp thread in the manner of the tabby binding, is passed over or

skipped, as the pattern is not changed by doing so. The remaining weft threads remain interlaced with the warp threads in the manner of the tabby binding.

The skipping of one binding weft thread may be performed by having the cylinder of the Jacquard machine make, during the cycle in question of the loom, two revolutions instead of one revolution.

In the above-mentioned important modification of the invention the figure weft threads may be interlaced with the warp threads at both sides of the fabric by means of a twill binding, e. g. a four-fold twill binding may be used. This twill binding renders the final fabric thicker, because those parts of the figure weft threads which lie loosely over the warp threads work up from the fabric. The porosity is increased.

Preferably when passing across from the positive to the negative side of the fabric, the figure weft threads at the positive side of the fabric are also, and, used for the figure threads at the negative side, beginning from a border, the exact position of which is determined by the position of a warp thread, the figure weft as well as the binding weft threads being positioned at either side of said figure weft and arranged at the same side of said warp thread.

Therefore when passing across from the positive to the negative side care should be taken, that during shooting in a figure weft thread the warp thread positioned at the negative side of the border between the positive and the negative side may only then be lowered, if this thread is also lowered for the adjacent binding weft threads having the tabby binding. As compared with the usual method of weaving blankets therefore when said figure weft thread passes across from positive to negative side, instead of lowering the first warp thread after the border and lifting the three following threads, as is done in the known method, the first, third and fourth warp threads are raised and the second should be re-lowered; whereas in the prior method the first, third and fourth warp threads are lifted and the second is lowered, the first, second and fourth should be lifted and the third lowered; instead of lifting one, two and four, and lowering three, now one, two and three should be lifted and four be lowered and finally the first warp thread should be lowered and the second, third and fourth be lifted instead of lifting one, two and three and lowering four. If in the novel blanket according to the said important modification of the method according to my invention the binding points should be arranged in the usual manner, these would as far as the positive weft threads are concerned, appear to lie around warp threads positioned at the negative side of the fabric and then these would be visible as uncovered binding points. In my novel blanket the binding points are so arranged, that they are substantially covered.

For the passing across from the negative to the positive side the above-mentioned data may be used of course with a corresponding change.

In the drawings Fig. 1 is a schematical view showing the position of the weft and warp threads in a known blanket, in which alternatively a white (binding) weft thread and a coloured (figure) weft thread are shot in;

Fig. 2 is a schematical cross section or substantially as viewed from below Fig. 1;

Fig. 3 is a schematical view, showing the mutual arrangement of the weft and the warp threads in an example of the blanket according to the invention;

Fig. 4 is a cross section, similar to that shown in Fig. 2 of the blanket shown in Fig. 3;

Fig. 5 is a schematical elevation of part of a blanket produced according to the hereinbefore mentioned important modification of the invention;

Fig. 6 is a cross section of the blanket shown in Fig. 5 and similar to the cross sections shown in Figs. 2 and 4;

Fig. 7 illustrates the passing across of the figure weft threads from the positive to the negative side in a blanket according to Figs. 5 and 6.

In all the figures warp threads are indicated under 1, 1a, 1b, etc. white or binding weft threads under 2, 2a, 2b, etc. and coloured (figure) weft threads under 3, 3a, 3b, etc.

In the known blankets according to Fig. 1 alternatively a white (binding) weft thread 2 and a coloured weft thread (figure weft thread) 3 are shot in. Here all the weft threads form a four-fold twill with the warp threads i. e. a weft thread alternatively lies loosely over three warp threads and passes under one warp thread, by means of which it is bound in the fabric, whereas the binding points B of the white weft threads 2 are shifted. The same can be said of the figure weft threads 3 and of the binding points B' thereof. It is to be noted that Fig. 1 shows the negative side of the fabric. It will be clear that the binding points B' are clearly visible at the negative side. These visible binding points spoil the distinctness of the pattern on that side.

In the product according to the invention shown in Figs. 3 and 4 first one white binding thread 2 is shot in. Then a coloured figure weft thread 3, a white thread 2, another white thread 2a, a coloured figure weft thread 3, again a white binding weft thread 2, etc. are shot in. The two binding weft threads 2 and 2a, which are adjacent to each other are interlaced with the warp threads 1 in the manner of a tabby binding. It is to be noted further that the binding points P, P' of a binding weft thread lying at one side of a figure weft thread 3 and the binding points Q, Q' etc. of the binding weft thread lying at the other side of the coloured figure weft thread 3 are equally positioned (i. e. not shifted) in the direction of the weft, so that these two binding weft threads adjacent a figure weft thread may be easily moved towards each other along the warp threads, so as to cover the binding points R, R', R'', etc. of the figure weft thread. These binding points would appear at the negative side of the fabric. (Fig. 3 shows the positive side), but they are covered by the binding weft threads bordering on the figure weft thread, said binding weft threads in the loom being beaten closely on to each other.

The figure weft threads in Fig. 3 are interlaced with the warp threads by means of a four-fold twill binding, the binding points R, R', R'' and S, S', S'' of subsequent figure threads being shifted and the figure thread lying alternatively loosely over three warp threads and passing under one warp thread.

Fig. 4 illustrates that the binding points R, R', etc., of the figure weft threads are deeply positioned in the fabric and may easily be covered by the two binding weft threads at either side of the figure weft thread.

Referring to Fig. 5 it will be clear how the first modification of the method according to the invention, i. e. a coloured background, may be obtained by using either for the figure weft thread 3 or for the figure weft thread 3b a coloured

thread. If these two weft threads are both uncoloured a white background is obtained (second modification). If said two weft threads are both coloured, the background will be distinctly coloured.

Fig. 5 shows how two binding weft threads 2 and 2a (with tabby binding), and two figure weft threads 3, 3a forming a four-fold twill are shot in.

A blanket, which is less close in texture, is produced by skipping at every time one of the binding weft threads 2 or 2a, respectively 2b or 2d, which skipping operation may be done in the loom in the manner described above. In this manner a blanket is obtained, in which a distinct pattern is maintained, said blanket having at the positive as well as at the negative side the character of a normal patterned blanket, so that there is substantially no visible difference between the positive and the negative side.

Figs. 5, 6, and 7 furthermore illustrate how the position of the binding points of the figure weft threads is chosen, so that said binding points are invisible at the negative side of the fabric. e. g. in Fig. 1 the positive figure weft thread is bound at the points W on the warp threads 1c, which are lifted towards the positive side by the binding weft threads 2a and 2b, so that the coloured points W of the figure weft thread 3 may get in a position between the warp threads 1c and the binding weft threads 2a, 2b and therefore are covered, respectively, invisible at the negative side and cannot influence the distinctness of the pattern on the negative side.

The negative figure weft thread 3a is bound on the warp thread 1b at the points X. These binding points are covered at the positive side of the fabric in a similar manner to that just described in connection with the binding threads 2a and 2b.

If a figure weft thread passes across from the positive to the negative side, as is the case e. g. in Fig. 7 with the threads at the point V, it is necessary, in order to avoid uncovered binding points at the negative side of the fabric, to use another rule of raising and lowering the warp threads 1a, 1b, 1c, etc., in Fig. 7 on the left hand side of the border line I; said rule having been discussed above and the practical result is illustrated in Fig. 7.

What I claim is:

1. A uniformly woven non-patterned blanket fabric consisting of facing wefts and foundation warps and wefts, the foundation threads being so woven as to form a weft rib weave wherein the wefts are laid in pairs in each successive shed of the foundation, each alternate pair of foundation wefts overlying alternate warp threads and underlying the intervening warp threads, the intervening pairs of foundation weft threads underlying said alternate warp threads and overlying the said intervening warp threads, and a facing at one side of the fabric formed of floats of the facing wefts, one for each pair of foundation wefts, said facing wefts being interlaced with the foundation warps at intervals and each being displaced to the face of the fabric by lateral pressure from opposite sides by the associated pair of foundation wefts due to close beating up of said foundation wefts.

2. A uniformly woven non-patterned blanket fabric consisting of facing wefts and foundation warps and wefts, the foundation threads being so woven as to form a weft rib weave wherein the wefts are laid in pairs in each successive shed of

the foundation, each alternate pair of foundation wefts overlying alternate warp threads and underlying the intervening warp threads, the intervening pairs of foundation weft threads underlying said alternate warp threads and overlying the said intervening warp threads, and facings at both sides of the fabric formed of floats of the facing wefts, a pair for each pair of foun-

dation wefts, said facing wefts being interlaced with the foundation warps at intervals and respectively displaced to the face and the back of the fabric by lateral pressure from opposite sides by the associated pair of foundation wefts due to close beating up of said foundation wefts. 5

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