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METHOD OF PRODUCING DOUBLE WARP PILE FABRICS WITH FIGURED BACKS

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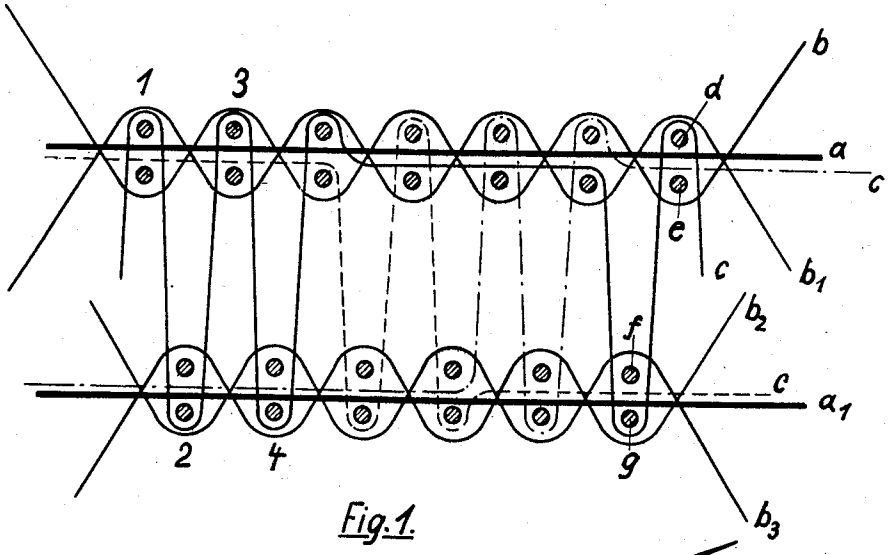


Fig. 1.

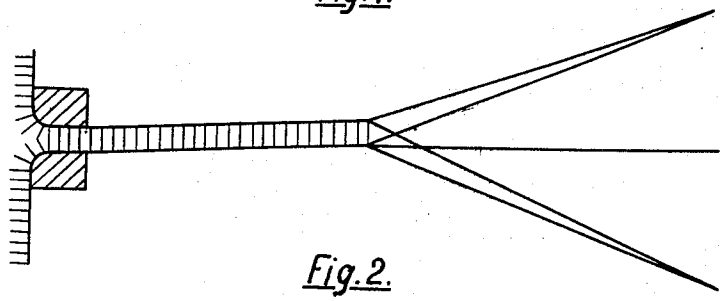


Fig. 2.

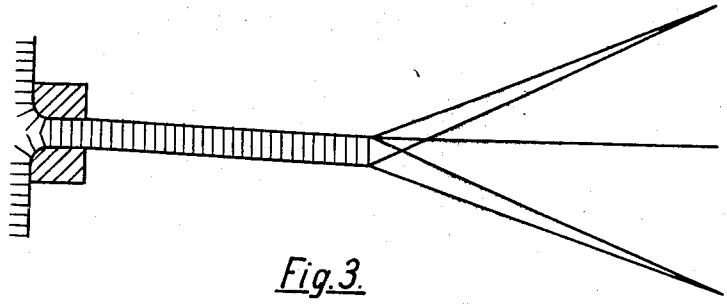


Fig. 3.

INVENTOR
Heinrich Theunissen
By Arthur M. Haber
ATTY.

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METHOD OF PRODUCING DOUBLE WARP PILE FABRICS WITH FIGURED BACKS

Heinrich Theunissen, Kaldenkirchen, Germany

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1 Claim. (Cl. 139—398)

This invention relates to a method of producing double warp pile fabrics with figured backs.

It is known to produce warp pile fabrics with dobby or jacquard figuring on the double weft double cloth loom, one shed being formed each for the upper and under cloth and one weft each being introduced into the shed of the upper and under cloth simultaneously in constantly repeated succession. If desired, two wefts, one above the other, may be woven in each of the two cloths into the ground fabric, the two wefts being introduced one by one in succession and simultaneously into the upper and under cloth. When so proceeding the pile yarns bind, for example in the upper cloth, around two wefts, while simultaneously two wefts are also introduced into the under cloth. Thereupon the pile warp yarns bind in the under cloth around two wefts, while simultaneously two wefts are also introduced into the upper cloth, so that between the following binding in of the pile warp yarns in the upper cloth and the previous binding in into the same cloth there are two wefts, likewise at the following binding in into the under cloth. Therefore, in this method it is impossible to bind the pile warp yarns into the individual cloths in direct succession. The pile loops thus formed are always separated by two wefts introduced into the ground fabric, so that on the wrong side the bends of the pile loops do not show a closed structure.

Hitherto, if desired to show the figuring formed on the pile side of a fabric on the wrong side thereof in a closed texture, the pile loops being bound on the back side around the wefts, and to obtain a firmly closed pile by binding in the pile loops in direct succession, the well known single shuttle method of weaving was utilized.

The method according to the invention of producing warp pile fabrics with a clearly figured texture at the back formed by the successive binding in of the pile loops, consists in this that always simultaneously two wefts are alternately introduced first into two sheds of the upper cloth and then into two sheds of the under cloth.

This method of weaving has the advantage that the disturbance of the texture, which is unavoidable in the hitherto practiced two shuttle weaving method on account of the wefts located between the pile loops, is eliminated. At the same time the pile loops are brought very close together, because the legs of the pile loops are in direct contact. Hitherto, all these advantages could only be secured by the complicated single shuttle weaving method.

An example of a binding according to the new method is illustrated in Fig. 1. *a* indicates the stuffer yarns of the upper cloth, a^1 the ground warp yarns of the under cloth, *b* and b^1 the binding warp yarns of the upper cloth, b^2 and b^3 the binding warp yarns of the under cloth, *c* the warp pile yarns, *d* and *e*, *f* and *g* the simultaneously introduced wefts.

The numerals **1**, **2**, **3** and **4** indicate the pairs of weft each of which forms a pattern repeat of the ground fabric.

Fig. 2 illustrates the shed formation for introducing the two wefts for the under cloth and

Fig. 3 shows the shed formation for introducing the two wefts for the upper cloth, both illustrations being diagrammatic.

Since the shuttles picked from the shuttle boxes always move on the same path, the sheds of the upper and under cloth must be uniformly adjusted to the direction of these shuttle paths. This adjustment is effected by the formation of a high, low and intermediate position of the ground and binding warp yarns, as well as the pile warp yarns. The intermediate position serves as a path for the upper and the low position as path for the lower shuttles. The ground warp yarns of the upper as well as the under cloth are, according to the binding shown in Fig. 1, alternately brought into the mid position and serve mainly for carrying the upper shuttle. At the introduction of the pair of wefts into the upper cloth the figure forming warp pile yarns as well as ¼ of the binding warps are brought into the top position, ¾ of the binding warps as well as the warp pile yarns which do not form figuring in the under cloth and the stuffer yarns of the under cloth are brought into the bottom position. The stuffer yarns of the upper cloth together with the warp pile yarns which do not form figuring in the upper cloth form the intermediate position. At the introduction of the pair of wefts into the under cloth the figure forming warp pile yarns as well as ¼ of the binding warps are brought into the bottom position, ¾ of the binding warps as well as the warp pile yarns which do not form figuring in the upper cloth and the stuffer yarns of the upper cloth are brought into the top position. The stuffer yarns of the under cloth together with the warp pile yarns which do not form figuring in the under cloth form the intermediate position. At the introduction of the pair of wefts into the under cloth the upward pull exerted by

the numerous warp yarns moving towards the top position is so great that both cloths are raised. When this occurs the stuffer yarns of the under cloth assume a horizontal position in the intermediate position, so that they enable a sure flight of the upper shuttle. The same applies to the stuffers of the upper cloth when the pair of wefts is introduced into the upper cloth, since when this occurs all warp yarns of the under cloth descend and cause both cloths to descend accordingly. These positions are indicated in Fig. 2 for the under cloth and in Fig. 3 for the upper cloth.

What I claim is:

A method of weaving double warp pile fabrics on a double shuttle loom for double pile fabrics the steps which comprise forming a double shed of the warps of the upper fabric with the pile warps and one series of binder warps in the upper plane, the stuffer warps in the central plane, and the second series of binder warps in the lower plane, inserting simultaneously two wefts one into each shed of the upper fabric, then forming a double shed of the warps of the lower fabric with pile warps and one series of binder warps in the lower plane, the stuffer warps in the central plane, and a second series of binder warps in the upper plane, inserting simultaneously two wefts into each shed of the lower fabric, and repeating the process.

HEINRICH THEUNISSEN.