UNITED STATES PATENT OFFICE.

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PROCESS FOR MANUFACTURING FANCY WEBS HAVING RAISED DESIGNS.

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To all whom it may concern:

Be it known that I, EDUARD ZEIDLER, residing at Guntramsdorf, in Austria, have invented certain new and useful Improvements in Processes for Manufacturing Fancy Webs Having Raised Designs, of which the following is a specification.

The method for producing raised designs on cotton-webs which are capable of being napped by protecting certain portions of the webs by a size impressed into the web is already known. The purpose of this is to prevent a napping along the sized portions of the web and, on the other hand to cause a fancy teasled surface to be formed along those portions of the web not covered by the size.

By these means there will result a thick and heavy web, ornamented at the desired intervals, with raised designs, regard being had to the fact that only a web can be employed which, by reason of its napped, rough shot, will permit of a raised surface being obtained.

Experiments have shown that a web spotted with raised designs will be obtained in a technically simple and economically advantageous manner, by impressing a size on webs consisting of a mixture of vegetable and animal fibers; this size not only preventing the napping of web at the impressed portions of the same but, at the same time permitting the destruction or detaching of the one of the two kinds of fibers aforementioned, whereby a raised or napped surface will be formed. The result of this will be, that along the impressed portions of the web merely the smooth, unnapped fiber of the other kind will remain, while both fibers will be retained and therewith a partially raised surface, along the remainder of the web.

The process is carried out in the following manner:

1. An acidiferous size, or such which in the course of the subsequent operation will cause acid to be formed, or which will detach or destroy the vegetable fiber is impressed on a web composed partially of vegetable and partially of animal fibers.

The said size will, on the one hand, prevent the napping of the web and, on the other hand, will effect or cause the destruction of the vegetable fiber. By these means, the animal fiber will remain at the unnapped portions on which the size has been impressed, while on the non-impressed portions both fibers will be retained and the web will be raised or napped in spots.

2. An alkaline size, or such as will be capable of detaching the animal fiber, is impressed on a web consisting partly of animal and partly of vegetable fibers. By these means the animal fiber will be destroyed along the impressed portions of the web, so that nothing but the vegetable fiber will remain, while simultaneously these portions of the web will be prevented from napping; on the other hand along the remainder of the web *i. e.* along the non-impressed portion, both kinds of fibers, and therewith a partially raised surface, will be retained.

The employing of a fiber-destroying size yields the possibility of creating napped designs on ground-webs which, taken by themselves, would be absolutely unsuitable for napping since they render the formation of a raised surface altogether impossible owing to their lack of a suitable material, while on the other hand, they would simply tear on the raising-gig.

The obtaining of raised designs on ground-webs of the kind mentioned is in so far possible, as the whole stock of fibers is still intact during the very napping-operation, whereby a raised surface will be capable of forming itself at those portions of the web left uncovered by the size. On the contrary, along those portions of the web on which the size has been impressed, this latter will not only prevent a raising or napping but will likewise prevent the destruction or injury of the ground-web of the one kind of fibers by the teasable threads of the weft of the other kind practically hiding the former that is to say, keeping them away from the raising-gig

Examples.

A size capable of destroying the vegetable fiber is composed of 200 parts by weight of sulfuric acid, 66° Bé. and 800 parts by weight of dextrin-paste (2:1, *i. e.* 2 parts by weight for each part by weight of water).

A size capable of destroying the animal fiber consists of 600 parts by weight of soda lye, 40° Bé., and 600 parts by weight of dextrin paste (2:1).

The size is impressed; the article is then

napped, whereupon the fiber-destroying action of the size comes into operation by the article being treated at a raised temperature by, say, passing it through a Mather-Platt-evaporator, a drying-cylinder or a furnace for carbonizing.

The aforesaid process may be carried out in some cases in which thinner fabrics with very little pile are used in such a manner that the impressing of color capable of destroying the one class of fibers, respectively the raised surface of the web, will take place only after the carding operation has been completed.

After the destruction or detaching of the fiber, the resulting waste is removed by washing, in which case (it being the animal fiber which has been destroyed) suitable substances (say, dextrin, glucose, glycerin, or gelatin) are added to the wash-waters to prevent an injurious effect of the dissociating lye in the remaining portions of the animal-fiber.

The subsequent expansion of the improved process with the view to obtaining colored effects or designs will permit of the following modifications:—

1. The addition of dye-stuffs and means for fixing the same to the fiber-destroying size whereby the fiber retained will be dyed or colored.

2. The employing of colors such as are used for dyeing or cloth-printing capable of fixing the dye-stuffs to only one of the two kinds of fibers mentioned.

3. A combination of the working operations set forth in 1 and 2.

4. The obtaining of effects or designs the principle of which consists in the fact of the article being treated in dye-baths which will render the coloring of only the one kind of fiber possible while the other fiber remains uncolored or but faintly colored.

5. The obtaining of effects or designs the principle of which consists in the fact of the article being treated in dye-baths composed of one, two or more different dye-stuffs and this either in one, two or more subsequent dye-baths, so that either a uniform or a diverging coloring of the two classes of fibers will result.

6. A combination of the working operations as set forth in 4 and 2, respectively 5 and 2.

What I claim is:—

1. Process of manufacturing fancy webs having raised designs, consisting in covering certain places of the web with a size, capable of destroying part of the vegetable or animal fiber by maceration, and napping the remaining places of said web for the purpose of retaining at the impressed portions of the web only the unnapped fiber of one kind and at the non-impressed portions of said web, both fibers and therewith a partially covered surface of thin fabric with little pile, substantially as described.

2. Process of manufacturing fancy webs of thin fabrics with little pile and having raised designs, consisting in covering certain places of said web with a size containing the dyestuff or coloring solution and being capable of destroying one kind of fiber, vegetable or animal by maceration, and napping the remaining places of the said web for the purpose of retaining at the covered portions of the web only the unnapped fiber of one kind and at the non-covered portions of said web, both fibers, substantially as described.

3. Process of manufacturing fancy webs of thin fabric with little pile having raised designs consisting in covering certain places of the web with a size, adding dye stuff, fixing said dye-stuff to the fiber destroying size in a bath, said size being capable of destroying part of the vegetable or animal fiber by maceration, and finally napping the remaining places of said web for the purpose of retaining at the portions of said web covered by said size only the unnapped fiber of one kind and at the non-covered portions both fibers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDUARD ZEIDLER.

Witnesses:

LEYS ALFRED HAMBURGER,

AUGUST FUGGER.