

## RECIPES FOR DYERS.

The following are mostly translations from foreign sources. We do not guarantee the results from these recipes, but give them for the purpose of showing our readers what their foreign competitors are doing.

## DARK BROWN ON WORSTED YARN.

For 100 lb. yarn. Prepare a bath containing  
10 lb. Glauber's salt,  
2 lb. orange,  
1½ lb. patent blue,  
1 lb. rubine,  
4 lb. sulphuric acid.

Enter the yarn at 140°F., give three turns, raise temperature to boil, and work to shade; lift wash, and dry.

## SILVER GREY ON HOSIERY.

For 50 lb. goods. Boil up  
1½ lb. fustic extract,  
¾ lb. logwood extract.

Cool down to 160°F., enter the goods, work well for 1 hour, lift and sadden with  
2 lb. copperas.

Stir well for half-hour, drain and wash.

## TOBACCO BROWN ON SILK.

For 10 lb. silk. Prepare a bath with  
3 lb. turmeric,  
1½ oz. orange G,  
1 oz. acid magenta,  
¾ oz. brilliant green.  
Old soap bath broken with acid.

Boil to shade, wash, brighten with acetic acid and dry.

## MAIZE ON SILK.

For 10 lb. silk. Prepare a bath with  
½ lb. sulphuric acid,  
3 oz. naphthol yellow S,  
½ oz. orange G.

Enter at 100°F., work 5 or 6 times, heat to 150°F., work well, then raise to boil; work to shade, wash, and dry.

## YELLOW BROWN ON WOOL.

For 100 lb. wool. Mordant by boiling 1½ hours with  
3 lb. bichromate of potash.

Wash, dry with

5 lb. alizarine orange,  
6 lb. fustic extract,  
¾ lb. acetic acid.

Enter the wool at 80°F., work for half-hour, then heat to boil, and dye for 1½ hours; lift, wash, and dry.

## OLIVE ON COTTON.

For 100 lb. cotton. Work for 20 minutes at 80°F. in a bath of

10 lb. fustic extract,  
5 lb. quercitron extract,  
2½ lb. logwood extract.

Heat to boil, work for half-hour, then enter in a cold bath of

2 lb. sodium bichromate,  
5 lb. copper sulphate.

Work 20 minutes, then heat to boil, work 20 minutes more; wash and dry.

## PALE BROWN ON COTTON.

For 100 lb. cotton. Mordant in a bath of  
25 lb. Gambier,  
1½ lb. bluestone.

Work for half-hour in this bath, then lift, wring, and work in a bath of

1½ lb. bichromate of potash

for 20 or 30 minutes. Dye in a bath of

2½ lb. alum,  
7 oz. chrysoidin,  
14 oz. Ponceau B.

## FIXING ALUMINA MORDANTS ON COTTON OR LINEN FABRICS.

An alumina mordant is the base for numerous dyeing operations. In fact, most of the natural colouring matters yield their fundamental colour with alumina. If a piece of cotton be introduced into a solution of an alumina salt, it draws to itself a quantity of the salt larger than what is in solution in the water, but the alumina is not fixed on the fibre and a single washing will remove it. If instead of washing the cotton, it be wrung, and then entered into a solution of a substance such as ammonia, carbonate of soda, or chalk, capable of

forming an insoluble compound of alumina, this compound will be precipitated on the fibre, which thus becomes mordanted. This method, however, does not fix the alumina upon the cotton in a sufficiently intimate manner, and the colours dyed on such mordanted cotton are not fast enough. This lack of fastness is due to the physical condition of the alumina: precipitated in the manner described, it occupies a relatively large volume, and is not entirely held in the pores of the cotton, but much of it lies upon the surface. Such a colour as alizarine, which requires after its combination with alumina such operations as soaping, washing, etc., cannot be fixed by this method. On the other hand, other colouring matters that have little affinity for the cotton fibre, such as the ponceaus, oranges, and scarlets, can be fixed in this manner, and they give relatively fast shades, which, however, wash badly.

Alumina plays in this case the part of a mechanical mordant. The mordant used for this purpose is the so-called basic alum, obtained by saturating ordinary alum solution with soda crystals solution, just to the point when a permanent precipitate begins to form. The salt used for precipitating the alumina is stannate of soda. Good results can be obtained by saturating the cotton with alum solution, and then passing it into aluminate of soda. In calico printing steam colours, the colouring matter is mixed with acetate of alumina, along with other mordants, such as lime salts, tin salts, oil, etc., then the goods are steamed after printing. The acetate of alumina is decomposed by the steaming; acetic acid escapes, and alumina is fixed on the fibre and combines with the colouring matter, which is in consequence fixed on the fabric.

In some styles of printing the alumina acetate is thickened with gum, farina, etc., and printed on the fabric, which is then steamed; it is next dyed in a bath of madder or alizarine. Wherever the mordant has been printed, the fabric is dyed, all other parts being left white. The alumina when it comes from the fixing baths is neither perfectly insoluble nor completely fixed on the fibre; therefore before dyeing it must be washed with warm water and well rinsed to remove the thickening and the soluble substances, which are not further needed. If it is simply washed in water a part of the mordant is removed, and the shade obtained will be scant and uneven, while the whites will be affected, as a certain quantity of the mordant removed will attach itself to the whites. Alum is not decomposed by ageing, as is acetate of alumina; it remains mixed with the hydrate of alumina formed by the decomposition of the acetate. When treated with water it removes part of the alumina already fixed, and this corrosion is very irregular, and often causes uneven shades. A bath must therefore be given of some substance that will complete the combination of the alumina with the fibre, remove the uncombined mordant, which is held mechanically by the thickening, and at the same time prevent the mordant from becoming fixed on the whites. The substances best adapted for this purpose are cowdung and binarsenate of soda.

## WOOL.

Wool is very easily mordanted with alumina mordants. The only alumina salts employed are alumina sulphate and alum. If wool be boiled in a solution of either of these, it gradually takes up the alumina from it, and this is firmly fixed, so that subsequent washing will not completely remove it.

The addition of tartar (acid tartrate of potash) appears to be indispensable, as lively and fast shades are to be obtained, as the results by simple boiling are not satisfactory. The weight of tartar used should be one-third the weight of alum or sulphate of alumina used. It is probable that tartrate of alumina is formed, and this is dissociated in the presence of the wool.

Wool mordanted by boiling for two hours with alum and tartar, ought not to be washed immediately. It is well to keep it in a moist state for a few hours, whereby the alumina will combine more intimately with the fibre. The shades obtained on wool thus left are fuller and faster than those dyed on wool washed as soon as it is mordanted.

## SILK.

Silk can be mordanted by alum at a boil, like wool, but, in most cases, simple working cold in a basic alum bath is sufficient to fix the alumina on the silk, which is then ready to be dyed with alizarine. It is not necessary to add tartar to the bath. It is best to leave the silk in the bath all night.—*Teinturier Pratique.*

The textile workers of Switzerland are issuing invitations for an international congress of textile workers, which will probably meet in Basle.

## Designing.

## NEW DESIGNS.

SATEENS AND THEIR DERIVATIVES.—  
(Continued.)

Proceeding to the consideration of the nine-end sateen, two methods of construction are given in *Designs 135* and *136*, which will be found to include all the other bases. In *Design 135*, five has been counted from left to right; in *Design 136* seven has been counted in the same direction. It will be noticed that in the first case an upright or warp twill is produced, while in the second a horizontal or weft twill has been produced. Now on proceeding to deal with this sateen, as with the eight-end sateen, it is at once apparent that there is a very great difference; for example, in *Designs 137—140*, dots have been added to discover, if possible, analogy to ordinary twills, and the results shew that with ordinary twills of 45 degrees there is no coincidence, but that with twills running at a greater angle, viz., moving only one thread for every two picks, there is perfect unison. Again, it was pointed out in reference to the eight-end sateen that in one direction there were two perfect twills independent of each other. In the nine-end sateen, however, no such relations exist, each twill combining with its neighbour; thus in the repeat there is only one twill, so that the derivatives of this weave cannot be varied as in the case of the eight-end sateen. Though this is, strictly speaking, true, it is also true that some exceedingly beautiful weave effects can be obtained by skilful manipulation of irregularities of this weave. *Design 141* is furnished as an example of this class, which should be well studied, as numerous modifications at once present themselves to the imagination. The effect may be enlarged as required by means of drafting and an extended pegging plan.

The ten-end sateen next claims consideration, and its construction is demonstrated in *Designs 142* and *143*. In *Design 142* seven has been counted from left to right, while in *Design 143* three has been counted from left to right. On comparing this make with the eight-end sateen it is found that they are alike in one particular—i.e., in both cases either a warp or weft sateen may be produced from the fine sateen according to the relative quantities of the respective materials. On experimenting with this weave to ascertain if any analogy exists between it and ordinary twills, exactly the same results are arrived at as in the case of the nine-end sateen, as will be gathered from *Designs 144* and *145*, with the exception that the twills run at a still greater angle.

## FANCY WORSTEDS.

*Design 146* may be utilised in many ways. It consists of a 2 and 2 twill square, surrounded with the eight-end diagonal, which is edged with a rib effect. As a fancy waistcoating it may be made to the following particulars:—

## Warp.

7ths of 2/50's tinted purple,
4 " " tan and white twist,
7 " " tinted purple,
14 " " tinted blue,
2 " " white and yellow twist,
14 " " tinted blue,
16's reed 4's.

## Weft.

Same as warp. 61 picks per inch.

As a heavier coating 2/40's worsted may be used with the same sett. Silk twists should be tried with this design, the centre portion of the 2 and 2 twill being enlarged as required.

## GALATEA STRIPE.

Fast colours; 50 reed, 3 in a dent, or 75 ends on the inch; four shafts, 20's warp, 24's weft, 52 picks per inch; warping and draft: 3 white, 3 in a heald, on No. 2 shaft; 3 dark blue, 16 opal blue, 3 dark blue on 1, 2, 3, 4 shafts; 3

white, 3 in a heald on fourth shaft; 12 dark blue, 2 orange, 24 dark blue, 2 orange, 12 dark blue, all on shafts 1, 2, 3, 4. Total of ends in pattern 80. The twill to run to the left, 3 shafts up, 1 down, in regular succession; one shuttle dark blue.

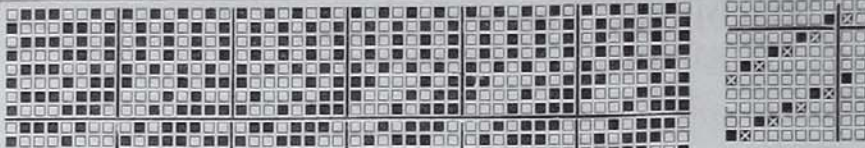
LINEN OR COTTON DRESS DESIGNS.

No. 1.—On 12 shafts, or might be made on 10 shafts, but the draft would be very complicated and difficult for the weaver if a smash of ends took place (technically called a "trap" and by spinners a "sawney"). As given it is comparatively simple: ten to the round (see draft and pegging plan), warp all blue, brown, fawn, sea green, salmon, or any fashionable shade in two-fold 60's cotton, two in a heald, one heald per dent, 60 reed or 60 ends per inch; weft: one shuttle, 56's white linen with 40 picks on an inch. The fabric would, if made to these particulars, be light, and in some respects resemble canvas cloth, and would be very suitable for morning wrappers or sea-side wear.

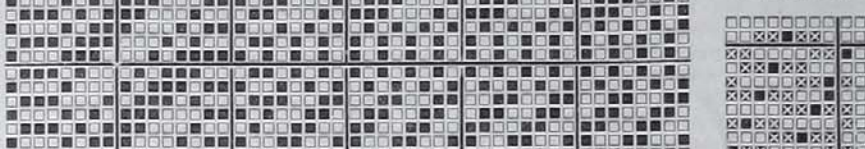
No. 2.—Another dress material, plain, on four shafts, straight over draft, two in a heald, 60 reed, 40's single twist, all cotton; warped 2 white, 2 light brown, for 18 repeats; then 2 white, 4 red, making a total of 74 ends in the pattern. It would be best to double the ends in the warping creel. One heald only in a dent. The weft same counts as warp; three shuttles, two in a shed, checked the same as the warp, but blue in place of red; 60 picks per inch, or the squares to be made equal end and end. Two contrasts may be used in warp and weft; two fancy twisted threads of cotton and silk might be used with advantage as a third colour in warp as well as weft. Considerable scope is offered for a variety of changes in colour effects and size of squares, which may be broken up into any given number as desired. The pattern is no novelty, but it is becoming very popular, and the details here given will be found suitable for a light dress material.

FANCY COTTON AND SILK TARTAN CLOTH.

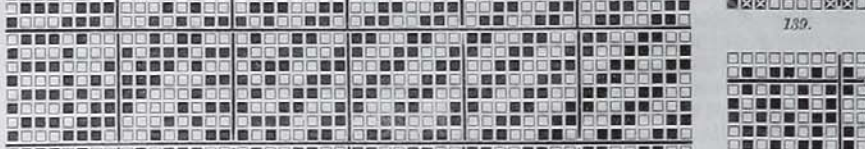
On 8 shafts, four for the cotton warp, four for the silk, 44 reed, 4 in a dent, or 88 ends per inch of 2/70's cotton and 30's silk tram. Weft: 30's single cotton and 30's organzine silk, 80 picks per inch, or a square cloth equal weft and warp; the four shaft cassimere twill to run off on the right and the silk twill to cross on the left; this particular effect must also be observed with the silk weft running to the left. This is a most elaborate pattern and would require to be worked in one of Mr. Wright Shaw's looms, or one having facilities in the way of long range checking motion. Warping: 272 serpent, or fully three inches, on 1, 2, 3, 4 shafts, 4 white silk on 5, 6, 7, 8, drawing the silk in from back as shown by the position of the figures; 14 light drab, 10 dark blue, 14 light drab, 12 serpent, 6 light drab, 12 serpent, 4 darkest blue possible, all on 1, 2, 3, 4 shafts; 4 white silk on 5, 6, 7, 8 shafts, 4 dark blue, 12 serpent, 6 light drab, 12 serpent, 10 dark serpent, 4 dark blue on 1, 2, 3, 4 shafts, 8 white silk on 5, 6, 7, 8 shafts. This is the centre of the pattern, but we will give it complete to prevent mistakes: 4 dark blue, 10 dark serpent, 12 serpent, 6 light drab, 12 serpent, 4 dark blue, 4 white silk, 4 dark blue, 12 serpent, 6 light drab, 12 serpent, 14 light drab, 10 dark blue, 14 light drab, 4 white silk. Total number of ends in the whole pattern 544, or over six inches. Checking pattern the same as the warp; the silk shoot to be put in with only one shaft up at a time out of the 5, 6, 7, 8, and, as before observed, the twill to run to the left and all the cotton weft to the right. This class of cloths will be largely in demand at the back end of the season. We have given the shades most likely to be in vogue; but, of course, any others may be entertained, provided they are not too glaring. A quite subdued tone of shading will give more satisfaction, especially to the fashionable art votaries. This very large check is neither ugly nor aggressively visible. The most pleasing arrangements may be made with dark sapphire blues, carbuncle, mossy green, an earthy brown, and stone—all useful, good wearing colours.



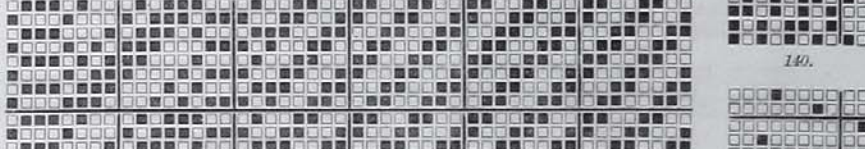
DESIGN 138.



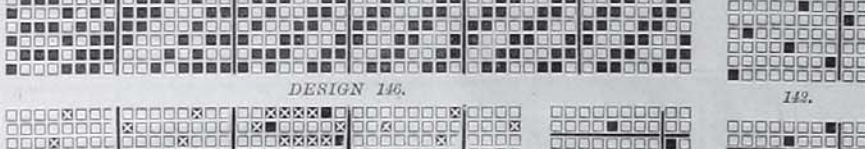
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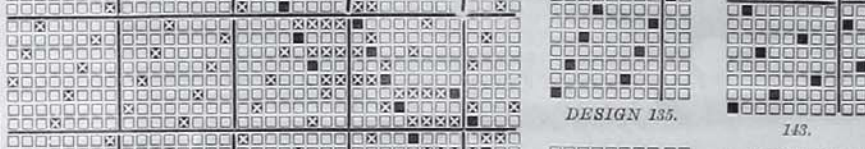
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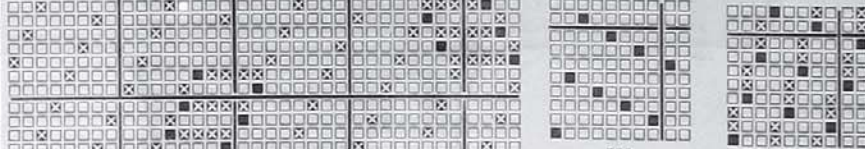
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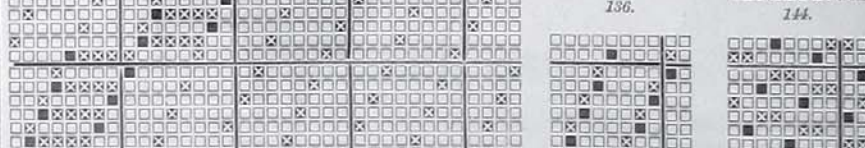
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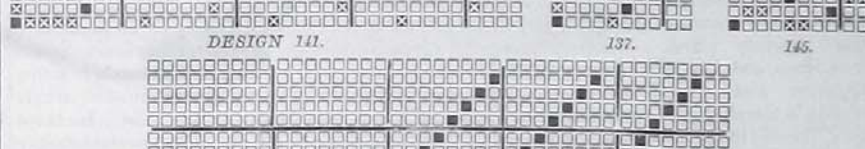
143.



144.



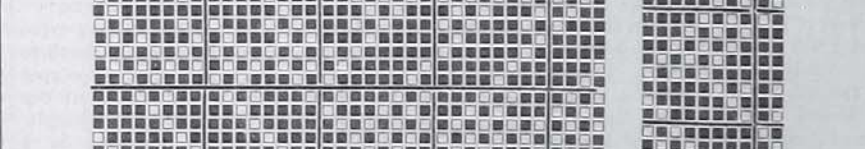
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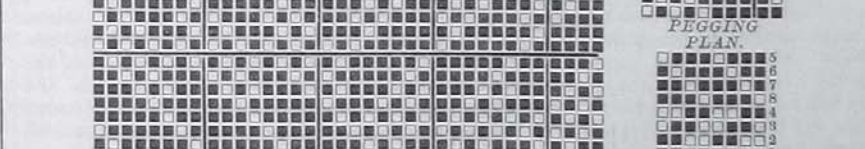
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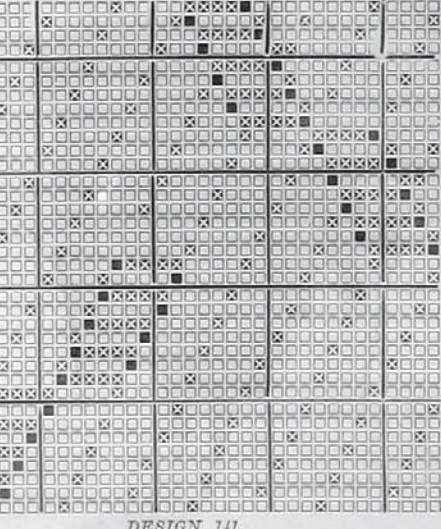
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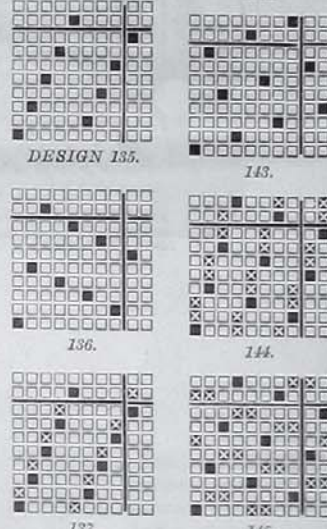
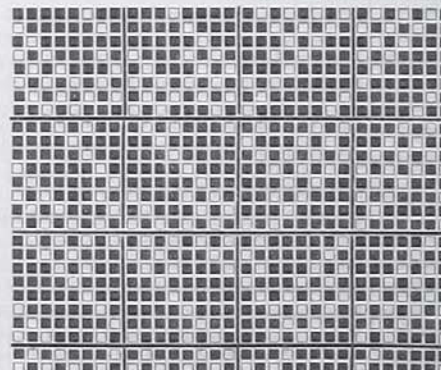


DESIGN 150.

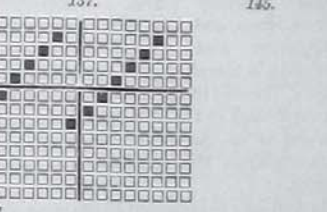


DESIGN 151.

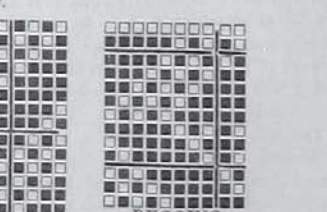
DRESS DESIGN DRAFT.



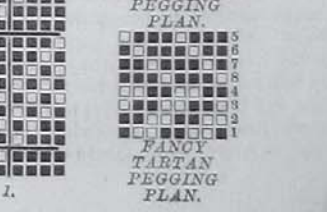
DESIGN 135.



136.



137.



138.

PEGGING PLAN.

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FANCY TARTAN PEGGING PLAN.