

service of Almy and Brown, and before the year was out, he put up three cards, roving and drawing, and a seventy-two spindle frame, worked by a water wheel, the first Arkwright machinery in America. From a description of the operations it appears that "the cotton was laid on by hand, taking up a handful and pulling it apart with both hands, and shifting it all into the right hand, to get the staple of the cotton straight, and fix the handful so as to hold it firm, and then applying it to the surface of the breaker, moving the hand horizontally across the card, to and fro, until the cotton was fully prepared." This does not inspire us with a great deal of respect for such appliances, but they were good enough then to make a radical change in the manufacturing prospects of the States. Whether the Pawtucket people will be justified in regarding their old mill, in which cotton is still manufactured, as the veritable cradle of their cotton trade, unless they are content to acknowledge that 1890 is certainly not the centenary of its erection by Samuel Slater, is, after all, not a matter of very much importance. If we are to accept what appears to be reliable testimony, the "Old Mill" of Pawtucket was not put up till 1793, when Slater appears as a partner with Almy and Brown, but the central fact remains that he was prime mover in several other successful ventures, and that he is thoroughly entitled to the designation of "The Father of American manufactures," which President Jackson gave him. It is especially interesting to remember that he practically escaped from England when we were in a state of industrial siege. Around our manufactures there were put Acts of Parliament in defence, with heavy penalties and imprisonment as the punishment of detection in exporting models, drawings, or plans of machinery, and, of course, in case the machinery was found in transit. Artisans were not allowed to emigrate, and if young Slater's errand had been known he would have been much longer than two months in getting to New York. But in spite of some convictions, and more seizures, the rewards of cotton manufacturing were then too great to become a national monopoly. Fines of £500 were not prohibitive when great fortunes might be won by evading them. The secrets of cotton manufacture were assailed on all sides. People came over on all kinds of plausible errands, but really to find out some detail of machinery, or to coax away some skilled operatives, and if sets of working models were sometimes discovered, hidden in bales of common goods, that could not prevent some attempts being more successful. There was even a State negotiation set on foot to induce Boulton and Watt to go to France, and who can tell what might have happened if that had been successful. That Samuel Slater broke through such barriers and overcame such obstacles as these is not by any means the least remarkable of the many recollections revived by this Pawtucket anniversary.

The portraits herewith represent Samuel Slater and his brother John. The latter had an interest in a mill built in 1799 in the town of Smithfield. The place where the mill is located is now known as Slatersville, and is the property of the heirs of John Slater.

Designing.

NEW DESIGNS.

FANCY DIAGONALS FOR DRESS MATERIAL.

This design is very bold and striking, the draft is straight over on 16 shafts, 24 to the reed; the figures at the side and foot of the design indicate

the pegging plan, all the other portion being repeats to show the run of the diagonal. A very good cloth for fancy vestings could be produced with 60 ends per inch, two in a heald of 24's spun silk, or 40's two fold cotton weft, single 20's, with 60 picks per inch. As this figure is really made by warp, the weft may be said to play a neutral part, at least so far as colour ornamentation is concerned, hence the necessity for vivid and determined contrasts for the warp threads. We give a few colourings for warp and weft, the preference being given for silk in warp. Crimson warp, pale turquoise blue for weft; white warp, light myrtle green for weft; light violet warp, white, cream, or grey weft; light lilac warp, dark terra cotta brown weft; Napoleon blue warp, dark orange or dark buff weft; light strawberry warp, dark dahlia weft; cream, dark cream warp, dark olive drab weft. These shades in warp and weft will be found serviceable and effective. If used for a dress material or shirting, 72 ends per inch of 24's warp with 60 picks of 12 soft cop weft will give a very satisfactory result.

FANCY DIAGONALS FOR VESTINGS.

This design is suitable for a variety of fabrics. The best effects would be given if weft and warp are equal. If there is any difference let weft be a little coarser than the warp, or a few more picks per inch than ends per inch in warp. A good cloth may be made with 2/16's cotton, two in a dent, in a 60 reed, 10's weft, 60 picks per inch. These details would make a good trousering cloth. For vestings, 40's warp in an 80 reed or 80 ends per inch, 30's weft, 80 picks per inch. Weft and warp grey; piece dyed in any shade, or bleached. The weft may be a different colour from warp, and vice versa. Straight over draft, 15 shafts.

FANCY SATIN DIAGONAL.

This diagonal is on the 16 shaft, and 7 for the satin ground, which is indicated in the design on a basis of three out of the seven points; or in other words, every three is passed over and a point made until completed. A very elegant and stylish dress material could be produced either in silk, worsted, woollen, cotton, or linen. The weft, if the reed is close set, might be any material, as it would be completely obscured in the face of the cloth, being thrown to the back out of sight. Two contrasts, or end and end, one for satin ground and one for figure, would be required to give full effect to this design; the reed might be a 60, three in a dent, or 80, two in a dent. Warp, 24's twist; weft, 30's; one shuttle, 48 picks per inch. The following colours and shadings are given as suitable, and in accordance with the prevailing taste:—Grey, pink, blue, mauve, cream, gold, and brown. In white cream ground, and sapphire blue for figure, a really pretty effect would result. For an out-door garment it would also look extremely pretty in cambrics, art and pongee silks, with greenish grey, venetian, or old rose pink, lightish browns, and pearl greys. It is exceedingly difficult to produce novelties in weaves, as almost every possible combination appears to be exhausted. Not so, however, with the embellishment of textiles by fancy colourings, where the utmost liberty is permissible if the arrangement be in accord with the vagaries of fashion. Many years ago we were engaged on a range of patterns for a very extensive London drapery firm, when their agent pointed out that an orange stripe would be desirable next to a glaring red. "Let us put a blue between," we suggested, "so as to minimise the discord." "Oh! bother the discord, do as I tell you; I know best what is wanted," was the reply. So much for taste. The ingenuity of the designer may be strained and bent in every direction to produce a really good article in good taste and style, but he is made subservient to the dictates and caprices of an unknown quantity that mysteriously rules with despotic hand in the World of Fashion.

MANTLE CLOTHS.

Design 176 demonstrates a principle of figuring mantle cloths similar to but more varied than that furnished in our last issue. The effect of this particular design is to give a shaded stripe, which will prove very effective if suitable colourings be introduced. Browns with red as the luminous and brightening colour; drabs and slates in conjunction with white; for lighter and brighter cloths French grey with

yellow, orange, and white, will also prove effective. These colours may be introduced either in the warp or in the weft but care should be taken to retain the shaded effect.

The design as given here cannot be reduced with drafting, so that it is not possible to produce such an effect with the dobby except in special cases, but as a ground for jacquard figures this system is very useful.

GALATEA STRIPED LINEN.

This is the most useful of all materials for women's and children's wear in every rank of society, and whether made in linen or cotton is always in season. It is very extensively used as a trimming for flounces and lately as a very becoming and durable cloth for bathing suits. We give the following new arrangement in anticipation of early enquiries for this make of goods:—All fast colour warp and weft, three shafts for ground, six for coloured stripe (see pegging plan), 60's linen warp, 60 reed, three in a dent, or 90 ends on one inch; 60's linen weft, 56 picks per inch, all one shuttle. Pattern of warp and draft as follows: 60 of very light fawn, on shafts marked on the side of the pegging plan 1, 2, 3; 6 of royal blue on shafts 4, 5, 6, 7, 8, 9; then 18 of light fawn on 1, 2, 3, a double end or two in a heald of royal blue, and four of light fawn on 1, 2, 3 shafts; 6 of royal blue on 4, 5, 6, 7, 8, 9 shafts; 18 light fawn, 2 of royal blue, 2 in a heald, 4 of light fawn, all on 1, 2, 3 shafts; 6 of royal blue on 4, 5, 6, 7, 8, 9, making a total of 126 for full pattern. Weft all fawn. If made in cotton, let dark blue take the place of fawn, both in warp and weft, the royal blue to become the lightest of cream or white; reed and picks the same, but warp 24's twist and weft 20's.

SHIRTINGS.

Patterns of this kind are extremely useful as they may be varied to an almost unlimited extent; the stripes may be increased at pleasure by adding more ends in the draft of each style of working.

A 72 reed, two in a dent, 20's warp, 14's weft, 56 picks per inch. Warp pattern and draft:—16 ends of white, 2 dark blue, 2 white, 2 dark blue, 2 white, 2 dark blue, 16 white; all on the first four shafts, as seen in the design marked as a 4-end or cashmere twill; 8 ends light blue, 8 dark blue, on the 8-end twill, four up and four down, 16 white, 2 red, 2 white, 2 red, 2 white, 2 red, 16 white on the first four shafts; 8 dark blue, 8 orange on the 8 shafts marked in the design as the 8-end twill. The whole pattern will amount to 100 ends, weft soft spun cop.

A second pattern.—Same reed, etc., 16 dark blue on the 8-end twill; 2 white, 2 red, 2 white, 2 red, 2 white, on the 4-end or cashmere twill.

A third pattern.—8 dark blue, 2 white, 2 red, 2 white, 2 dark blue, 2 white, 2 red, 2 white, 8 dark blue, on the four shafts or cashmere twill; 2 white, 5 dark blue, 2 white, 5 dark blue, 2 white on the 8-end twill.

These three patterns will be found very effective for shirtings, wrappers, etc. As we find this class of cloth is in great demand, we intend to furnish a few more really useful patterns in our next issue.

THE ARRANGEMENT OF FIGURES.

Figure 24 illustrates very effectively the "Sateen distribution of figures." It consists practically of a spray of gorsegrass, so common in country lanes, of course conventionalised to a certain extent. There are several noteworthy points in this design which will well repay attention. In the first place it should be observed that the spray is drawn in three positions; in the bottom portion of the spray the upper surface of the leaves are seen; in the middle portion of the spray the under sides of the leaves are seen, and in the upper portions the balls turn round sideways. We need scarcely remark the realisation of conditions such as these is at the root of all good designs.

Again, attention should be given to the breaking of one spray by its neighbour. Such interlacing, if such it may be termed, will very often be found useful, since it supplies a means for

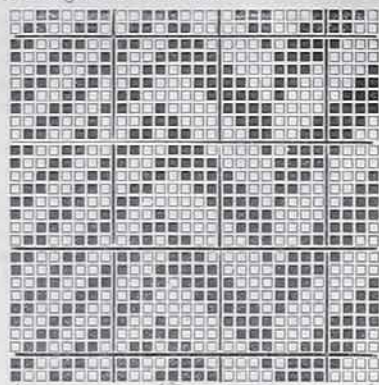
breaking through stiffness and giving the idea of ease and grace.

Attention should also be given to the construction of the design, since it hardly gives a comprehensive idea to say simply that it is spray arranged in fine sateen order, for it needs little study to see that there are limits to the form of the spray. In Figure 24, the first figure dealt with was that formed by the largest leaves at the bottom of the spray, this being distributed on the sateen principle. On this being accomplished there was found to be a space into which a similar figure rather smaller than the first was introduced, upon the completion of which the idea immediately presented itself of making a continuous spray; this was acted on and resulted in the design as here given.

Further reference will be made to this system of arrangement in our next.



FIGURE 24.



4 END TWILL. 8 END TWILL. SHIRTING.

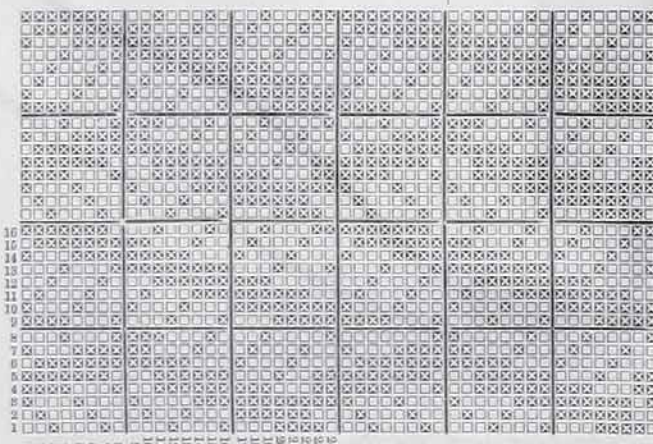
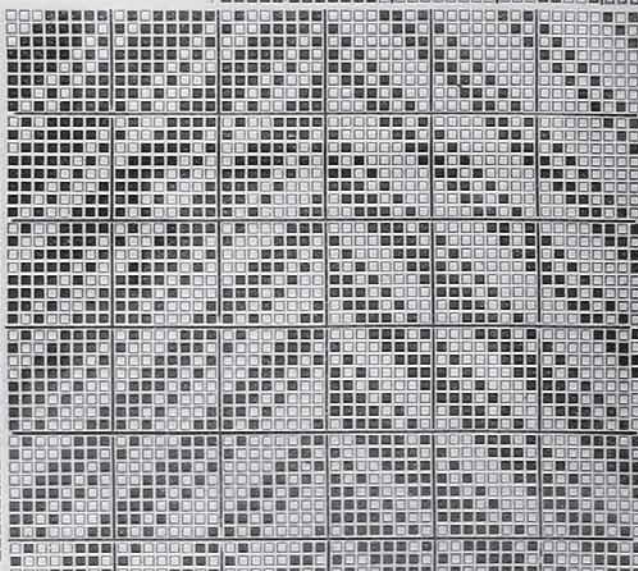
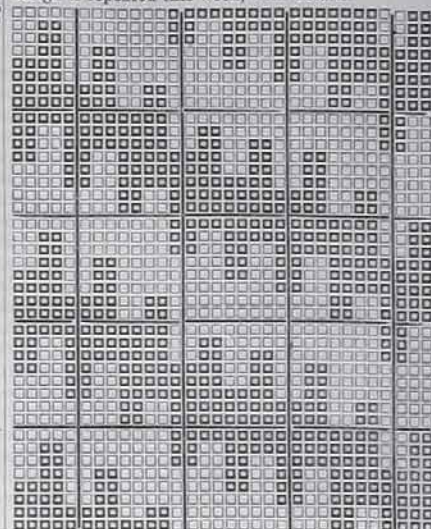
Pegging Plan.



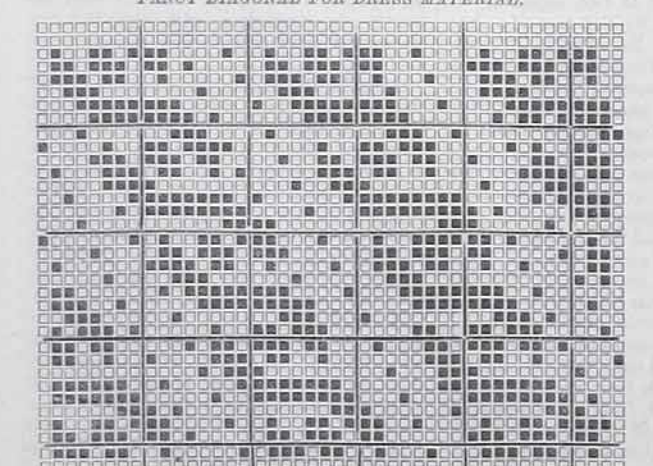
GALATEA LINEN STRIPE.

ERRATUM.—The first design figure given in last week's issue was, as practical readers would discover, erroneously described as "A Clan Tartan," instead of "Fancy Diagonal for Dress Material." The Clan Tartan instructions were complete without a design. The Diagonal design is repeated this week, with details.

No. 1. FANCY DIAGONAL.



FANCY DIAGONAL FOR DRESS MATERIAL.



FANCY SATIN DIAGONAL.



DESIGN 176.