

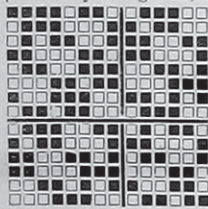
latter country the employment of children under ten years of age is forbidden altogether, and under twelve they are only allowed to work when provision can be made for their regular attendance at school. Between twelve and fourteen children are limited to eight hours' work, and apprentices to ten hours, with half-an-hour's rest in the morning and afternoon, and an hour at mid-day. The German law prohibits the employment of children under thirteen in factories. And over the age of thirteen they can only be employed if they are no longer required to attend an elementary school. Under fourteen years employment is limited to six hours, and between fourteen and sixteen years of age to ten hours a day. Sweden has no half-time system, but children may not be put to work before they reach the age of twelve. From twelve to fourteen they may work six hours a day, and from fourteen to eighteen for ten hours. There is no half-time system in Belgium, but the employment of children under twelve is forbidden in mines, quarries, and certain other specified works. No system analogous to the half-time system exists in Portugal. And in Spain the employment of children under ten is forbidden. Above ten and under fourteen, or in the case of girls sixteen, they may be employed for six hours a day.

## Designing.

### NEW DESIGNS.

#### FANCY PLAID DESIGN.

For a fancy plaid, giving a small figure on a nearly plain ground: 14 shafts, straight-over draft, 14 to the round, which is the pegging plan; 80 ends per inch of 30's cotton twist for warp, and 80 picks per inch of 30's cotton for weft. Warp and weft patterns as follows: 80 of light blue green, 4 dark myrtle green, 4 light blue green, 4 dark myrtle green, 4 light blue



FANCY PLAID DESIGN.

green, 10 dark myrtle green, 36 dark emerald green, 4 white, 36 dark emerald green, 4 white, 36 dark myrtle, 36 dark emerald green, 36 dark emerald green, 10 dark myrtle green, 4 light blue green, 4 dark myrtle green, 4 light blue green, 4 dark myrtle green. Total ends in pattern, 320, and repeat from 80 light blue green.

#### FIGURED DRESS FABRICS.

It seems to be the constant desire of the manufacturer of dress fabrics to cheapen his goods and yet retain the richness of effect usually only obtainable in the higher-priced goods. Perhaps we are rather hard on the manufacturer, and should say that there is a constantly increasing demand for cheap goods, which it is the manufacturer's duty, as far as possible, to supply. However this may be, there can be no doubt that the demand, coupled with competition, for such goods is constantly tending to produce sounder and more beautiful fabrics at a diminishing cost. For example, *Sketch C* is designed specially for a pure silk fabric, and yet we propose to apply it also to cotton warp goods. But, it is objected, a much inferior fabric will be obtained in the latter material than in the former. Though this is true, yet it is also true that when the effect produced is considered, along with the cost, there is a balance in favour of the cotton.

The characteristic feature of silk is its lustre, its glossiness, and unless this be developed in the piece it is practically wasted. Now a brief experience with such fabrics demonstrates the fact that warps as a rule tend to become dead and non-lustrous, while the weft seems to lustre-up; therefore the thought at once occurs to the designer to employ a cotton warp to give the deadness requisite for contrasting with the lustrous silk weft. Such a system of development it is proposed to employ in this instance.

We should recommend for the production of this design a combination of harness and shafts. For example, suppose a 300-machine is at hand, then the floral effect may occupy the whole series of wires being developed, on a similar scale to *Design 53*, while the harness may be tied up out of the way for the plain twill portion between each stripe. Of course, if a jacquard specially mounted for shaft and harness work is obtainable, so much the better, since the above system tends to damage the harness.

Respecting the development of the figure as denoted in *Design 53*, we should recommend the following sett:—

Warp.

All 2/130's cotton; 140 threads per inch.

Weft.

- 1 pick 40's orange silk,
- 1 ,, 40's green silk,
- 140 picks per inch.

Under these circumstances the flower would be developed in orange tint, and the leaves in green tint, while the stems would shew more decidedly green, to balance which the orange weft must be brought up unadulterated for the stamens of the flowers. In using this system of development, as we have previously pointed out, care must be taken to thicken certain parts, such as the stem of the flower in *Design 53*, since practically only every other pick figures.

Note:—The figure in *Design 53* is very indistinctly developed owing to the comparatively short flushes throughout. If, however, each kind of type be run over with a coloured pencil the figure will be very apparent.

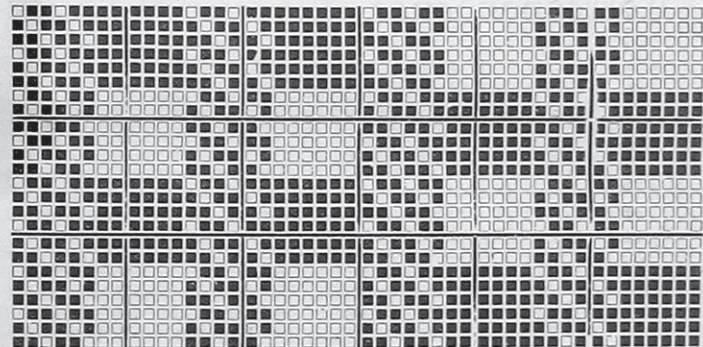
This sketch might be effectively treated as a cotton warp and mohair weft fabric, when the sett should be as follows:—

Warp.

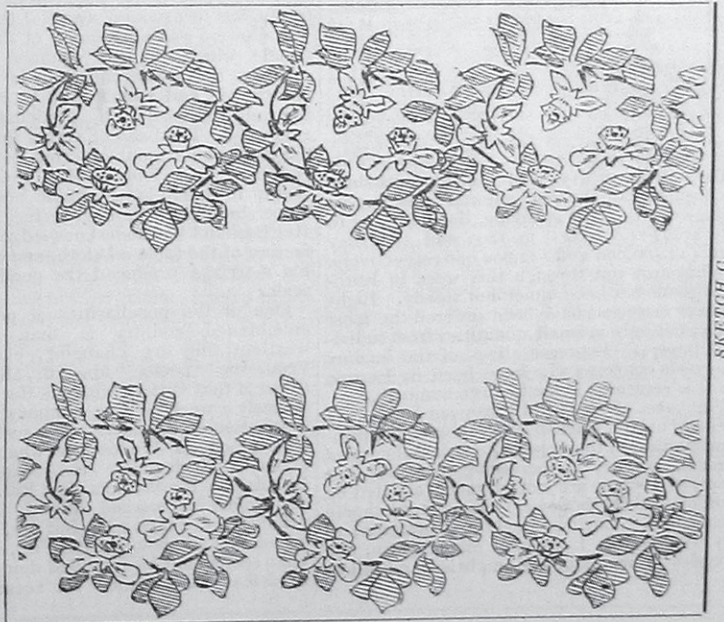
All 2/120's cotton; 72 threads per inch.

Weft.

All 36's mohair; 72 picks per inch.



ORIGINAL DESIGN FOR SILK VESTINGS.



SKETCH C.

The ground in this case should be plain, with the leaves, etc., developed as weft with flushes of from three to ten.

#### ORIGINAL DESIGN FOR SILK, ETC., VESTINGS.

This design will be found a novelty for producing a neat and chaste effect in two colours, either in silk, cotton, linen, or other materials. Vestings, trouserings, and fancy shirtings may be obtained as fabrics by this weave in a very simple and economical manner. Particulars as follows:—64 reed, three in a dent, 96 ends per inch, or 2/40's white organzine for warp, or cream, very light pink, light mauve, light strawberry, chartreuse, sky, buff, mid-coral, and scarlet. Any of these will give an appropriate ground for the weft, which may be 20's spun silk, 80 picks per inch, all one contrasting colour or hue to suit the ground. All blues, browns, maroons, in fact, any dark hue, will be in accordance with the white, cream, and light pink grounds; and without covering further space with these details, whatever the ground may be, the weft must be a good contrast, or in harmony. Different shades may be employed, the ground, we may say, being light pink, the weft dark pink, and in this way, by careful treatment and the selection of good colours and materials, an effective variety of handsome patterns would result. The warp and weft are both employed in turn, giving force and character to the weave. The draft is completed with 48 ends, though it may be enlarged to any extent, and the pegging plan, as will be seen, is 12 to the round on five shafts. Anything more simple for producing a vesting could scarcely be conceived.

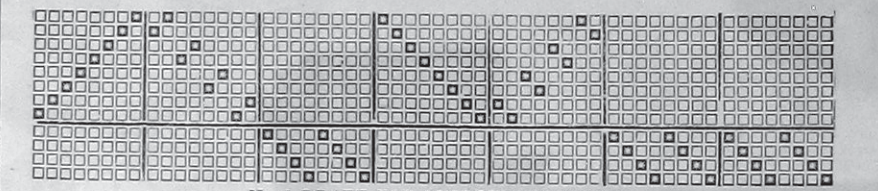
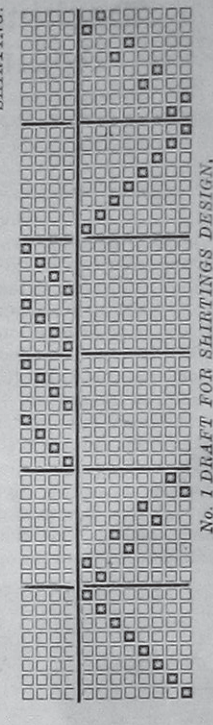
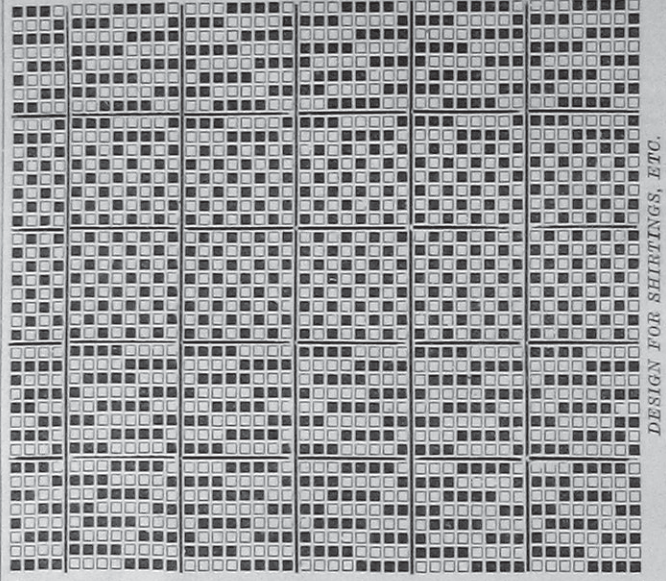
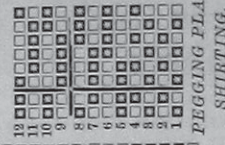
#### DESIGN FOR SHIRTINGS, ETC.

This design is worthy of notice from manufacturers, not only on account of its simplicity and the ease with which it can be produced, but also by reason of the vast amount of available colour combinations, as well as variety

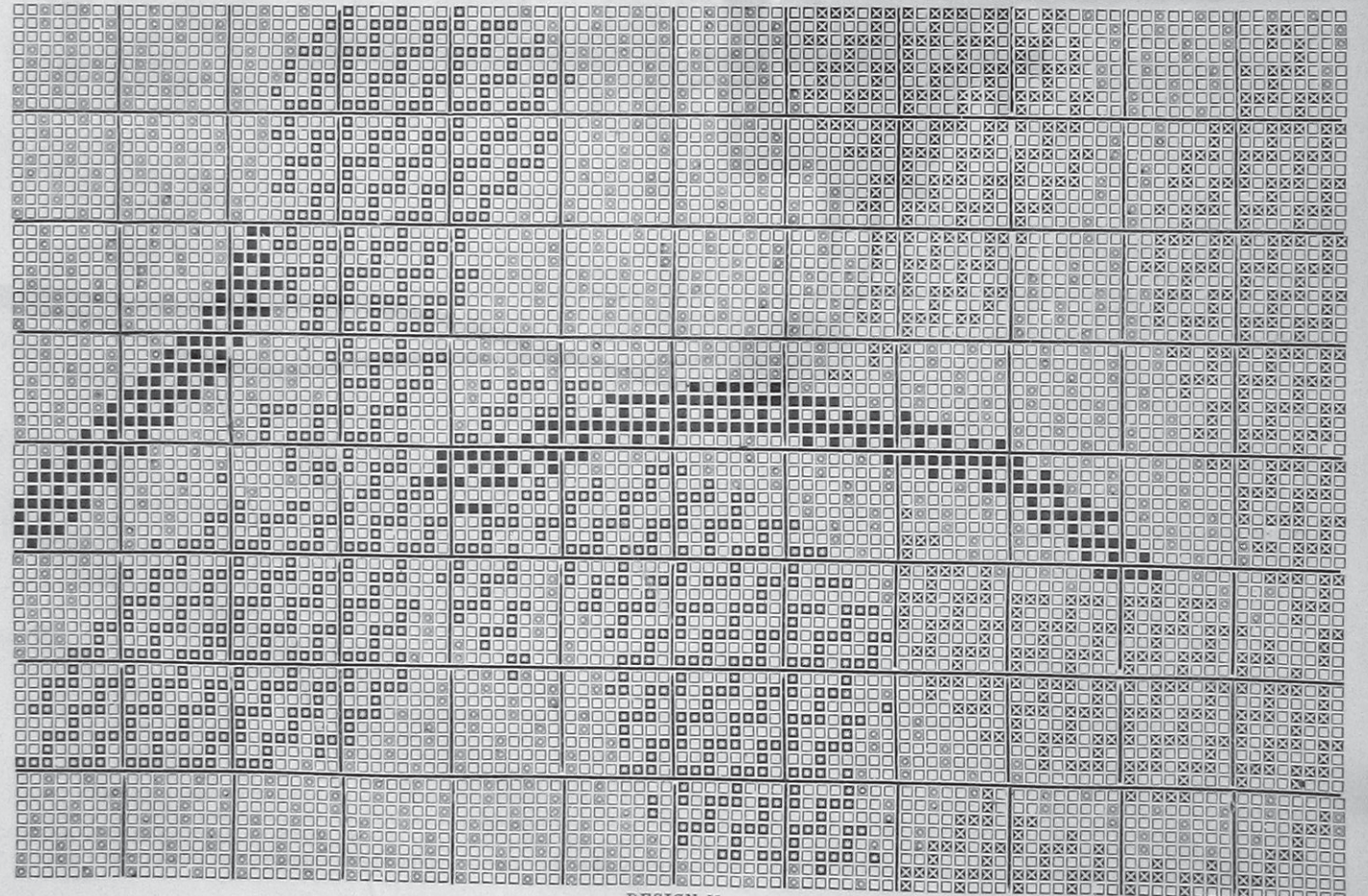
of form, in the manipulation of the drafts. We give Nos. 1 and 2 to shew how this may be obtained: 12 shafts, 8 to the round; the draft on the pegging plan numbered 1, 2, 3, 4, is for the plain ground, straight-over draft, and may be extended to any size by repeated drawings; it is two in a dent. The other portion on 5, 6, 7, 8, 9, 10, 11, 12, or shafts, forms the fancy arrow in the stripe, which for a shirting pattern will make a very handsome and effective novelty, with a proper arrangement of colours. All this part, whatever number (which must be even), is drawn in four in a dent, weft all one shuttle. So reed, two and four in a dent, 48 picks per inch.

No 2. The draft for the fancy stripe must always commence with the lightest end first. We give the following pattern with full details: warp, 20's twist; weft, 20's; 32 of Oxford blue, 4 fawn, 4 white, 4 Oxford blue, all on 1, 2, 3, 4 shafts; 1 white, 1 red, for 16 times on 5, 6, 7, 8, 9, 10, 11, 12 shafts; 1 white, 1 red, for 16 times on 11, 12, 9, 10, 7, 8, 5, 6; then 4 Oxford blue on 1, 2, 3, 4 shafts; 1 maize, 1 dark chocolate, 16 times on 12, 11, 10, 9, 8, 7, 6, 5; 1 maize, 1 dark chocolate 16 times on 6, 5, 8, 7, 10, 9, 12, 11; and 4 Oxford blue on 1, 2, 3, 4 shafts; then 1 white, 1 red, 16 times on 11, 12, 9, 10, 7, 8, 5, 6, and 1 white, 1 red for 16 times on 5, 6, 7, 8, 9, 10, 11, 12 shafts; 4 Oxford blue, 4 white, 4 fawn on 1, 2, 3, 4 shafts, and repeat from 32 Oxford blue. If these figures are carefully followed in conjunction with the pattern given, no mistake can possibly occur. The fancy ends, whatever may be the arrangement, must be on 5, 6, 7, 8, 9, 10, 11, 12 shafts. The pattern may be enlarged by repeats of drafting to any size. Weft always to be of same tone as that on 1, 2, 3, 4 shafts. For variations: cream for Oxford blue, weft the same; arrow stripes: light green, and arrow stripes, light blue and cinnamon brown, and finally a solid ground (without the 4 Oxford blue, 4 fawn, 4 white) of 44 light buff, 32 end-and-end—that is, 1 of blue, 1 white, 16 times drawn, as shewn by the figures—4 light buff on plain shafts, 32 end-and-end white and violet

on figures given, 4 light buff on plain shafts, and 32 end-and-end of white and blue, and repeat with 44 light buff on plain shafts, weft light buff. We might cover an entire page by shewing how variations can be made; sufficient, however, has been given to plainly indicate the nature and style of this weave.



No. 2 DRAFT FOR SHIRTINGS DESIGN.



DESIGN 53.