only two ways of avoiding this—namely, taking care to buy a good quality of plate or thread in the first instance; and in preventing the introduction of the mischievous fault we have described, which there reason to believe has at times been more or less widely prevalent in the weaving districts. The firm of Messrs. E. and W. G. Mabey, in which we place the highest confidence, has taken on this part of manufacturing, is one of the oldest engaged in it, and we have every confidence in stating that thorough reliance may be placed upon its productions for being of that quality represented, whilst, if they be consulted as to the quality of plate or thread it may be desirable to use to stand certain severe processes and to come out untarnished, their advice may be implicitly relied upon.

Technical Education.

THE RESULTS OF THE CITY AND GUILDS EXAMINATIONS.

(Continued from page 75.)

The additional results of the recent City and Guilds examinations for the working of the London Institute for the promotion of technical education are as follows:

CRAIG VALE.

Results in Cotton Spinning:—First Class Honours: Walter S. Smith (gold medalist and money prizeman); Robert O. Wood (honours); Charles Blechwell, Sam Groves and Cyril Muller (First Class Certificates); Second Class Ordinary: W. J. Pickford, C. Weedridge, M. Derriman, and J. A. Clark. Teacher, Mr. John Bewsick, June.

DUNDEE.

The following is the pass list of the Cotton Spinning Class held at the Atley Institute and taught by Mr. John Woonley:—Ordinary Grade: Allen Harrow, Harry Smith, Joseph Wallace, Fred Makin, and Henry Fletcher (1st Class), William Clark, Charles R. Warrason, John William Heppe, Thomas Jones, and Fred Swinfield (2nd class).

DUNDEE.

In this centre, 61 students of jute manufacture, taught by Mr. T. Fergison, have gained certificates. The following are the names of the pass and medals, the prizes being given by the London Juteweavers’ Company, and the medals by the City and Guild of London Institute:—Jute Spinning:—Honour grade, Andrew Fleming, first prize of £5 and 25s. and silver medal; Robert D. Davidson, first prize of £3 and silver medal; John Blyth, second prize of £2 and bronze medal; William Robb, third prize of £1 and half medal. Jute Weaving:—Honour grade, Andrew Fleming, first prize of £5 and 25s. and silver medal; Charles Darro, second prize of £2 and silver medal; Donald Lowden, first prize of £3 and silver medal; William Waddell, second prize of £3 and bronze medal; Alexander Battersby, third prize of £1 and bronze medal.

GRAYS.

The following are the names of five students who have passed second class in the ordinary grade in Woolen and Worsted Spinning:—Ernest Burt, Wm. H. Shearer, George H. Brook, Fred Hobson, and John Macpherson.

MANCHESTER.

The textile classes of the Manchester Technical School have the following result:—Cotton Spinning: William Myers, first-class honours, first prize of £6 of the Clothworkers’ Company and the Institute’s Silver Medal; John W. W. W. first-class ordinary grade, first prize of £6 of the Clothworkers’ Company and the Institute’s Silver Medal; Samuel Mason, first-class ordinary grade, second prize of £2 of the Clothworkers’ Company and the Institute’s Silver Medal; Samuel Holt, first-class ordinary grade, third prize of £1 of the Clothworkers’ Company and the Institute’s Silver Medal; Frederick Davenport, first-class ordinary grade, fourth and a bronze medal.

DIAGRAM A.

DIAGRAM B.

half of the shed more below the centre than the top is raised above is simply to throw all or most of the weight upon the bottom half of the warp, leaving the top portion slack, it being very evident that the line ACB is shorter than ADB. In the particular case under consideration, viz., the application to plain cloths of this principle, the reason for adoption lies in the fact that from certain of the threads being slack the reed marks, which otherwise would appear very distinctly, are rendered undistinguishable by the lower portion of the shed being thrown below the cross threads with it as shown in Diagram B, and thus it is at once seen that more weight can be introduced. True, the conditions in plain cloth are exactly reversed in the succeeding pick; still the advantage gained is probably not wholly lost, when in ordinary woolen cloth manufacture the raising of the back rest, which is equivalent to throwing the top section of the shed slack, is commonly resorted to simply as a means for getting in more weft. The system of shedding cannot be reversed in the case of sanded weaves, so the overlooker must always use his discretion in this matter, or trouble may come.

Another method of getting in more weft is what is known as “crossing the shed” before the pick is beaten up. In all looms, whether for woolen, worsted, cotton, or silk, means are provided for effecting this, and in most cases both systems mentioned are utilized.

GAZEE FABRICS.

Though the number of designers who have practically to deal with gaze or leno fabrics is very limited, yet the knowledge once acquired may be so useful that all should endeavour to obtain a group of the subject, when with a little practice all difficulties will disappear. With this idea before us, we propose furnishing from time to time examples in this class of design with suggestions for application, etc., which we hope will prove service to manufacturers, and which at the same time may, we hope, clear the way for the uninitiated.

In Figures 23 and 24 are shown two examples which we will endeavour to explain and thereby cause to be applied. The designing plans are attached, and Designs 172 and 173 along with their pegging plans show the principles of indication on point paper.

Designing.

NEW DESIGNS.

In our contemporary, the Boston Journal of Commerce has appeared the following query:—Will some of your readers inform us why, in weaving some classes of plain goods, the bottom warp, when the shed is open, is depressed more below the centre than the top warp is raised above? Since this is a question which interests all overlookers, no matter what the class of work they are engaged on, we think a brief statement of the principles underlying the subject would prove interesting.

The first thing to be considered is the effect produced by the arrangement mentioned. Now reference to Diagram A it will at once be seen that the effect of depressing the bottom threads with it as shown in Diagram B, and thus it is at once seen that more weight can be introduced. True, the conditions in plain cloth are exactly reversed in the succeeding pick; still the advantage gained is probably not wholly lost, when in ordinary woolen cloth manufacture the raising of the back rest, which is equivalent to throwing the top section of the shed slack, is commonly resorted to simply as a means for getting in more weft. The system of shedding cannot be reversed in the case of sanded weaves, so the overlooker must always use his discretion in this matter, or trouble may come.

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THE TEXTILE MERCURY.

The thick thread passes first through the loop, then crosses the other thread, and passes through the ordinary shaft used in conjunction with the loop for the formation of gauze. In both the drafts supplied, it will be noticed that the ordinary shaft, working in conjunction with the loop, forms the loop shaft. The loop is always the foremost position. This system of working is by many not considered the best, since when the ordinary shaft is raised there is a danger of the slip of the loop becoming entangled in the warp and causing breakages. As a rule therefore better work will result with the loop and deep shaft being placed together in the front. It may now be uninteresting to compare the point paper plans with the actual patterns as sketched in Figures 35 and 36; however, note should be made of the arrangement of the picks. First then notice Figure 35, where we have given the effect of plain cloth with a single gauze crossing, which is the cause of isolation of the single pick, since here the deep thread is crossed into its false position, so return to its original position the next pick and weave plain for seven picks, as in Figure 36, where we have again the same combination of picks, seven and one, but here there is nothing to produce this grouping; so that the design so obtained is not what we have intended, and a narrow strip of this figure is combined with Figure 35, in which case the effect is exactly as sketched, when a narrow strip of Figure 36 is used, the grouping of the picks is entirely lost. In the second place, however, the grouping of the deep threads together by the thick thread passing from side to side. It may now be asked: how is one to know the thick thread is about out of its course and not the three thin ones, since in many cases equal divergence occurs? The answer to this is that the thick threads interweave with the welt in such a manner that their stability is much greater than that of the thin thread, and as a natural consequence the thick thread bends as required and thus produce the effect sketched.

Again it should be remarked that in weaving the shed is formed from the bottom, if Figure 35 is to be wove with the right side uppermost and lifting will be required than if the cloth be woven wrong side up; so in describing the latter, etc., we will turn to the shed on the reverse of what is denoted by our sketch.

On consulting the first sketch (Figure 35) it will be at once seen that the only threads raised for the first pick to pass in are the deep or crossing threads; therefore, the deep must be raised. If the gauze cloth is the order in which the gauze plan for Design 150 acts upon the loop shafts, etc., is realized, as indicated by the arrows, there will be no difficulty in seeing that the ends indicate this, the loop is thus raised and produce the three threads. For the second pick, the crossing thread and two out of the three threads are down while the third of the thin threads must be raised, so in order to accomplish this, shaft 1 must be raised as indicated in the pegging plan. For the third pick, shaft 2 will be raised; for the fourth pick, shaft 1; and for the fifth pick the deep shaft indicated, thin crossing the crossing thread on the opposite side of the three thin threads. The manner in which the effect represented in Figure 35 is worked out will be understood on reference to Design 171, and also the draft and pegging plan. Here the stationary and crossing thread work plain for seven picks, but for the sixth pick with the deep thread crosses to the opposite side of the thread with which it has been plain and back again for the ninth pick to form plain again; thus the effect represented in Figure 35 is obtained.

DRESS FABRICS, ETC.

The two patterns of gauze just described may be combined in stripes varying in width as required, in either cotton, or wool and silk, or silk and worsted. A good effect will be obtained by using for the fine threads the silk (say 200's or 280's), while the thick crossing threads may be worsted (say 230's or 240's). Again, excellent effect may be produced by using cotton warp and silk or flax weft, combining with the gauze an ordinary stripe plain or satin ground with a variegated figure developed. Designs of this type will claim our attention in future numbers, and we also direct attention to the many methods adopted for producing gauze effects with ordinary headings.

FANCY STRIPE.

We give another example of a scrol figure suitable for a fancy dress stripe. For details of colour see The Textile Mercury, July 25th. The repeat of this figure may occur after two more plain stripes are passed between, or the junction of the bottom and the top take place without any interval of plain cloth or satin. The design is purely suggestive, but if entertained would be found highly ornamental as a stripe.

NEW GALATEA STRIPE.

Fast-colour: 20 ends on the inch, 2½ warps per inch, 100's per end, 2½ sets of sets; 25 nice black, 6 dark blue on 1, 2, 3 shafts; 3 white, three in a head, on fourth shaft; 1 dark blue on 1, 2, 3 shafts; 3 white, three in a head, on fourth shaft; 1 dark blue on 1, 2, 3 shafts; 3 white, three in a head, on fourth shaft; 1 dark blue on 1, 2, 3 shafts; 3 white, three in a head, on fourth shaft; 1 dark blue on 1, 2, 3 shafts; 3 white, three in a head, on fourth shaft.

TARTAN CHECK.

First Pattern.—A tartan check in a 72 reed, two in a draft, 30's twist, for every 12½ for 60, 50's per inch. The worsted, whatever may be the counts or picks, must, however, be arranged as to square the warp pattern, 6 shafts. Pattern and draft: 244 silver grey, straight over on shafts marked 1, 2, 3, 4, 5, 6; then 15 dark brown on 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6; 6 slate on 4, 5, 6, 1, 2, 3, 4, 5, 6; 6 of tan on 4, 5, 6, 1, 2, 3, 4, 5, 6; 6 very light slate or white on 4, 5, 6, 1, 2, 3, 4, 5, 6; total 154 ends. The checking same as the warp pattern and the round to follow the draft. To prevent any misconception we give full details (see pegging plan). The horizontal spaces are the shafts marked 1, 2, 3, 4, 5, 6; the vertical spaces are the threads marked at the bottom 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6, known as the round; the silver-grey warp must square the silver-grey in the warp by repeating the 1, 2, 3, 4, 5, 6 threads; the dark brown warp on 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6; 6 slate, 6 tan, 6 white wefts all on 4, 5, 6, 1, 2, 3, 4, 5, 6; 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6. It must be as well to have wefts on one count, say 2½, and 72 ends per inch with 72 picks.

Second Pattern.—144 corn, 12 royal blue, 6 primrose, 6 dark brown, 6 peacock green, weft checking same as warp pattern, but crimson in place of peacock green. We have been very particular in giving full details for the making of this tartan check, in order to give a very likely to be of great demand at the back end of the season. More combinations of colour draft and weave will be given in a future issue