The background of the cover is a collage of various weaving-related diagrams and patterns. It includes several grid-based patterns, some with handwritten notes in Finnish. One note at the top left reads 'J3 5K-8 5P-8 5T-8'. Another at the top center says 'loimi- ja kudel-voimista ja pomsia yhdistelty'. A diagram on the right shows a grid with labels '2x', '2x', '2x', '8x', '8x'. Below that, a diagram is labeled 'Tie-up'. Another diagram shows a grid with labels 'A', 'B', 'C' and 'Thread from ... to ...'. A diagram at the bottom right is labeled 'Oikeampioleisen rakenne.' and 'muoleisen rakenne.'. A diagram at the bottom left is labeled '3-752 K'.

MASTER WEAVER

BI-MONTHLY BULLETIN
FOR HANDWEAVERS



Z-HANDICRAFTS
FULFORD, QUE., CANADA

MASTER WEAVER

Z - HANDICRAFTS - FULFORD - QUEBEC - CANADA

November, 1955

No. 24

STANDARDS.

The difference between a democracy, and a totalitarian state is, that in the former there is as little standardisation as possible, and in the latter - as much as possible and even more.

However from times immemorial democracies accepted a certain amount of standards, without which the life would be a nightmare. Thus we all accept standards in measuring, standards in speaking and writing, standards in social behaviour, and in particular: standards in education. We find it as natural to say: "he is a high-school graduate", as: "this is a two-hundred mile drive", or: "a two-pound steak". We do not feel that our personal freedom is endangered when the filling station attendant takes 3 dollars for 10 gallons of gas. We do not argue about the definition of "high school", "mile", "pound", "dollar", and "gallon" - although they are all "standards".

We take also for granted that a driver, a teacher, a civil servant, a soldier, must pass certain standardised tests to be qualified. Otherwise they might become a public danger.

This principle however does not seem to work in crafts. Granted that the very idea of a craft is opposed to the modern trends in our so called civilisation. Granted that we do it for pleasure, or perhaps more than for pleasure - for a deep psychological need of fulfillment. But still, there is often a need to discern between a good craftsman and a beginner, between a genius and a failure.

This need arises, unfortunately, whenever money comes into the picture. This is probably because money is most highly standardised. It has always a very definite value, never an approximate one. We do not mind for instance when we are told: "you have about 3000 miles to drive to reach the West Coast", but we would feel insulted if our bank manager informed us that our overdraft is "about" 3000 dollars. Thus we like to know that what we buy for money, has also a definite value.

Therefore as long as one is pursuing a hobby for his own satisfaction, does not sell, and does not teach others, the question of standards does not arise, unless the craftsman in question wants to get some sort of recognition for his work. But once we start selling our abilities, whether as a teacher, a judge of an exhibit, or as a producer of handicrafts to be sold - we must have some sort of standards.

If a weaver takes money from another weaver to teach him, then at least it must be understood that the teacher knows more about weaving than the student. This distinction is not too difficult with complete beginners who have never seen a shuttle, provided that the teacher knows how to teach, and not only how to weave. But it is not so simple with more advanced weavers. Let us suppose that I should like to learn a not too common weaving technique such as damask on a double harness. I know about a few weavers here and many more overseas who do this kind of weaving. In any case I'll have to travel and spend some money on this project. But where to go? Which of them is a good craftsman and at the same time a good teacher? I might try and try again, and still be disappointed. In old good times my guild would direct me to a master weaver who specialises in this particular line. Why not now? Why cannot we have a National Guild or even regional Guilds which would test and qualify teachers?

Thus in teaching we could do with some standards concerning both: the craftsmanship and the teaching abilities of those at least who advertise and take money for the tuition.

But this is not all. There is another problem which concerns all weavers who sell their weaving. How many good craftsmen complain about the lack of a market, when at the same time the tourists spend millions every year on worthless "souvenirs". You may say that this is only the result of lack of good taste, and that nothing short of compulsory education of the tourist can change the situation. But is it only the tourist to be blamed? I doubt it. Very often a discriminating traveller wants to bring back from a trip something unique and characteristic for the visited district. And what happens? He buys Mexican pottery at Woolworth, because there is nothing else. Or in higher class - Indian silverware. This silver is good, no doubt about it. Perhaps it is even made by the Indians. But unfortunately it can be bought everywhere although it belongs to the South West only. Leatherware must be made all in one place in huge quantities (because it is so cheap) but it is stamped with the name of any place at all, and the same kind is sold from coast to coast and from the Equator to the North Pole. The style, the workmanship do not count any more - it is the low price which matters.

There is general trend to abuse the tourist, and give him as little as possible for the little he wants to spend. But he wants to spend only little, because he knows that he is cheated anyhow.

And here at least in our own domain we can do something. For that matter we can do two things: insist on selling only high-quality hand-woven and hand-finished articles; and use only design which would be in some way characteristic for the place where it is offered for sale. This does not mean that we should use only traditional patterns and limit ourselves to the drafts which were popular in a given district some two hundred years ago. We may and even must modernise, adapt, convert and transcribe, take into consideration later influences and contemporary trends - but always trying to preserve and stress the local colour.

Obviously such articles will be much more expensive than the mass produced "souvenirs". And here the Weavers' Guilds can help a lot in selling them by issuing certificates of approval in form of

tags attached to each article. These tags should be uniform in design, so that they will become as familiar to the tourist as the sign "AAA" on a motel, and as effectif also.

But to deserve such a seal of approval the article must conform with certain standards. These standards would apply not only to the craftsmanship, but also to the design, its appropriateness in the place of selling, the yarns used, and finally - the price.

In connection with the last point a distinction must be made between hand-woven goods produced: 1-st, as "exclusive"; 2-nd, as "hand-woven" but not exclusive; 3-rd, "hand-loomed" i.e. woven on fly-shuttle looms; and 4-th, "hand-made" on small automatic looms operated by hand or foot, where the quality of the fabric requires slow rate of production. The seal of approval should specify to which of these four categories the article belongs, and the price must be established accordingly.

By "exclusive" goods we understand hand-woven fabrics made for one customer only. One coat length, one set of place-mats, one pair of guest towels, one apron, one skirt, and so on. This is the highest classification, and highest prices should be charged.

The "hand-woven" but not exclusive weaving means that on the same warp more than one set, length, or article are produced, without changing the colours or design. Such articles are produced faster, and therefore are cheaper. In certain cases as for instance place-mats and napkins, they are easier to sell, because one order can be subdivided into large or small sets.

"Hand-loomed" articles are a different problem. If a honest craftsman wants to weave a fabric 72 inches wide he has hardly any choice but to use fly-shuttle. But if he uses his knowledge of fly-shuttle weaving to make 6 parallel napkins, or towels, then he is a mass-producer. It is up to the Guild to condemn articles made on fly-shuttle looms, and which could be made as well on a hand-shuttle loom.

"Hand-made" fabrics woven on automatic looms in very large quantities belong all to the same class: high quality tweeds made of such a yarn which would not stand the speed of a power loom. They work on the principle that the labour (unskilled) being so much, and the yarn so much, it is cheaper to produce hand-woven materials, than to force a power loom to work at a low speed.

Then this is our problem: Distinguish between good and poor teachers of handweaving. Distinguish between good and bad articles offered for sale. Protect good teachers and good craftsmen.

We shall publish two more articles on this subject, where we shall discuss the ways and means.

CRACKLE OLD & NEW.

From the point of view of traditional, conservative weaving, crackle is one of the best weaves for a four harness-frame loom ever invented. Compared with overshot it is stronger and more uniform in texture. Compared with summer-and-winter it has four blocks of pattern instead of two. Any overshot pattern can be copied in crackle.

Crackle is a logical development of a 2:2 twill, particularly of the diamond twill. The direction of threading changes so often that most of the floats skip three warp ends (in plain diamond twill most floats skip 2 ends). No float is longer than 3 unless a mistake has been made in drafting.

Although primarily a pattern weave, in modern weaving crackle gives very good results with mixed warps (warps with yarns of different count and material).

The theory of crackle is a little involved. The threading draft has four distinct units, each unit of four warp ends:

1-st: $\begin{matrix} & x & x & \\ x & x & & x \end{matrix}$; 2-nd: $\begin{matrix} & & x & x \\ x & x & & \end{matrix}$; 3-rd: $\begin{matrix} x & x & & \\ & x & & \end{matrix}$; 4-th: $\begin{matrix} & & & x \\ & & x & x \\ & x & & \end{matrix}$;

Each unit gives one block of the pattern, and can be repeated any number of times. For instance if a block of pattern must be 200 warp ends long, one of the units is taken simply 50 times. But when we change from one block to another the units do not match, and therefore one or two additional heddles (and warp ends, of course) must be inserted between the two blocks. The choice of these incidental heddles must be made in such a way, that the sequence of threading is not interrupted (i.e. it will give tabby on harness-frames 1+3, against 2+4), and that it won't produce floats longer than 3. For instance between the first and the second unit we could insert a heddle on frame 4 (fig.2 A), but it would spoil the tabby. Then if we place

$\begin{matrix} & & \textcircled{x} & & \\ x & x & x & x & x \end{matrix}$ A; $\begin{matrix} & & \textcircled{x} & & x \\ x & x & x & x & \end{matrix}$ B; $\begin{matrix} x & x & \textcircled{x} & x & x \\ & x & \textcircled{x} & & \end{matrix}$ C; $\begin{matrix} & & & \textcircled{x} & & \\ x & x & x & x & x & \end{matrix}$ D; Fig.2

the third frame, it will produce a float of six (fig.2 B). On the frame No.2 it will give 3 heddles on the same frame (Fig.2 C). Then the only place which remains is on frame No.1 (fig.2 D). This general rule can be kept in mind for all combinations of units.

If you prefer ready formulas here they are (for drafts read from left to right): between unit 1 and 2 - incidental on 1; between 2 and 3 - on 2; between 3 and 4 - on 3; between 4 and 1 - on 4. Between 1 and 4 - on 1; between 4 and 3 - on 4; between 3 and 2 - on 3; between 2 and 1 - on 2; between 1 and 3 - two accidentals: on 1 and 2; between 2 and 4 - on 2,3; between 3 and 1 - on 3,2; and

between 4 and 2 - on 4,3. These are all the combinations possible.

Regardless of the threading draft, crackle can be woven in three basic ways. First as traditional crackle, which means one treadle

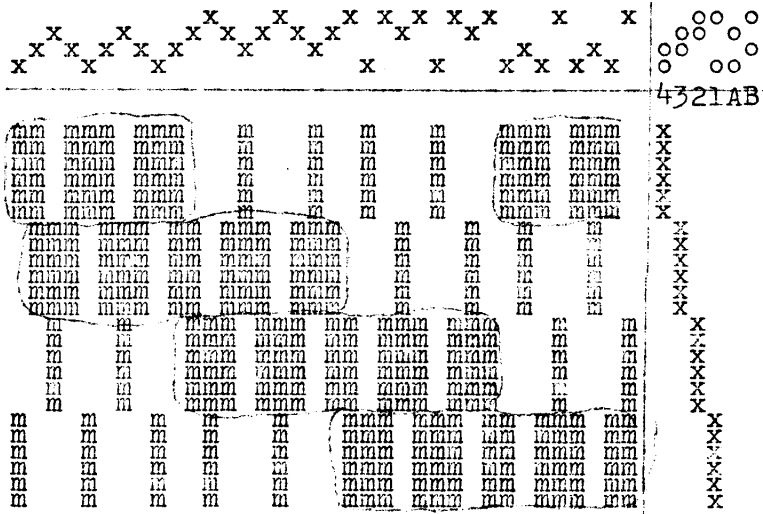


Fig.3

for one block of pattern. Picks of pattern alternate with binder in all following examples, but the binder is not shown on the draw-downs. Traditional crackle is shown in fig.3.

Or it can be woven as plain summer-and-winter, i.e. two treadles alternating all the time, so that the first block is woven on treadles: 4, and 3; the second - on 3 and 2; the third - on 2 and 1, and the fourth: - on 1 and 4, as in Fig.4.

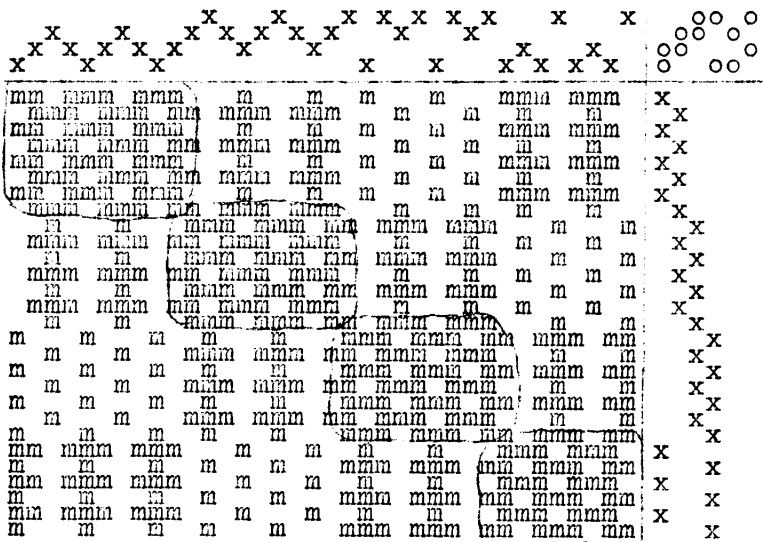


Fig.4

Finally it can be "woven-as-drawn-in", i.e. as traditional overshoot or diamond twill (fig.5).

When we compare these three treading, we may observe that they influence not only the structure of the fabric, but the pattern as well.

In the first treading (fig.3) the blocks of pattern overlap each other by about one half of their length, and there is nothing we can do about it, unless we use only two blocks instead of four; for instance the first and

the third, or the second and the fourth. As far as structure is concerned, this is typical for classical crackle with floats forming vertical columns.

In the second treading (fig.4) the blocks do not overlap. The structure of the blocks is identical with summer-and-winter. Besides the blocks (outlined on the draw-down) we have half-tones corresponding closely to the half-tones in overshoot, but of a different structure.

The third treading (fig.5) gives an effect similar to the second, but the general appearance of the fabric is much more satis-

factory. There is a fine diagonal running across all blocks of pattern, and if the draft is woven as drawn in, this diagonal will cross the whole fabric. However this treading is the most difficult to follow.

How to treadle?

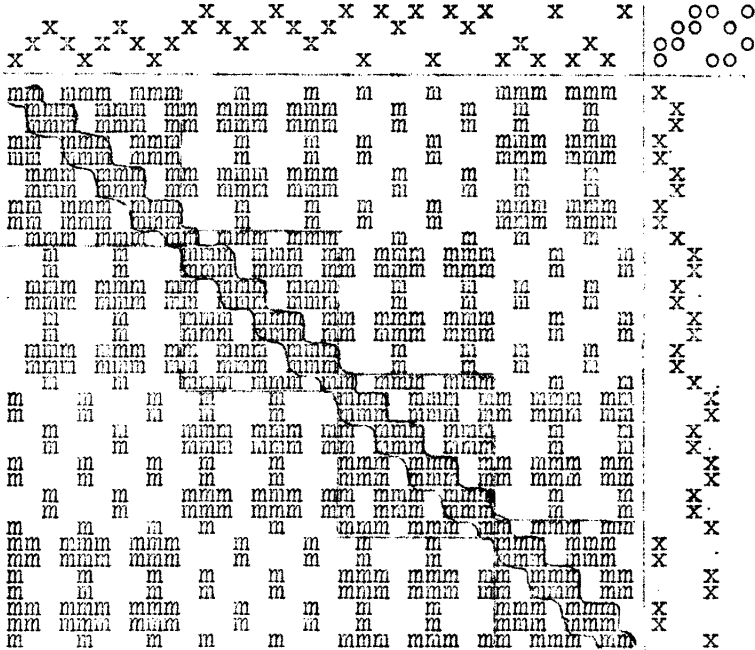


Fig.5

In the first case (fig.3) the depth of blocks or the number of shots of the pattern weft in each block may be any, but it is advisable to use even numbers: 2, 4, 6, etc. Then the units of treading are as follows:

- 1) 4A4B, 2) 3A3B,
- 3) 2A2B, 4) 1A1B.

Each unit can be used any number of times.

In the second case (fig.4) the number of pattern shots should be odd. Otherwise we shall have two shots in the same shed, between two blocks. The units of treading are:

1) 4A3B, 2) 3B2A, 3) 2A1B, 4) 1B4A. But at the end of each block we must repeat the first half of the unit. For instance if the first block is supposed to have 5 units, it will really have 5 and a half: 4A3B4A3B4A3B4A3B4A3B4A. Only then it will match the second or the fourth block.

However if we weave block 3 after 1, or 4 after 2, or 1 after 3, or finally 2 after one - we do not repeat the first two shots of weft. E.g. 4A3B4A3B2A1B2A1B. This sounds a little involved and so it is.

In the third case (fig.5) the units are:

- 1) 4A3B3A4B, 2) 3B2A2B3A, 3) 2A1B1A2B, 4) 1B4A4B1A.

Here as in the former case at the end of each block we must repeat the first two shots of the unit. E.g.: 4A3B3A4B4A3B3A4B4A3B2A2B3A etc. But again, when we go from the first block directly to the third or from the second to the fourth, we do not add these two shots.

When the pattern is woven as drawn in, the weavers with good eyes may forget about the units and all rules of treading, simply by building a straight diagonal on the fabric. When this diagonal comes to a float of 2 the corresponding treadle is used only once, when the float is of three - we make two shots on the same treadle (with binder in between, of course). The relationship between the length of floats and number of picks is well illustrated on fig.5. In fine pattern, where there are several diagonals, one should mark with a pin the one to be followed, and move the pin forward when the weaving progresses.

We may also follow the threading draft on paper, as is often done in case of overshoot, and read the treadling in terms of combinations of harness-frames. For instance in fig.3 reading from the left we shall have: 12, 23, 23, 12, 12, 23, 23, 12, 12, 23, 34, 34, 23, 23, 34, 34, 23, 23, 34, 14, 14, 34, 34, 14, 14, 34, 34, 14, 12, 12, 14, 14, 12, 12, 14.

These three treadlings are the basic ones. They can be used with any threading draft. But they are not the only ones.

When a fabric is used for upholstery, there is no objection to long floats on the wrong side. Therefore we can use a tie-up as in fig.6, which will produce long floats on one side and tabby texture on the other. The pattern will be faintly visible only because of the difference in colour between the pattern weft and the ground.

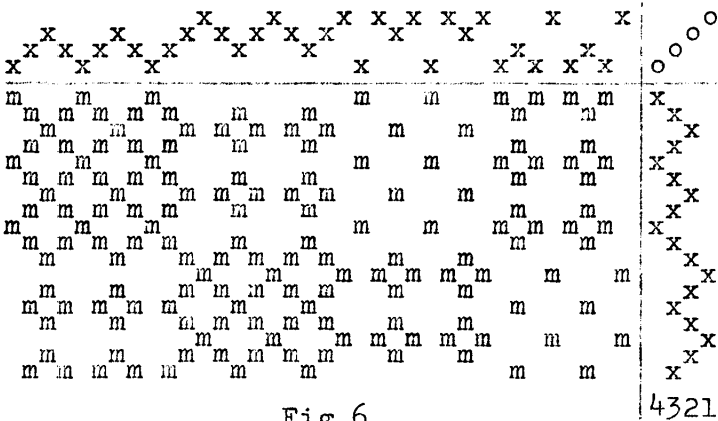


Fig.6.

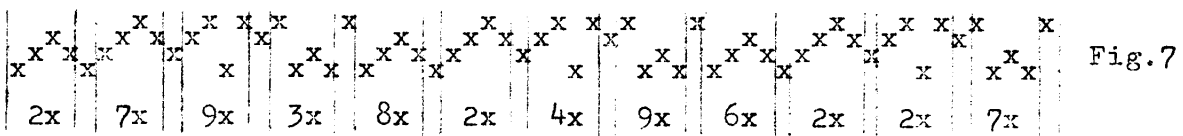
The treadling here is identical with the threading draft, but we do not use tabby for binder. Instead, after

each shot of pattern weft, which must be of a contrasting colour, we make one shot of binder (same colour as warp) on the opposite treadle. I.e. binder on 3 after 1, on 4 after 2, on 1 after 3, and on 2 after 4. Thus complete treadling for the above draft is:

4 2 3 1 2 4 3 1 4 2 3 1 2 4 3 1 4 2 3 1 2 4 1 3 2 4 3 1 2 4 1 3
 2 4 3 1 2 4 1 3 4 2 1 3 2 4 1 3 4 2 1 3 2 4 1 3 4 2 3 1 4 2 1 3
4 2 3 1 4 2 1 3;

The underscored treadles are used for pattern, and the remaining ones for the binder. Both wefts for the pattern and the binder should be of the same count.

Further experiments can be made with the texture of the fabric. Strangely enough the threading draft is here of secondary importance, but large blocks of pattern should be avoided. It is much better to use a "hit-and-miss" pattern as in fig.7.



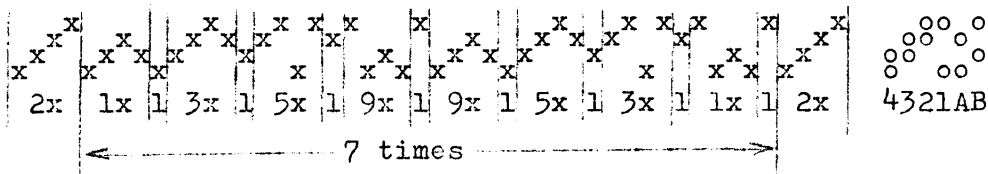
We shall use standard tie-up as in fig.3. The following treadlings can be tried with different yarns:

- 1) 1,2,3,4. 2) 1,3,2,4. 3) 1,2,3,4,3,2. 4) 1,2,1,3,1,4.
 5) 1,2,3,4,2,1,4,3. 6) 1,2,3,2,3,4,3,4,1,4,1,2.

First experiments should be made with uniform yarn, both in warp and weft. Then we can introduce different counts of yarn in weft, and finally in warp as well.

A practical project in Crackle.

Upholstery fabric in small unsymmetrical pattern. Natural single linen No.16 for warp, set at 30 ends per inch. Reed No.15, two ends per dent. The width of warp - 36 inches. The total number of warp ends: 1080. The first and last 4 ends (at the selvages) may be made of 10/2 or 12/2 cotton. The threading draft:



Treading (one repeat): 4A3B3A4B4A - once, 3B2A2B3A - 3 times, 3B - once, 2A1B1A2B - 5 times, 2A - once, 1B4A4B1A - 9 times, 1B - once, 4A3B3A4B - 9 times, 4A - once, 3B2A2B3A - 5 times, 3B - once, 2A1B1A2B - 2 times, 2A1B4A4B1A1B - once.

The weft should be half-bleached single linen No.16. The same shuttle for pattern and binder. Do not use different colours in weft and warp, because the pattern is "dynamic", which simply means that it is moving in one direction and should not be stressed. If soft, natural linen is available for weft, it will do as well as the half-bleached. The pattern will be faintly visible in oblique light, and this is all we want. Those unfamiliar with single linen will find necessary information on this subject in MW No.1 (1951).



DRAFTING.

In the lesson No.4 (MW 16) we have discussed a variation of a pattern in overshoot. The basic pattern with a diagonal was changed into another symmetrical pattern, but without diagonals. This was done on a full draw-down which is seldom practical because of the size of the graph-paper required. Therefore in most cases when studying the possibilities of a pattern we do not use the full threading draft - but the profile.

The number of variations of a pattern (on the same threading and tie-up) is much higher than it could be expected. For instance 3 blocks woven in swivel on four frames give us a choice of 62 (sixty two) symmetrical patterns. Number of variations in multi-harness weaving is often astronomical. The whole subject therefore is rather complicated and with a large number of blocks requires a certain knowledge of higher mathematics (permutations). In our discussion we shall limit ourselves to simple profiles where definite directions can be given as to the method of finding all the variations.

We speak only about symmetrical variations, because first: the number of unsymmetrical ones is always unlimited, even with the simplest profile, and second: because symmetrical patterns can be very easily changed and adapted to our requirements, either by distorting them in treading, or by combining several variations into one pattern.

For instance in fig.1 we have 6 variations possible with a 2 block pattern (damask on 10 frames or Summer-and-Winter on 4).

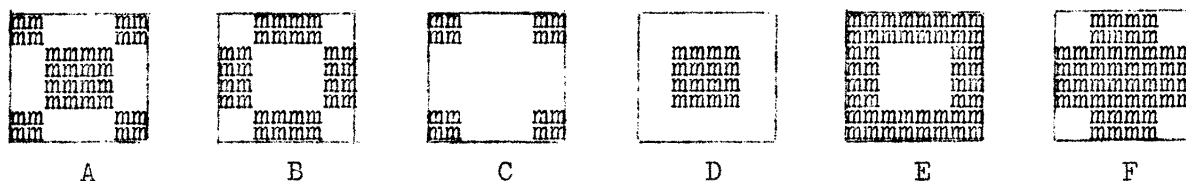


Fig.1

We may never use these patterns but they will serve to figure out other patterns such as:

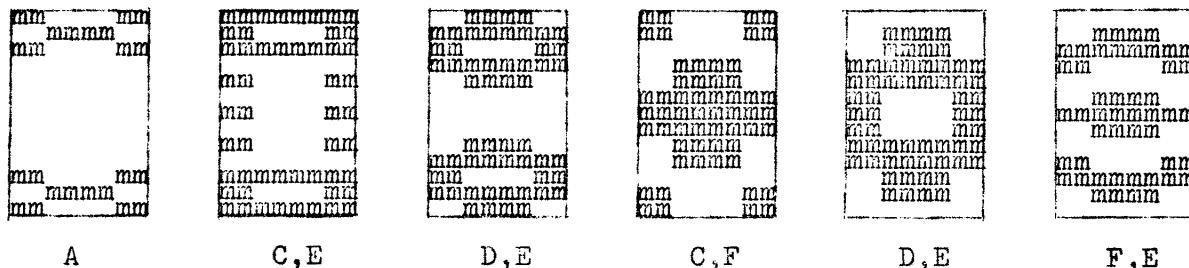
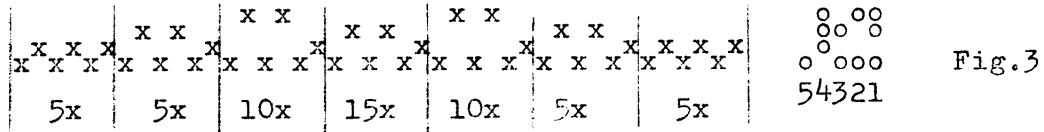


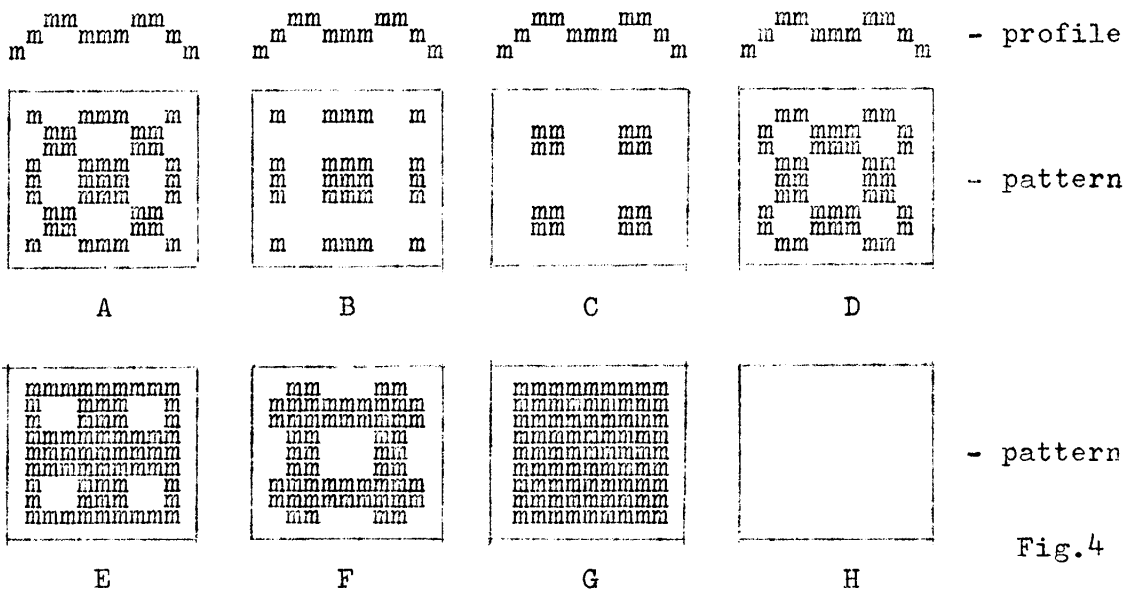
Fig.2

The patterns in fig.2 are all derivate of patterns in fig.1, as indicated under the drawings.

Thus the first step is to find all the basic variations from a profile. Let us suppose that we have a threading draft for Bronson lace as in fig.3.



To make a profile we can take 5 units of the weave for one square, which will make a very small profile, very suitable for our purposes:



The first and the most important variation is A in fig.4. Here the pattern is squared or "woven-as-drawn-in". The profile is squared block by block. We start with the right hand side of the draft. This is one square of plain tabby. Next comes one square of the first block of the pattern; then 2 squares of block 2; then 3 squares of block 1; 2 squares of block 2; one square of block 1, and one square of tabby.

B is the same as A, but where we had the second block, we now weave the same amount of tabby. We may say that it is A minus the second block.

C is derived in the same way from A, but here the first block was replaced with tabby. Thus this is A minus the first block.

D is the reverse of A. Instead of weaving the first block, we weave the second and vice versa. Tabby remains as in A.

E is a derivate of D (and not of A any more). Here we replaced block 2 by both blocks together (treadle 1 instead of 2 in fig.3).

F is also a derivate of D, but here the first block was replaced by the combination of both (treadle 1 instead of 3).

G are both blocks squared together. In our case it is solid lace with a tabby border on all sides.

H is a variation of pattern only from purely mathematical point of view. It is nothing but tabby (both blocks replaced with tabby), and we would not mention it except that we shall need it later on when figuring out three-block patterns.

The table in fig.5 gives directions for treading of all the above variations. T - tabby (treadles 4,5); 1 - first block (treading - 434345); 2 - second block (tr.: 424245); B - both blocks together (tr.: 414145). All other numbers indicate the number of picks of weft.

| | | | | | | | |
|-----|---------|----------|---------|---------|---------|---------|---------|
| A : | T - 30, | 1 - 30, | 2 - 60, | 1 - 90, | 2 - 60, | 1 - 30, | T - 30. |
| B : | T - 30, | 1 - 30, | T - 60, | 1 - 90, | T - 60, | 1 - 30, | T - 30. |
| C : | | T - 60, | 2 - 60, | T - 90, | 2 - 60, | | T - 60. |
| D : | T - 30, | 2 - 30, | 1 - 60, | 2 - 90, | 1 - 60, | 2 - 30, | T - 30. |
| E : | T - 30, | B - 30, | 1 - 60, | B - 90, | 1 - 60, | B - 30, | T - 30. |
| F : | T - 30, | 2 - 30, | B - 60, | 2 - 90, | B - 60, | 2 - 30, | T - 30. |
| G : | T - 30, | B - 270, | | | | | T - 30. |
| H : | T | | | | | | 330. |

Fig.5

The above method will serve in every case of a two-block pattern with a tabby ground. However it must be remembered that the lowest line of the profile does not count here as a block. Tabby may be used not only in borders but between the blocks of pattern as well as in fig.6. In the subsequent variations this tabby is never changed

into anything else. In the two variations (A and G) shown in the draw-down on fig. 6 the horizontal and vertical strips of tabby show between blocks of lace.

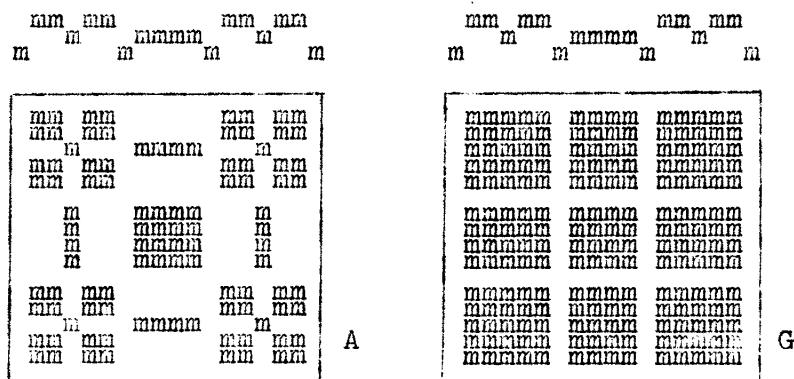


Fig.6

However if this lowest line of the profile represents a real block of pattern which can be used at will, the number of variations increases 8 times.

This case will be discussed in the next lesson of drafting.

INFORMATION SERVICE.

PATTERNS IN WARP.

Any pattern which can be woven in weft can be also woven in warp. This method is used quite often in production, where a long warp is prepared in two or more colours, and the weaving done with one shuttle only. Although there is nothing new in this technique,

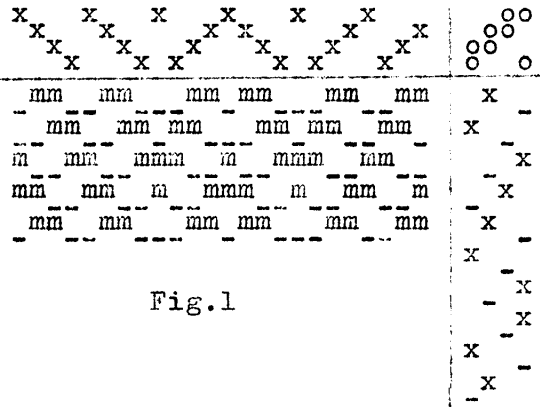


Fig.1

there are very few drafts available in the existing weaving literature for warp-face patterns. On the other hand any draft for diamond twill, crackle, summer-and-winter, and small patterns in overshoot can be easily changed into a warp-face one.

First of all we make a complete draft for a weft-face effect. This is generally known as Bound weaving, or weaving on opposite sheds, or weaving without binder.

Let us take as an example a diamond twill draft (fig.1). One

shot of the dark weft ("x") is always followed by a shot of a lighter weft ("o") made on the opposite shed. If the warp is rather open (for instance 12 ends per inch for 8/2 cotton) and the weft heavier

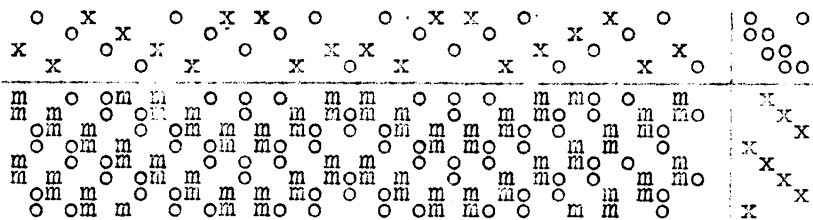


Fig.2

than the warp and loosely spun, it will be quite easy to cover the warp with weft.

Now to change the draft from weft-face into a warp-face one, we simply turn the graph paper by 90°, and read the treadling as threading, and the threading as treadling. This means that now we shall have the warp in two colours and very

closely set, but there will be only one colour and one shuttle in weft. The tie-up is now on the left, but we can transfer it to the right as in fig.3. Here the dark colour in warp is marked "x" and the light colour "o". The warp must be set much closer than usual. Roughly about twice as close as for plain tabby in the same yarn.
