

MASTER
WEAVER

BI-MONTHLY BULLETIN FOR HANDWEAVERS



JUNE 1952

FULFORD · QUEBEC · CANADA

ENCYCLOPEDIA OF HAND-WEAVING

ALL WEAVING TERMS EXPLAINED
IN ALPHABETICAL ORDER

The Encyclopedia contains weaving terms used in the United States as well as in the British Commonwealth. It can serve either as a reference book, or as a handbook of handweaving. Its main purpose is to enable the weaver to read and understand any weaving publication, book, or periodical regardless of its technical level.

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MASTER WEAVER

Z - HANDICRAFTS · FULFORD · QUEBEC · CANADA

June, 1952

No.4

WHAT ABOUT TEXTURE?

"Texere" is a Latin word which means "to weave". Texture then is the result of weaving, and every woven piece has texture. This has been pointed out by highest weaving authorities again and again. Nevertheless the word acquired during the past few years quite a different meaning.

Thus we have at least three meanings of this term. First the obsolete one equal to "weave". Second the more or less modern one used not only in weaving but in all crafts and sciences, and which could be shortly translated as "topography of the surface" or more scientifically as a "three-dimensional description of the surface". The third and so popular with some weavers designates not "texture" but "rough texture". Thus silk woven in tabby has not texture according to this last meaning, but bamboo mixed with wire has.

Why the interest of weavers turned recently to the effects in texture? There were several factors present and it is hard to decide which has been the most important.

On one side the reaction against colonial and Victorian richness of design asked for simplicity. But simplicity gets boring. Thus we compromise by using simple techniques with elaborate yarns. Thus the texture-mania could be considered as a double reaction, first against the elaboratedness of patterns, then against simplicity.

On the other side all possibilities of pattern weaving have been completely explored in the 18-th century. With a hand-operated draw-loom there was complete freedom of design, but unless one is and artist painter such freedom is rather a hindrance than an advantage. An average weaver thus reached the end of a blind alley, and since there was nothing more for him in this particular direction, he started in an entirely new one, not with any regard for simplicity, but only to experiment with new possibilities.

A third approach to this problem is nearly a metaphysical one. It is a known fact that when an individual is thwarted or frustrated, he will go back to his childhood as far as his emotional life is concerned. A whole group or even race may go back thousands of years to its infancy under particularly difficult circumstances. It would not be an exaggeration to say, that our generation of handweavers is a greatly frustrated one. First hardly a century or so ago there was such a technical development of handweaving that we must feel as poor relatives of the 18-th century weavers at the best. Then there is the industrial power weaving which to many of us looks like black magic, and which performs in minutes what we can do only in hours. Under the impact of these two challenging forces we may feel quite justified in returning to the very childhood of weaving, when willow twigs were used both for warp and weft, when rushes were

mixed with the first painfully spun flax fibers, when strips of leather were interwoven with bamboo, and when there were no dyes either vegetable or synthetic.

Whichever of these factors is predominant, we must accept the fact that texture came back into power in its most primitive form. Deploring it will not help us. But on the other hand we can not say light-heartedly: all right then starting tomorrow we shall weave texture. There are certain difficulties.

As long as we use traditional materials in weaving, we are on a safe ground. We take advantage of the experience collected by generations of weavers, and find out without difficulties what yarns to use for each definite purpose, how close to weave them, and what technique to adopt. We know that 8/2 cotton cannot be set less than 18 ends per inch, or it will slip, and that 28 lea linen should not be set closer than 45, or we won't be able to iron it. We have such information for the asking. But if we try to use silk tape for weft, we may spend years before discovering the proper technique of weaving without crumpling it. Or if we try thin copper wire for warp we just do not know where to start, what size to take, how close to set it, what to use for weft, and so on, and so on. Even when we overcome all technical difficulties, there still remains the question how the "fabric" will behave, when in use. The appearance can be judged when the fabric is still on the loom. But will it be heavy enough, resistant to tension, torsion, friction, action of heat and cold, moisture, chemicals. Will it be easy to make into whatever we intend it for? Will it be easy to clean?

To answer these questions in advance i.e. before we spoil a piece of weaving, would be rather desirable and it can be done in two ways only. One is of learning as much as possible about the mechanics of weaving, and about the properties of all materials which could be used for weaving. The other way is of experimenting with the same materials, studying their behaviour during weaving as well as afterwards. The first requires a lot of theoretical knowledge, higher mathematics included, as well as physics and chemistry, but it may prove the more efficient in the long run. The second, of trial and error, purely practical one, requires a lot of common sense, and a lot of time. There is no third way.

Of course, we can copy what others did, but then where is the point? Where is the creativeness, the satisfaction of overcoming obstacles? Or yet we can produce white elephants by mixing indiscriminately most inappropriate materials in hope that sooner or later something will come out of it. Unfortunately the calculus of probability is against us. At the best we shall produce "daring", "interesting" or just "cute" articles, absolutely useless otherwise.

Perhaps the best approach for most weavers would be to use both theoretical and practical way at the same time. Learn a lot, and experiment a lot. If we know already a little about the physical and chemical properties of materials, all the better.

Let us take a practical problem and follow different stages of reasoning and experimenting until a satisfactory solution is reached. For instance we would like to make something which could be used as window blinds. Not too bulky so it could be wound on a roller above the window. Nearly opaque but not quite. Heavy enough so it will resist a light breeze. Resistant to wear. Easy to clean.

Thin and wide strips of something or other suggest themselves for weft. It is true that we could just weave a very firm cotton fabric,

impregnate it with elastic black paint, and we would have something looking like a 85¢ mail-order house idea of a window blind. But we want texture - so the next best are strips. We already feel that the warp part of the problem will be comparatively easy. But what about those strips? They can be made of metal. Then they can be as thin as required, and even thinner. Heavy enough too, and not transparent. But we have two objections: first that they most probably will cut the warp. If they are flat they will cut it when rolled. If they are slightly rounded (like a pocket measuring tape) they will do the same when the blind is unrolled. The other objection is that they have to be perfectly straight, since any tendency to bend will ruin the shape of the blind. Now, metals are easy to bend, and very difficult to get straightened up. The possible third objection is that only expensive metals are resistant to rusting and other chemical reactions. Thus metals are out.

We have then plastics and wood. There is no doubt that among the multitude of plastics there is one, which would just answer our needs. But how to find it? We might undertake just for this particular purpose an extensive study of plastics. On the other hand the plastic-makers might publish a popular book on plastics, and their physical and chemical properties. As far as we know, they did not do it so far. Thus, for us at least the plastics are tricky and unreliable. Some of them curl in the sunshine, some burn only too happily, some are too soft, other too brittle. We might however experiment with some, and perhaps find the solution.

Now the wood. It seems quite simple to make or order thin strips of wood which will fulfill all the conditions. They will not damage the warp, will stay straight unless broken, and can be made as heavy or light as desired. There is one disadvantage however: the wood warps for various reasons. One of them is humidity. The blind may get wet on one side, and at any rate there is usually more moisture on one side of the blind than on the other. To prevent the wood from warping under the effect of moisture we may impregnate it with oil, paint or varnish, to fill the moisture-absorbing pores in the wood. This is the easy part of it - we may treat the strips with linseed oil, or stain and varnish them before weaving. Still there remains a factor which may cause trouble later on. A blind is heated unevenly on both sides: sunshine on the outside in summer, and the heat from the inside in winter. This may provoke temporary or permanent warping of wood. And here our theoretical knowledge will not help us any more. We have either to take the risk or to experiment. We can make a makeshift blind of several kinds of wood, treated in different way, and of different thickness, and observe its behaviour when submitted to heat on one side.

The rest will be easy. We shall soon find out that the strips will have to have tapered edges, or it will be impossible to weave them tightly. That the warp must be hard twist cotton, set far apart in pairs. That the best weave will be gauze (or leno) because it will prevent the warp from slipping on the "weft".

The above example shows how involved are the simplest problems in texture for a seriously minded weaver. And so they should be if they are worth of being solved at all. Except for the creators of white elephants, of course.

HUCKABACK LACE

The weave which we are going to describe has two advantages when compared with so called "Bronson" or "Swedish" lace. First - it has balanced tie-up and can be woven on any counterbalanced loom as easily as twill. Second- it will give the "lacey" effect regardless of the yarn used, when the former gives best results with linen and only after washing.

The best known huckaback is the 10 by 10 one (a repeat of 10 ends in threading and 10 picks in treadling) shown in fig.1.

```

m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
m m m m m
    
```

Fig.1

Nevertheless there are other huckabacks such as 6x6 or 14x14. The "6x6" one is probably the best for our lace (fig.2). It has only horizontal floats on one side of the fabric, and only vertical ones on the other (fig.3). When we "turn" it i.e. get floats in both directions on the same side of the fabric and in the same row, we shall get the fabric shown on fig.4. In reality it will look quite different.

```

m m m
m m m
m m m
m m m
m m m
    
```

Fig.2

```

m m m
m m m
m m m
m m m
m m m
    
```

Fig.3

```

m m m
m m m
m m m
m m m
m m m
    
```

Fig.4

What happens is that the ends: "a", "b", and "c" come very closely together, and so do the ends "d", "e", and "f". The same takes place in the weft: first three shots will separate from the next three. A hole right in the center of each repeat will appear even without washing.

```

x x x o o o
x x x o o o
x x x o o o
m m m x x
m m m x x
m m m x x
m m m x x
    
```

Fig.5

Applying the principles of fabric analysis (see the 2-nd issue) we shall get the full draft. It gives lace on the whole surface of the woven fabric. The edges will be rather poor. To improve them we may use either a plain threading

```

x x x x x x x x x x
x x x x x x x x x x
    
```

Fig.6

```

x x x x x x x x x x
x x x x x x x x x x
    
```

Fig.7

(fig.6), or tabby threading for huck (fig.7). Since we can weave tabby at the same time as the lace without additional heddle-frames, we can make simple one-block-plus-ground patterns such as in fig.8.

```

m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
    
```

a

```

m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
    
```

b

```

m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
m m m m m m m m m
    
```

c

Fig.8

If we take as an example fig.8 b - the corresponding profile is:
 m m m m m m m m m (lower line tabby, upper line - lace), and the full draft:

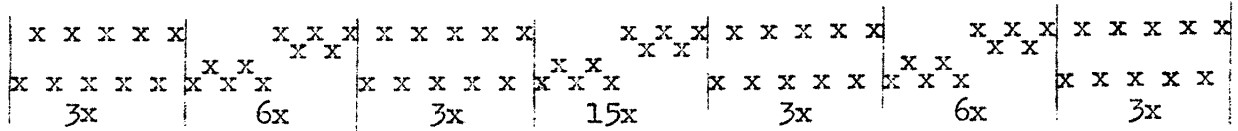
```

x x x x x x x x x x x x x x x x
x x x x x x x x x x x x x x x x
5x 20x 5x 5x 5x 20x 5x
    
```

tie-up as in fig.5
 treadling as-drawn-in

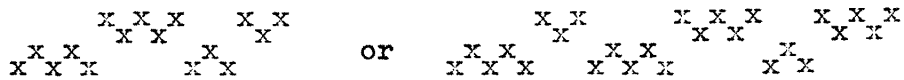
Fig.9

Should a coarser texture of the lace be required we can use as a basic draft a 10x10 huckaback. For instance fig.8 "a" in a 10x10 huck will have the following draft (Fig.10):



the tie-up: $\begin{matrix} o & o \\ o & o \end{matrix}$ treadling: 2,3 (15x), 2424231313 (6x), 2,3 (15x) etc.
4321 Fig.10

It is better not to go beyond the 10x10 huck since the weave is rather open, and there may be considerable slippage, but 6x6 and 10x10 hucks may be used in one draft. E.g.:



the treadling in the first case will be: 2424231313242313 and in the second: 24242313242423131324231313.

The sett of warp depends on the ration between the amount of the tabby and of the lace in a woven piece. If there is mostly tabby and little lace, the sett should be as for tabby. If there is mostly lace, it should be slightly closer.

In pieces woven entirely in lace, the lace effect can be further enhanced by special slaying. For instance with 6x6 huck it should be: 3-0-3-0, and with 10x10 huck: either 5-0-5-0, or 1-3-1-1-3-1, as in fig.11.

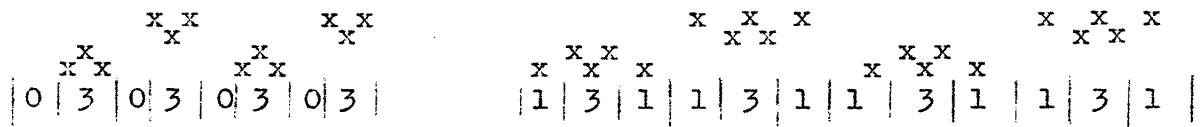
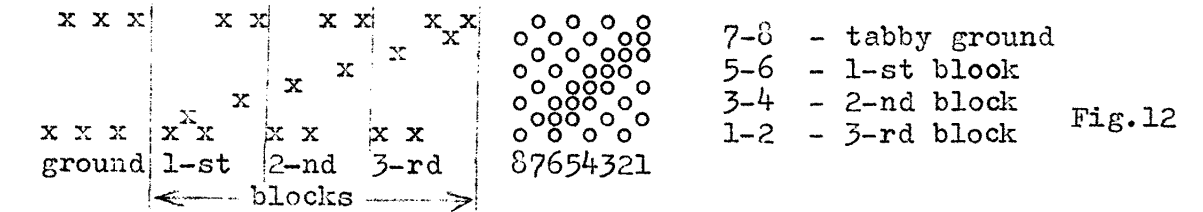


Fig.11

For more than one-block-plus-ground patterns, more heddle-frames are necessary. It takes two additional frames for every additional block of pattern. Thus all patterns discussed in our first issue (page 9) may be woven on 8 frames. Fig 12 gives units of weave for the ground and the three blocks, as well as the tie-up.



When combinations of blocks are woven (more than one block at a time) the tie-up may become very complicated, and require more treadles than available. In such a case a simplified tie-up may be resorted to. The pattern treadles will be used simultaneously with one of the tabby treadles. For instance the last pattern on page 10 (1-st issue of M.W.) requires combinations of

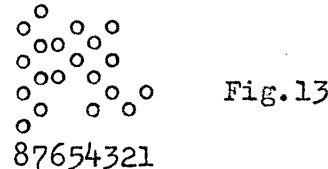


Fig.13

blocks: 2 + 3, 1 + 2 + 3, and separately block 1. The corresponding tie-up is shown in Fig. 13. Blocks 2+3 are woven on treadles 5+7, and 6+8. Blocks 1+2+3 on tr.: 3+7, and 4+8. Block 1 - on tr. 1+7, and 2+8. The tabby treadles are used alone alternately with the pattern shots obtained with the above combinations of treadles. For instance complete treadling for one repeat of blocks 2+3 will be: 8, 5+7, 8, 7, 6+8, 7.

Interesting colour combinations will be obtained by threading the frames 1 and 4 (fig. 5, 9, 10, 11) or 1 and 8 (fig. 12) in one colour - rather neutral - and the remaining frames in another more pronounced. The same colours must be used for weft: the neutral for tabby, and the other for the picks which form floats. Since however the effect we are aiming at is lace and not pattern, these two colours should belong to the same range, or in other words should be two shades of the same colour, for instance: beige and light brown, blue and navy, etc.

In weaving the beating must be adjusted to the pattern woven. Whenever there is a large amount of lace in one row, the beating must be light, and when there is comparatively little lace it is much stronger. The heaviest beating is for tabby alone. If there is a tabby border around the woven piece it is quite easy to check the strength of beating: the number of picks per inch should be always the same regardless of the part of pattern woven. The same of course applies to other weaves which give lace-effect.

WEAVING TERMINOLOGY

In connection with our note about the "Honeycomb=Waffle" misunderstanding, it has been pointed out to us, that the sentence we used then: "So far we have found that Honeycomb and Waffle are the same weaves" is misleading since it implies that there is only one weave under discussion. Obviously there are two weaves:

1. Halkrus - without a clear English equivalent, called "honeycomb" by many American handweavers, or "Lacey-Weave" by some.
2. Honeycomb weave, called Waffle (from Swedish Vaffel) by many handweavers. However the name "Honeycomb" is used exclusively by both British and American weaving industry.

We quite agree that there is a confusion, and this is why we write on this subject. The name of "Honeycomb" should be applied to one of these weaves only, but since the industry adapted Honeycomb for what we call Waffle, and did it a long-time ago, we have hardly any choice.

We have received from Mrs. Marguerite P. Davison (author of the "A Handweaver's Pattern Book" and other volumes) very interesting remarks about the historical background of both weaves which we quote with her permission:

"As to honey-comb, I do not find waffle weave used nor mentioned in any of the old books. In the Abslam Hecht book... published in 1849, he shows a bed spread and calls it honeycomb. Honeycomb weave, as distinct from Spetsvav, as used in U.S. is always just a plain alternating spot weave *), sometimes with stripes between blocks of the spots. It is really a treadling which may be applied to any overshot pattern, and differs in the old use only by... a heavy thread to define the spots, while the spetsvav uses one of the same grist as the warp."

*) translation of Spetsvav. Ed.

CLASPED WEFTS.

(or SKYSCRAPERS)

This is the only free weave which can be performed at a reasonable speed. It can be woven on any loom, and in any texture. It can be combined with any technique or pattern. It does not require any special equipment. It is excellent in teaching, since the results are very spectacular and encourage the student.

The principle is not very involved. In each shed instead of a single weft, there are two coming from opposite directions. They interlock or clasp each other and return to the same side of the shed from which they came. The point of interlocking can be shifted along the shed by pulling at one of the wefts. Thus any pattern which requires only two colours in one row can be woven easily. Fig.2 (page 9) a, b, c, and d - shows examples of such patterns.

Equipment necessary for "clasped wefts" consists of the loom, a small bobbin rack, and of several quills (twice as many as colours used). Quills should be much shorter than the shuttle-spindle, so that the weft will unwind without any resistance or friction.

The weft is wound on the quills as usual, each colour on two quills. One of them is placed in a shuttle, the other on the bobbin rack. Thus if we have four colours in the pattern, there will be four shuttles and four bobbins or quills on the rack.

The rack should be placed to the left of the loom (fig.1) near

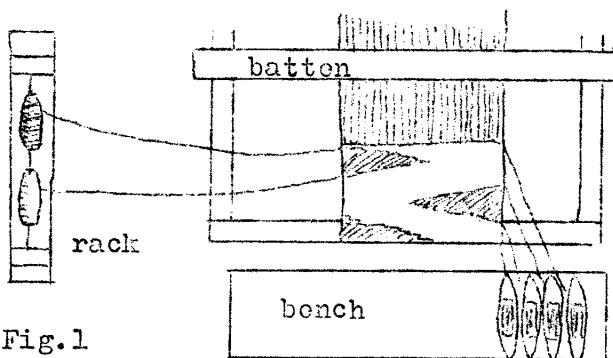


Fig.1

enough for the weaver to reach it without getting up, but too close. The quills should be at about the same height as the weaver's shoulders. All shuttles are always on the right hand side of the weaver on the bench, with the exception of the one in use at the moment.

After checking up that all wefts both on the rack and in the shuttles unwind freely, we

tie the ends of these on the rack to the warp at the left hand selvedge, and then weave an inch or so of plain tabby. Now, supposing that we are going to weave the pattern on fig.2 "a" which asks for white on the left and beige on the right, we pass the left hand under the white thread which comes from the rack and over all other colours, and keep this hand ready to catch the shuttle. With the right hand we throw the shuttle with beige weft, catch it, pull it over the white thread on the left, and throw back into the same shed. We shall notice that both wefts are clasped now and that we can move their point of crossing each other by pulling on the white or on the beige. After finding the proper place of crossing we change the shed and beat. It is rather important to change the shed before beating, or the wefts may shift considerably from their original position. The whole operation is repeated in the next shed, and so on, as long as these two colours are used.

When the point marked "A" on fig.2a is reached, we replace the beige shuttle with the brown one, and the white weft one the rack with

with beige. At "B" we change to white in the shuttle, and beige from the rack. At "C" - shuttle: beige, rack: white. At "D" shuttle: brown, rack: beige. At "E" shuttle: beige, rack: white. At "F" shuttle: white, rack: beige, and so on.

The above pattern is one of the easiest. Although the bands of colours should be of about the same thickness, their sides should be rather irregular, and no time should be spent on careful adjusting of the wefts. With a little practice it can be woven as fast as any pattern weave. Other patterns in fig.2 may require more time, particularly the ones with vertical lines.

In general vertical lines should not be too straight, or a ridge will result. They should be rather blurred by pulling alternate picks of weft a little too much to the left and to the right. Diagonals are easy to make and they do not produce ridges even if geometrically straight.

When plain ground in one colour is wanted (fig.2b from "A" to "B") the weft used for this part of the fabric must be doubled to look exactly as the weft in the pattern. Or if there is not much of the ground, the shuttle of one colour may be crossed with the weft from the rack of the same colour.

Binder may be used between rows of pattern, but it should be very fine compared to the pattern weft, and of a neutral colour. The resulting effect will be one of a ribbed fabric.

The yarn used is of a certain importance. For instance it will be noticed that the edges are pulled in more than in ordinary weaving. Consequently linen warp is not indicated. The weft should be smooth, and slide easily. Here again linen is poor material, particularly single linen. Cotton is the best, rayon and wool - second best. Metallics can be used with care. In all cases however there is one most important condition: the two wefts used in the same shed must have the same direction of twist, and possibly the same degree of twist. Otherwise they clasp each other so firmly that they can not be moved at all. Their grist should be identical for different reasons. In other words the wefts should be of the same yarn, grist, twist - all through.

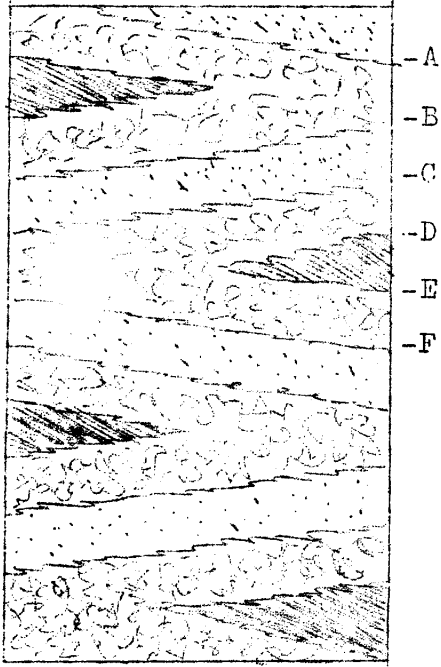
For the first experiments with "clasped wefts" one should start on a rather narrow warp, but it is quite possible to weave even bedspreads in this technique. The speed of weaving will however diminish quite rapidly with the growing width of warp.

Three colours in the shed. There are two methods of doing it:

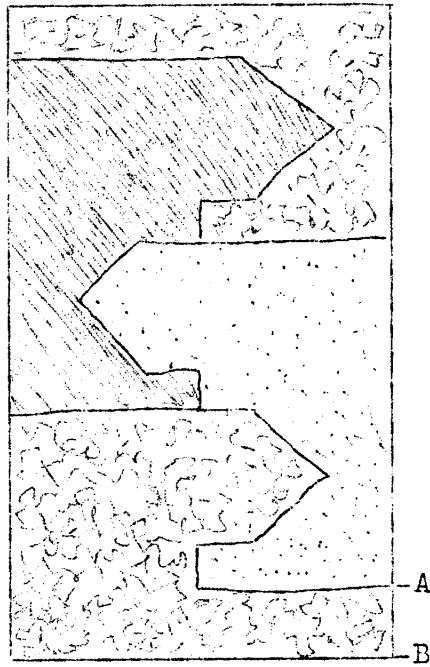
1. Set up the loom for double-width fabric with the selvages on the left. Now two colours can be placed on the rack, and they will make the borders of the pattern. The third colour will be in the shuttle. A mark will be left in the fold, no matter how carefully the piece is woven. Patterns made in this way may be quite attractive (fig.2 "e").
2. Place a bobbin rack on each side of the loom. Rather strong colours on the racks, and neutral ones in the shuttle or shuttles. Now we throw the shuttle with let us say beige from the right to the left, catch red from the left hand rack, carry it part way into the shed, then catch black from the right hand rack and pull it into the same shed, then change and beat. We shall have three wefts in one shed: on the left two red with one beige, in the middle three beige, on the right two blacks and one beige. It is obvious now why strong colours should not be used in the shuttle: they would kill the more subdued shades. Fig.2 "f" shows a pattern suitable for this last technique.

C L A S P E D W E F T S

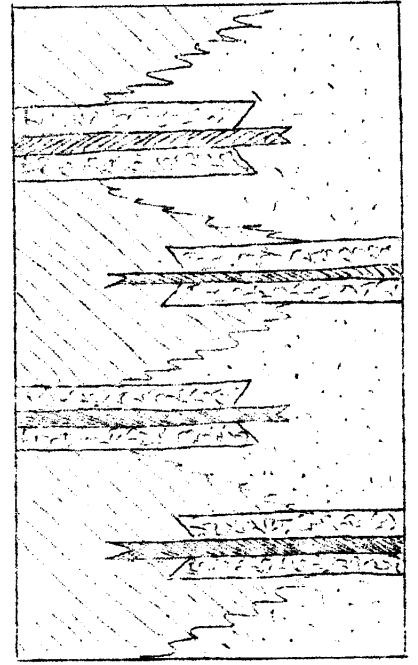
Fig.2



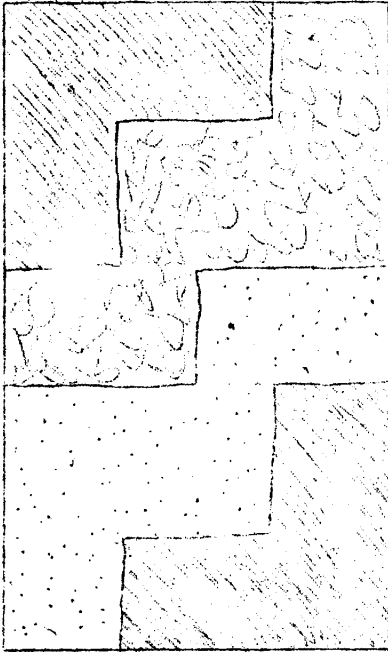
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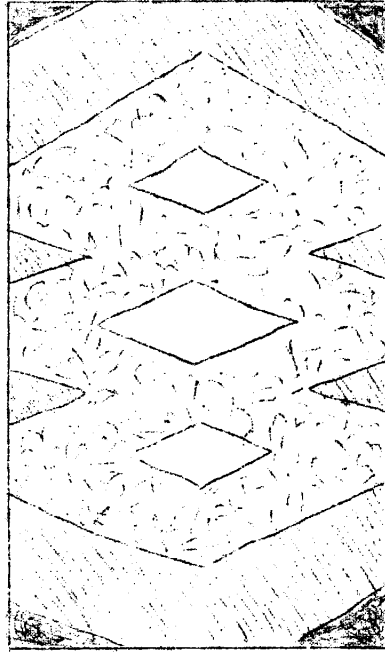
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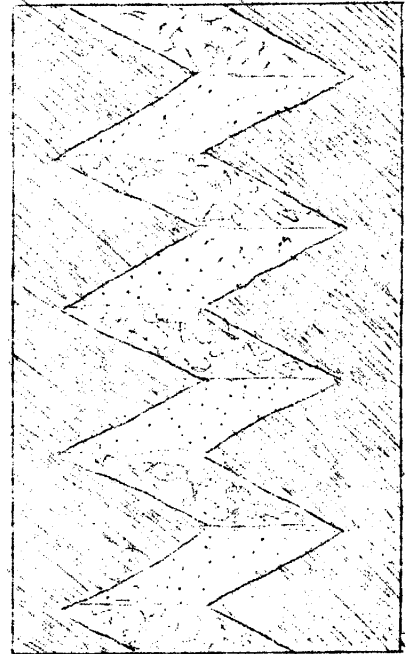
c



d



e



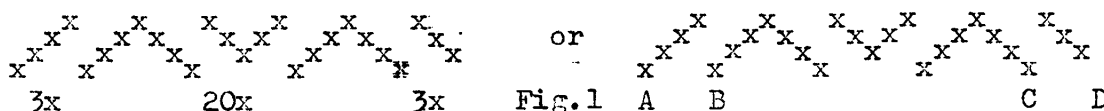
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SHORT DRAFTS

(this article has been suggested by our readers in connection with "Pattern Analysis" in MW 3)

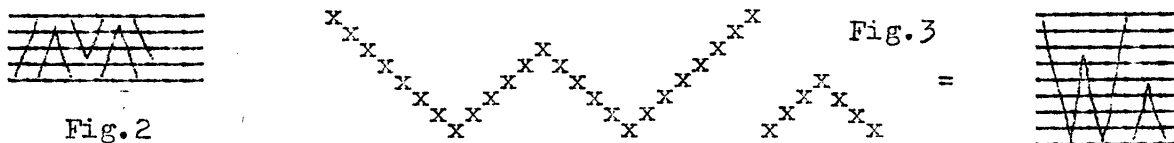
Nearly every draft used in weaving is shortened in some way. A complete draft without any condensation for 1000 warp ends would be 100 inches long if drawn on graph paper with 10 divisions to the inch. Consequently it is necessary to abbreviate the drafts. But there are so many ways of doing it that it is not always clear what a given short draft really means. We shall make here a review of all common methods of condensing drafts, and of developing them back to the form suitable for threading.

The first step in saving the graph paper is to give only one repeat of every part of the draft, and mark in some way how many times each repeat is to be used. For instance in case of a diamond twill with plain twill borders we may write:



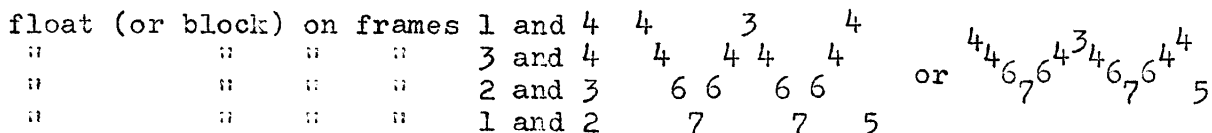
in the first case the number of repetitions is written directly under the draft, in the second we shall find somewhere beside the draft such directions: "thread from A to B 3 times, from B to C 20 times, from C to D 3 times".

This is already a considerable economy, since instead of 384 divisions of the graph paper we need only 26. But even this may be shortened further. In old drafts for twills we find the following way of writing: (fig. 2). This is a "short draft" of the draft in Fig. 1.

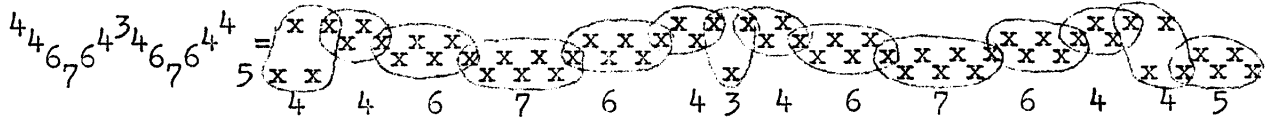


Here the economy is particularly obvious in case of a large number of heddle-frames (fig. 3).

In case of overshoot we do not gain anything by using the above method since the changes in direction of the diagonals are so frequent that indicating them by a zig-zag line is not more economical than the full draft. Thus a new idea is used. The principle of overshoot is to make patterns from floats of different length, and what really matters is only the length of these floats and their relative positions. There are only four combinations of heddle-frames which give overshoot floats: 1-2, 2-3, 3-4, 4-1. Thus we may make our short draft on four lines corresponding to these four combinations, and mark each float by a number indicating its length in warp ends skipped:



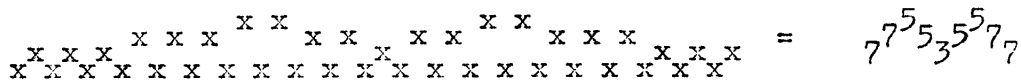
The full draft corresponding to this short one will be:



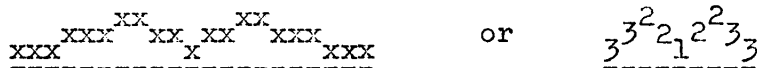
Although we have agreed that the lowest line in the short draft is 1-2, the second 2-3, and so on, it would not matter in the least if we decided to change the order of blocks, for instance: 1-4, 1-2, 2-3, 3-4 or 2-3, 3-4, 4-1, 1-2. It is true that after developing it into the full draft we would have apparently different drafts, but the patterns represented by these drafts would be always the same. Since it is immaterial how we write a short overshoot draft, as long as the length of floats is correctly shown, there is but one step to make the draft still shorter, i.e. to write the numbers in one row: 4, 4, 6, 7, 6, 4, 3, 4, 6, 7, 6, 4, 4, 5. In overshoot the length of floats has an even number when the blocks follow a diagonal, and an odd number, when the diagonal changes its direction. Thus when developing the above short draft we shall know that we have to change the direction at 7, 3, 7, and 5.

In symmetrical patterns we can further cut the draft by one half by writing only half of the short draft and indicating the centers of symmetry by underlining the corresponding blocks: 3, 4, 6, 7, 4, 5. This means that after 5 we reverse the draft until we come to 3, which is already the beginning of the next repeat. Thus in all we have only 7 figures written in one row, instead of 55 crosses written on four lines.

Spot weaves (all-over spots, etc.) Here the situation is very similar to overshoot except that the blocks of pattern are not written on frames 1-2, 2-3, 3-4, 4-1, but on the following combinations: 1-2, 1-3, and 1-4. The relationship between the full and the short drafts is as follows:



A variation of this drafts found often in old literature consists on marking the first heddle-frame by a continuous line, and indicating not the length of pattern floats, but the number of heddles on the pattern frames (2,3,4) by crosses, squares or numbers:



Weaves with "units". So far we have been speaking about weaves which have no definite units of weave. By unit we understand the shortest repeat which has still all the characteristics of the weave. Now we shall discuss the weaves which have more uniform texture. Each of them has as many units as there are blocks of pattern in the draft. Thus:

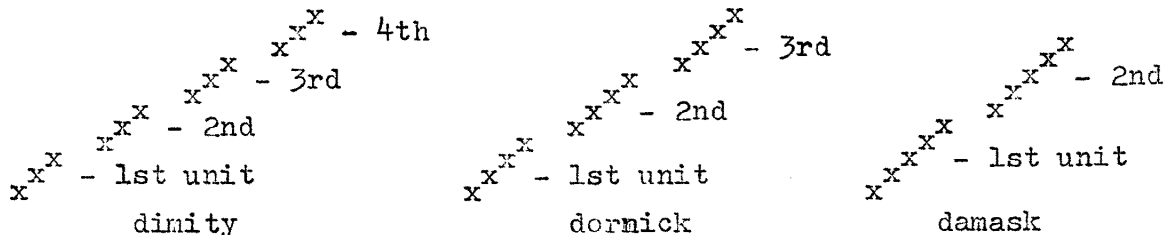
Summer-and-Winter has only two units in drafts for 4 frames: 1323 and 1424, but it will have 6 when woven on 8 frames: 1323, 1424, 1525, 1626, 1727, 1828. Numbers are those of heddle-frames.

Crackle has four units for 4 frames: 1232, 2343, 3414, 4121. Besides these there are "connecting" heddles between blocks.

Lace (Spot, Bronson, or Swedish) has two units of pattern in 4-frame drafts, but it has also the ground. It is advisable to consider 6 or 8 ends of the ground as a unit, too: ground - 121212, 1-st block - 131312, 2-nd block - 141412, or ground - 12121212, 1-st block - 13131312, 2-nd block - 14141412.

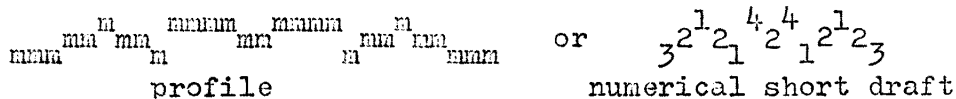
Huckaback has only one unit of pattern on 4-frame drafts, and one unit of ground. For instance - ground: 1414141414, pattern: 1212143434, or ground: 141414, pattern 121434.

Turned twills have all units identical but written on different frames. E.g. dimity (1:2 turned twill) on 12 frames has 4 units, dornick on 12 frames - 3 units, damask on 10 frames - 2 units:

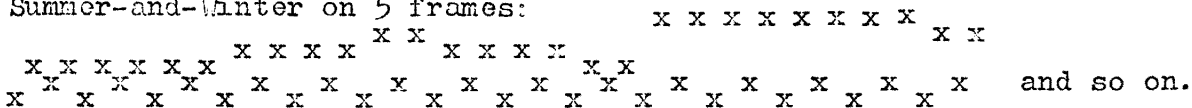


The simplest double weave will have the same units as dornick. The tie-up of course will be different.

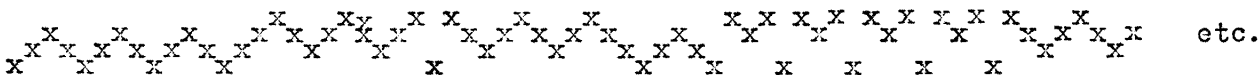
All the above weaves have the same short drafts. The number of identical units to be used in one sequence is indicated either by an appropriate number of squares in one row (graphical short draft or profile), or by a cipher (numerical short draft):



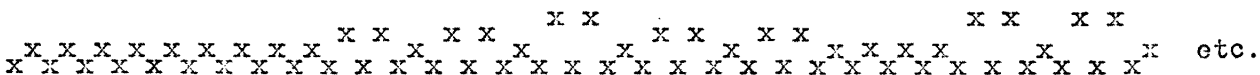
This kind of short draft does not mean any particular weave, but only a certain pattern. It can be developed into any of the above mentioned weaves by replacing each square by one unit of weave. Thus it can be Summer-and-Winter on 5 frames:



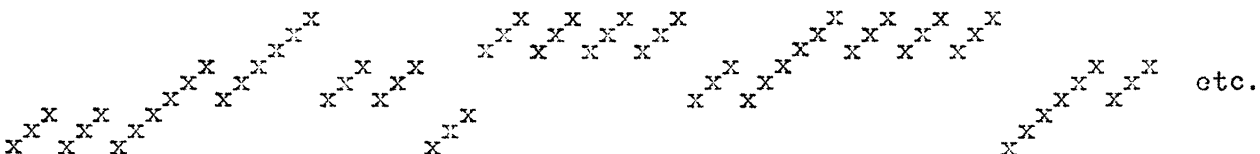
or crackle on 4 frames:



or lace on 4 frames if the lowest line of the draft is the ground:



or dimity on 9 frames:



In the last case the same short drafts as for diamond twills can be used (fig.3) but they are much longer than the profile or numerical drafts.

Other short drafts of historical value have been discussed in Mary Atwater's "Shuttlecraft Book of American Handweaving".

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