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WEAVER

BULLETIN FOR HANDWEAVERS

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# MASTER WEAVER

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May, 1954

No.15

## MODERN WEAVING

There is a strange tendency among the younger weavers to weave only "modern" textiles. Their demands are so hard to satisfy, that perhaps it will be worth while to think a little about this subject of both "modern" and "contemporary" weaving.

Let us start with the easier problem of things "contemporary". We may assure all weavers, that whatever they weave - whether it is a copy of old chinese silk, a colonial coverlet, or a place-mat of cellophane and cat's hair - is always contemporary. No matter how hard they try - they cannot do anything else, - because contemporary means only that it has been woven in our times; except when we write and speak about past ages, then the same word means a piece of work executed in those times, because the whole expression should be always: contemporary with. Its colloquial meaning when the "with" is omitted is about the same as "present" and may extend as far back as one year when one speaks about cybernetics, or 50 years when one speaks about art. So really there is no problem here - rather a misunderstanding.

"Modern" is anything which conforms more or less to the requirements of the contemporary style, or fashion, or methods, or way of life - provided that it did not exist for too long a period of time. For instance the habit of eating, although prevailing, is not modern. However if something has been abandoned as a bad job, and then much later on re-discovered - it can be modern again. Thus Hindu Yoga is, or was modern not long ago, even if it is thousands of years old. The same can be said about so called "texture" weaving: it was "modern" some ten thousand years ago, and is modern again. With hats, length of dresses, and colour of cars it does not take quite so long. Things of this kind are modern on and off. So here we have a real problem.

It seems that most things which at any time have been called modern - do not last. The word has been used for the first time not so long ago, and we cannot think about anything to which it has been applied, and which would survive more than a decade or two. Modern physics of the 20-ties are pathetic to us, modern music of the same period became classic if it survived at all, and modern dresses as old as that are completely ridiculous.

A very small percentage of things which at any time were modern survives, but on the condition that they won't be modern any more, they become classic instead, and are generally recognised as being valuable - whether rightly or wrongly is another story.

Looking at this problem from purely statistical point of view, it seems that whoever engages in the pursuit of modernity has very small chances of achieving anything of value. His work may create sensation for a time, but it will be forgotten in a decade.

Why then the general trend to be modern. This trend is just one component of our tendency to create. To create useful and valuable things. There is creativeness even in reproducing, or copying, as long as the final product is good. But there is much more creativeness and proportionately more satisfaction when the product is improved in some way. This improved product is new, and it is modern. Thus a modern car is at least from a certain point of view better than an old model. The same applies to a modern radio, modern telescope, modern typewriter. It won't last because there will come still better, newer, and more modern products, but it has played at least for a short time an important role of a step toward a higher stage.

Thus we come slowly to the definition of "modern". It is something new and better at the same time. Not just new. In my opinion we often abuse the term by applying it to things which are only new, but in no way better. This confusion of terms results often in creating completely worthless products whose only claim to modernity is that they are different and therefore new. In technology such an approach would not work. If we designed a new car which would run only sideways, it certainly would be different and new, but not necessarily modern.

In arts and crafts such a distinction is not as easy as that. One might say that anything new is modern here. But is it? Even in pure art there must be some justification for being different, for not following the tradition. This justification may be purely subjective, but it can not be completely dispensed with. If the artist is really happier when painting one eye under the nose, he has got something, because after all people are not so completely different from one another and there is a chance that some of his admirers will feel the same way as the painter. But if he works in cold blood and tries to be original only to increase his chances to sell, he can not hope to fool all the people all the time.

In weaving the criterions are simpler. A piece of weaving must serve some practical purpose. Even a piece of tapestry hanging on the wall must conform to many requirements, besides its artistic value. And if it has claims to being modern then in some respect it must be better than other fabrics made for the same purpose. It may be stronger, or cheaper, or fit better a modern interior, or be easier to clean - but in some way it must be better. Otherwise it is only different.

There is a third category of modern weaving. This is: copying another modern weaving.

Thus we have a choice between: modern because better, modern because different, and modern because similar to another modern weaving.

Of these three the first has still only a small chance of survival, but without it there would be no progress. The second has none, and the third is too absurd to be mentioned. Copying old masters can teach us a lot, even if the copy has no value in itself. But copying pioneers who are still groping in the dark, and will be decimated before their efforts will be noticed, is not even funny.

We do not attempt to give advice to the pioneers, except that they must be equipped with perfect knowledge of both industrial and hand weaving, and of many other things from physics to psychology. Otherwise they are not pioneers at all, and they belong in the second group of those who are different for the heck of it. And anyhow who can advise the pioneers, who are supposed to be the leaders?

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## FROM THE CLASSICS

### "Of the Boiling and Cleansing of Linen Yarn."

by Alexander Peddie, Glasgow, 1822.

Linen yarn before being put into the loom, requires to be boiled for the purpose of softening and emptying the yarn of all impure substances which adhere to the fibers of which the threads are composed, and also to increase its firmness and tenacity; by which operation, the weaver is enabled to put his cloth closer together, and it also retains its closeness after it is weaved, throughout the process of bleaching. A spyndle of yarn, weighing 1 lb 8 oz before it is boiled, will weigh only 1 lb 4 oz after, which is about the sixth part lighter; and if the stuff from which the yarn is spun be of bad quality, it will empty still more; very coarse yarn is seldom boiled, as it would be expensive, but is only put into a steep from twenty-four to forty-eight hours, in order to make it soft, and more flexible for the operation of weaving.

To boil Linen yarn, first steep it among soft water for the space of twenty-four hours, then take it out of the steep, and lay it on a rack to drain off the water from it, and wring it; (and in the interim, have the boiler with a sufficient quantity \*) of Pot ashes brought near the boil,) then make it up soft, and put it into the boiler, press it down with a pole, but not hard, as that would cause the yarn to be very unequally boiled; or as it is termed among Boilers "spotted", and when the yarn is new put in, it ought to be particularly attended to, to make the fire burn brisk and strong, which will prevent the spotting in a great measure; make it to boil three hours, (but previous to putting in the yarn have an iron hoop cross warped with cords laid in the bottom of the boiler, to prevent it sitting to the bottom, and burning the yarn;) then take it out, and let it lie till about lukewarm, put it into the boiler again, with a sufficient quantity of Pearl ashes, and boil it for an hour and a half, then take it out and wash the lee out of it in clear running water, then wring it, and let it lie booked in the wrung state, and lastly put it upon poles, shake and dry it, and if the day be dry, the oftener you go over it, the better, as it tends to open the yarn, and make it clear and free.

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\*) ca 10% of Pot ashes, and later 1% of pearl ashes by weight of yarn. The difference between pot-ash and pearl-ash is that the first is crude and the second purified Potassium Carbonate.

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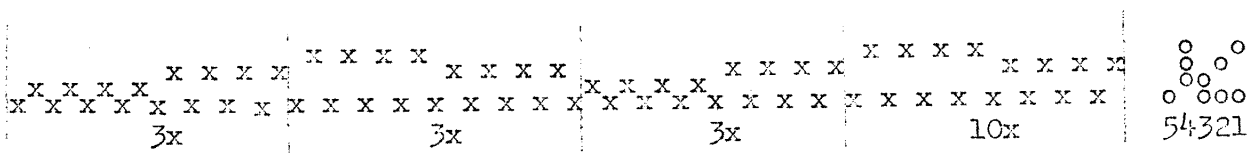


Fig. 5

Here we start with grey (or rather mixture of black and white) all across: 1b, 2w, 3b, 4. After about 3" of this border we change to: 1w, 2b, 3b, 4 and keep this treading for another 3". Then we repeat the grey as before and for the same distance. Finally we weave the large black block 1w, 2b, 3b, 4 for approximately 10". The above dimensions are for the sett of warp of 16 ends per inch. The rows of pile will be spaced  $\frac{1}{2}$ ", and the length of the pile will be  $\frac{1}{4}$ ".

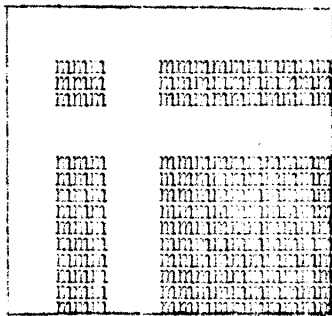


Fig. 6

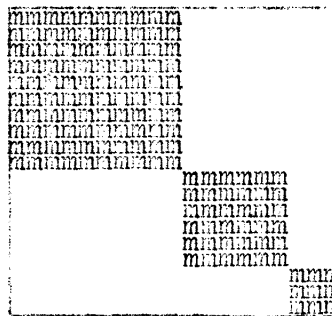


Fig. 7

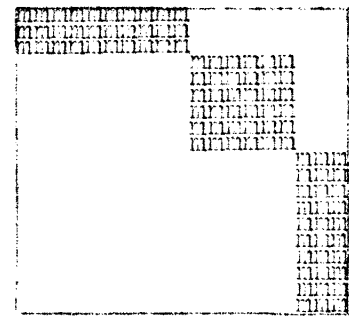


Fig. 8

The pattern will be as in the draw-down on fig. 6: one block with ground. In fig. 7 and 8 we have another kind of patterns. Three blocks without ground. The draft for both of them is the same and it is shown in fig. 9.

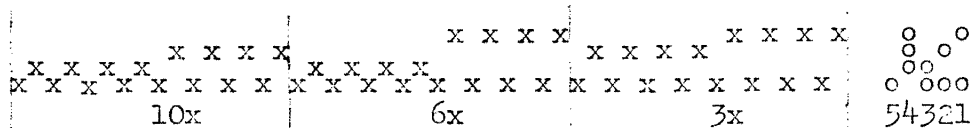


Fig. 9

The treading for a pattern as in fig. 7:

1w, 2b, 3b, 4 - 10", 1b, 2w, 3b, 4 - 6", 1b, 2b, 3w, 4 - 3".

The treading for the pattern in fig. 8:

1w, 2b, 3b, 4 - 3", 1b, 2w, 3b, 4 - 6", 1b, 2b, 3w - 10".

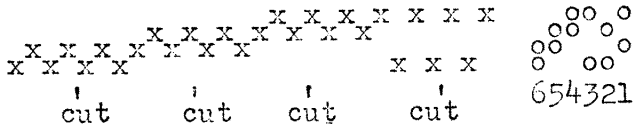
It should be understood that the "grey" background is really striped in the vertical direction. The shorter the pile, and the finer the yarn used - the more uniform this background appears.

Stripes both vertical and horizontal are quite easy to weave with any draft. For vertical stripes just alternate two colours all the time. For horizontal ones - weave with one colour for several picks, and then change to the other colour.

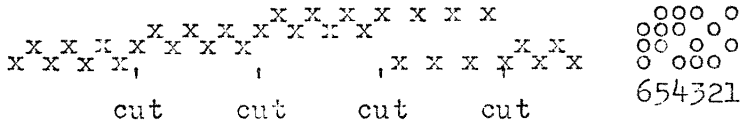
By combining both methods we can have checkered effect. For instance in the draft No. 5 page 5 MW. 14 we treadle: 1w, 2b, 3. 1w,

2b, 4 for about one inch, and then: 1b, 2w, 3, 1b, 2w, 4 for another inch.

More than two colours are rather difficult to weave in corduroy. We shall have either poor pile, or difficulties in cutting. As an example of the first we can take a plain overshoot draft (fig.10), and treadle as follows: 6w, 5b, 4b, 3r (6w - white, 5b - black, 4r - red) with alternate binder 1 or 2 after four shots of pile weft. One row of pile will be pure black, one - black-red, one white-black, and one - white-red. The second block of pattern will be: 6b, 5b, 4r, 3w. The third: 6b, 5r, 4w, 3b. The fourth: 6r, 5w, 4b, 3b. The pile will be only half as thick as usual, but we may cut both sides.



An example of normal pile with four colours, but difficult to cut is shown on fig.11. Treadling: 1-st block - 6b, 5r, 4b, 3w; 2-nd block - 6r, 5b, 4w, 3b; 3-rd block - 6b, 5w, 4b, 3r; 4-th block: 6w, 5b, 4r, 3b. Binder after each four shots of pile weft.



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Finally we have the possibility of combining corduroy with the locked wefts technique (MW No.4, page 7). There is very little to be said on this subject. We use any draft, tie-up, and treadling directions suitable for corduroy, but build the pattern by interlocking two wefts of different colour in each shed. Any pattern can be used. The outlines of the pattern will be blurred, because of the cutting. Three colours can be used in one shed as described before.

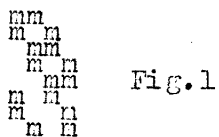
The colour of the warp and of the binder should be about as dark as the darkest shade used for pile.

We mentioned already once before, that not necessarily all the pile must be cut. When using more than one colour we can try to cut only one colour leaving the other flat. This is difficult with fine and involved patterns, but quite easy when the blocks are large and simple, particularly in case of locked wefts.

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## WEAVING TERMINOLOGY.

Weavers are often at a loss how to call directions for weaving with looms which have no tie-up. Since many of these looms have no treadles either, we cannot use the term "treadling". The proper expression is "Lifting Plan". Another term "Peg Plan" applies really only to the power weaving. Lifting plan can be either graphical as in fig.1 or numerical: 1-2, 1-3, 2-3, 2-4, 3-4, 1-3, 1-4, 2-4. In the graphical lifting plan the first column from the left corresponds to the frame No.1, second to No.2, etc.



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# TWO-HARNES METHOD

Crackle. Summer-and-Winter.

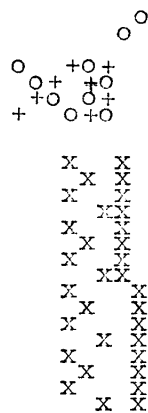
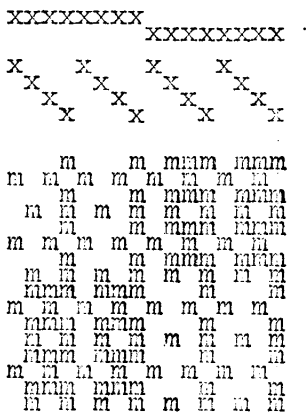
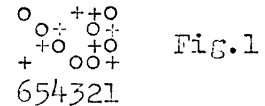
Swivel. Embroidery Weaves.

A two-harness loom, once set up and threaded is about the most versatile piece of weaving equipment one can imagine. Without changing anything but the treading we may have hundreds if not thousands of patterns woven either in 1:3 turned twill, or in crackle, or in summer-and-winter, with all the variations peculiar to these weaves. For instance a 1:3 twill can be woven as biased, broken, sateen, wave, stockinet, dornick twill, mixed (with tabby), and so on. We shall describe here only the typical examples of each weave,

## C R A C K L E

It can be woven on any draft made for 1:3 turned twill, provided that the tie-up has two treadles for tabby. Since usually tabby is required even in dornick to start the warp, space the woven pieces, for making fringes etc., there is no need to touch the tie-up at all.

We have the typical tie-up for dornick with tabby treadles on fig.1. If we use for the pattern just one of the twill treadles (3,4,5, or 6), and insert one shot of binder after every shot of pattern, we shall have crackle weave. The draw-down on fig.2 explains the technique better than any



description. Here the length of floats will be 3 as in traditional crackle. The difference is that we won't have any floats of 2 joining the blocks. The binder will be probably finer than the pattern weft, although the fabric can be woven with one shuttle i.e. binder and pattern of the same colour and grist.

Although all four twill treadles (3,4,5,or 6 fig.1) can be used to weave crackle, they should be selected so that all floats in one block are of the same length. For instance in fig. 2 either treadle 3 or 6 will give all floats of 3.

Fig.2

## S U M M E R - A N D - W I N T E R

The tie-up here is the same as in fig.1. Two pattern (or twill) treadles (3 and 5, or 4 and 6) are used alternately instead of only one as in crackle. Here some of the floats (see fig.3) must be shorter than 3 at the edge of each block. The binder can be used after each shot of pattern or only after 2, 3 or 4 picks of pattern weft. It cannot be dispensed with entirely because of the floats in warp, which would grow indefinitely.

Bound Summer-and-Winter presents a problem here. Since the alternate shots of weft are on opposite sheds we would have to change with each pick of weft both the ground and the pattern frames. This makes weaving very slow, even if theoretically possible.

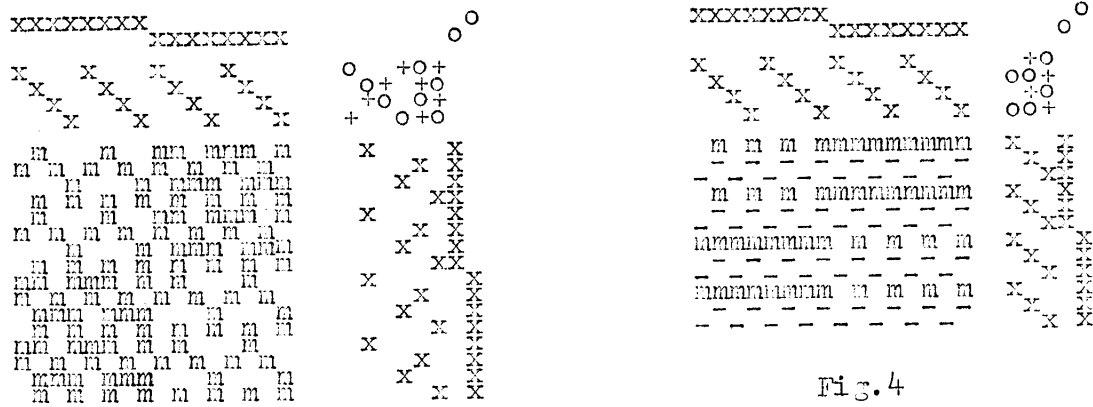


Fig. 3

Fig. 4

S W I V E L

The tie-up for swivel must be slightly changed as in fig. 4. There is only one pattern treadle tied to frames 1 and 3 for the sinking shed, and to the frames 2 and 4 so that they will be in neutral position. The tabby treadles remain as before. The pattern as always in swivel is visible only because the pattern weft is of a different colour than the ground. Consequently on the draw-down we have marked the ground as "G" and pattern as "P". The long floats in pattern weft are either cut off or left on the back of the fabric. The shots of weft are in the cloth much closer together than on the draw-down because one of the tabby shots comes in the same shed as the pattern weft.

EMBROIDERY WEAVES

We shall give only two examples of embroidery - fig. 5 and 6. The ground in both cases is tabby, but it may be twill as well.

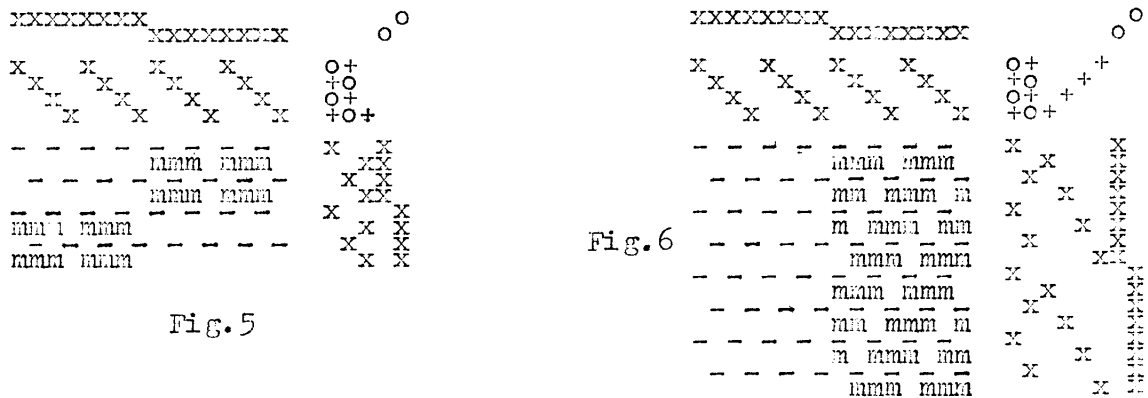


Fig. 5

Fig. 6

Here the floats are underneath, and as in case of swivel they are cut off. Otherwise the draw-downs are self-explanatory.



obviously such method of drawing would take too much time. For this reason we do not try to represent the cloth as if looked at through a microscope, but we simplify the picture by marking whole squares either black or white. Instead of fig.2 we have fig.3.



Fig.2



Fig.3

In other words we make the draw-down as if instead of more or less round thread we were using flat and thin ribbon without any space left between the shots of weft or ends of warp.

The second pick of weft is made with treadle 3 (directly above the 2-nd mark in the treadling draft). This treadle is tied to frames 2 and 3. These two frames operate the following warp ends: 1,2,5,6,7, 10,11,13,14,17,18,19,22, and 23. Consequently in the second line of the draw-down the above warp ends will be covered with weft, and represented by black squares.

The third pick of weft is thrown when the treadle No.2 is depressed (please check on the draft). This treadle is tied to frames 3 and 4, and it sinks heddles and warp-ends No.: 2,3,6,9,10,14,15,18,21, and 22. All these warp-ends will be covered with black weft and marked accordingly in the third line of the draw-down. Finally the fourth pick of weft is made when the treadle No.1 pulls down heddle-frames 1 and 4, so that the black weft covers warp-ends No.: 3,4,8,9,12,15,16,20,21,24.

Now we come to the 5-th pick of weft. Looking up from the 5-th mark on the treadling draft we can see that it has been made in exactly the same way as the 1-st pick: with treadle No.4. Thus the 5-th line must be identical with the 1-st line of the draw-down. Provided that we did not make any mistakes, we do not need any more to look at the tie-up and the threading draft, but we can simply copy the first line. The next pick is the same as the 2-nd, so that we can draw the 6-th line by copying the 2-nd, and so on. The 7-th and the 11-th line are the same as the third, the 8th and the 12th - the same as the fourth. The best way of copying the lines already made in the draw-down is to put a piece of paper across the draft just above the copied line, so as to cover the upper part of the draft.

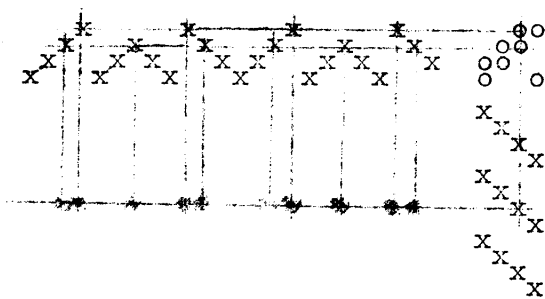


Fig.4

Once we have understood the relationship between different parts of the draft, we do not need to count picks, treadles, frames and warp-ends. We simply stick to the following rules:

From the line in the draw-down which is being made look horizontally to the treadling draft. Find the corresponding treadling mark. Follow it up (vertically) to the tie-up draft.

Find the frames tied to the corresponding treadle (fig.4), and follow them horizontally again to find the warp-ends threaded through these frames. Now from all these - drop down vertical lines (imaginary or made in pencil) until they cross the line in the draw-down which is being worked at. ALL SQUARES WHERE THESE LINES CROSS THE DRAW-DOWN LINE SHOULD BE BLACK. If not there is a mistake.

It often happens that the student will make the draw-down correctly, but still will be quite confused about the interpretation, i.e. will not see any relationship between the paper work, and the actual weaving. The following exercise may bridge the gap: Give the student a sheet of graph-paper with 4 divisions to the inch. Make him draw the threading, tie-up and treadling drafts in proper order. Now in the place reserved for the draw-down cut with a razor-blade all vertical lines on the graph paper. From a piece of black paper cut a number of strips a little less than one quarter of an inch in width, and slightly longer than the width of the draw-down. Explain the situation when the first pick of weft is to be made - which warp-ends are sunk and which raised. Then with a pencil actually make a shed in the paper, and insert one of the black strips of paper. Push it up until it is in line with the first treadling mark. Proceed in the same way with the second, third, and so on - line of the draw-down. The basket work resulting from these operations will look similar to both the draw-down and the actual work on the loom. Now make the student copy the whole draft on the normal graph-paper (8 or 10 divisions per inch) this time without cutting. Make him compare all three: the weaving on the loom, the basket work, and the final draft. If this won't help - nothing will.

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## WAFFLE WEAVES

Waffle Weave in handweaving means the same as Honeycomb in industrial terminology, and has nothing in common with Colonial Honeycomb. It is a "three-dimensional" weave i.e. that it has a certain depth, or thickness not due to the thickness of the yarn, but to the way the warp and weft are interwoven. Because of this third dimension the draw-downs give only an approximate picture of the fabric: the long floats both in warp and weft represent the raised areas, and the tabby - the sunk areas.

We can divide roughly all waffle weaves into: single (one long float in warp and one in weft in each repeat), double (two floats in each direction, single face (waffle effect only on one side of the fabric), and double face.

Fig.1 shows the draft for the smallest and simplest waffle, woven on four frames. Fig.2 is the same fabric woven on a 6x6 huckaback draft. This is double face, single waffle.

On fig.3 we have single face, single waffle. The squares are larger than in fig.1. The draft No.4 has still larger squares.

The draft on fig.5 gives double face, double waffle. It can be woven also on a 10x10 huckaback threading as in fig.6.

All the above drafts were for 4 frames. On 5 frames we can weave "perfect" waffle (see fig.8) - or rather perfect on the draw-down - in practice all waffle weaves give distorted squares, because the length of vertical and horizontal floats can not be the same. For instance in fig.6 the floats in warp are longer than the floats in weft. If we change the tie-up to the one on fig.7, we shall have the floats in weft longer than the ones in warp.

The drafts for waffle are not always symmetrical, as shown in fig.9. There is a great variety of drafts for higher number of frames, but they do not present any particular advantage.

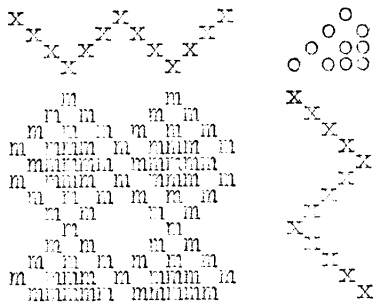


Fig. 1

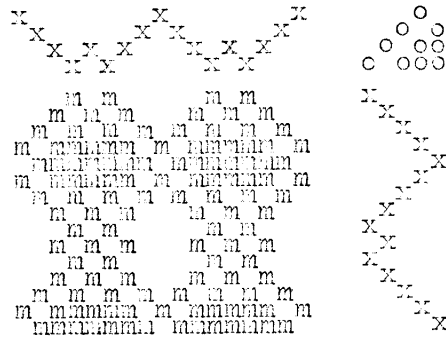


Fig. 3

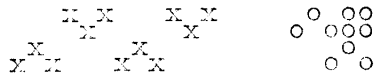


Fig. 2

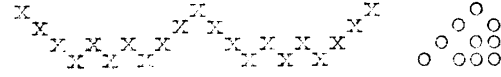


Fig. 4

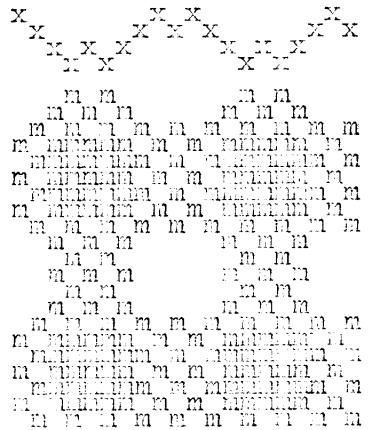


Fig. 5

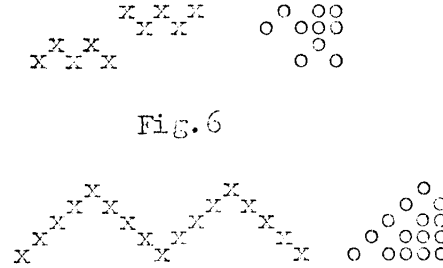


Fig. 6

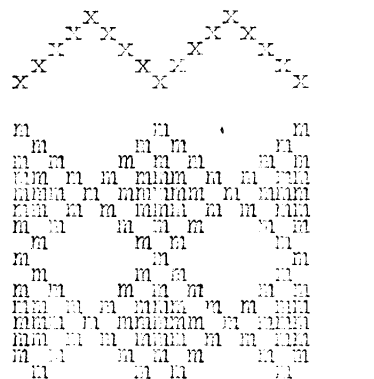


Fig. 8

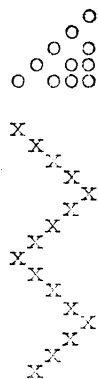


Fig. 9

In fig.1, 3 and 8 we have floats which are tied to the ground only once in each repeat. Such a fabric is not very strong of course - the floats can be pulled out very easily. Drafts No.5 and 9 give stronger floats.

I N F O R M A T I O N   S E R V I C E

We shall try to help you with your own weaving problems, answering technical questions, supplying necessary information, finding books, and periodicals, and locating supplies.

Here are the rules of our service:

- 1 - Each question will be answered by letter.
- 2 - If the problem is of a general interest we may print the answer in the Master Weaver independently from the letter.
- 3 - There is a fee of one dollar which should accompany each question. This is returned immediately if we cannot answer your question.
- 4 - If the question is of such a nature that it cannot be answered in 500 words, we may either give you information about books or other publications discussing your problem, or advise you what would be the cost of a complete answer.
- 5 - We shall try to answer your letters immediately. In exceptional cases when we shall have to consult sources not readily available, it may take up to two weeks.
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