

MASTER WEAVER

BI-MONTHLY BULLETIN
FOR HANDWEAVERS



Z-HANDICRAFTS
FULFORD, QUE., CANADA

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Handweaver & Craftsman



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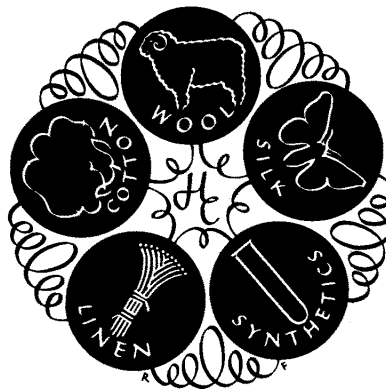
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MASTER WEAVER

BI-MONTHLY BULLETIN FOR HANDWEAVERS

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November - December, 1961

No. 60

FLYING SHUTTLE.

This is not only a piece of weaving equipment, but also one of the most controversial issues among handweavers. There are many who consider the flying shuttle as a symbol of corruption of the purity of our craft.

Before we start considering the pros and cons involved in using a flying shuttle in handweaving we shall give a short description of this mechanism. A detailed description would be superfluous, because it is rather unlikely that one of our subscribers would try to build this gadget.

A flying shuttle, sometimes called "fly-shuttle", is much more than a shuttle. It is a superstructure built on the beater, usually of the overhead type.

The batten, or beater has a so-called "shuttle race", or a narrow board in front of the reed, much longer than the reed itself. At each end of the shuttle race we have a wooden box (or boxes). The shuttle enters one of these boxes after every shot of weft, and then is propelled in the opposite direction by a combination of sliding metal shafts (pickers), cords, and of a handle which hangs above the centre of the beater. The shuttle is straight, heavier than a hand-shuttle, with points protected with metal caps. Instead of a bobbin or quill, there is a stationary "cop"; the weft unwinds from one end.

The weaver holds the handle always in the same hand, and operates the beater with the other. The shed is changed as usual by pressing treadles.

Originally the purpose of this contraption was twofold: to increase the speed of weaving, and to increase the maximal width of

the fabric. We can dismiss the first factor right away. It is possible that in the old times when a weaver worked 12 hrs a day, always at the same type of fabrics, a fly-shuttle weaver after several years of practice could "outweave" a hand-shuttle operator. Nowadays this factor is absolutely immaterial, and for the following reasons:

1. The beater with the fly-shuttle mechanism is much heavier than a normal beater, and therefore much harder to handle. If it is designed so as to operate more than one shuttle it is still heavier and more unwieldy.

2. The weaver gets tired much faster with a fly-shuttle, not only because beating requires more strength, but also because he works in an unsymmetrical position, with one hand performing a completely different operation than the other.

3. The gadget is bad enough with an overhead beater. With an upright beater it is still worse. Incidentally it produces a tremendous racket not calculated to sooth the weaver's nerves.

4. It is absolutely useless in any weave which requires several shuttles.

5. The flying shuttle mechanism is not cheap, cannot be installed just on any loom, and it cannot be made easily at home.

With all these limitations, there is little to fear from the competition of "unscrupolous" weavers who try to speed up their production by the means of a fly-shuttle. They should be pitied rather than censored, since obviously they are martyrs of a bad cause.

But the fact remains that if we must weave a fabric 72" wide or more, the only practical answer is a flying shuttle. The alternative of two weavers sitting side by side at the same loom is psychologically unsound, with the exception perhaps of identical twins.

Thus we may safely reject the idea that a flying shuttle could possibly present a danger to our ethical standards, and we can use it with clear conscience for very wide fabrics, provided of course that we ever learn how to operate it.

Still there is one human factor left out. From time to time we hear about a new handweaving venture which is supposed to use

flying-shuttle looms for mass production of so called handwoven articles. This is bad. And it is bad, regardless of whether they use a fly-shuttle or not. The very idea of mass production does not belong in handweaving, at least not any more since industrial revolution. Mass production may be necessary, but then it has nothing to do with us. It is a problem solved more than a century ago by power weaving.

The so called handweavers who try to compete with real craftsmen by making their articles cheaper, and at the same time competing with the textile industry by pretending that their articles are hand woven, are dishonest to both, because their production is neither industry or craft. But this has nothing to do with the flying shuttle. One can easily train a flock of "shuttle pushers" to weave by hand faster than any normal handweaver. He will probably use also extremely long warps, automatic bobbin winders, and half-automatic looms. Why not then go a step farther and use power looms?

So much for the flying shuttle. But there is one part of this equipment, which is worth saving: the shuttle itself. Provided that it is not too heavy, and that the points are not too sharp (powerweaving shuttles are absolutely useless in handweaving), it is much better than a normal hand-shuttle for weaving wide yardage. But this is about all.

Therefore there should be really no controversy about the flying shuttle itself, but rather about the attitude of those weavers who try to cheapen not only their production by the craft itself.

FROM THE EDITOR

THERE WAS A MISPRINT ON THE FIRST PAGE OF THE LAST ISSUE OF THE "MASTER WEAVER". INSTEAD OF "NO. 60", IT SHOULD BE "NO. 59". PLEASE CORRECT THE MISTAKE, AND ACCEPT OUR APOLOGIES.

A NEW DEVELOPMENT

IN LOCKED WEFTS

Here is another method of weaving patterns in Locked Wefts. It produces free patterns in only two colours. The elements of the pattern do not need to start at the edge of the fabric. They can be

distributed in any way we like. Fig.1 shows the principle.

The two colours must be very contrasting, and they form three areas: ground of blended colours; the first colour; the second colour. The figures in the two pure colours may be of any size, and of nearly any shape.

The way this can be done is very simple. We need only two bobbins on the bobbin rack to the left of the loom, and two shuttles: one of each colour. Let us say that we use only white and black.

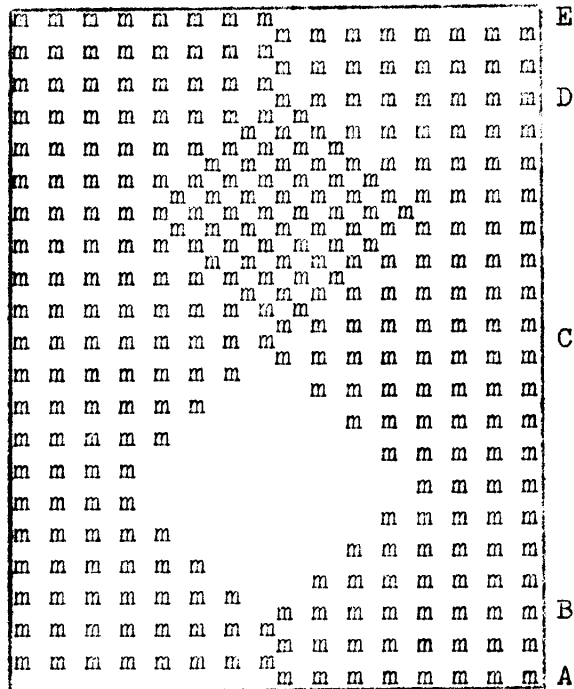


Fig.1

We throw the black from the right; catch the white from the rack, and pull it into the shed approximately to the point when we shall have the first pattern. After having changed the shed we throw white from theright, catch the black from the rack, and pull it to exactly the same interlocking point as before. Then we repeat this operation until enough ground is woven (fig.1 from A to B).

This ground with alternate white and black lines will have a faint "seam", where the wefts are locked. If we adjust the interlocking carefully, the seam will be hardly visible.

To start a pattern all we have to do is to overlap the same colour in both sheds, that is to cross the wefts alternately to the

right and to the left of the point of interlocking in the ground. In fig.1 we overlap white from B to C, and black from C to D. When the pattern is finished we weave again ground (D to E).

The draw-down gives only a very poor idea of the general effect for the simple reason that the shots of weft are much closer together than the lines on paper.

The reason why we use only two colours is that changing any of the two colours would produce horizontal stripes in the ground. But we can have patterns planned precisely for this effect.

The colours used are of primary importance, and they should be carefully planned. The warp being visible, it takes also part in the colour scheme. Thus if we use black and white in weft, the warp should be medium grey to reduce the striped appearance of the ground. If the warp is yellow, one weft - red, and the other - blue, then the ground will be grey (at least in theory), one block of pattern orange, and the other green.

On the other hand if we set the warp so that it can be completely covered by weft, the warp does not affect the colour scheme. With soft and heavy weft we can weave very good imitation of tapestry in this way. Here, if we use tabby, we shall have faint vertical stripes in the ground. They will be eliminated if we use plain 2:2 twill instead of tabby.

PRACTICAL PROJECT.

Cocktail napkins.

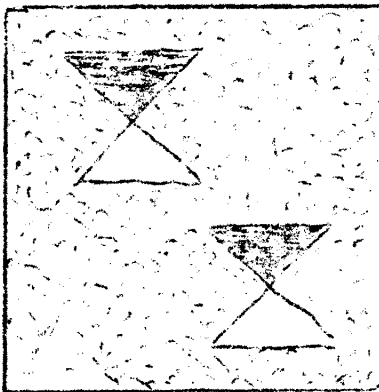


Fig.2

Warp: 20/2 mercerized cotton, cream.

No. of ends: 392; sett: 30 ends per inch;
reed No.15; 2 ends per dent.

Any threading which gives tabby sheds.

Weft: 20/2 mercerized cotton, dark brown,
and old gold.

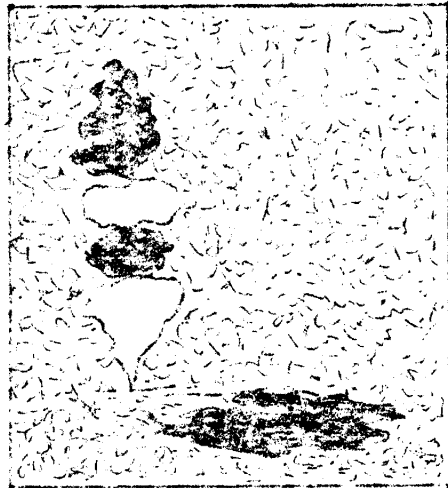
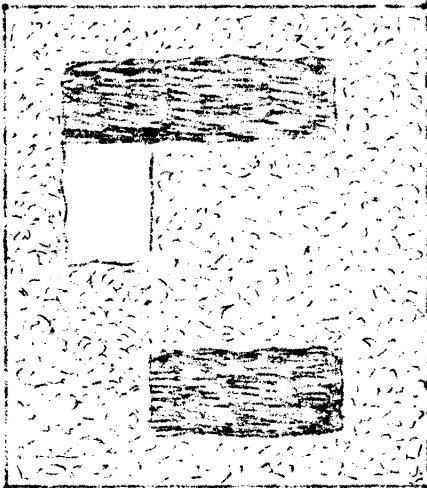
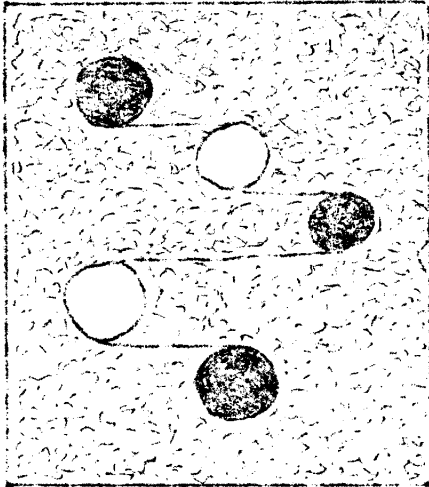
Finishing: fringe of ¼" on all sides; hem-
stitch before fringing.

Pattern as in fig.2.

Other patterns on the following page.

Dotted lines indicate the seam.

Patterns for Locked Wefts.



When designing patterns for this type of locked wefts particular attention should be paid to the seams which join different figures. A vertical seam is the least visible. Diagonals are all right if they are not too close to the horizontal. If two figures are to be joined horizontally, a very obvious line cannot be avoided, and it should be a part of the pattern.

MULTISHAFT TWILL
OR HUCK

L A C E

With 4 shafts it did not matter whether we call our Lace: twill, or huck. But with a higher number of shafts we must decide which is it. If it is twill, then the draft will be as in fig.1.

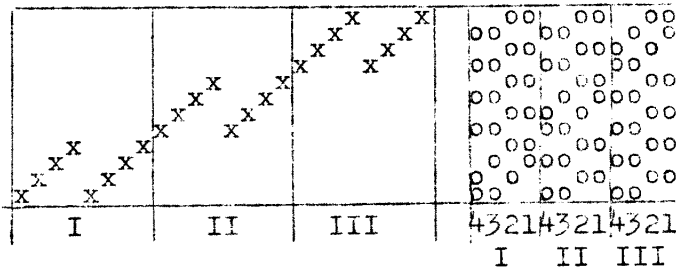


Fig.1

The tie-up here is purely theoretical, shown only to explain how it works. For instance when we weave block I in lace and blocks II and III in tabby, we use group "I" of treadles. The lowest 4 shafts are tied as for lace, when the remaining shafts are tied for tabby (the treadling is 2413). Block II of lace is woven on group "II", and block III on group "III".

Since however treadles No.2 are all identical, and so are treadles No.3, we can save 4 of them for combinations of blocks of lace as in fig.2. The ground (or tabby) treadles are moved now to the

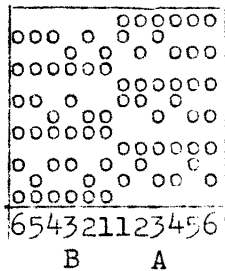


Fig.2

outside, so that the treadling with alternate feet will be still possible. The treadles are divided now into only 2 groups: A and B, and the numbers go in each group from the center out. The treadling is:

Block I: A6, B5, A5, B6.

Block II: A6, B4, A4, B6.

Block III: A6, B3, A3, B6.

Blocks I+II: A6, B2, A2, B6. Blocks II+III: A6, B1, A1, B6.

With a larger number of treadles we could have more combinations of blocks of pattern, e.g.: I+III, and I+II+III.

Any 3-block pattern can be woven in this way. There is no limit to the size of blocks, and the lace is firm enough to reach right to the edge of the fabric.

Obviously as a method the Twill Lace is not very economical, because with 12 shafts we have only 3 blocks of pattern (or 2 blocks plus ground), but then at least the threading is easy

PRACTICAL PROJECT I

Linen towels.

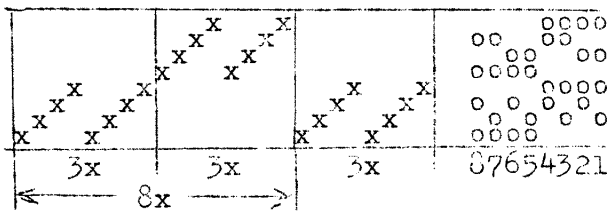


Fig.3

Warp: 20/2 linen; No.of ends: 408; sett: 24 ends per inch; reed No.12; 2 ends per dent; width in reed: 17".

Weft: the same as warp, or No.10 single linen.

Treadling: 1,8 - to make 3"; 1,7,2,8 - 1"; 1,5,4,8 - 1"; 1,6,3,8 - 1"; 1,8 - 1". Repeat the last 4 groups for the desired length, and finish with 3" of tabby.

If we consider our Lace as huckaback, then the drafts should be of the type shown in fig.4.

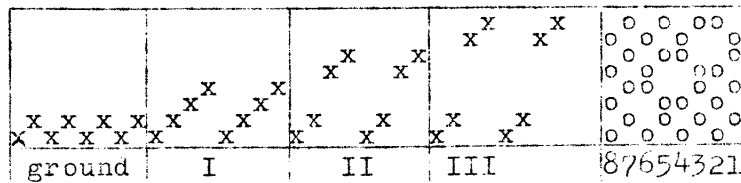


Fig.4

The tie-up is the same as for huck-lace, and it gives each block of pattern separately, but we can have also combinations of blocks as in fig.5.

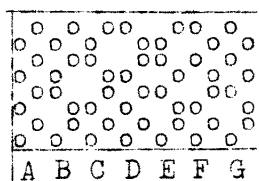


Fig.5

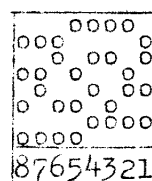


Fig.6

MODERN UNSYMMETRIC DIAMOND TWILL.

Diamond Twill is the simplest pattern weave, yet it deserves much more attention than it gets. When teaching, we mention it right after the herringbone twill, we explain the "woven-as-drawn-in" principle, we give a few examples, and this is about all. Yet the small patterns are not only very charming but unbelievably intricate.

The weave is variously called: Goose Eye, Birds Eye, Russian Diaper (?), Rosepath (literal translation from Swedish). The fabrics woven in Diamond Twill are very firm (longest float of 3), and can be used for any purpose whatsoever: upholstery, place mats, towels, table cloths, skirts, coats, aprons, runners, and even rugs. It can be woven with or without binder, plain or on opposites, on 3, 4, or more shafts. It may produce very clear and contrasting patterns, or a faint damask effect. In all it is one of the most valuable weaves.

The most important fact about diamond twill is, that unlike overshot, crackle or summer-&-winter it can be woven with or without binder. The binder may be either tabby, or the opposite shed of twill.

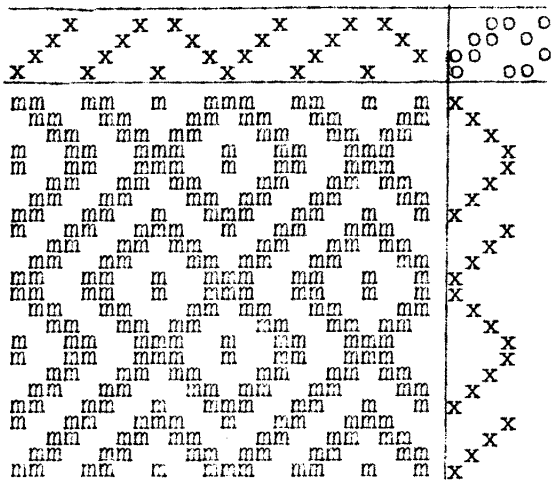


Fig.1

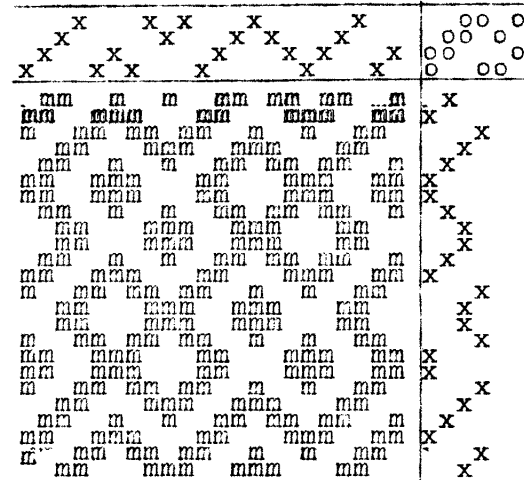


Fig.2

When woven without binder, it cannot produce completely symmetrical patterns: each diagonal will be broken at the turning point. The sett of warp must be as for twill. In diamond twill with a bind-

er, the following conditions must be strictly observed:

1. The sett of warp must be much more open than for twill, or even tabby: approximately one half of the sett for twill. That is, if the proper number of ends per inch for twill is 40, and for tabby 30, then the sett of warp for diamond twill with binder should be 20.

2. Regardless of the type of treadling, that is whether the pattern is woven-as-drawn-in, in rose-fashion, or fancy (independent of threading), we must use an odd number of shots on the same twill treadle, when the treadling proceeds in one direction, and an even number of shots at the turning point. In case of woven-as-drawn-in patterns, or rose patterns it simply means: one shot on diagonals, and 2 shots at turning points (fig.1 and 2). But in fancy treadlings we may have many more shots of weft on the same treadle.

3. The tabby sheds used for binder simply alternate all the time, regardless of what happens to the pattern. But if twill binder is used, it must follow the pattern weft when the treadling is going in one direction, and precede when the treadling changes direction. Here are a few examples of fancy treadlings (1234 twill, AB tabby).

1A2B3A4B1A2B3A4B1A2B2A1B4A3B2A1B1A2B3A4B4A3B2A1B etc.

1A2B3A3B3A4B4A4B4A3B2A1B1A3B4A4B4A4B3A3B3A2B1A4B etc.

132431421324314241342312413431421324314241342312 etc.

1324313131444213124242131313424242313131324 etc.

In the last two examples the lower row is the twill binder, finer and of a different colour than the pattern weft.

With the richness of detail of the diamond twill patterns, there is no particular reason why the patterns should be symmetrical, or for that matter why should there be any definite repeat. If the drafts in fig.1 and 2 are rather short, it is only because otherwise they would take too much space on paper. But any weaver can make his own drafts of any length, either with the pattern covering the whole fabric, or alternating with plain twill as in fig.3.

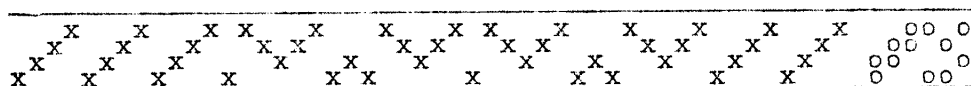


Fig.3

We have also a possibility of breaking the monotony of plain biased twill with tiny diamonds inserted at regular or irregular intervals as in fig.4. This type of fabrics can be used for clothing of any kind.

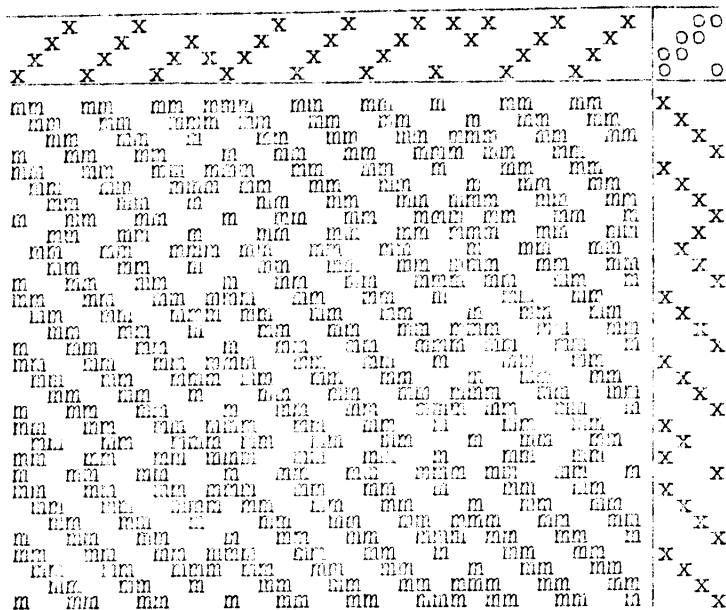
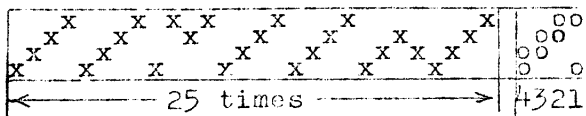


Fig.4

This subject is far from being exhausted, but any weaver who understands the principle can do a lot of research on graph paper, and on a sample loom. We shall return to the diamond twill in connection with multicolour patterns.

PRACTICAL PROJECT.

Woolen yardage for sports coats.



Treadling: 1234123412343234
123412341214;

Warp: 8/2 wool; No.of ends: 700; sett of warp: 20 ends per inch;
reed No.10; 2 ends per dent; width in reed: 35".
Weft: 8/2 wool of a slightly different colour than the warp.

In the next issue: HANDWOVEN IMITATION FURCOATS on eight shafts.

MULTICOLOUR DIAMOND TWILL in weft and warp.

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