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MODERN OVERTSHOT

There are several reasons why the Colonial Overshot, not long ago the most popular weave in North America, is getting neglected. These reasons are of both: technical and aesthetical order.

Colonial overshot does not suit us any more, because first of all the traditional patterns do not fit into our modern way of life. They do not match our furniture, our dresses, rugs, and other textiles. The patterns lack simplicity and freedom - two important factors in modern designing.

Then from technical point of view the weave really is not very good. It has low resistance to wear, because it has too long floats, and its texture is not uniform, because the length of floats varies with the pattern on the same piece of weaving. Thus the fabric is firm and strong where the floats are short, and soft and weak where they are long.

With all these faults the weave has several advantages which make it worth rescuing from the oblivion.. For instance with limited equipment (only 4-frame loom) it gives very large possibilities in composition of patterns. Because it has a balanced tie-up it can be woven fast and without difficulties on any kind of loom. It can be adapted to any weaving yarn, and since it has the warp, pattern weft, and binder always mixed in the same proportion - three completely different yarns can be used in the same piece of weaving with good results, as for instance: cotton for warp, rayon for pattern, and linen for binder.

What can we do then about the colonial overshot to make it "modern"?

1. Use only very simple patterns, and rather subdued colours.
2. Avoid "compulsion" in designing, such as symmetry in all directions, diagonals crossing the fabric from one corner to another, certain rigid ways of treadingling ("tromp as writ", rose-fashion", and so on.
3. Eliminate long floats, let's say longer than 7.
4. Make all floats of the same length, or if we have two sets of floats - distribute them uniformly all over the woven piece.

1. This is the easiest part. Even among the colonial patterns we can find quite a selection of simple geometrical designs (2 and 3 block patch patterns, cross and diamond, etc). Now if

instead of contrasting the pattern and the ground, we shall use the same colour for the pattern and the binder - we shall get a completely different and much more pleasant (to our modern eyes) effect. The colour selected for the weft should not be too different from the warp. Two different shades or rather grades of the same colour will give the best results.

Since we use the same colour for both: pattern and binder, we may as well use the same count of yarn, and consequently only one shuttle. This makes weaving much more rhythmical and incidentally much faster. The problem here is how to remember the next tabby treadle to be used. With two shuttles the position of the shuttle used for binder indicates the proper tabby shed: if the shuttle is on the right hand side, then the next treadle is the one also on the right hand side, and vice versa. But here the shuttle is always on the same side for the shot of binder.

Probably the best solution of the problem is to have a tie-up with both tabby treadles on one side, so that one foot operates the pattern and the other - the binder. Now after making one shot of binder, we keep the foot on the same treadle until the next shot of tabby, and shift it only in the last moment. After a while this becomes quite automatic.

Any overshot draft can be "modernized" for weaving borders, on the condition that it does not contain too long floats. Instead of weaving all four blocks, we select only two opposite ones (1,2 and 3,4, or 2,3 and 1,4), and weave them in two different colours.

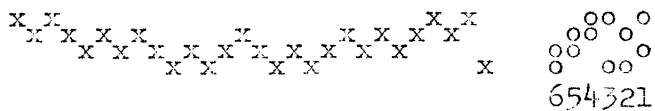


Fig.1

For instance in fig. 1, we shall use blocks: 1,2 and 3,4. The other pair is not very interesting, because there is hardly anything on

the block 1,4. Let's call our colours B and R (black and red), then the treadling may be as follows:

1B, 2R, 4B - 4 times, 1R, 4B - 4 times, 2R, 1B, 6R - 6 times, 2B, and reverse. Use binder where necessary.

2. Let's forget about the "squaring" of each block, and about weaving them in any definite order. We do as we please. We shall see later that we can even weave two blocks at the same time.

3. It is very easy to eliminate long floats. We can either select drafts with short floats only, or "condense" any draft by shortening long floats and leaving other parts of the draft intact. This will solve only the technical requirements however, and won't give us much control over the pattern.

4. How to combine the freedom of the pattern, and a uniform texture? There is in colonial weaving a technique of drafting which practically solves all our problems. There is one element of pattern which can have any size whatsoever and still the floats remain of reasonable length. This is the colonial Table (fig.2). The table is made of any number of small squares or rectangles. Thus we can have the floats quite short (5 in our example), but the table may be as large as wanted.

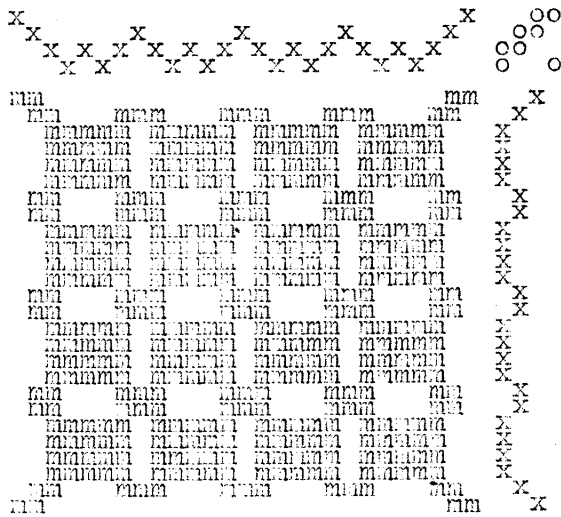


Fig. 2

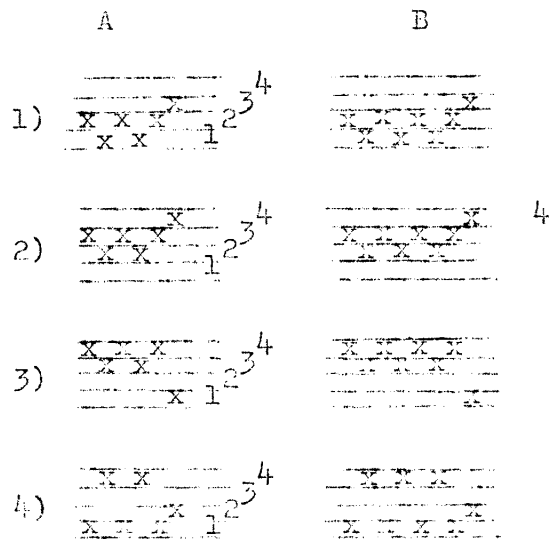


Fig. 3

Now we can have four different tables, each made of units of 6 or 8 warp ends. The draft in fig.2 is made of four such units. Fig.3 shows in column A all four units with floats of 5, and in column B - units which give floats of 7. In draft 2 we have used four units No.1 in column A.

Any unit can be repeated any number of times, until the desired size of a table is reached. Then we can draw another table based on another unit, and so on. We shall have four tables or four blocks of pattern in all. In one piece of weaving only the units taken from the same column can be used.

When joining two blocks of pattern (or two tables), we must insert an incidental heddle, just as in Crackle weave, to preserve the tabby order in the draft. Thus between unit 1 and 2 the incidental heddle will be on 4. Between 2 and 3 - on 1. Between 3 and 4 - on 2, and between 4 and 1 - on 3. The units do not need to be used in the above order in a draft, but then the incidentals change. For instance between 4 and 3 - the incidental is on 1; between 3 and 2 - on 4, between 2 and 1 - on 3, and between 1 and 4 - on 2.

A complete draft of a very simple 4 block pattern is shown in fig.4.

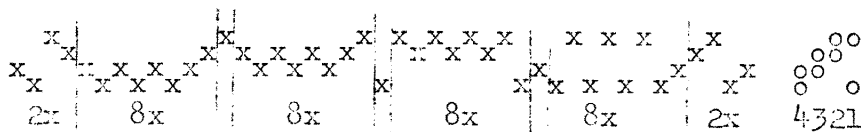


Fig. 4

There are many ways in which this draft can be treadled. First of all it can be woven in the traditional way "woven-as-drawn-in" with a diagonal running across the whole woven piece. It will show four squares or colonial tables as in fig.5. But the tables may be woven in the "continental" way: each table made of 8 long,

vertical columns, instead of 64 squares. For instance table No.1 (based on unit No.1) will be woven using only treadle No.4 until the proper size is reached. In colonial weaving it would be: treadle No.4 - 6 times, alternately with treadle No.3 - twice.

Overshot with all floats of the same length presents a possibility which the traditional weave lacked: it can be woven without binder, and still give good texture. The technique is the same as in bound weaves, with the difference that here we do not try to cover the warp with the weft, and that the sett of warp remains conventional. When weaving without binder we may use several colours, and what is more, we can combine blocks, i.e. weave two blocks at the same time, a thing unheard of in colonial weaving.

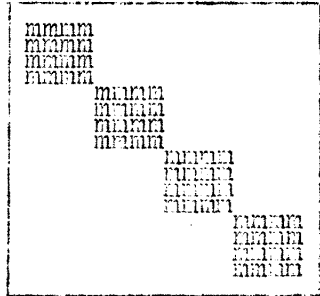


Fig.5

Let us start with 4 colours. In practice they will be probably rather four shades of the same colour, or one strong colour and 3 neutral ones, but for the sake of clarity we shall suppose that we have four different ones, for instance: black (B), red (R), grey (G), and white (W). The treadling here is always the

same: 1, 2, 3, 4. It never changes. What changes is the order in which the colours are used. Each block of pattern has a different order of colours.

| | | | | | |
|----------|------|---|---|---|---|
| treadle: | 1 | 2 | 3 | 4 | |
| block: | 1-st | B | R | G | W |
| | 2-nd | W | B | R | G |
| | 3-rd | G | W | B | R |
| | 4-th | R | G | W | B |

Fig.6

| | | | | |
|------|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1-st | B | G | G | W |
| 2-nd | W | B | G | G |
| 3-rd | G | W | B | G |
| 4-th | G | G | W | B |

Fig.7

Fig.6 gives the directions for treadling. We can start with any block depending on the pattern. If it is block 1-st, we use all four shuttles in the order indicated: black on treadle 1, red on 2, grey on 3, and white on 4. We keep on weaving in this way until the block is finished. Then we change to the second (or any other) block.

To keep the order of colours without remembering them all the time, we place the four shuttles one above another on the woven piece, so that the shuttle which has been used last comes on top, and the next one is taken from the bottom.

If we do not want all four colours, we still keep the same treadling, but use one of the colours twice as in fig.7.

We shall notice that in fig.7 there is one colour (black) which is the most important - it is the one which shows the pattern, the leading colour. Other colours form the ground, more or less. We can take advantage of this fact and weave two blocks in black, one in grey, and one in white. In this way we shall have combinations

of blocks. Fig.8 shows examples of patterns woven on the draft No.4 and the corresponding treadlings:

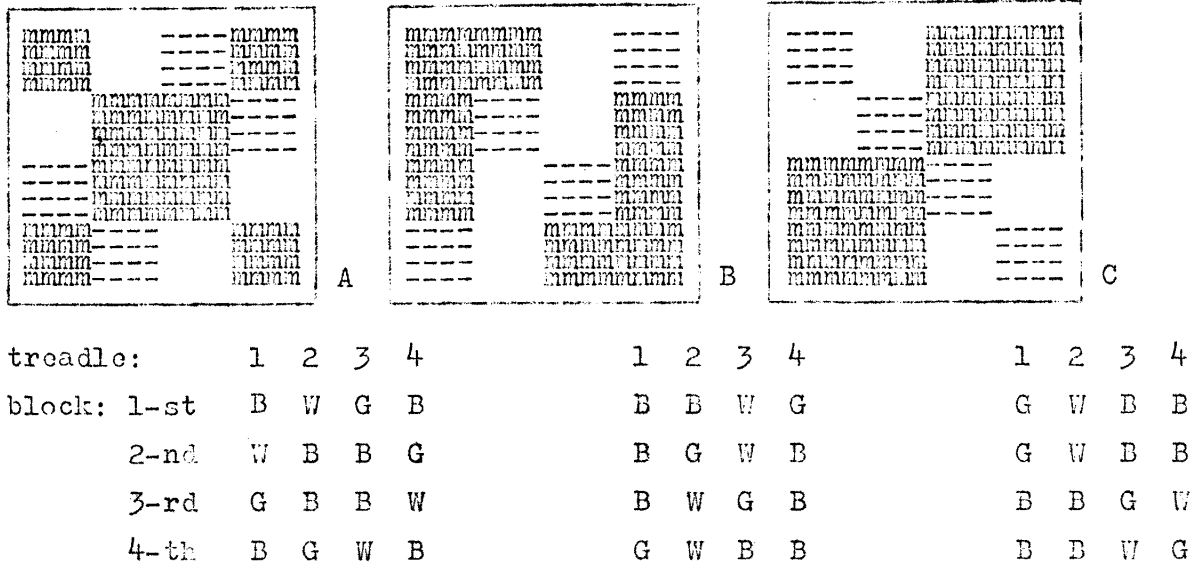


Fig.8

From purely practical point of view the bound overshoot is woven exactly in the same way as any other bound weave. If we want to cover the warp nearly completely with weft, the sett of warp must be much lower than usual, and the weft rather heavy and soft. With usual setts of warp, the picks of the same colour of weft will be not quite close, but since the blocks of pattern are very large, this does not blurr the pattern.

Whatever is the count of weft used all four colours must be in the same yarn - the same material, number and twist. Otherwise the texture of the fabric will be uneven.

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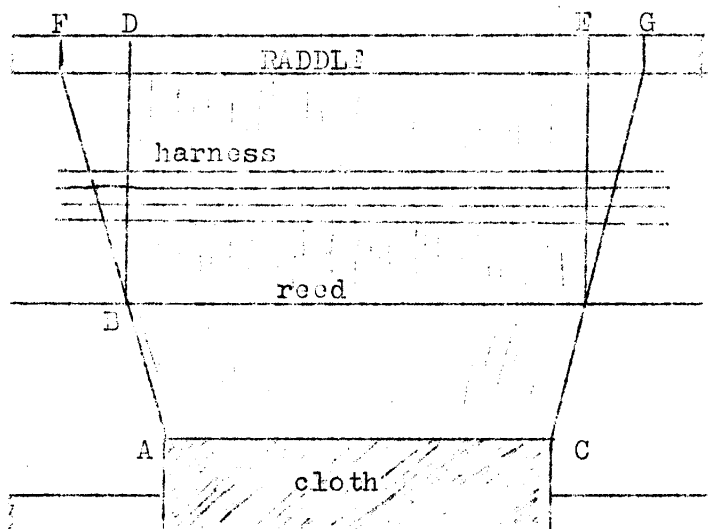
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RADDLES.

When the warp is all prepared for beaming, it has to be wound on the warp beam so that its width will be about the same as the width in the reed. We say "about" but in most cases we make it exactly the same. Somehow we take it for granted that, since the warp is supposed to be let's say 40 inches in the reed then it should be beamed 40 inches as well. How far are we justified in this? The practice shows that we must be right most of the time, since we do not experience much trouble in weaving. And this is perfectly true, as long as weaving of rather coarse yarns is in question. By "rather coarse" we mean anything heavier than 20/2 cotton, 24/2 wool, or 16/1 linen. With finer yarns the case is not so simple. For instance the breaking of warp ends at the edges despite all the precautions

taken may be often traced back to this habit of beaming.

Fig.1 explains why it happens. The width of the woven fabric is always less than the width in reed, because of the take-up on the weft. With very few exceptions, such as warp-face fabrics, the cloth is narrower than the warp in reed. In result the warp-ends between the cloth and the reed are not straight



but run at an angle. The wider the warp - the larger this angle. It depends also on the amount of the take-up in weft, on the yarn used etc. As long as this angle exists, the warp ends - particularly at the edges do not pass freely through the dents of the reed, but rub on the blades. This rubbing does not matter very much in case of heavy, smooth, and strong yarns. But with really fine, slightly rough, and not resisting friction threads, the ends at the edges get frayed, worn out, and eventually broken. More warp ends are broken because of friction than from any other cause.

Now let us suppose that the warp ends do not go in a straight line from the back to the front of the loom (line D - B), but also at an angle (line F - B). Friction would be much smaller, although it could not be eliminated altogether. During its motion, the reed at least part way won't touch the warp. Thus the answer to the problem is to spread the warp from F to G, instead of from D to E.

The exact width of warp on the warp beam is very hard to figure out, because as we mentioned above, the take-up or drawing in of the edges depends on too many factors. At any rate the width of beaming should be always more than the width of warp in the reed. We might estimate it very roughly at about the same percentage as the percentage of the take-up. For instance if the fabric is 10% narrower than the warp in reed, then the width in beaming should be 10% higher than the latter. A warp 40" in reed, which gives a 38" fabric should be beamed at least 42". Of course all this applies to really fine weaving.

The spreading is the easiest and fastest if we use a raddle. Reeds are very poor substitutes for several reasons. First - the reed is usually held in the batten - which is much too far from the warp beam. If we want to guide the warp so as to produce a uniform layer, the guiding device must be quite close to the beam. Then even if we place somehow the reed on the slabstock, the spreading takes much longer than in case of a raddle. Finally with a reed there is a necessity of transferring the lease from one side of the reed to the other, or the reed could not be removed.

A raddle is essentially similar to a reed but open on one side. And it has fewer dents per inch. The ancient home-made raddles had sometimes only one dent for 2 inches. They were made entirely of wood with pegs instead of steel blades or wires. Our "modern" raddles have from 2 to 4 dents per inch.

An old-fashioned raddle had usually a "cape", or a wooden cover which closed the open side of the raddle after spreading.

The raddles on the market can be used either in the batten, where they are fitted instead of the reed, or they can be laid flat on the slab-stock with the blades projecting toward the back of the loom. However for reasons given before we do not advise placing the raddle in the batten.

The most convenient way of attaching the raddle to the slab-stock is to drive two screws in the latter, one at each end, and then to cut off their heads with a hack-saw. The screws should be about 2" long and 1" should project above the upper surface of the slabstock. Two holes are drilled in the raddle so that they will fit the screws. The raddle when in use will be simply laid on the slabstock with screws in holes. There is no need to fasten it any more since the tension of the warp will press it down.

We can easily make a simple raddle at home. Take a piece of wood as long as the loom is wide, and about $1\frac{1}{2}$ " x $\frac{3}{4}$ ", or 2" x 1". Mark a line along the center of one of the flat sides and starting with the center divide it into half inch sections. Now drive one 1" nail into each mark, so that about $\frac{1}{2}$ " will project. This is the raddle. It should be fixed to the slabstock as described above.

When spreading we take a strong thread (8/4 cotton), tie it to the first nail in the raddle and then as the spreading progresses we wind it around the nails thus securing the warp in the raddle.

DRAFTING

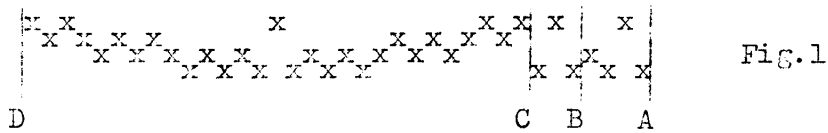
Before a draft can be used for weaving it must be adapted to the woven fabric. It must be completed, so it will contain all the information necessary for threading a loom, and later on - for treadling as well. We shall start with threading.

A full threading draft has usually two or three parts:

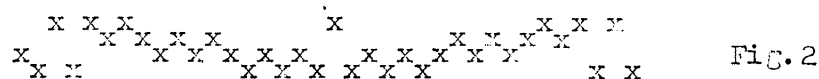
1. The main draft, composed of so many repeats of the particular weave or pattern.
2. The borders - one on each side. They give a certain finish to the woven piece - otherwise it may look as if it were cut from a larger piece. Borders are used only with pattern weaves, but not for upholstery fabrics.
3. The selvedge. This part of the draft has seldom more than 8 ends, which are threaded so as to give a firm, uniform texture, with as short floats as possible.

All these three parts must be adjusted to each other. In adjusting we must take into consideration both practical and aesthetic factors.

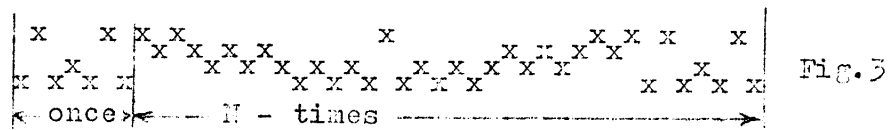
1. The Main Draft. In conventional weaving patterns are usually symmetrical, but the drafts very often are not. Thus the first step in such a case is to "balance" the draft. This can be done in two ways. Let's take as an example the draft in fig.1.



The draft is not symmetrical. To balance it we can for instance transfer the part from A to B to the left as in fig.2.



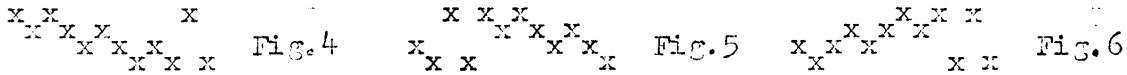
This is still not completely symmetrical, but the difference of one heddle can be taken care of when adjusting the borders. Another way of balancing is to use the draft such as given in fig.1, repeat it in threading the required number of times, and then add at the end the part from A to C (fig.1). It will look as in fig.3.



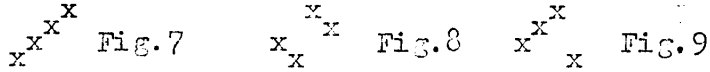
Now the whole draft is perfectly symmetrical. It may be pointed out here that such drafts require always an odd number of ends in the warp.

The next step is to fit the draft into the woven piece. If for instance we intend to weave a 40" wide fabric of 18 lea linen, we shall need about 30 ends per inch, or 1260 ends in all with the take-up and shrinkage. If we want about 2" borders it leaves 1140 ends for the main draft. One repeat of our draft has 36 ends. We divide 1140 over 36 which gives us 31 repeats, and 24 ends left over. This surplus ends must go into the borders - 12 in each. Thus we shall have 72 (60+12) ends for the border and selvedge.

2. The Borders. A border should have either a smaller or a simpler pattern than the main draft. In our case it would be difficult to get a smaller, undistorted pattern without additional frames, but we can have a simpler one: a plain diagonal as in fig.4.



3. The Selvedges. With a 4-frame loom we have not much choice. The selvedges will be threaded as plain 2:2 twill. We cannot get anything simpler.

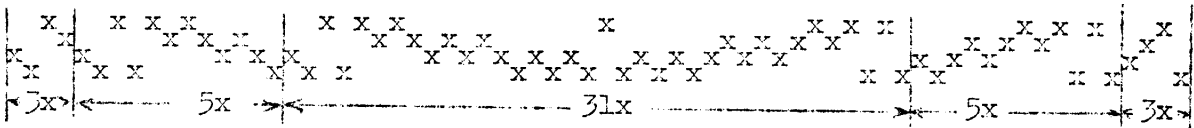


Adjusting. All three parts must be worked out so that: 1-st there is a continuation of design between the main draft and the border, and 2-nd - that the tabby order is preserved. This means that we cannot have two heddles on the same frame, or a gap between frames 1 and 3, or 2 and 4.

The draft for border on fig.4 does not fit neither side of the main draft. There is no continuation of design. Consequently we have to change it as in fig.5 for the LH border, and fig.6 for the RH one. Since our repeat of the border draft has 12 ends we could use it 6 times, but then we would not have anything left for the selvedge. Thus we shall take it 5 times with 12 ends left for the edge.

The same happens when we try to adjust the selvedge draft as in fig.7 to the borders. We have to change it into Fig.8 for the LH edge, and into Fig.9 for the RH edge.

Only now we can assemble the whole draft as in fig.10.



It is a good idea always to check the number of warp ends in the draft before threading. In our case we have:
 $3x4=12$, $5x12=60$, $31x36=1116$, $5x12=60$, $3x4=12$; $12+60+1116+60+12=1260$.

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| Turned Weaves - 2/6, 3/7, 9/7, 13/5, 14/8, 16/9 | Workshops - 11/1 |
| | Yarn and the Sett of warp - 8/1 |

FROM THE EDITOR

Our program for the coming year 1955 is as follows:

We shall continue our Lessons of Drafting with: short drafts, variations of patterns, and analysis.

We start a new serial: yarns, their count, sources, properties, and applications.

In theory of weaving we shall discuss pile weaves, cross weaves (gauze, leno, pickets, riddles), and net weaves - besides the more common techniques.

We shall continue with articles of general interest such as: sett of warp for heavy yarns, mixed warps, doubling the weft, etc.

From now on "Master Weaver" will be sent in envelopes, not folded.
