

TURNEID SWIVEL.

Swivel (MW 1, page 6) is essentially tabby, consequently there are no floats, vertical or horizontal. Thus the term "turned" cannot be applied to the direction of floats. However, in swivel such as we have described so far, the pattern is formed by colours in weft.

If we turn the draft so that the threading draft becomes the treading and vice versa, we shall have colours in warp and only plain ground in weft. The advantage of such an arrangement is not obvious at first. We shall get the same pattern, with the same number of frames, but in most cases we shall have to have at least two warp-beams, because the take-up on the pattern ends will be much smaller than on the ground. On the other hand we shall use only one shuttle - since there are no colours in weft. This makes weaving much faster. Figure 1 shows a draft for plain swivel and fig.2 - a draft for turned one.

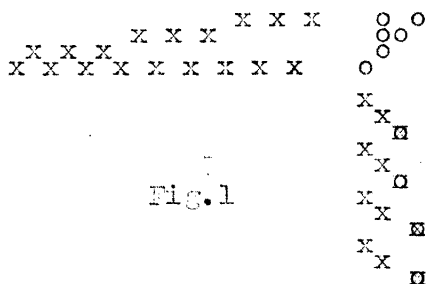


Fig.1

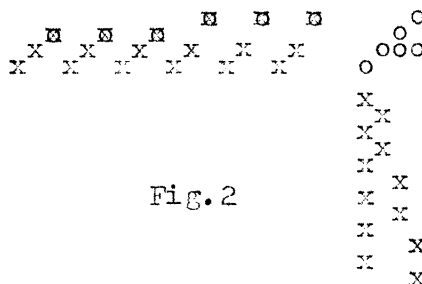


Fig.2

In threading or treading 'x' is ground, and 'o' - colour. The above tie-up will give two blocks of pattern, but no combination of blocks. Since every combination of blocks of pattern in plain swivel requires an additional treadle, then after turning it we need an additional frame. If we have nough frames and enough warp beams the turned swivel is an excellent solution for production weaving, but won't appeal to a hobbyist.

However there is a possibility of using both the plain and the turned swivel in the same piece of weaving. As we know, for purely practical reasons plain swivel cannot have narrow blocks. In horizontal direction we can have even single lines, but in the vertical - the blocks must be not much less than 1/2" wide, or the pattern weft will not stay in the fabric. But just the opposite is true for the turned swivel. Here the vertical lines may be single, but single horizontal lines are out of question.

By combining both drafts (fig.1 and 2) we can have both vertical and horizontal lines on the same piece of weaving (fig.3). Treadles:

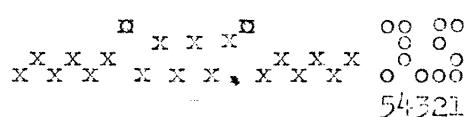


Fig.3

- 5 and 4 give plain ground,
- 3 and 4 - vertical lines,
- 2 and 4 - horizontal line,
- 1 and 4 - another horizontal line.

On a four frame loom, all we can get are two blocks in weft (one being the opposite of the other, and one block in warp. Let us see what we can do in these circumstances. Fig.4 gives a few ideas. Some are conservative, and some are "modern".

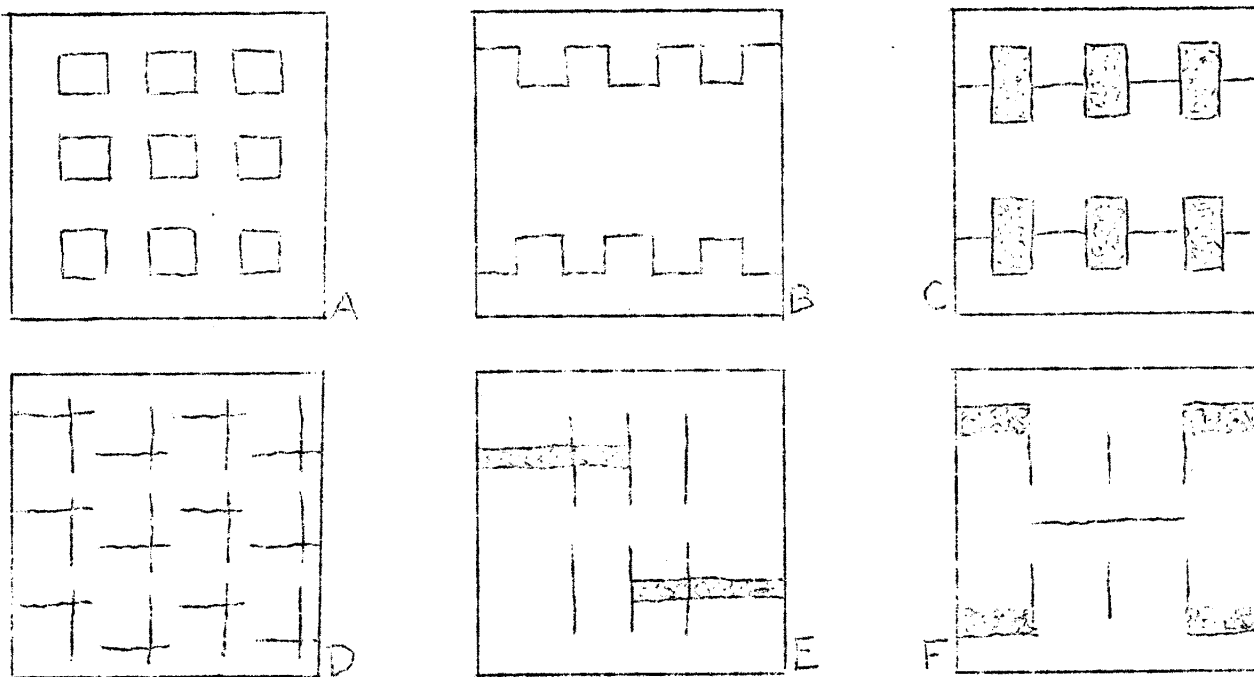


Fig.4.

On fig.5 we have a draft for fig.4 a, b, and c; in fig.6 - a draft for the pattern on Fig.4 d. Fig.7 shows a draft for pattern 4.e, and fig.8 - for pattern 4.f.

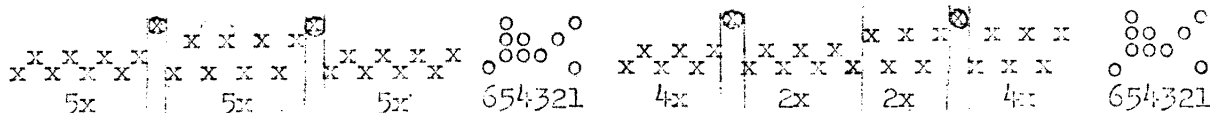


Fig.5

Fig.6

Tie-up in fig.5 or 6 gives the following variations of treading:

- Variation 1. - treading 1,5 - we get plain ground without any colour either in warp or weft. Colours in warp remain under the fabric.
- Variation 2. - treading 6,5 - gives vertical lines in colour.
- Variation 3. - treading 1,5,3, with colour on 3 - gives horizontal lines corresponding to one block of pattern on frame 2. No vertical lines.
- Variation 4. - treading 6,5,3 with colour on 3 - gives horizontal lines as in Var.3, and vertical lines.
- Variation 5. - treading 1,5,2 with colour on 2 - produces the same result as Var.3 but with horizontal lines in the second block of pattern.
- Variation 6. - treading 6,5,2 with colour on 2 - is similar to Var.4 but with horizontal lines in the 2-nd block.
- Variation 7. - treading 6,4,6,5 (not used in any of the patterns on fig.4) gives vertical lines with short floats of 3.

Fig.4 a has been woven in the following way: Variation 1 to make plain ground in the border, then one repeat of Var.6, then Var.2 to square, then one repeat of Var.6, and again from the beginning.

Fig.4 b: Var.1 - one repeat of Var.6 - Var.2 to square - one repeat of Var.4 - Var.1 to fill the center of the woven piece - one repeat of Var.4 - Var.2 to square - one repeat of Var.6 - Var.1.

Fig.4 c: Var.1 - one repeat of Var.6 with the same colour as in warp - Var.6 with a different colour to square - one repeat of Var.4 with the same colour as in warp - Var.6 with the second colour to square - one repeat of Var.6 with the first colour.

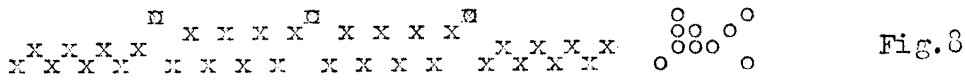
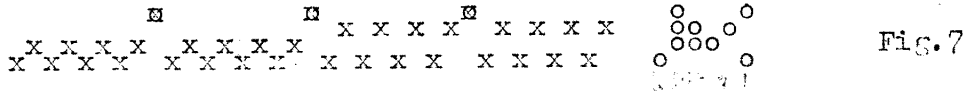


Fig.4 d (draft on fig.6): Var.1 - Var.2 - one repeat of Var.4 - Var.2 - Var.6 (one repeat) - Var.2 - and start all over again.

Fig.4 e (draft on fig.7): Var.1 - Var.2 - one repeat of Var.4 with first colour - several repeats of 4 with second colour - one repeat of Var.4 with the first colour - Var.2 - Var.1 - Var.2 - one repeat of Var.6 with first colour - several repeats of Var.6 with second colour - one repeat of Var.6 with first colour - Var.2 - Var.1.

Fig.4 f (draft on fig.8): Var.1 - one repeat of Var.4 with first colour - Var.3 with second colour - Var.2 - Var.1 - one repeat of Var.6 - Var.1 - Var.2 - Var.3 with second colour - one repeat of Var.4 with first colour - Var.1.

Of course there are many more possibilities than the above 6 examples.

The technical requirements of turned swivel are few. Since the vertical blocks of pattern form long floats, the take-up on the corresponding warp ends is much smaller than on the ground warp. Consequently the colours in warp cannot be warped and beamed together with the ground warp. If they are few the best solution is to wind them on bobbins and hang at the back of the loom. If they are more numerous they can be beamed on a separate warp beam - it may be a small roller, or a broom stick tied to the loom frame.

The frames with only a few warp ends are no problem in a jack-type loom with single or double tie-up. In counterbalanced looms, these frames should be tied each with two cords (one at each end) to the loom frame so that they will not rise higher than necessary to open a good shed. Otherwise there would be too much tension on the colours in the warp.

The sett of warp, as always with swivel, should be rather close and the beating - hard. The yarn for the pattern should be a little heavier than the one for the ground. The colours bright or dark, otherwise the pattern will be hardly visible.

The floats at the back may be cut close to the fabric - after washing and ironing, or - if only one side of the fabric is going to be used - they may be left as they are or better cut about 1/4" from the fabric.

We shall discuss later the turned swivel on more than 4 frames as well as the "three dimensional weaving" of swivel.
