

DRAFTS FOR 8 FRAMES.

Most handweavers take it for granted that each draft should be woven on a possibly smallest number of harness-frames. In industrial weaving just the opposite attitude seems to prevail: that the warp ends should be distributed uniformly on a rather large number of frames.

Both points of view are justified. If we have a four-frame loom, then obviously we should like to get as much out of it as possible. We do not aim at speed, and we have seldom to face a problem of threading more than 50 warp ends per inch. Therefore we crowd half of the warp on one frame quite often (Bronson, spot, swivel) regardless of the friction between the warp and the heddles it produces. But the industry works with much closer setts of warp, and can not afford to have warp ends broken by friction. And of course the number of harness-frames hardly matters in power weaving. Just the contrary: with a high number of frames the threading may be much simpler than with a low one.

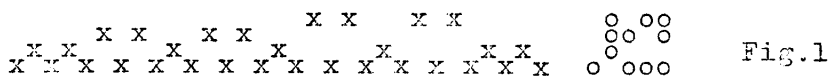
A weaver who has a multi-harness loom is in a position to afford the industrial outlook on many weaving problems. When he has for instance a draft for four or five frames, he will use intelligently all eight, and he may get better results particularly with fine yarn. Better, because there will be less friction, less possibility of broken ends, and more balanced treadling. This is true of course only on the condition that the eight-frame loom is properly built and not too heavy in operation.

Besides this, there is another factor, which may be important in certain circumstances. Any threading on 8 frames gives more variations of weave or pattern than the same threading on four harness-frames. The change of the tie-up is always easier than re-threading of the loom.

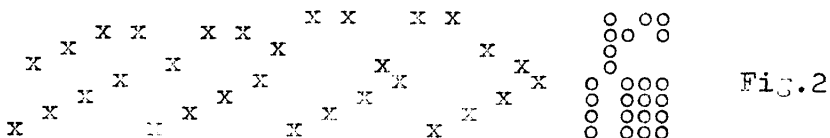
To demonstrate what can be done with 8 frames we shall take up two problems: 1-st how to transcribe four frame drafts into better balanced eight-frame ones, and 2-nd: what can be done with plain sequence threading on 8 frames.

1. Four frame drafts.

Let us take as an example a Bronson Lace. A draft for 4 frames:

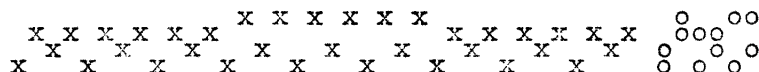


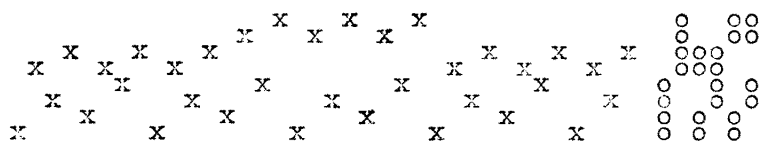
will look on eight frames as follows:



Since as a rule there is quite a lot of tabby ground on such a draft, and therefore the frame No.2 has more heddles than 3 or 4, we are justified in distributing these heddles on two frames: 5 and 6. Frame No.1 which originally carried half of the warp is now replaced with four frames: 1,2,3, and 4. Thus the warp is as evenly distributed on the eight frames as possible.

A draft for Summer-and-Winter can be still easier converted into an 8 frame one. Each frame is replaced by two. E.g.:

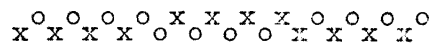

 changes into:

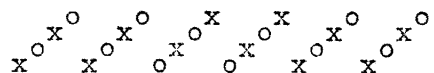

 Fig.3

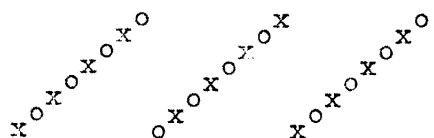
The same method of replacing one frame by two may be used in case of pattern twills, crackle, overshot, etc. - where the frames carry about the same number of heddles. However nothing is gained here unless the sett of warp is so high that the frames are overcrowded, and that there is too much friction.

Thus such weaves as Bronson, spot, swivel, dropped tabby, cannele, etc., are always easier to weave if transcribed from four into eight frames. Other weaves should be transcribed only when the sett of warp is rather high (above 40 per inch).

A high sett of warp does not mean necessarily fine yarn. For instance two-block rep weave theoretically can be woven on two frames, but even on four frames the sheds may not open too easily particularly on jack-type looms. Therefore there is every reason, if we have an eight-frame loom, to use all eight frames. Thus a theoretical but very impractical draft:


 becomes practical on 4 frames:


 and still easier to weave on 8:

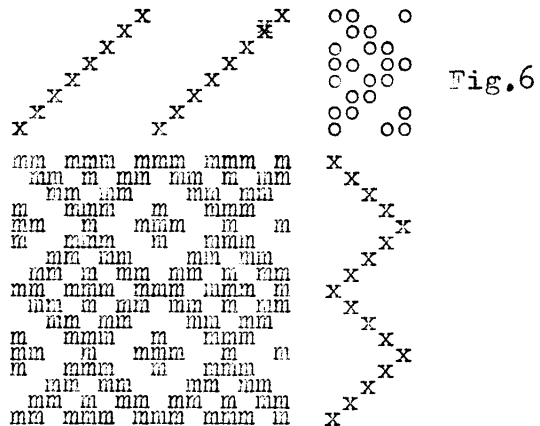
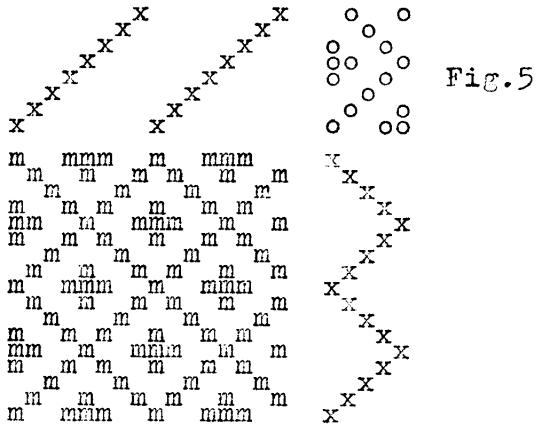

 Fig.4.

In the last case we can really cover the weft with warp without any difficulty.

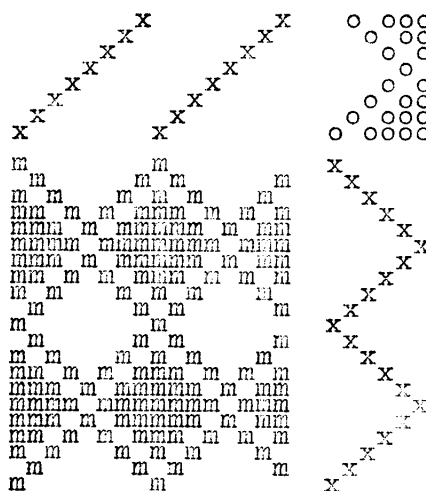
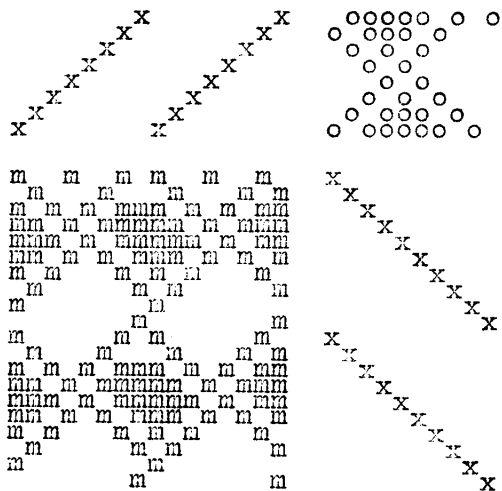
The same applies of course to such weaves as overshot, crackle, or summer-and-winter when they are "turned", i.e. woven with colours and pattern in warp, when a closely set warp is required, to double weaves for four frames (circular, double width, etc), quilt weaves and so on. Here again threading on eight frames will be often much easier than on four.

2. Drafts for more than 4 frames.

Another advantage of eight frames shows when we transcribe drafts originally meant for 5 frames. Not only that the frames are less crowded but in most cases we can use plain sequence threading. Here are two examples of 5 frame diamond twill which would require a herringbone threading on 5 frames, but may be threaded in sequence on eight:

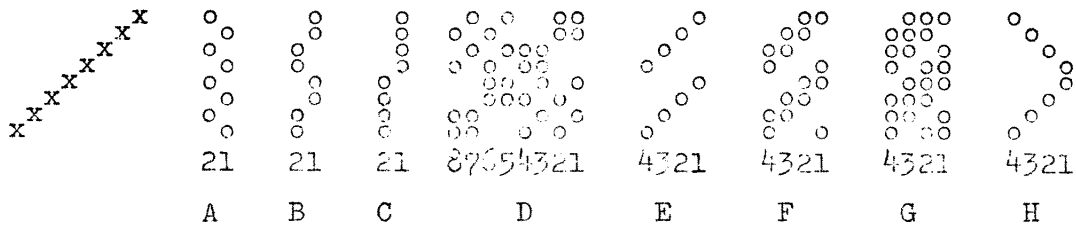


This applies not only to twills, but to many other weaves. As an example can serve the 5-frame waffle, often considered to be

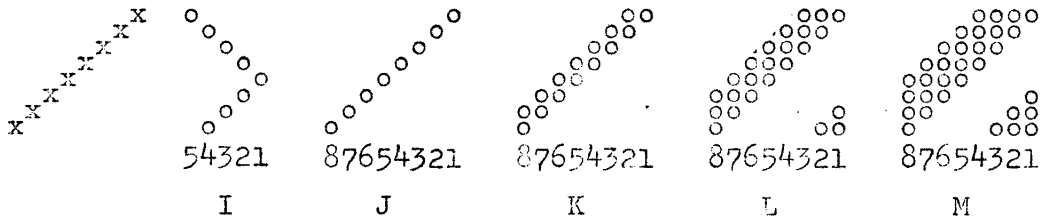


the "perfect" waffle (fig.8). On the other hand we can weave on the same threading another waffle, which could not be written on less than eight frames (fig.7).

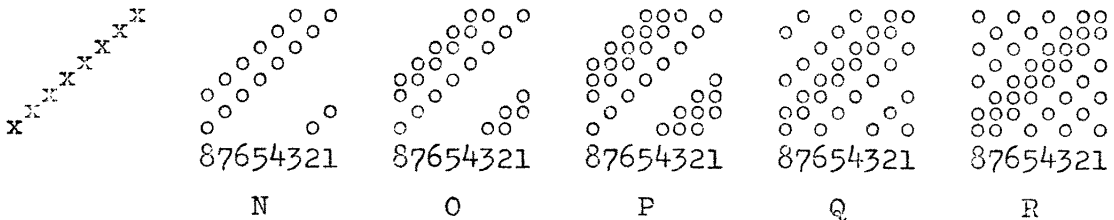
We cannot discuss here all the drafts written originally for 8 frames, because their number is astronomical. However we are giving on the next page typical tie-ups for several basic weaves, as well as for some 8 frame twills. The idea of these basic tie-ups is to enable the weaver to use them in combined tie-ups when for instance tabby, basket, and twill are used in the same piece of weaving. All the tie-ups are for plain threading: 12345678 or 87654321.



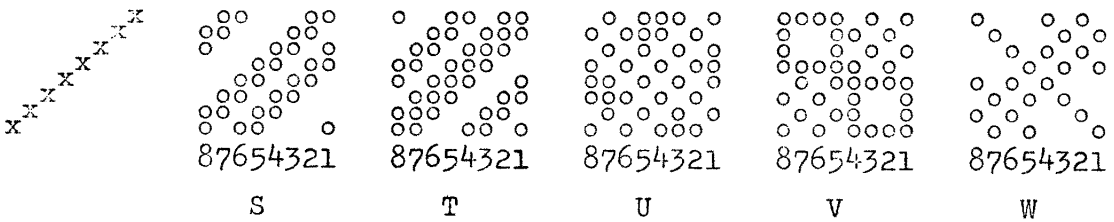
A - tabby; B - 2:2 basket weave; C - 4:4 basket weave; D - mixed basket and tabby (treading: 12345678); E - 1:3 twill; F - 2:2 twill; G - 3:1 twill; H - diamond twill.



I - diamond twill; J - 1:7 twill (this can be woven as plain or broken, or even satin: 85274163); K - 2:6 twill; L - 3:5 twill; M - 4:4 twill.



N - 1:1:1:5 twill; O - 1:1:2:4 twill; P - 1:1:3:3 twill; Q - 1:1:2:1:1:2 twill; R - 1:1:1:1:1:3 twill (diagonal of floats of 3 on a background of tabby).



S - 1:2:3:2 twill; T - 1:3:2:2 twill; U - pattern twill; V - alternate squares of tabby and floats; W - alternate squares of 1:3 twill and tabby.

The drafts: J, K, L, M, N, O, P, Q, R, S and T can be woven as biased or broken twills. Drafts U, V and W should have plain treading, but in case of V and W corded fabrics may be woven also. W should give crepe effect when treadled: 13245768.
