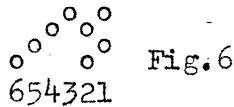
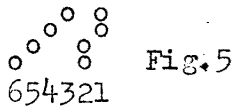


floats, when compared with a biased twill, or with a balanced one of the same order. For instance in the above example (fig.4) we would have a float of 3 in a 2:2 twill, but in a double face twill there will be floats of 5 on both sides. This is the reason why for instance overshoot cannot be used at all in this technique. The floats would be much too long for practical use.

A problem in case of nearly every double face twill is the tie-up. It always requires more treadles than the loom is equipped with. For instance a 4 frame double face twill is woven on either 8 or 10 treadles, and 8 frame one - on 16 treadles and so on.

In such a case we have to use either direct, or partly direct tie-up. For instance instead of the tie-up on fig.1 we have the one



on fig.5. The treadles no.1,3, 5, and 7 on fig.1 are here replaced with a combination of two treadles used simultaneously, so that the treadling for biased twill will be:

2+3, 3, 1+6, 4, 1+5, 5, 2+4, 6. If binder is used, or any amount of tabby woven on the same tie-up, fig.6 gives a still better solution. Here the treadling for plain twill is: 1+6, 3, 2+3, 4, 1+4, 5, 2+5, 6. In a similar way most problems of treadling can be solved, although with a higher number of heddle-frames three treadles must be often used at the same time.

WEAVING TERMINOLOGY

Lash, Leash, Lease.

There is a little confusion as to the proper use of these three terms, particularly in such expression as "Leash-Sticks". The last two have the same etymology, and were at a time used in the same meaning.

Lash comes from old English "lashe" (whip) and designates two picks of weft; probably the movement of the shuttle there and back suggested an analogy with the action of a whip.

Leash (possibly from Latin "laxus") is the same as Heddle in U.S. Therefore "leash-stick" in England means the same as Heddle-stick here, and never the same as Lease-Rods.

Lease is a corruption from Leash. Originally then both meant the same, but they do not any more. Now "lease" means the same as cross in the warp. Etymologically then it would not be a great mistake to speak about "leash-rods", or leash-sticks, but it certainly would be very confusing.
