
MASTER WEAVER

Z - H A N D I C R A F T S • F U L F O R D • Q U E B E C • C A N A D A

March 1954

No.14

THE LEASE AND THE LEASE-RODS.

We can risk the statement that of all the parts and accessories of a weaving loom the lease rods (not "leash") are most often misunderstood. On one hand we have weavers who get panicky whenever they see lease rods being pulled out of the warp, and on the other those who make it a principle to never weave with lease rods in. Who is right?

First of all what is a lease? It is such an arrangement of ends of warp, crossed singly, in pairs, or even in fours, which keeps the ends always in the same order regardless of what may happen to the rest of the warp. If this order were not preserved the beaming would take a very long time, and in certain cases it would be even impossible. Should the lease be dropped after beaming the threading although possible will be difficult, and later on during weaving we shall discover that we have a lot of twisted ends which give an uneven tension to the warp and a wavy line to the weft.

Depending from the method of warping, we may have only one lease in the warp, or two - one at each end. In old English terminology the first of them has been called "portee cross", and the second "porrey cross".

A lease is not the only way of preserving the order of ends in a warp, but it is the easiest and the most efficient way.

The role of lease rods is two-fold: first they secure the lease itself, and from this point of view they are necessary only as long as the lease is needed. For instance after the loom is threaded the lease can be dropped, since the ends are kept in order by the heddles. Thus except when the threading does not produce tabby, and when at the same time there is a possibility of re-threading the loom, the lease rods might be removed.

The second role of the lease rods is to keep the back shed in the proper shape. This shed should have a definite size, and it should be as clear and free from tangled ends as the front shed.

If two or more ends of warp twist around each other, which may easily happen during beaming, they form a shorter shed than all other ends (fig.1). This means that there will be more tension on these twisted ends than required. Difference in tension results not only in a wavy line of weft (with elastic warp it disappears soon enough), but it may stretch the twisted ends permanently so that after being too tense at first they become too slack later on. This produces in the fabric uneven areas alternately too open and too firm, thus spoiling both the appearance

and the quality of the cloth.

In fine weaving we have still another factor. If the front and the back sheds are of widely different size (fig.2) there is a slight

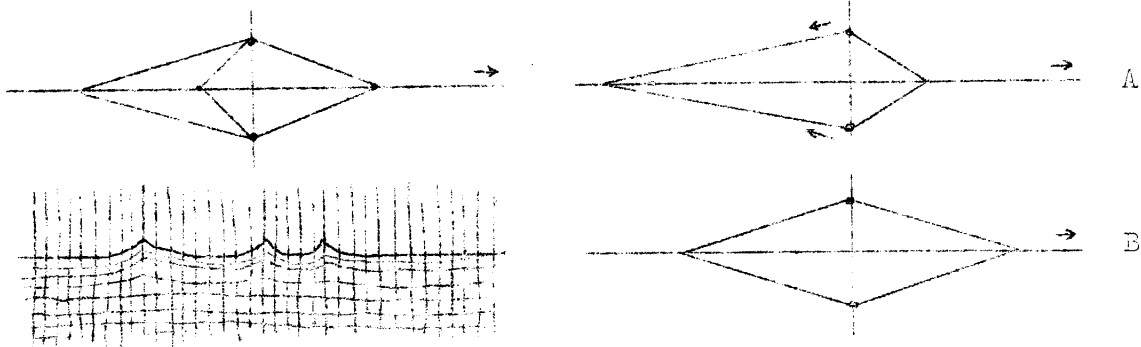


Fig.1

Fig.2

sliding movement of the warp through the heddle-eyes each time the shed is opened or closed. This movement may not amount to more than a very small fraction of an inch, but it is quite sufficient to break the yarn if the latter is fine and not resistant to friction. Even if the yarn is not actually broken, the friction in heddles will raise lint on the warp ends, which later on will show as a fluffy line running all across the fabric.

This effect is entirely negligible with such heavy yarns as for instance 10/2 cotton, particularly mercerised, but may have disastrous effects with single linen finer than No.30.

Since the friction here is between the yarn and the heddles - the harm done depends on what kind of heddles we use. The best from this point of view are cord heddles since they are soft enough to move together with the yarn so that there is hardly any sliding. The second best are good quality, well polished round wire heddles.

Thus the rules of using the lease rods are as follows:

1. We do not gain anything by removing the rods, except when finishing a warp.
2. The rods should not be removed whenever we may want to re-thread the loom, and when at the same time the threading has no tabby.
3. The distance between the rods and the harness should be the same as the average distance between the harness and the fell (last pick of weft, as in fig.2 B).
4. In working with fine yarns the lease rods must be in place. Even if they are not required in beaming (sectional warp), they should be inserted later on.
5. For the same reason as in 3 the rods must be tied to the loom frame so that they cannot move with the warp.

There is not much to be said about the mechanical properties of lease rods. They should be slender and springy, so that they bend easily when there is a tangle in the warp - instead of breaking the ends. They must have well rounded edges, and be perfectly smooth. They should be polished but better not varnished - the warp ends cut through the varnish. And finally they must have a large hole at each end.