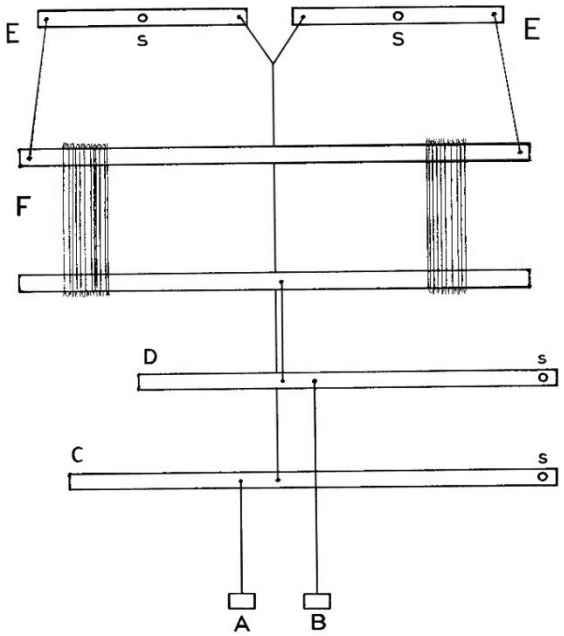
The parallel countermarch system

In a countermarch loom, every shaft is actively involved in each shed: Each shaft is either lifted or pulled down by each treadle.

Uneven sheds, for example a satin weave shed, where four shafts are lifted and one is pulled down, open cleanly every time. The warp ends on the fifth shaft do not tend to ride up as they often do with jack looms.

When the shed is made, the same tension is applied to the raised ends as to the lowered ones, resulting in the best shed in relation to the increase of the warp tension.

Traditional countermarch system

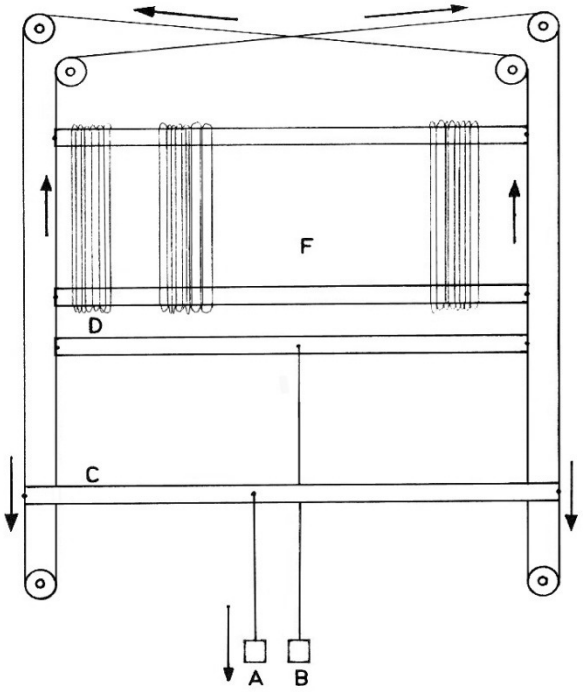


Look at the diagram to help you understand how a countermarch loom works. The points marked S are the pivoting points for the lams C and D and the jacks E.

You will see that beneath each shaft, there are two lams associated with it. One of those lams is directly connected to the shaft and moves in the same direction as it does: when this lam is pulled down, the shaft moves down. When the other lam is pulled down, the shaft rises.

Parallel countermarch

Each shaft is attached to a cord, which goes over all six rollers. The ends of the cord are joined, so the cord forms a continuous loop. When treadle A is pressed down, the lower lam C, attached to the outside part of the cord, moves downward, pulling the shaft F up. When treadle B is pressed down, the upper lam D attached to the inside part of the cord, goes down, pulling the shaft with it.



Compared to the traditional countermarch, the parallel countermarch has five nice features:

1. In contrast to the traditional countermarch, the lams of the parallel countermarch stay horizontal, while moving the same distance as the shafts. This means that the action of all treadles is the same, not depending on their location in the width of the loom.
2. The parallel countermarch system is more compactly constructed, because the action space the lams need is less than pivoting lams and the rollers at the top take less space than jacks.
3. Shaft bars and lams cannot slant. Their ends are fixed to the cord and when the cord moves, all parts of the cord have to move the same distance.
4. There is no tie-up to the middle of the lower shaft bars, so the heddles can be moved freely over the shafts.
5. There are no cords, connecting the lams to jacks, running through the middle of the warp

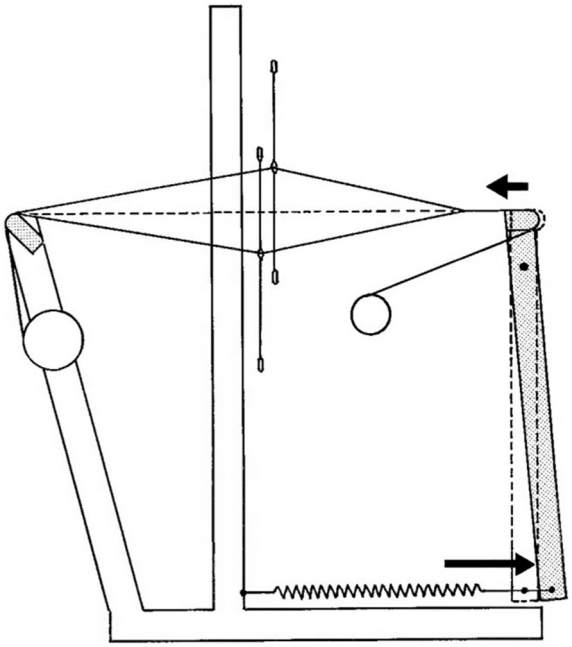
Because each treadle is tied to one of the lams of each shaft, twice as many tie-ups per treadle must be made, on the average, compared to looms with another system.

Before the advent of Texsolv cord, the time required to tie up a countermarch loom was

daunting. Once the ties were made, there were still problems as knots slipped or had to be untied to adjust the cords. Fortunately this drudgery is a thing of the past. The Texsolv cords neither stretch nor require knots. The Texsolv tie-up cords are attached to the lams and can be simply hooked onto the treadles. Changing the tie-up is easy and fast.

To improve the countermarch shed, to offer the best shed a shaft action system can provide, Louët invented an action system for another part of the loom that holds the warp:

The moving breast beam, controlling the warp tension



The moving breast beam allows the shafts to move more easily in their opposite directions. Looking at the diagram that shows the loom from the side, you will see that a shed is giving the warp a kind of parallelogram shape. Imagine, the warp is made of inelastic material, like metal wire, you will understand that making a shed is only possible if the distance between breast beam and back beam becomes smaller. When this distance is fixed, as it is on other looms, the shed depends completely on the elasticity of the warp. When the shed becomes wider, the tension on the yarns increases (enormously, in case of a less elastic warp). That causes heavy treadling and may damage the warp.

The moving breast beam is held by springs, adjustable to give your warp the tension needed for your project. Besides improvement of the shed and protection of the warp, the springs guarantee exactly the same warp tension each time you have to advance the fabric.

The Texsolv system

Texsolv cord and heddles are Swedish products, crocheted out of polyester yarn.

Cotton heddles have the advantage of being silent in use. Metal heddles, flat or wire, have the advantage of having open eyes. Texsolv heddles combine these features. A bundle of Texsolv heddles is a continuous line of 100 heddles folded into a zigzag. Each bundle is fastened in four places. These ties make it easy to pass the shaft bars through the upper and lower loop of the heddles. Do not remove the ties from the bundles, until the heddles have been slipped onto the shaft bars or the loops of the bundles are inserted by sticks, to protect the heddles from becoming entangled.

If you need to remove heddles from a shaft, first tie them as they were originally. Use a pair of sharp scissors to cut the heddles apart.

Texsolv cord consists of two cords, which are connected every 12 mm, forming loops in between. If needed, the cord should be cut between two loops. To prevent unraveling, the ends should be singed. Be careful not to overdo the melting and be aware that melted polyester is very hot and will burn the skin.

By mentioning the first or last loop in these instructions, the loop is meant, next to the one where the cord is cut, because when that loop remains after cutting, it has no strength and should not be used.