

---

# MASTER WEAVER

---

BI - MONTHLY BULLETIN FOR HANDWEAVERS

---

Z - HANDICRAFTS - FULFORD - P.Q. - CANADA

---

July - August 1959

No.46

## THE STORY

OF THE TECHNOLOGY OF HANDWEAVING - 2.

When speaking about the history we must disregard primitive weaving, not only because its chronology is uncertain, but it is also different for every country. What was long forgotten past for India, is the present for American Indians, and both may be a distant future for New Guinea.

The countries which knew industrial weaving (i.e. done by specialised craftsmen to supply the needs of a large community) were: China, India, Egypt, Greece, and Rome. Smaller countries bordering on these large centres of civilisation were surely partaking of their technical achievements and do not need to be considered separately. Europe, or at least central Europe is a problem and we shall discuss it after Rome.

China discovered quite early the silk worm, and the extreme finess of this yarn required appropriate weaving methods. No amount of patience could produce fine silk fabrics without shedding motion and without shuttle. Thus China seems to be the motherland of modern handweaving.

India probably got the idea of a foot-power loom from China. In the Hindu version it was a dugout in the ground. The weaver sat on its edge with his feet in two stirrups which activated the shafts. The loom frame was made of bamboo sticks simply planted in the ground but it contained all the essential parts of our modern loom.

Egypt never came anywhere near the technical perfection of the Far East. There were two types of looms: one vertical, and one

horizontal. Both had lease-rods, but at first only one tabby shed could be open by following the lower lease-rod: the other had to be picked-up. Later on there is a heddle-stick for the other shed of tabby. Beating was done with a flat stick. Shuttles if any were of the flat type. There is no evidence of shedding motion operated by treadles, stirrups, or levers. But they had a cloth beam, and the warp could be much longer than the loom itself, although it was not wound on a warp beam.

Greek looms were still more primitive than the Egyptian ones. They were always vertical. The cloth beam was at the top between two uprights. The warp hung from it and was wound around stones or special weights made of clay. As the weaving proceeded the warp would be unwound from these weights. The beating was done upwards, which must have been particularly awkward. No evidence of any shedding motion, or even of heddle-sticks.

As far as the Mediterranean area is concerned we have the following picture: 2,000 BC and probably much earlier we have in Egypt a horizontal frame loom (the warp stretched as on a sample frame). This loom slowly disappears and is replaced by a vertical model of a similar design (the warp is not weighted). It is possible that this loom came to Egypt from Syria. Greece uses only vertical looms, but with weighted warp. Rome adopts later on the Greek loom. In the meantime the vertical Egyptian type travels west and north, when the Greek loom which as we already have mentioned became "official" Roman type, enters Egypt with the conquerors.

In the fifth century the Greek loom disappears from the Mediterranean basin; the vertical Egyptian takes its place and remains in universal use until the tenth century, By this time it was slightly improved: both cloth and warp were wound on rollers, and the sheds were opened with heddle-sticks with doups. But still no treadles, and no shuttle which could be thrown.

At about the same time appears a new type of weaving loom: horizontal with two and then three shafts operated by treadles. This third shaft constitutes a very important development, because it made possible weaving of twills. It is said that this invention came from Syria, but it is rather unlikely, because the 3 shaft loom was very soon followed by 4 shafts and even by the draw-loom. Obviously it

was not a local development, but a "break through" from the Far East. As we shall see later the same type of foot-power loom was known at about the same time (the tenth century) much farther north in countries which had no relations with Syria.

It seems that when the foot-power loom travelled all the way from China to the Western Europe, the vertical loom went in the opposite direction and was adopted in China for weaving tapestries.

How sure are we of our facts? Most of it is pure speculation, because the earliest "proof" of treadle loom being used in Western Europe comes from the 14-th century! But the analysis of fabrics, interpretation of texts, pictures etc, give us a pretty good picture of what was happening.

But the situation north of the Mediterranean is not clear at all. For instance if we can trust Julius Caesar it seems that England did not know weaving at all, but France (Gallia) at the same time already produced twills on a commercial scale. Would that mean that the foot-power loom was known in Western Europe in zero AD? This is extremely unlikely. Yet, we know that the foot-power loom came to the central Europe earlier than to the Mediterranean basin.

In pre-roman times we find vertical looms with weighted warp (Greek type) nearly everywhere. Iceland, Scandinavia, Switzerland, Poland, Germany. But they disappear long before the tenth century, and are immediately replaced by the "modern" horizontal looms, with treadles, shafts, and shuttles. A shuttle used in Central Europe in the tenth century looks exactly like the shuttle we are using now.

Now, what happened? Why the weighted warp was not followed by the vertical frame loom, as in the South of Europe? Where are the intermediary stages?

Obviously here again the development was not of local origin, and the looms came from the same source as the foot-power looms which invaded the Mediterranean area, i.e. from the Far East. How the idea travelled - we cannot even start guessing. But the best proof that the modern loom was not invented in central Europe is, that once it was established there, it remained in its original form for nearly a thousand years! Surely if the local craftsmen were so gifted, that they could bridge the gap between the Greek loom and the foot-power loom without going through other stages, then they would not stop

there, but kept developping this particular model. Yet no material changes in the construction took place during some ten centuries, execept when there was an obvious influence from the outside

The eleventh century must have been to the weaving world, what the twenteeth is to the science. The dvelopments (we do not use the word "discovery") followed one another at such a rate that now we cannot visualise the whole process. The Draw-loom appears in Spain at the same time when in other coutries of the Western Europe even the four-shaft foot-power loom is unknown. With the improved conditions of trade, weaving technology spreads everywhere and becomes stabilised in the following centuries. Then nothing much happens for a long time. There are local variations of the pattern and yarn, there is a trend toward very elaborate tapestfies, quite independent from the development of the draw-loom. The factor of efficiency does not come into consideration. The best weaving is done leisurely with complete disregard of cost and time.

The first sign of the impeding decline of weaving is the invention of the flying shuttle (beginning of the eighteenth century). Its purpose was to make possible weaving of wide fabrics by a single weaver. But once invented, it has been used also to speed up the whole process.

Jacquard could be called the spiritual father of power weaving, but he was also a gravedigger of the Craft of weaving. His machinery for the first time could produce any length of most complicated fabrics, and any number of most elaborate pieces, provided that they were identical. Thus the mass production started long before the invention of the power loom.

Handweaving as a profession declined very fast under the pressure of the power loom, and and it died out in the first half of the nineteenth century. It survived in poorer or more conservative countries for another century. Then came the revival of handweaving.

It is much too early to write the history of this last period. We are actually making this history now, and its future is in our hands.

\*\*\*\*\*