

S H O R T C U T S

HOW TO MAINTAIN & IMPROVE A WEAVING LOOM

1. Counterbalanced (CB) Looms.

A counterbalanced loom should have a Shed Regulator, unless it is going to be used with balanced tie-ups only. By "balanced" we do not mean necessarily that each treadle is tied to two shafts. It may be tied to one shaft or to three shafts - but all treadles used in the same piece of weaving must be tied to the same number of shafts. This can be done only if the upper tie-up (between the rollers and the harness) is adjustable, otherwise the loom is limited not only to balanced tie-ups but to so-called "standard" tie-ups.

Therefore, unless we intend to weave only plain tweeds and similar fabrics, the first thing we should do is to add a shed regulator. It costs about \$ 10, or it can be made in home workshop for much less. You will find the description of shed regulators in old issues of the "Master Weaver" (No.1 page 12; and No.10 page 9). But the most important condition of success here is not so much to get one, but to understand how it works, and to get used to it. A poorly working regulator is worse than no regulator at all.

It is a mistake to suppose that when we have a shed regulator we must dismantel it each time when we do not use it. Nothing of the sort. A regulator can be immobilised in 20 seconds, and then the loom works as if it never had one. On the other hand with very fine yarns we may find it advantageous to adjust even the balanced sheds with more precision.

A shed regulator does not need to be tied to all treadles. For instance if we have 4 treadles tied to 2 shafts each, and 2 treadles tied to one shaft each - only the last two treadles must have additional ties to the regulator.

Finally the shed regulator may raise all shafts in the first place (by stretching the springs), and then no additional ties need to be used regardless of the tie-up (the loom works as a reversed

jack-type). This latter method is particularly valuable in two cases: when we make experiments and change the tie-up rather often; and when we press more than one treadle at a time (direct tie-up, and compound tie-up).

All these possibilities of the regulator must be tried, and mastered before attempting any project at all.

2. Jack-type looms.

The most objectionable feature of nearly all looms of this type is not so much the lower speed and therefore inferior performance, but the impossibility of adjusting the lower part of the shed.

The ties in the tie-up of a jack-type loom are seldom adjustable. But even if they were it would not help much, because the length of a tie has no influence on the lower part of the shed, which is the most important one, since it supports the shuttle. Quite often an open shed touches the shuttle race (lower part of the batten) or the lower shaft of the reed.

The lower part of the shed should be absolutely flat, but at the same time it should never touch the reed or the batten. If it is not flat the shuttle will not travel in a straight line. If it rubs on the batten - it will ruin any fine yarn. Fig.1 shows a per-

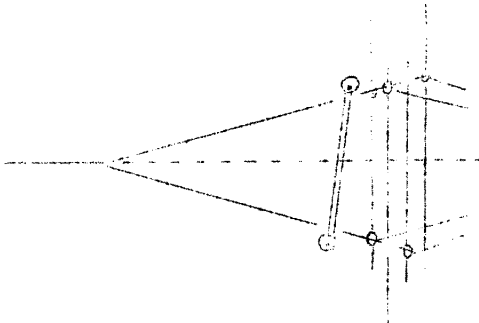


Fig.1

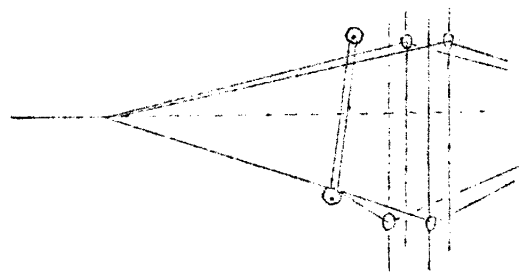


Fig.2

fect shed, seldom found in jack-type looms, and fig.2 - the more common case in which the flatness of the shed is achieved by bending the warp around the batten. The shed is flat but at the cost of the warp rubbing the batten most of the time.

We shall risk here a statement that the reason why so little weaving with fine yarns, single linen, etc. is done in North America is that there are too many jack-type looms on this continent.

And yet the solution of this particular problem is so easy, that it is hard to imagine why the makers of jack-type looms did not think about it long ago.

All we must do is to fix a smooth and round stick, dowel, or old broomstick across and under the warp right in front of the harness (fig.3). It may be fixed with two screws to the uprights of the loom, or it may be hung from the top on two cords. In the latter case it should also be tied with two shorter cords to the uprights, or any other part of the loom frame, so that it would not move with the warp, when this is being pulled forward, but those two additional cords are not essential.

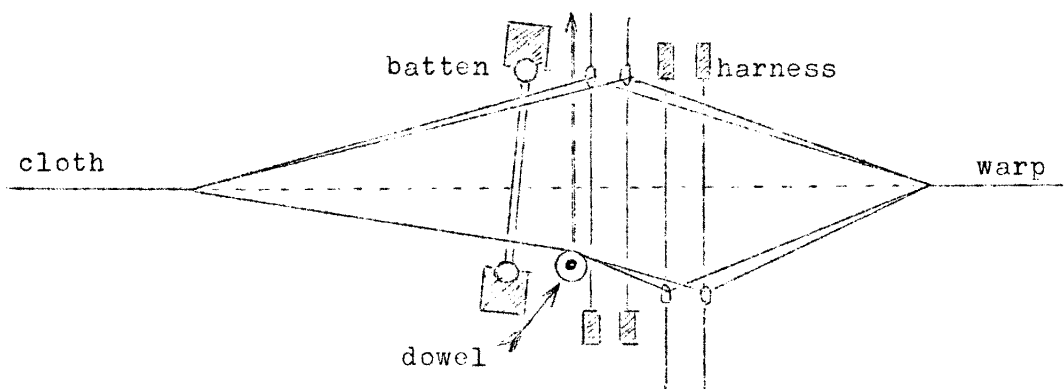


Fig.3

What is important, is that the dowel be smooth, and that it be strong enough not to bend under the tension of the warp.

The exact position of the dowel is very important: the warp must bend about it, but it must just clear the batten and the reed shaft, i.e. it cannot touch it in any position of the batten.

One may ask: what is the difference between fig.2 and 3? They both look about the same. Yes, but not in action. In fig.2 the warp bends around a moving part of the loom, when in fig.3 it bends around a piece which is stationary. There is still some friction, when we move the warp forward, but this is negligible.

Incidentally the same arrangement made in exactly the same way can be used with CB looms. It is not necessary at all, at least in theory, but when working with fine and brittle yarns it will be an additional safeguard which may save us a lot of broken ends.

Shall we call this additional dowel something or other? It could be called a "Shed Stop" which it is after all.

3. Additional parts of the loom.

Few weavers realise that a high number of shafts is or may be of little importance, but that additional warp beam, or beams are very useful. Even with two-shaft looms we can weave very unusual fabrics if we have two warp beams. Thus, if there is any possibility of buying a loom with two warp beams, it will be a good choice. Obviously each beam must have a separate brake, and at least one of them must be a friction brake, so that the tension of both warps can be adjusted at will. On the other hand a second warp beam can be made in any home workshop at little expense. We shall describe such a home made beam later on when speaking about two-warp fabrics.

Perfect weaving can be done (theoretically) only when the front shed remains always of the same size. This means automatic "take-up" - which moves the warp forward with every beat of the batten. As far as we know there are no such looms on the market. But the take-up mechanism is very simple and also can be made at home.

What is however much easier, and also important, are a few small screws driven here and there in the loom frame. For instance one on the left hand upright with a pencil on a long string hanging from it. Saves us looking for the pencil. Another on the right hand side with a pincussion for pins, needles (at least one darning needle) etc. Scissors should hang from a hook on the right hand side of the bench, but they should not be tied on a string: the first thing we do is to cut the string with the scissors, because they are needed somewhere else. The bench should have plenty of space on top, or a tray attached to its right hand side, or a drawer for all sorts of odds and ends: yarn, full and empty bobbins, threading hook, scotch tape, paper, measuring tape, glue, paraffin wax, resin etc.

More screws are needed in the loom frame for tying the lease- rods, for the raddle, etc. We shall speak about it later, when describing beaming and threading.

Factory made looms have frames usually made of hardwood. Neither nails, or screws can be driven in hardwood directly. They will bend, or break, or split the wood. A hole must be drilled first - a little smaller than the diameter of the screw, and as deep as its length.

4. Maintenance.

All screws and bolts get loose. Tighten them periodically with a wrench and a screwdriver. How often? It depends on how often and for how long the loom is being used. Do not tighten the bolts or screws which support the batten, or at least make sure that the swords of the batten do not bind on the frame.

All cords stretch. Adjust them quite often when they are new. At first after a few hours, then after a few days. If they break, replace with heavier or stronger cords. When replacing the cords of the tie-up it is advisable to replace all of them at the same time. Otherwise they will stretch at different rates, and the tie-up will have to be adjusted all the time.

All moving parts need lubrication. There are hardly any looms left with wooden shafts in wooden bearings. If you have one of those oldtimers use axle grease. Otherwise fairly heavy car oil (No.30) will do in most cases. The fastest moving parts of the loom (jack shafts, rollers, pulleys) require most attention. Then the batten supports, bolts probably; treadle shaft or hinges; finally the cloth beam, and warp beam bearings, and the cloth beam ratchet. Do not oil a friction brake!

Buy a small sprayer (as for flies) and fill it with the purest kerosene, or coal-oil. Spray from time to time the reeds, and steel heddles not in use, and even the ones in the loom, as well as all steel parts of the loom. The oil, if really pure, evaporates and is not supposed to stain anything, but it prevents rusting. Wipe the loom dry after each such spraying.

From time to time rub all wooden parts of the loom with lemon or banana oil. At longer intervals wax them (hard wax) or better si-monize - follow directions. Do not varnish. If any of the important working parts of the loom is damaged (deep scratches in the slabstock, or breast piece) it should be re-finished in a wood-working shop.

Properly maintained loom will last for ever, and even a badly damaged one can be easily restored, unless of course the wood is rotten, which should not happen in the first place. Restoration of antique looms is a different story.
