



THREADING IS EASY

by Harriet Tidball

If there is one aspect of handweaving generally disliked, this would certainly be threading. To many weavers it is just a long, tedious nerve-wracking job which is little more to the weaving than a necessary evil.

But this is far from a universal attitude toward the process. To some weavers threading is an enjoyable process and an activity quickly disposed of, but replete with satisfactions which come from doing an exacting task well.

What could cause these two widely divergent attitudes toward threading the loom? A good guess would be that the unhappy threaders are working awkwardly, uncomfortably, and inefficiently, while the happy threaders have found a system which is simple, fast, and devoid of physical strain. Although it is an exaggeration to say that there are as many threading methods as there are weavers, this occasionally heard statement is indicative of the diversity of approach to the process. One might wonder, since there are countless methods for threading the loom, which system is the correct one. This is an unanswerable question, since what is right for one loom, one type of warp and one weaver, may be altogether wrong for another set of circumstances. One must think not in terms of the right and the wrong way, but in terms of the method which is easiest, most accurate and fastest, for the particular conditions at hand.

The first point to determine is the objective of threading. This is simply the selection of the warp threads in the order in which they are wound or beamed, and threading each one, in its proper order, through the correct heddle on the correct harness, to produce the desired pattern. But to this fundamental requirement we add the limitation that the process must be accomplished as quickly and agreeably as possible, with a minimum of such annoyances as awkwardness, fatigue, nervous tension, and delay.

Approach each warp with a studied analysis of the factors involved. Perhaps the first consideration here is the size of the warp and the way it has been prepared. If the warp is a short one (under ten yards) and a small one (under eight hundred threads) it will probably have been prepared on a warping reel or warping pegs, with a cross or lease, and chained off. In this case, most weavers will be slewing the warp first, selecting the threads from the cross, threading it from front to back, then beaming. If the warp is longer, or has more threads, or both, it may have been prepared and chained as in the former case, but it is most likely that it will be slewed through a raddle and beamed in the traditional manner with an assistant, and the cross will be secured at the end as a guide to threading order. If the warp is more than fifteen yards long, and most

especially if the weaver does not have an assistant to help with beaming, it is probable that it will have been beamed sectionally. As things actually work out these days, it is quite likely that the warp will have been sectionally beamed, even if it is a short, small one. Loom manufacturers are more and more supplying sectional instead of plain beams, and sectional warping has really "caught on" since weavers have learned that by this method a practically fool-proof warp may be beamed quickly and without assistance. These three main beaming methods present different threading problems.

Further considerations in the selection of threading method are the type of equipment, the type of warp, and any individual characteristics or preferences of the threader which may influence the threading method. Adaptation to the warp type is largely a matter of judgment which comes with experience, and individual convenience is a matter which the weaver works out in time, so a generalized method will be presented here which does not make concessions to these peculiarities. The specific problem will be the threading of the sectionally beamed warp, a threading problem which seems to be more baffling than any other, probably because such a warp has no cross or lease to hold the order of threads.

PREPARING THE LOOM FOR THREADING. The first step toward efficient threading is the dismantling of the front of the loom so that the space in front of the harnesses is clear. The means of doing this differs from loom to loom. In rigid looms, the breast beam usually lifts out, and the beater is commonly slung on floor-level brackets so it simply lifts out too. The cloth beam may likewise lift out, but if it is fastened permanently into the loom there is little loss as its removal is not as important as the removal of the breast beam and beater. Some beaters, unfortunately, cannot be removed, so one must get along by simply taking off the top and the reed. Folding looms present different dismantling problems. The first photograph shows a Macomber loom in threading position. The side arms are lifted from their brackets and the entire breast beam assembly lowered to the floor. The beater is lowered on top of it, or it may be lifted out, and the cloth beam may be lifted out. The lower photograph shows the folding Gilmore loom in threading position. Most X-frame folding looms are handled in this same manner: folded instead of dismantled. Loosen the wing nuts at both sides; stand in front of the loom and step on the horizontal cross piece to which the treadles are attached. Lift the breast beam up until it is at maximum height, or the completely folded position. The beater will then slide under the breast beam and can be rested on the floor. Sometimes the harnesses are too low for comfortable threading, and it is an advantage to raise them. If the loom has overhead jacks, lift the harnesses and slip strong dowels or pieces of board under the jacks to hold them up. If the loom has push-up harnesses, raise the harnesses and slip two short boards of suitable width under them. One must study one's own loom to determine how it is dismantled. In some looms it is necessary to remove bolts, which is troublesome but feasible, but screws should never be removed.

A further adjustment which is sometimes advisable is the raising or moving forward of the back beam. The back beam should be somewhat higher



A dismantled Macomber loom being threaded by Helen Bontecou, National City, Calif



A folded Gilmore loom being threaded by Mrs Martha Ebener, Portland, Oregon

than the heddle eyes, so the warp slopes down to them. And, there is often greater security and speed in threading if the beam is fairly close to the harnesses. This matter must be left to the ingenuity of the weaver in adapting the equipment to the process, and it is best to start with the back beam in normal position and then see if an altered position is required.

THE THREADING POSITION. The threader sits directly in front of the harnesses and as close to them as possible. It is important that the seat be of the correct height, but here again "correct" varies with the convenience of the individual. My own preference is for a twelve inch high stool, which places the heddle eyes at about chin height. The two photographs show a higher position, which some threaders prefer. Give several stools and chairs a good trial before selecting a favorite.

ARRANGING THE WARP FOR THREADING. The best handling of the warp requires practiced skill and the beginner cannot hope to work with the smooth, easy speed of the experienced threader. The beginner must take intermediate safeguards which slow the work, but as experience grows and the "feel" of the process develops, some steps can be discarded. Full details, without short-cuts are given here. Follow these directions at the outset, and shorten or eliminate steps only as short-cuts develop naturally.

Unwind a bout at one end of the beam by loosening the end, carrying it around the back beam, and then drawing it straight forward as the beam unwinds until the ends are eight or ten inches beyond the eyes of the front harness heddles.

Fix the warp beam in this position with the ratchet or brake.

Hold the ribbon of warp under tension throughout, as a release of tension, even the tiniest bit, will disturb the thread order. The ribbon of warp will be lying on the back beam, tensioned, with every thread in the exact position that it is wound on the beam.

With a piece of Scotch tape about three inches long, cement this warp ribbon to the back beam, pressing the tape firmly to the threads and the wood. Wide Scotch tape is safest. Masking tape can be used, but Scotch tape is safer because through it one can see any threads which become displaced.

Drop the warp ribbon. The threads may twist together when tension is released, especially if the warp is cotton, but this is of no moment at this stage.

Loosen the end of the second bout, and very carefully carry the end around the beam so it will extend the same distance as the first. As much as possible, keep the ribbon tensioned so that there will be no disturbance of thread order when it is carried over the back beam. It is not always possible to keep the exact thread order while unwinding, but order can be restored by using a fine-toothed comb. Insert the comb between the warp beam and the ribbon and carry it upward, around the back beam, while holding the free end of the ribbon under tension.

Scotch tape this warp ribbon to the back beam the same as previously. No harm is done if the tape overlaps bouts.

Continue thus until all of the warp is hanging firmly taped, over the back beam.

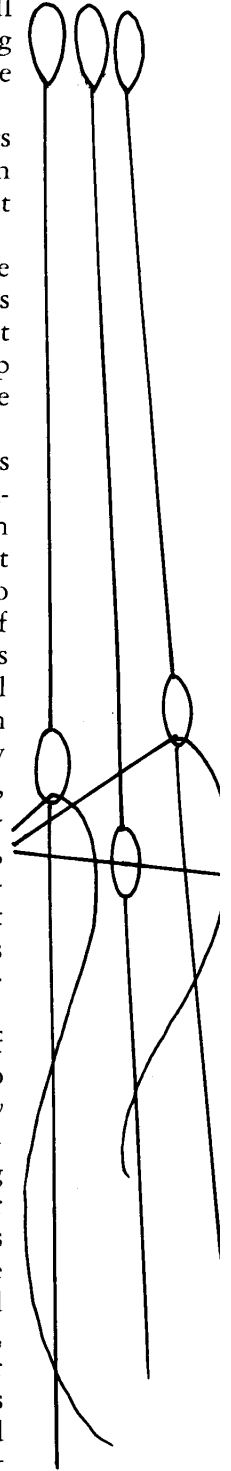
It is a wise precaution to then stretch a long piece of Scotch tape the full length of the warp, at the inside edge of the back beam. A little careful combing may be required, just along the beam, while this strip is being laid, to eliminate minor twists.

A short-cut used by some experienced weavers is laying all the warp bouts across the back beam at one time, then unwinding the warp to the correct length and taping it all at one time. The pitfalls of this method will be obvious, and it should not be attempted until the threader feels very sure of his controls.

Some weavers prefer to carry the bouts over the harnesses and tape the ends to the top front of the first harness or to a cross-piece if the loom happens to have one. This system increases the hazards of thread disorder and makes it difficult to retain full tension on all warp ribbons. And the threading from warp held in this position requires many extra motions, doubling or tripling the amount of time required for threading.

THREADING. All handloom threading is done from right to left, unless the threader is left-handed, in which case he reverses the direction. If one wonders why the right to left direction is used, just try entering a few threads from the opposite direction; it is as awkward as writing with the left hand. The first step is to loosen the catches holding the heddle bars, and to push all heddles to the left-hand side of the loom. The wise weaver will calculate the number of heddles required on each harness for the entire threading, and add or remove as required, but always leaving a few extras. If the warp width is to be the full harness width, not more than half a dozen extra heddles should be left on each harness, but if the warp is narrower than the frames, as many extra heddles may be left on the harnesses as there is space for. This applies to a jack-type loom, since a counter-balanced loom is sometimes thrown out of balance if the harnesses contain extra heddles. My own system is to simply be sure, by estimate, that there are sufficient heddles on each harness. When the threading and slewing are completed, if there are too many empty heddles remaining at the left side, distorting the warp direction, removal is necessary. With some looms it is difficult to add or remove heddles after the threading is started, so this matter should be checked in advance.

The next step is to analyze the draft to determine a logical number of threads to work with in a single threading group. Most drafts divide well into rhythmic groups, so this is not difficult. The long *Overshot* drafts, and *Shadow Weave* drafts are the only ones which are difficult and require special concentration. The wise threader has his draft thoroughly in mind before starting threading, so that he need not follow it thread by thread, and in most cases, after one or two repeats, need never refer to it again. This is accomplished by analysis of the technique units or rhythms, more than by memorizing. As an example we shall use the warp threaded for the *M's and O's* weft variations. The total draft is five eight-thread units of forty ends. These units are arranged in A, A, B, A, B order. Each eight-thread unit requires two heddles on each of the four harnesses, so the full draft requires ten heddles on each harness. This draft is easy to thread in its entirety as one warp group, through memorizing the thread order in the A and B units and the occurrence order of these units. If the draft



is a long one, the weaver may wish to break it down into two or more threading groups. Threading groups may vary from twenty to fifty or sixty ends, but they should be so logically selected that the threader need never refer to the draft during the process of threading one group.

Another approach is to use one warp bout as the threading group. This was the system used for the example warp. Since each warp bout contained sixty ends, this required seven and a half draft units for each bout: for the odd numbered bouts fourteen heddles from each harness plus two extras on harnesses one and three, and for the even numbered bouts fourteen heddles from each harness plus two extras from harnesses two and four. Easy enough; and most drafts can be figured in this manner.

Count off the number of heddles from each harness required for the pre-determined threading group, and push these heddles to the right hand sides of the harnesses.

Starting at the right, count off the number of warp ends required for the threading group. The value of threading an entire bout as one warp-group is obvious, since this eliminates the necessity of counting threads. (As experience grows, the thread-counting step may be eliminated, however, since this is merely a precaution against threading errors.) With the left hand just to the left of the group of selected heddles, grasp the ribbon of warp between the thumb and three fingers, leaving the index finger free. Tension and straighten the warp ribbon so that any twists or tangles are removed and all threads are held in the positions in which they emerge from the tape. A fine-toothed comb, used gently, will often help here. Hold the warp ribbon under tension with the hand just in front of the harnesses. Some people find it easier to rest the hand on the heddle bars.

With a drawing-in hook, push the first heddle from the first drafted harness slightly to the right of the heddle group. This is most easily done at the lower heddle bar.

Run the hook through the heddle eye and to the warp ribbon, and pick off the first thread of the warp ribbon with it. This is the tricky process, and the index finger of the left hand is kept free to help select the correct thread. The eye should check at the back-beam tape line to be sure that there are no twists and the proper thread is selected. The secret here is to hold the warp ribbon continuously under tension so that the thread order cannot be disturbed.

Draw the thread through the heddle eye and, while withdrawing the hook, push the threaded heddle to the side.

Repeat these steps with the second heddle, the third, and so on, until all the threads and heddles of the warp group are used.

If the last thread goes into the last heddle, it is probable that no errors have been made, but it is usually wise to check the threading at this point. Satisfied that the threading is correct, tie the dangling warp ends in a loom knot and push the threaded heddles to the right-hand side of the harnesses.

Repeat these steps of counting off heddles, counting off threads, drawing the threads through the heddles, checking for accuracy, tying with a loom knot and pushing heddles to the right, until the entire warp is threaded.

The person using this method for the first time should be working with fairly coarse warp, and should divide the threading rhythm into small groups of perhaps ten to twenty ends. The system will seem awkward at first, as does any new activity, and it will be slow. But after sufficient practice anyone can develop great skill and easily thread four to five hundred ends per hour, and many people can do better than that. The process might be compared to using the typewriter. Disorganized threading systems are somewhat like the hunt-and-peck typing system with which few people can gain speed or accuracy. Learning the touch system requires concentrated effort and practice. But once the touch system is learned, speed and accuracy are quickly acquired, and the process is automatic so that the mind is freed from any concern about mechanics.

THREADING WITH AN ASSISTANT. Of all the loom dressing stages, it is in the threading that one can use an assistant most safely and advantageously. Calling in one of the neighbors or one of the members of the family to help with warp beaming may lead to disaster, but not so with threading. A threading assistant should sit on a high stool at the back of the loom, hold the warp bout under tension, pick off the correct thread, and loop it onto the drawing-in hook. Taping the bouts is unnecessary. The threader will make the best speed if he encircles the group of heddles at the lower heddle bar, loosely with the left hand, holding the heddles diagonally to the left. With the eyes on the heddle-bars, the correct heddle is selected with the left thumb and allowed to drop free. The hook is run through the eye, and the thread is drawn through after the assistant has looped the warp over the hook. This will go very rapidly if the threader does not pause to push individual heddles to the right. Push them as far as possible with the motion of withdrawing the hook. When a group needs to be pushed over, simply touch the hook to the top heddle bars at the left of the heddles and gently shove to the right. (One of threading's most annoying aspects is heddles which catch on a diagonal between the upper and lower heddle bars. This is usually caused by forcing, and heddle sticking is eliminated if the heddle is touched gently with the drawing-in hook, at one point only, either top or bottom as the case may be.) Two people working together in this manner can thread a loom with astonishing rapidity, but it is a strictly concentration, no conversation job. Don't try to keep at the job too long. An hour, or even a half-hour, and then a "coffee break," is advisable. Six hundred threads per hour is very moderate speed, which can be increased as two people work systematically together. One pair of weavers who always work together on this process has told me that they can thread a one-thousand-end warp in less than an hour, a speed which seems incredible to me. So, if two weavers are of a cooperative nature, here is the point for cooperation. And since the thread-picking is actually a non-skilled job, any member of the family who has reasonable patience and tenacity can do it as well .

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