

SECTIONAL WARPING  
for Looms with  
Sectional Warp Rollers

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## SECTIONAL WARPING

### Description and Advantages

There are many advantages in Sectional Warping. In "Chain Warping" one winds one or several warp yarns at a time on a warping board or reel, measuring off the warp length, then repeating this measuring of a few threads at a time for all the warps to be used. One winds the total number of warps desired on the frame, then chains off the entire group so as to distribute them across a smooth warp roller and wind them around this, a process known as "beaming".

In the sectional warp method, one figures how many warps are needed for each section of the warp roller. This is divided off into 2-in. sections, sometimes 1-in. sections. Having figured what is needed, such as 48 warps for a setting of 24 ends per in., one threads a "creel" with this many threads, then winds this 2-in. unit on one section of the warp roller at a time. After each section is finished, one makes a "cross" of the warps with a heavy cord, or pastes a tape across the warp ends to preserve the order in which they were wound.

Both methods of warping are used. The chain method is excellent when winding short warps or when designing fabrics. Below we list the advantages of the sectional method.

1. There is absolute assurance when threading that each warp will lie in its planned space with no crossing of threads or subsequent tangles. The warps are held in a definite cross, and this position is kept all along the warp, even when wound on the roller. One finds it easy to thread with no question as to the "next thread".
2. All the warps have the same tension and the warp has a smooth, even appearance. A smooth, even warp makes for better cloth and prevents any trouble resulting from threads at various tensions, some loose, some taut. The selvage threads also keep the same tension as the main part of the warp.
3. Sectional warping provides for warps of great length, such as might prove difficult to manage by the chain method. A length of 25 yds. is the practical maximum usually attempted on a smooth roller, for chain warps must be wound by hand, and beamed by hand by one person while a second person must pull the warp taut and try
4. The Sectional method is also an efficient, fast method, saving hours of time and patience, while one must stretch out a warp of uneven tensions, to perfect the total width of a chain warp. In the sectional method, one turns the cranks of the warp roller while the warp flows on from the creel. One can put on 50 yds. at a time, finishing a 16-in. warp in 1 hr. We taught two blind students this method, and they handled both their creel and loom alone, putting on 110 yds. of carpet warp in 3 hours. This means that the loom is ready for threading with a "one-and-one" shed at the end of that time. It would take 3 hrs. or more just for the winding of such a warp, and it would still have to be beamed on the loom. More than a day would be required to put such a long warp on a loom.
5. If planning warp stripes or plaids, one can thread the creel for a 2-inch repeat using this for each section, or a single section at any point. If a 4-in. stripe is desired, one reverses the lease reed, which reverses the order of colors when necessary. One is not handicapped in any way by doing striped warps. One can add any number of colored or textured threads at any point in the warp, by adding a spool to the creel at this point. The accent thread is wound on with the others.
6. Smaller spools of thread are used for the sectional method. Many thread companies now offer warp yarns on 2- or 4-ounce spools. One needs only as many spools as the number of threads planned for each 2 in. of warp. If one does not wish to buy the separate spools for the creel shown here, (the Gallinger Creel) one can use a large cone of thread and wind off one's own spools. An excellent type of warp spool is provided by Grant; and the new Mason Warper offers an efficient method for preparing warp spools, plain or striped. \*

\* For equipment described, write to: Osma Gallinger Tod Studio, 319 Mendoza Ave. Coral Gables, Fla.

**THE CONSTRUCTION OF WARPING CREELS**

Choose a type of creel where there is a certain amount of tension on the spools as they are wound. A creel with horizontal bars on which the spools revolve is not satisfactory unless there is a tensioner connected with it, in which case it forms efficient equipment. On the creel shown here, the spools are placed vertically on a frame, and as the warp threads are drawn from the spools they provide necessary tension. Most creels are planned to hold enough threads for 2 inches of warp on the warp roller, and most warp rollers are divided into 2-inch sections. If you have a loom with 1-inch sections on the warp roller, you will need only as many spools on your creel as there are threads per inch. If you have a 2-inch sectional, you will need twice as many spools as there are threads per inch, such as thirty spools for a setting of 15 per inch.

**HOW TO THREAD A CREEL**

Have ready as many spools as required for 2 inches weaving space. The creel shown here accommodates 10 spools per vertical column. Start with column at left as you face the creel, and put first spool A on bottom peg. Proceed upward, next spool on next peg, etc. to the top. As you place each spool, carry its thread end to top of creel and thread through the distributor along the top, as at B, or through the special arrangement of your creel. The warp threads should be kept separate in some such way. Tie 10 threads together in back of distributor with a slip knot. Start on next vertical column, placing a spool on bottom peg, and proceeding to the top, same as 1st column. When as many spools as you require have been put on creel, you are ready to thread through lease reed or a tensioner.

**TO THREAD A LEASE REED OR TENSIONER**

Each loom company has its own special arrangement for giving tension to the warp threads. In the method given here, there is a slot-and-hole heddle through which the threads go, and this both provides tension and keeps the threads in perfect order, as well as providing a one-and-one shed when threading. In the lease reed shown, C, every other space is a slot and goes the complete length of the steel frame, while in between are shorter openings designated by black dots at their extremities. By threading the warps in succession as each one is taken from distributor, one is able to get a one-and-one shed by lifting and lowering the lease reed.

Use a threading hook to thread. Put first thread as it comes from B, through first opening of lease reed, the short hole at C. Put next thread through next opening, this time it is the long opening or slot. Continue alternating thus all across. One can procure lease-reeds of certain dentages, such as 15, which will serve both for 1 thread per opening, or for 2 threads, for a 30 per inch setting. In this case one threads 2 adjacent warps through 1st hole, next 2 warps through the slot, next 2 through a hole, etc. With a 12-dent lease-reed, one can thread for a 24 per inch setting. The pairs of warps never cross and in threading them, one can take either thread of the pair. One can see at a glance that it would also be possible to thread 2 threads in a hole, 1 in a slot, etc. all the way across the reed thus giving a setting of 18 per inch in a 12-dent lease reed. The warps never cross.

**WARPING A SECTION OF WARP ROLLER**

Decide how many 2-inch sections of warp you wish, such as 6 sections for a 12-inch warp, etc. Plan the beaming so that the warp will come at center of roller. Tie the warps as they come in a group from lease reed onto tape or cord of 1st section, as at D, being sure that warps come OVER back beam, see G, bottom left of page 3. Slip lease reed into holder at the back of loom, - a groove as shown here, but could also be clamped on, see E. Now crank with warp roller handle as many rounds of roller as will give you your length. Measure circumference of warp roller before starting, and figure accordingly, allowing 20% or more added yardage for build up of warp on each 2-inch section. Turn as at F.

**FORMING A CROSS**

At the end of this 2-inch section, have ready a heavy soft yarn, 15" long; cut as many of these as there are warp sections. Drop the lease reed, G, insert heavy yarn into opening, as shown; lift reed and insert yarn into 2nd part of cross, H, bringing it back to meet first end and tying in a slip knot. Turn roller once around to give added length of warp for the threading. Cut warps, I, fasten warped ends to a peg, J, on the side away from next section, - so as not to interfere with free flow of warp. Do all sections the same, then loosen warp ends from pegs, tie ends so as not to have lease rods slip through; replace heavy yarn with the two lease rods, as shown at K.

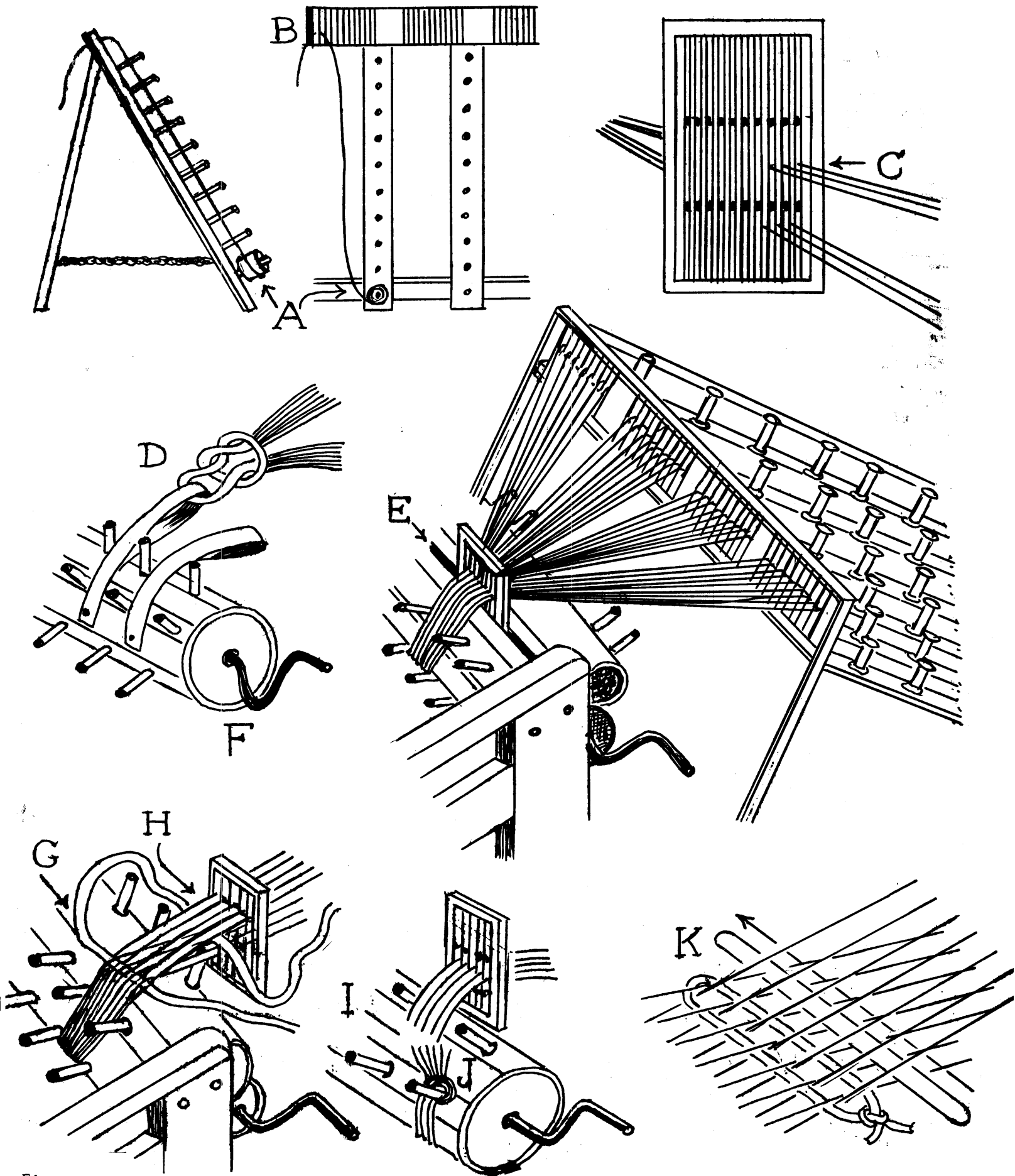


Figure 1.

Regular  
Method



Reverse  
Method

### STEP-BY-STEP DIRECTIONS FOR SLIPPING WARP ON LEASE RODS, K.

See page 5 for method. Get one of the lease rods ready, as at M, and bring one of the sections forward from warp roller, L. Bring all the sections forward one by one so that rod can go through first cross of them all. Open shed at furthest end, M, for easiest method. Tie slip-knots at ends of all groups as at M, to keep rod from slipping through.

Next have a second person hold the first lease rod filled with the sections and tied ends, at a tension, while you slip second rod through second part of cross. When all sections have been placed on the two lease rods, tie ends together as at N. You are now ready to thread.

### TO THREAD HEDDLES. See page 5, N, O, P, Q.

First suspend lease rods just back of heddles, as at N, with back rod at top. Pull warps toward the front so that lease rods can hang loosely, their ends dropping below rods as shown. Tie all harnesses together, O. Shove all heddles to left, as at P. Follow directions below:

To thread, follow diagram on page 5, left below A, B, C, D, E. Pull a heddle out from the left, but keep it at the left of your hand. Bring first group of warp threads under harnesses, as they come from lease rods, C and A. Hold this group in left hand, D, after they come from under the harnesses, C. Take first thread as it comes off rod, pull out of clump, keep balance of the warps in left hand. With tips of forefinger and thumb, and helping right hand with left which always retains warps, make a loop to go through heddle eye as shown. After threading, shove heddle to the right, as at Q, see sketch page 5, upper left. Continue thus, taking one warp at a time from group to thread through next heddle coming toward right, from desired harness. It is simple and easy to work this way with the fingertips, and no hook to take up and set down.

### TO SLEY THE WARP THREADS

After all warps are threaded, lay reed on top of two long bars, extending from front to back of loom, and sley with a Swedish S-hook, pulling warps down through reed which lies horizontally across the two bars. See sketch at R. This threading and sleying method saves time and is enjoyable. The secret of threading with groups coming UNDER harness frames, is that the heddles slide easily from left to right, without the necessity of letting go the warp groups.

### TO WARP STRIPES AND PLAIDS

Plan the stripe design so that the warp stripes will fall within the count per inch or 2 inches. For instance if you have 36 threads per 2-inch span, your warp stripes can be 9, 18 or 36 inches, or any count that will total 36. Now arrange them on the creel just as you wish them to flow from the creel, 1st thread at bottom of creel, P, 3, A, etc, and follow the stripe design one thread upward at a time. Continue, starting second vertical column at base with the 11th thread, etc. A stripe of 3 blue, 1 white, 8 red, 6 white, totalling 18, would be planned as follows: 3 blue on first 3 pegs, of 1st column, starting at base; 4th peg from base, place 1 white; follow with 6 of the red, making 10 spools for 1st column. Start at bottom peg of 2nd column for 1 red, then another red, making 8 red in all; then add 6 white in a row. This will leave 2 empty pegs at top of this row. Start stripe again, 2 of the blue; then go to bottom of 3rd column for 2 more blue, then 1 white, etc. Keep repeating until all 36 warps are ready. There will be 2 repeats of this stripe to fill the 2-inch sectional space.

To have alternate stripes, - one stripe effect for 2 inches, followed by another for next 2 inches, thread creel once; place warp on every other section. Then thread creel again, and thread alternate sections in between. This gives a 4 inch section.

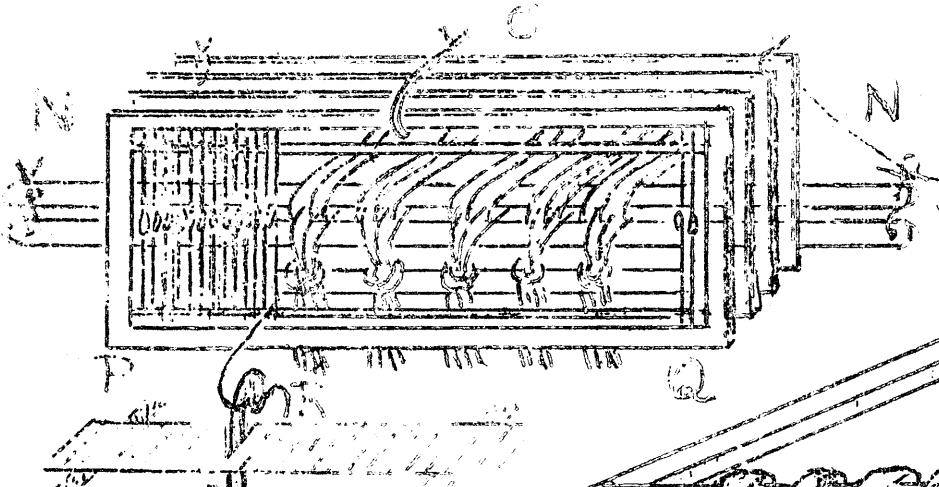
### REVERSING A STRIPE:

Thread creel for half the stripe. Warp first section of warp roller. For next section twist the lease reed backwards so that the series of colors is reversed, and the turning point becomes the center of a 4-inch stripe. See sketches above for method. Warp every other section this reversed way.

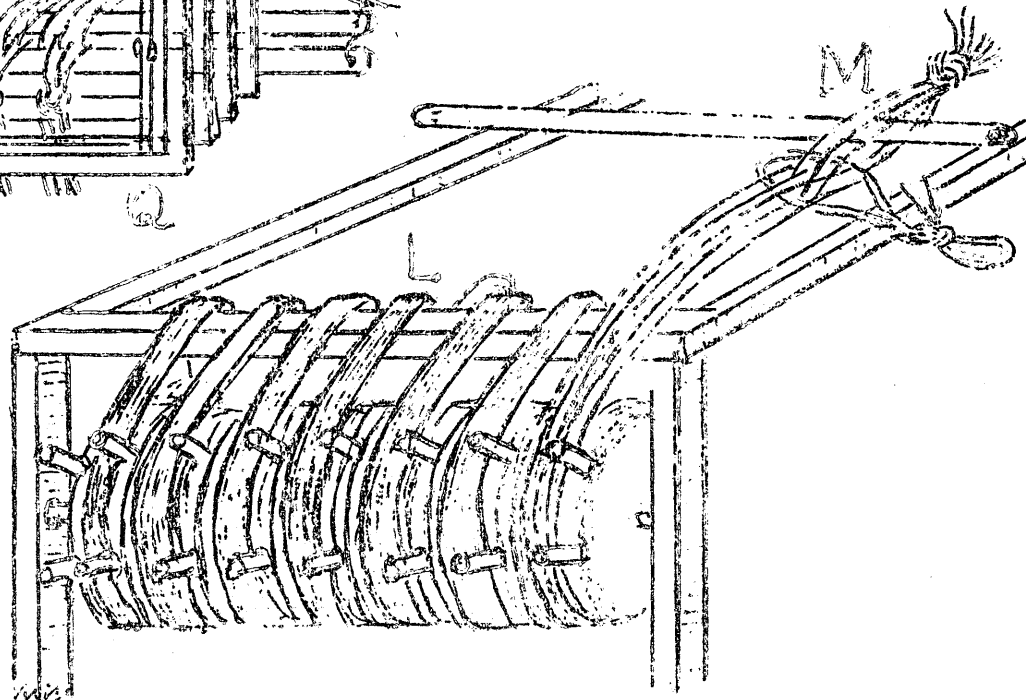
For an 8-inch plaid skip 4 inches of roller at intervals and fill these two sections in, either with plain background color, or another 4 inch stripe.

### TO MAKE BORDERS ON A WARP:

Fill the creel with regular warp color, and warp all the center sections. Then warp the creel with a second color or series of colors for 2 or 4-inch side borders, and warp sections at both right and left. One can add texture threads at any desired point on creel.



Transfer cross from the heavy cord to the lease- rods, as shown.



Maintaining The Cross for Threading. Transferring Cross to Reeds

Sley with Swedish S-Head  
HANGING LEASE RODS, N, O.

To prepare the warps for easy threading, hang lease- rods from back of harnesses with the lease rod furthest back on top, N, and ends hanging down in groups, closed with slip knots, see N, O.

One can also lay lease- rods across two long bars, going from front to back of loom, and thread warp thus. The method shown at N gives a better view of warps and may be easier.

ADJUSTING DENTAGE TO LEASE REED

Lease Reeds, page 3, C, come with certain spacings, such as 15, 12, or 18 per inch. If you wish to use the lease reed for a different dentage, such as 20 threads per inch, adjust as suggested below. In a 15 dent reed:

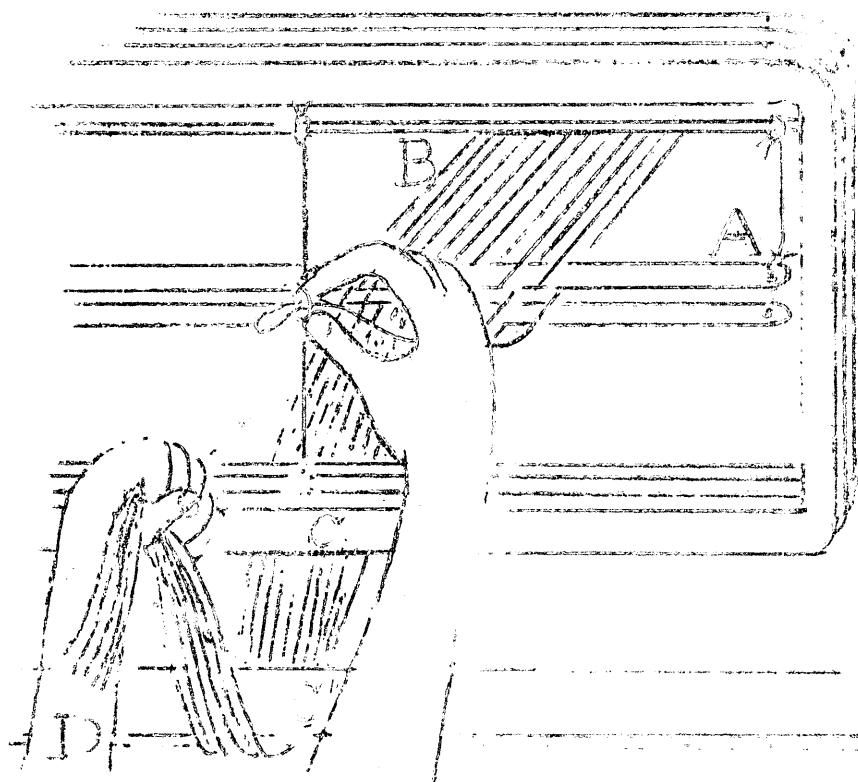
Thread single warps through two dents, then 2 in a dent. Continue thus, 2 warps every 3rd dent. This will give 20 per inch. The same distribution may be used for a regular reed.

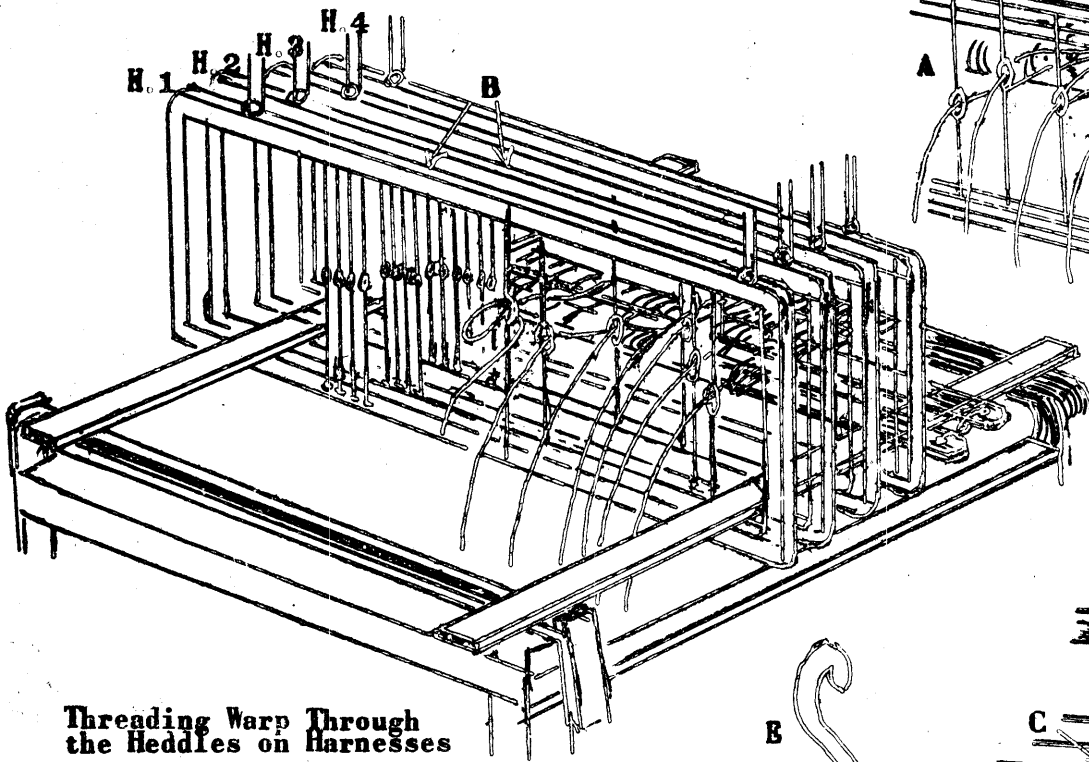
For fewer threads per inch, such as 12 in a 15 dent, skip every 5th dent. It doesn't matter whether this is a slot or hole. Adjust to your own counts but make an even repeat.

TUBES for WARPING

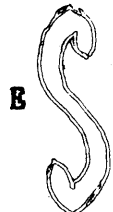
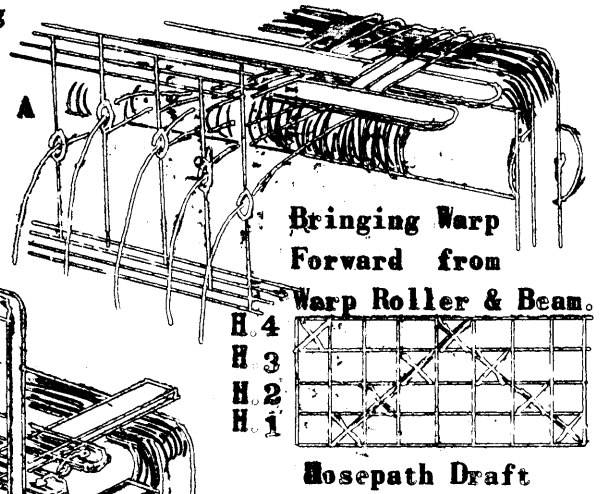
Most thread companies put their threads up on small 2- or 4- ounce tubes. This facilitates warping and altho one has to invest in more yarn one saves time and money throughout.

Spools for making your own thread tubes are available at Grant's Home Weaving Supply Co., Panguitch, Utah. With these one can save thread.

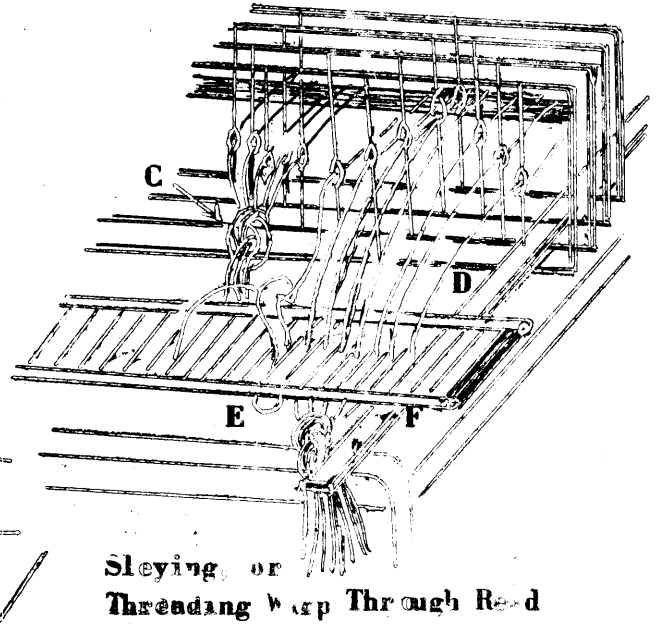




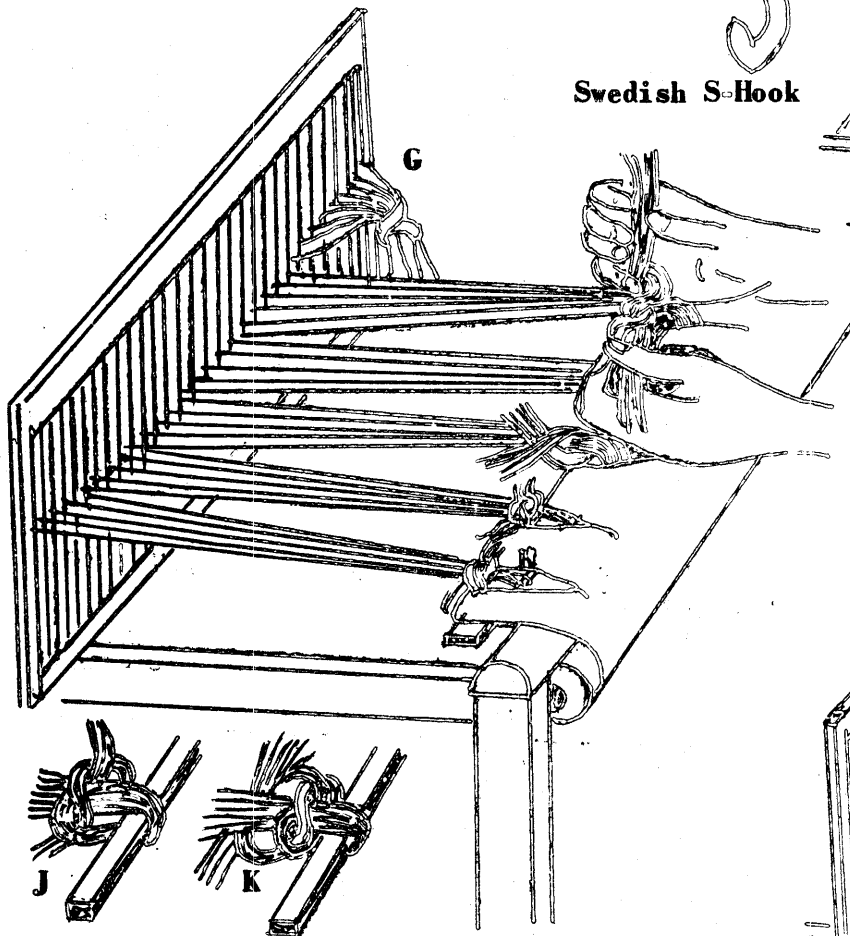
Threading Warp Through the Heddles on Harnesses



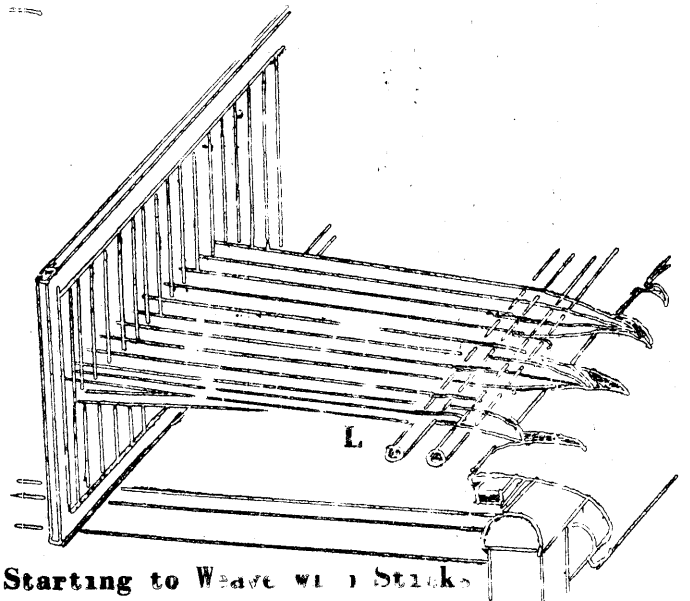
Swedish S-Hook



Sleying or Threading Warp Through Reed



Tying Down the Warp Threads



Starting to Weave with Sticks