WEAVING INSTRUCTIONS

SIX-HARNESS "HEARThSIDE" LOOM

by NELLIE SARGENT JOHNSON

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NELLIE SARGENT JOHNSON 12489 MENDOTA AVE. DETROIT 4, MICH.
SIX HARNESS "HEARTHSIDE" FOLDING FLOOR LOOM

DESIGNED BY

NELLIE SARGENT JOHNSON

FOR

SEARS, ROEBUCK & CO.

WHAT KIND OF A LOOM TO BUY IS ALWAYS AN IMPORTANT QUESTION. A LOOM REPRESENTS A PERMANENT INVESTMENT AND A FAIR AMOUNT OF MONEY. THE 6 HARNESS FOLDING FLOOR LOOM ABOVE IS A HAND LOOM DESIGNED FOR THE HOME-WEAVER. THERE IS NO POWER, AND NO FLY SHUTTLE ON THIS LOOM.

WHEN THE LOOM IS OPEN, IT IS 48" WIDE, 42" HIGH, AND 45" LONG FROM FRONT TO BACK, WHEN IT IS OPEN. IT WEIGHS 235 LBS. TO FOLD UP INTO A 22" LENGTH FROM BACK TO FRONT, LOOSEN THE NUTS ON THE SIDE UPRIGHTS, AND ON THE FRONT BRACES, AND PUSH DOWN ON SIDE ARMS OF THE LOOM. THIS IS DONE VERY EASILY AND QUICKLY EVEN WITH THE WEAVING ON.

THIS LOOM IS A COMFORTABLE HEIGHT TO SIT AT, FOR EITHER A SHORT OR A TALL PERSON. AN ORDINARY DINING ROOM CHAIR IS JUST RIGHT.

THERE ARE 6 HARNESSES, 600 FLAT STEEL HEDDLES, A 39" REED WITH 12 DENTS TO THE INCH, 6 TREADLES, AND 6 LAMMS. WIRES CONNECT LAMMS TO TREADLES. THESE ARE EASY TO CHANGE. YOU CAN TIE ONE LAMM TO A TREADLE, OR 5 IF YOU DESIRE.

THIS IS A "JACK" TYPE LOOM, WHEN YOU PRESS YOUR FOOT DOWN ON A TREADLE THE HARNESSES RISE TO MAKE A 4TH SHED THROUGH WHICH THE SHUTTLE CAN PASS. THIS WILL ALWAYS BE THE SAME, IT CANNOT GET OUT OF ADJUSTMENT. THIS IS ONE VERY GREAT ADVANTAGE OF THIS LOOM, THERE ARE NO CORDS TO SLIP OR TIE. THE TREADLES ARE WIDE, AND SET FAR ENOUGH APART EVEN FOR A MAN'S FOOT TO OPERATE.

THIS LOOM IS EASY TO WARP. IT HAS A SECTIONAL WARP BEAM DIVIDED INTO 13 SECTIONS. A SMALL THREAD GUIDE COMES WITH THE LOOM. BUT A SPOOL RACK SHOULD BE ORDERED FOR SECTIONAL WARPING. AND 24 SPOOLS OF CARPET WARP IS NEEDED. AS 24 THREADS ARE PUT ON EACH SECTION OF THE WARP BEAM AT ONCE, TO CORRESPOND TO ONE WARP IN EACH DENT OF THE 12 DENT REED. EACH SECTION HAS TO HAVE THE SAME NUMBER OF YARDS ON IT. SO ATTACHED TO THE HANDLE OF THE WARP BEAM IS AN INDICATOR WHICH WILL REGISTER THE NUMBER OF TURNS MADE. ONE COMPLETE TURN OF THE WARP BEAM PUTS ON 8 YARD OF WARP ON THE WARP BEAM. THERE ARE FIGURES ON THE INDICATOR FROM 0 TO 20. THUS 20 TURNS PUTS 160 YARDS OF WARP ON A SECTION. EACH SECTION CAN BE WARPED WITH ABOUT 40 YARDS OF CARPET WARP IF DESIRED TO PUT ON THAT MUCH, BUT BE SURE YOU GET IT ON EVENLY AND SMOOTH.

MANY WEAVERS LIKE A PLAIN BEAM. FOR SHORT WARPS, THIS IS AN ADVANTAGE SOMETIMES. THE BAR HOLDING THE WARP BEAM PEGS CAN BE REMOVED, AND THE PEGS TURNED INSIDE TO THE CENTER, AND A PLAIN BEAM RESULTS.

THERE ARE MANY THINGS WHICH CAN BE WOVEN ON THIS LOOM. YOU CAN WEAVE RUGS OF RAG STRIPS, OR YOU CAN BUY MAYSVILLE RUG FILLER, ALSO SOLD BY SEARS, ROEBUCK & CO. FINE WEAVING SUCH AS SUIT, DRESS, OR COAT MATERIALS, AS WELL AS LINEN, BAGS, CURTAIN, ETC., ARE ALSO POSSIBLE. THIS IS AN EXCELLENT LOOM FOR PLEASURE AS WELL AS PROFIT.

FOR FURTHER INFORMATION OR INSTRUCTIONS, WRITE:

WEAVING-CONSULTANT, SEARS, ROEBUCK & CO.
The loom is the tool with which one weaves cloth. It is important before you try to warp and thread your loom for you to carefully study the above diagram. Learn the names of all the parts as they are listed. Read over these directions step by step until you understand them. Do this with the loom in front of you before you try to warp and thread it.

To open the loom. The loom is shipped folded and tied securely. Remove from the shipping crate. Carefully undo the cords; take care and not cut the cloth beam or warp beam cords as you do this. Loosen the large thumb nuts on each of the side uprights, and also the nuts on the inside of the front braces. Pull up on the side arm pieces on both sides until the loom opens full width. Pull out the front braces so they are in the position shown above, then tighten all of the nuts in place again.

Let down the treadle bar so that the six treadles rest on the floor. As you sit in front of the loom, the treadle on the left is number 1, the next is 2, the third is 3, the 4th is 8, the 5th is number 3, and the 6th is number 4. Now take hold of the front harness. Pull it up as high as it will go. You will see just below the center board, one of the lambs appear. These lambs are also numbered, and there are six, one on each of the 6 harnesses. The lambs are attached to the treadles with wire connectors. The order of doing this is called the loom tie-up. This is explained in detail at Figure No. 4 on Page 6. When you are ready to connect the lambs to the treadles, refer to Page 6.

The harnesses are also numbered from front to back of the loom. That is, we call harness 1 the front harness, and the back harness number 6. The harnesses have 2 heddle bars which carry the flat steel heddle eyes through which the warp thread is threaded. Each harness has 150 heddles on the first four harnesses, for a total of 600 heddles. For a beginner it is much easier to thread only 4 harnesses at first. To hold the heddle bars in place there are 4 heddle springs on each harness. Take the time to learn where all of these parts are, and how they work.
The warp, or the lengthwise threads, is wound on the warp beam. To form cloth, these threads are crossed by the weft thread. The weft thread is carried through the shed, the opening between the warp threads. This shed is made by placing the foot on the treadle causing the harnesses to rise. The shuttle carries the weft or "woof." There are three kinds of shuttles. A large rug shuttle is furnished with the loom. You use this for razz, or rug filler. The boat or throw shuttle is used for fine weaving and fine weft threads. It requires a small bobbin which can be of metal or paper. These must either be wound by hand or on a spool winder of some sort.

Now that you have learned what and where each loom part is, you are ready to plan what to weave on your new tool. Be patient and learn how to use the loom. Read and follow carefully each step of these directions. Then you can warp, thread, and weave your first project easily and well. So we have to decide at once what we will do and make our plans.

Plan for a weaving project

1. Decide what we wish to weave.
2. Kind of warp suitable to use.
3. How many pieces are to be woven.
4. How long each piece will be.
5. Width of each piece.
6. How many warp threads will there be in the width. Our reed has 12 slits to an inch. One thread can be put in a slit for 12 threads to an inch. Two threads in each slit will give us 24 to an inch.
7. How much warp shall we allow for fringe or for hem, and for tying up to warp and cloth beams.
8. How much warp shall we buy for this. To get this, multiply the number of warp threads in the total width, by the number of yards needed for the length of warp.
9. What weft is to be used. Amounts of weft are more difficult to figure. After your loom is threaded and tied up to cloth beam, you can weave 2 or 3 inches. Then you can count and see about how many shots or picks of weft you have in an inch of woven material. From this, you can figure about how much weft you need. In this width, 30" one skein of Maysville Rug Filler will weave about 18". Three balls of Maysville Home-craft cotton wound as one weft weaves about 27".

When buying carpet warp, or in fact any thread or yarn, it is well to see how many yards there are in the balls or skeins. Carpet warp comes in 300, 600, and 800 yard spools. Compare the prices on this basis. You may be surprised sometimes when you do this, to find less yardage at a lower price.

When using razz for weft for rugs, be sure they are cut so they will weave about the same thickness. If you use light weight materials and heavy in the same rug, cut them different widths. The best way to be sure of the width to use is to try it out right on the loom. Do not begrudge time you spend experimenting on your loom.

Plan for first weaving project

2. Carpet warp.
3. Five rugs, and a half yard sample.
4. About one and a half yards long.
5. Have a finished width of about 30".
6. Multiply 30" by 12, the number of slits to the inch in the reed. This equals 360 warp threads. Add to this 30 more threads to allow for pulling in of the edges, and for double tying the edges to total 390.
7. For hem allow 2" of warp on each end, or 4" for each rug. For fringes allow at least 8" for each rug. And about 2 yards more for weaving take-up. So make a ten yard warp for the whole project.
8. The total number of warp threads in the width is 390. Multiply 390 x 10 yards of length equals 3900 yards of warp for a 10 yard warp. If you are going to use a spool rack and the sectional method of warping described here, buy 24 spools of carpet warp. Or buy 7 spools, 600 yards to a spool, and wind 24 spools for the spool rack either by hand or on a spool winder.
9. Weft can be of razz, Rug Filler, or heavy rug wool, or cotton chenille.

The method of knotting or sewing razz and stockings is described in the book, "Weaving on the Hearthside Loom," and will not be repeated here.

Another useful suggestion is to keep a careful record in a note-book of every woven project you put on your loom. Include everything, and a woven sample if possible.
HOW TO MAKE A SECTIONAL Warp.

THE EASIEST WAY TO WARP THE LOOM IS TO PUT IT ON IN SMALL GROUPS OF THREADS ON A WARP BEAM DIVIDED UP INTO SECTIONS BY DOWEL PEWS. FROM 40 TO 50 YARDS OF WARP CAN BE PUT ON AT ONCE IF DESIRED, BUT WE ARE GOING TO PUT ON ONLY 10 YARDS.

THE WARP BEAM ON THIS LOOM HAS FOUR REMOVABLE BARS, NUMBERED 1, 2, 3, 4. EACH BAR IS DIVIDED INTO 18 SECTIONS BY MEANS OF DOWEL PINS. FOR A PLAIN WARP BEAM, THESE CAN BE TURNED IN TOWARD THE CENTER. BUT WE WILL USE THE SECTIONS AND WARP EACH SEPARATELY.

EACH SECTION OF THE WARP BEAM CORRESPONDS TO 2" OF THE REED. OUR REED TAKES 12 THREADS TO EACH INCH, SO WE ARE GOING TO PUT 24 THREADS ON EACH SECTION. WE HAVE A TOTAL OF 350 WARP THREADS, SO WE WILL WARP 16 SECTIONS WITH 24 THREAD ON EACH, AND THE LAST OR 17TH SECTION WILL HAVE ONLY 6 WARP ON IT.

PLACE THE METAL THREAD GUIDE IN THE HOLES ON THE BACK OF THE SLAB STOCK BAR, JUST OVER THE SECOND SECTION OF THE WARP BEAM, AS THIS IS THE FIRST SECTION WE WILL FILL.

SET THE SPOOL RACK ABOUT A YARD OR SO BACK OF THE WARP BEAM. OPEN 4 SPOOLS OF THE WARP. PUT THESE ON THE LOWEST ROW OF THE RACK. HAVE ALL OF THE WARP ENDS FROM THESE COME FROM BELOW THE SPOOL AS THEY UNWIND.


TIE IN A GROUP TO THE CORD OF THE WARP BEAM AS SHOWN AT FIGURE 2, A AND B. WE ARE NOW READY TO WIND ON THE WARP.


MOVE THREAD GUIDE CAREFULLY TO HOLES ABOVE NEXT SECTION. TIE ENDS OF WARP GROUP TO WARP BEAM CORD. CHECK INDICATOR SO IT IS SET BETWEEN 1 AND 20. FILL SECOND SECTION SAME AS FIRST ONE. FOR 17TH SECTION, USE ONLY 6 SPOOLS. WIND ON SAME WAY.
When warp is all on the warp beam, remove spools from spool back, one at a time, so they do not tangle. Start at the top rod to do this. Wind up the thread and put away for future use.

Undo the knots of three or four of the sections of the warp beam groups. Take these groups in one hand, pull them out long enough to bring them forward up over the back slat stock bar, and over the top of the harnesses so they hang down about 8 inches or so. Let the warp beam unroll as you do this. Then release the warp beam tension cord, so you will have tension. After this each of the other sections will have to be unwound by itself, without releasing or letting the warp beam unwind. Take each section of the warp groups hanging over the harnesses, and pull and tighten each group until each thread comes straight up from the warp beam, over the slat stock bar in the proper order. This is important.

Loosen the thumb nuts on top of the battens or beater frame. Take out the reed while threading the loom. Let the beater frame rest against the side uprights. Take off the breast beam bar from its peg. Now you can sit in a chair right up close to the harnesses while threading. Push all the heddle eyes on the harnesses to the left of the loom. Be sure first and count heddle eyes on each of the harnesses to see that you have enough on each harness for the complete threading of the loom. This loom has 150 heddle eyes on each of the first four harnesses. We will use one of the simple twist threading given below, so we will not have to change heddle eyes on this first attempt at threading the loom.

How to thread the loom.

The threading draft is the plan used to put each warp thread into the heddle eye of its correct harness. Start to thread the loom at the right. Threadings drafts are read from right to left, and threaded the same way. There are three simple threading drafts below—twill, herringbone, and rose-path threadings. One repeat of these drafts is from A to B. Note that twill is a repeat of 4 warp threads. Herringbone is a repeat of 5 threads; rose-path draft is a repeat of 8 threads. Select which ever one you wish to use for this first attempt.

The 1's on the lower line of the draft are for warp threads to be put into heddle eyes of harness 1, the front harness. The 2's on the second line of the drafts are for warps on harness 2, the 3's are for harness 3, and the 4's are for warp threads in heddle eyes of harness 4. The 5th and 6th harnesses are not used for this first threading of the loom to make it easier for you.

We will use for our first attempt the twill threading. This has a repeat from A to B of only 4 warp threads. We will take as a group, four repeats of A to B, or 16 warp threads at a time.
1. Count off the heddle eyes needed for the 16 warp threads. This is on harness 1, 4 on harness 2, four on harness 3, and 4 on harness 4. This is group 1.
2. Now bring down the first group of warp threads from the top of the harnesses. Take them through all of the harnesses to the left of the counted heddle eyes. Hold group in the left hand, as shown at Figure No. 2. Be sure all threads are straight, in order. Loosen and pull them until they are.
3. Remove first thread from group with the right hand, by reaching through all of the harnesses on the right of the counted heddle eyes. Loop it, and thread it into the first heddle eye on harness 1.
4. Pull warp thread group tight in left hand.
Threading the loom, (continued). Take out the second warp thread with the right hand. Put this in the first heddle eye on harness 2. Do the same with the 3rd and 4th warps, and thread them into the first heddle eyes of the 3rd and then the 4th harness. Now you have threaded one repeat, from A to B, of a twill threading, or 4 warp threads.

4. Repeat this same thing 3 times more, and you will have finished group 1, or A to B four times, for 16 warp threads. Be sure to check and see that you have made no mistake. Generally your heddle eyes will not come out right if there is a mistake, that is why we count out the heddle eyes needed for each group we thread. Tie warp threads, of group 1 into a loop knot to keep them from coming out of the heddle eyes.

5. Now count off the heddle eyes for group II. Thread this group the same as the first. Continue in same way, threading groups of 16, while threading try not to have interruptions. It is easy to make mistakes, and if they occur and are not caught, you might have to thread all over again. Don't stop to stick a pin in for each thread on the threading draft. Get a rhythm. Carry 4 warps in your mind, as 1, 2, 3, 4, and then thread them. Then take the next four on your draft. This helps to avoid making mistakes.

Changing Heddles from One Harness to Another.

It is often necessary to change heddle eyes from one harness to another. It is always best to count the heddles needed on each harness before beginning to thread in your pattern drafts. Make sure you have what you need for the complete width of the loom.

The heddle bars are held in the harness frames by small springs as Figure No. 1. Pull up on these springs to loosen the bar from the harness frame. Pull out the bars from the side slots at top and bottom of harness frame. Slip two heddle eyes off the bars. Then thread into these the number of heddle eyes to be taken off that bar as at Figure No. 2. Lay these aside. Remove bars on harness needing more heddle eyes. Thread the heddle eyes taken from first harness on this harness bars, keeping the group on the two heddles as just done. Put back the heddle bars in the side slots, and be sure the springs are tight too.

Sleying the Reed

As soon as the threading is finished, the next step is to sley the reed. Put the reed back into the frame of the beater. Tighten the thumb nuts on the beater and the frame. Find the center of the reed and mark it. If the entire width of reed is not used, start at the right hand side of the reed, at a point that is 1/4 of the total width to be sleyed. In our case, we start 3 1/2 inches in from the right edge to draw in our first two warps. This centers the warp threads.

Take first warp group in left hand, with reed hook in right hand, draw one thread at a time through a slit of the reed. Keep the same order as they come from the heddles. Do not let threads cross. For a good edge, put two threads in each of the first, and also the last four slits of the reed. This makes it easier to weave a good selvage.

Check each warp group carefully as you put the threads through the reed slits. Do not skip any slits, or put two in a slit unless you intend it that way. Our reed has 12 slits or dents to an inch. Length of a reed and slits to the inch is stamped on edge, as 12-39 for the one we are using.
TIEING WARP GROUPS TO THE CLOTH BEAM

The next step after all of the warp is sleyed or drawn through the slits of the reed, is to tie the groups to the cloth beam. It is very important to tie these groups so all the warp is even, and threads are at the same tension. Put one of the wooden sticks which come with the loom into the loops of cord from the cloth beam. Make sure these cords are all the same length. Bring this warp, with cord attached, up and over rear beam, which has been replaced on its peg on front of the loom. Tie all warp groups now.

Start with the center warp group. Pull warp threads through your fingers to be sure all are even, and no loose threads. Take the warp group under cloth beam bar as at (1) of Figure No. 2. Separate it as at (2). Tie in a bow or slip knot as at (3). Do not use hard knot to untie. Hard knot (4) must be easy to untie. After center group is secure, tie end groups the same way. Then the others across width of the reed. Press down on warp group with the hand to get all at same tension. If any are loose, as center and ends are apt to be, retie them until all are even.

EXPLANATION OF LOOM TIE-UP.

To make the harnesses rise, they must be tied to the treadles by means of the lams and the wire connectors. The regular loom tie-up is shown at Figure No. 4. We will now describe how to do this. It is important to do right. The harnesses are numbers from front to back on the loom. Harness 1 is the front harness. Harness 6 is the back harness. Have someone pull harness 1 up. You sit on the floor with the wire connectors handy. Lamm 1 will come down when harness 1 is up. Take a connector. Slip the straight end into the first hole in Treadle 2, and the top end T over Lamm 1. Pull down tight. Always have the wire connector in the treadle hole directly below the lamm you are tying. Now have harness 4 pulled up. Put a wire connector into hole 4 of Treadle 6, and down over the top of Lamm 4. Now we have tied up harness 1 and harness 4 to Treadle 2 as shown at Figure No. 3.

For the rest of the treadles follow Figure 4.

For Treadle 1 - Tie Lamm 3 in hole 3, and Lamm 4 in hole 4.
For Treadle A - Tie Lamm 1 in hole 1, and Lamm 3 in hole 3.
For Treadle B - Tie Lamm 2 in hole 2, and Lamm 4 in hole 4.
For Treadle 3 - Tie Lamm 1 in hole 1, and Lamm 2 in hole 2.
For Treadle 4 - Tie Lamm 2 in hole 2, and Lamm 3 in hole 3.

See that you make no mistakes. If you do, your sheds will not come up right when you put your foot on a treadle. Check this carefully.
Winding a Rug Shuttle. To wind a rug shuttle, tie a slip knot with the end from skein or spool to fasten to the shuttle as shown at Figure No.1 below. For skeins, use a reel to hold the skein; wind directly from this to the shuttle. To practice at first, wind the shuttle with some of the carpet warp, rags, or rug filler. Now we are ready to weave.

Insert two of the leash sticks as shown at Figure No.2 A. This helps to bring the warp threads together. To do this, press down the treadle A, put a stick between the raised warp threads. Then press down treadle B, and put in another stick. Adjust the tension on the warp threads by turning the handle of the cloth beam, but do not have the warp too tight, just enough to give slightly when pressed down with the hands. And let the warp be wound up so the first row of weft to be put into the shed will be about 3” to 4” from the edge of the breast beam.

Plain weave or “Tabby.” Press down Treadle A with the left foot. Throw the wound weft shuttle through the shed thus made, from left side to right side on the shuttle race close to the reed. Catch it with the right hand. Bring the beater toward you to push this close to the heading sticks. Press down treadle B. Beat again with the beater. Turn end of weft thread into this shed to fasten it as shown at Figure No.2 D. Now throw weft shuttle from right to left. Let weft lay at a long slant as shown at D.

Use treadle B and right foot when weft is on right edge, and treadle A and left foot when weft is on left edge. This soon gets to be a habit, and one can weave very fast in this way. Get this rhythm, practise this.

So the order for plain weave is—
Throw weft shuttle from left to right on Treadle A. Beat close. Change shed to Treadle B. Beat again. Throw weft shuttle from right edge to left on the shuttle race as before. Beat up close. Change to Treadle A. Beat again. Repeat for plain weave.

The aim of the beginner should be to get good edges. They should look like B of Figure No.2, not like E with looped edges or like F with edges that are pulled in. When edges are drawn in too much, warp threads may break, and you cannot beat your weft so it is close together. Try to keep the woven width out the full width of the reed. This takes some practice, but it is not difficult if you take time and practise.

To add a new weft thread—
When the old weft thread runs out, just let the new end overlap a few warp threads to fasten it in. This is shown at Figure No.2 at C. Trim off the ends of weft that stick up after a few more weft rows are in. Trim as you weave to make a neat looking job.

Rolling up the Woven Cloth—When you have woven to about 6” from the reed, it is time to wind up the cloth. Grab the cloth beam handle to loosen the tension. Slip off the cloth beam dags. Pull the warp beam release cord at the side front to let warp roll out. Turn cloth beam handle to wind up cloth so it comes about 4” from edge of breast beam. Get the tension right, start weaving again.
CORRECTING THREADING MISTAKES.

When a few inches of plain weave are woven, mistakes in threading will show up. Let us hope you have been careful and there are none to correct.

**Figure No. 1** shows the effect when warp is crossed back of the reed. The shed is not clear. To correct this, pull the threads where the mistake is, out of the reed and re-sley them correctly.

**Figure No. 2** shows two mistakes in sleying, either 2 warps in same slit, or a skipped slit. Take out these threads and re-sley.

**Figure No. 3** shows a skipped slit, or one thread left out. Re-sley from the mistake.

**Figure No. 4** A threading mistake will look like this. To correct this, trace the warp thread back from reed to its heddle eye. Check the pattern draft and the heddles on each side of the mistake to find out which harness the thread belongs on. For there are two threads on the same harness or on the wrong harness. A mistake occurs when a 2 follows a thread on harness 4, or a 1 follows a thread on harness 3, or vice versa.

To correct this, without re-threading all the warp threads, you can tie in a string heddle on the right harness. Pull out the thread on the wrong harness, and put it into its correct place, according to the draft, in the string heddle.

**How to tie a string heddle.** Take a piece of carpet warp about 30" long. Loop under the bottom heddle bar of the correct harness where the thread should be. Make a double knot at a point just even with the regular heddle end. Lead the warp in this space. Then tie another double knot to come at the top of the heddle eyes. Tie ends of carpet warp to top heddle bar, and cut ends close. Re-sley warp through reed, and tie up to the cloth beam again.

Always correct your threading mistakes. It is very careless craftsmanship to leave them in.

**Mending a broken warp thread.** Sometimes a warp thread does break. Pull one end to edge of the woven cloth. Let other end hang at back of loom. Take about 2 yards of new warp thread and wind it on an empty warp spool. Thread end of this from back of loom to front, through heddle eye and reed. Tie this end with a square knot to warp end at edge of woven cloth. Let spool hang over back slab stock bar. Weave enough length for mistake, then remove. Then tie warp thread back into its heddle and slit.

**Figure No. 3** A skipped slit in reed

**Figure No. 4** A threading mistake

In the reed, tie it to the end broken from the weighted spool. Or the end can be wound around a pin inserted into the edge of the woven material. Later these ends can be put into the warp with a needle.

**Four harness twill threading.**

Now that we have practiced plain weave for a few inches, let us see what we can do with our twill. Lines drawn below the draft at right show what happens when you weave one weft on Treadle 1, Treadle 2, Treadle 3, and Treadle 4. Do not use A or B treadle. Repeat for 2 or 3 inches. End on Treadle 4. For a reverse border, you continue Treadle 3, 2, 1, and 4. Repeat this. You will have a nice reversed border.

Remember that Treadle 1 is always the one on the left, and we are now using the regular tie-up as given at Figure No. 4 on Page 7. When weaving a continuous twill, there is always a long skip on the edge. To avoid this, you can use two shuttles filled with the same weft thread. Throw one shuttle, change shed, then throw second shuttle. If you alternate in this way, you avoid this skip.

**Complete tie-up for 4 harness twill.**

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Page 8
The complete tie-up is shown at the bottom of Page 8. Tie-up No.2 is the 6 treadle tie up, including the plain weave treadles A & B. This has two lamms tied to each treadle and is the regular tie-up. Tie-up at No.3 has only one lammm tied to a treadle. The loom can be tied up this way, and you can use two feet and bring down the treadles in any desired combination you wish as you weave. Many like to tie up in this way. Tie-up No.4 has 3 lamms tied to each treadle, and is just the reverse of No.3. Tie-up No.5 is used for the double width material.

Double width cloth can be woven on the twill threading using tie-up No.5. When starting to thread the loom for this, put the first warp thread on harness 2. Then thread 3, and 4. Then thread 1, 2, 3, 4 as given for the width of the loom. Warp must be sleyed through the reed twice as close as the finished cloth will be, or weave with a coarse weft. Only the plain weave is possible, but stripes of color can be added. The closed side of the weaving comes on the right hand side. Treadle 1, 2, 3, 4, with one shot on each shed.

**Weaving Rag Rugs**

Many people who use these instructions will probably use their loom to make rag rugs. These can be most attractive and very saleable, or often they are ugly. Take care to plan these rugs with regard to color and kinds of material used. Cut them evenly, and sew or knot them together. If in doubt how wide to cut the ragiddles, cut a small number of pieces and see if they weave as you wish to have them on the loom. Sort out the colors. Keep light colors together, and dark colors for contrasting borders. Very short lengths pieced together are better than very long yardage of one kind and color of rags.

Rags can easily be dyed. The more uneven the dye takes, the better, for the color is shaded. The rug at Figure No.1 below was woven of rags dyed in shades of blue, from light to dark. Short lengths of bright red were inserted in the same shed as the blue, every once in awhile. This was of dyed bed sheets, cut about an inch wide. For this use just the plain weave treadles A and B for the whole rug.

To cover the warp with weft, it must be sleyed further apart in the reed, or the weft must be cut fine enough so it will cover. Put two warps in one slit, skip a slit, put two in the next slit for the width of the warp. You can skip two slits of reed too, if you wish to do so.

**Figure No.2** below is a rag rug woven on a rose and grey striped warp. Warp 24 threads of slate grey on one section, 24 threads of dull rose on the next section, and so on for the width of warp. Weft was of 1 inch wide strips of a worn out plaid grey and white bed blanket. The plaid of the blanket made very attractive pattern when this was woven.

**Figure No.3** had 12 threads of dark green warp and 12 threads of light green warp on each section. They are threaded into the harnesses, one dark and one light. This rug was woven with dark green Maysville Rug Filler. The design was made by putting in short lengths of beige as desired. And the V's were made by twisting a green and a beige weft together in the shed. Very easy and simple to do.

Never weave poorly cut rags. They can be cut from 1/2 to 2" wide, depending on the weight of the material used. It is better not to combine wool and cotton material in one rug. Keep them separate.
**Amounts of Weft Material are not easy to judge until you have done enough weaving to know how much you use yourself. But you can estimate this on the basis of the amount you use for one square yard of material 36" wide. This is about 12 pounds of rags cut an inch wide. For a rug to finish 36" wide, make a warp of 450 threads. This will be about 36" in the reed, but rags do pull in a little on the width. Be sure to bley the reed double in the first and last four slits on the edges. It makes the rug wear better, and a better selvage too. Always be sure to let your rag weft lay very loosely in the shed. You cannot beat rag weft up tight if it is pulled in at all on the edges. Keep the front brace of the loom on a good slant when the loom is open. Tighten the nuts on these with a wrench if need be to keep them tight.**

**Knotted Warp Ends**

Rugs may be finished with a hem or a fringe. For a fringe, allow at least 8", between each rug. Open the shed and insert a folded strip of paper this width. Remove this when rugs are taken from loom. Tie 4 or 5 warps together with a knot. Do not take too large a group at once. When knot is made, pull it up close to last row of weaving, pull tight. For hems, plan to weave at least two inches of weaving, more if the rug is heavy.

**To remove weaving from the loom**. Take the tension off the cloth beam by lifting the ratchet daug. Wind the warp forward about 18". Cut the material off across full width of the loom. Tie the warp ends in groups in the reed, so they will not slip out of place. Unwind finished weaving on cloth beam, untie or cut the knots of warp tied to cloth beambar. If rug is to be fringed do not cut these knots, untie them. If rug is to be hemmed, stitch twice between each rug. Have stitching 2" apart. Cut between this stitching to separate the rugs. This prevents the threads from fraying.

**Now let us consider for a moment the other two simple threadings, Herringbone and Rose-path.**

**Herringbone**

This threading is just one step beyond the twill and is a twill with a 3,2, add 12. One repeat from A to B is 6 threads. The drawing below the draft shows the pattern effect of the weavings: Twill 1, 2, 3, 2, repeated over and over, just one shot of weft thread on a shed. Of course, this may also be woven in many other ways. Two repeats of the draft are written out. The last thread on harness I at D, is added to balance the first thread on harness I.

**Rose-path Threading**

This is a very common draft, and has many uses. One repeat from A to B takes 8 warp threads. Two repeats are written out here for you, and just below the draft are lines showing the woven effect when treadled 1, 2, 3, 4, 3, 2, put one weft shot on each pattern shed for this. Two repeats of the draft are written out, and the last thread at D on harness I, will balance the first warp thread at A.

**Rose-path threading woven "on opposites"**

**Drawing of Woven Effect**

**Photograph of Woven Effect**

**Here we have a drawing and a photograph of weaving "on opposites." Two weft colors must be used for this. And the warp should be yet far enough apart to completely cover it, or the weft used must be fine enough so it will cover the warp. Treadle 1 with dark color, Treadle 3 with light color. Repeat this. Then treadle 2 dark, Treadle 4 light, Repeat this. Now 3 with dark, 1 with light color, repeat this. Then 4 dark, 2 with light weft, repeat this, and so on. As many as 4 different colors may be used in this way. Put just one weft shot on each shed in this weaving.**

**Combinations of Twill, Herringbone, and Rose-path.**

It is possible to write and use combinations of these three threading drafts in many different ways. The threading on Page 11 is an example of this: From B to C of this draft is twill repeat 3x, From C to D is the herringbone repeated 2x. From D to E is Rose-path threading repeated 2x, E to F is one thread to balance pattern.
THREADING DRAFT - COMBINATION OF TWILL, HERRINGBONE, ROSE-PATH.

Arranging the Threading Draft to Fit the Number of Threads in the Complete Warp is the Next Problem We Will Take Up. Each Draft Must be Balanced in the Loom on Each Side of the Center. And We Must Also Know How Many Heddle Eyes Are Needed on Each of the Harnesses Used, For the Complete Threading of the Loom. This Loom is Sent Out with 150 Heddles on Each of the First Four Harnesses, or Has a Total of 600 Heddles. We Did Not Need to Change These as There Were Plenty on Each Harness for the Twill Threads Just Discussed.

To Get the Heddle Count on Each Harness, Divide the Threading Draft into Groups. Number These Groups of Threads, as 1, II, III, IV, etc. Then Count the Number of Threads on Each Harness of Each of the Groups. Multiply These by the Number of Times Each Group Is Repeated in the Arrangement of the Warp Threads for the Width of the Article, and Add These Totals.

<table>
<thead>
<tr>
<th>Group</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harness</td>
<td>1234</td>
<td>5678</td>
<td>91011</td>
<td>121314</td>
</tr>
<tr>
<td>Count for Total Heddles</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

So We Need 83 Heddles on Harness 1; 112 on Harness 2; 110 on Harness 3; and 84 on Harness 4. Always Count Off Heddles Before You Begin to Thread the Loom, It's Easier.

Warp: - 390 threads of Carpet Warp for a Rug Sley; - 12 dent reed, one in a dent Weft; - Maysville Rug Filler, One 75yd skein weaves about 14" in this width. From this you can calculate for length you weave.

Woven Effect of Threading Above

#3, (Continued) Treadle 4, 3, 2, 1, 4. Alternate Order at #2 and 3 for the Length You Desire. Then Repeat #1, the Twill Border on Opposite End of the Rug. Rag may be Used for This Weft if Desired.

A Square Table Cover can be Woven Using No. 5 Mercerized Cotton, or "Enterprise" Cotton, or Candlewick Cotton.

Use Only One Shot of Weft on a Shed.

Weave #1 as Above for 5 1/2 inches.
- #2- Treadle 1, 2, 3, 2, Repeat for 6"
- #3- Treadle 1, 2, 3, 4, 3, 2; Repeat for 8 inches for Center. Then Repeat #2- back in reverse, and #1, the Twill Border for the End of the Cover.
COLONIAL OVER-SHOT DRAFT - 4 BLOCK PATTERN "ON OPPOSITES."

This pattern draft gives a different way to use a Colonial over-shot threading than is common. It forms a border on the ends and sides of the rug with a textured plain center.

Warp - 390 threads, dark brown carpet warp
Sley - 12 threads to the inch, one to dent
Weft - Plain weave after each shot of the pattern weft of orange carpet warp.
Pattern weft - Wool rugs cut 3/4" wide, dyed dark brown.

Arrangement of threading draft for 390 warp

Thread first two heddles' double - 2
Then thread E to A, selvage - 10
Now A to B, or group 1, 11, 111, 111 - 78
Then B to C, group V, VI, repeat 5X40 - 200
C to D, group VII, once - 11
Then B to A, group IV, 111, 11, 1 - 78
A to E once - 10
Thread last heddle double - 1

Total number of warp threads 390

For a wider rug, repeat the threading from B to C as desired for the center.

Heddle count for each harness

Harness 1 - 112
2 - 89
3 - 82
4 - 104
Total 387 Use up the 3 extra warp threads needed for the total of 390, by threading the first two and the last heddle double.

Weave a 2" heading with orange carpet warp in plain weave, using just treadles A and B, alternately.

How to weave an over-shot pattern draft

Thus far, we have used threading drafts with only short weft skips. Now we have one with long weft skips. To make our cloth hold together, we must use one shot of plain weave after each shot of the pattern weft. And you must always be sure that this plain weave alternates, first on A, and then on Treadle B. To do this, we must have two weft shuttles. One is wound with the orange carpet warp and the other with the wool rugs. Use regular tie-up on Page 6.

To weave this, treadle in the following order: Treadle 4, rag weft; A, carpet warp, weft; A, rag weft; B, carpet warp; 4, rag weft; A, carpet warp; 4, rag weft; B, carpet warp./

This is the detail, but the above is generally not written out to include the plain weave, but just Treadle 4-4x. The plain weave between is understood. Continue to use Treadle 2, rag weft; A, carpet warp; 4, rag weft; B, carpet warp; 2, rag weft; A, carpet warp; 2, rag weft; B, carpet warp; 2, rag weft; A, carpet warp. Then treadle 4, 8, 2, A, 4, B, 2, A, 4, B, 4, A, 4, B, 4, A. This completes the border. For the center of the rug weave as follows: Treadle 3, B, 3, A, B, 3, B, A, 3, B, 3, A. Repeat this over and over for desired length. Then treadle 3, B, 3, A, B, 3, A, B, 3, A. Repeat now the end border as given at first. Weave a 2" plain weave for the hem and the rug is finished. The pattern weft treadles are 1, 2, 3, and 4. The plain weave treadles are just A and B. The rag weft is used on the pattern treadles, and the carpet warp on the plain weave treadles. If you are a beginner, practice weaving one inch on Treadle 1, using the plain weave alternately after each pattern weft of rags, for an inch or so. Use Treadle 2, then 3, and then 4 in the same way. This shows you what will happen as each treadle is used, and is much help.
Rug No. 2.
Another rug can be woven on the same threading draft. This makes a patterned square in the corners of the rug, plain end and side borders, and a patterned center. Here on these directions the plain weave on A and B threads is not written out for you, as in the detail on Page 12. But use these with the open carpet warp weft just as you did to weave the previous rug.

Weave a plain weave heading for 2" for a hem as before. Then thread 
\*1-3x, 1-1-1, 3-3x, 1-2x, 3-1, 1-1, 3-1, 1-2x, 3-3x, 1-1-1, 3-3x* for the end border with rag weft.

For the center of this rug, use thread 4-3x, 2-1, 4-1, 2-1, 4-1, 2-3x, 4-1, 2-3x, 4-1, 2-1, 4-3x. Repeat this for the center as far as desired. Then end with thread 4-3x.

Repeat the end border, as given above from \* to \*, and finish the rug with the plain weave heading with the orange carpet warp for the hem.

These rugs are easy to weave and very effective in their pattern design. You can also use other materials for the weft if you wish, such as cotton rug filler, Chenille, or heavy rug wools, in the same way.

MODERN ARRANGEMENT FOR A "CRACKLE" WEAVE RUG.

Regular Tie-Up

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II - V  III - IV  V - III
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This threading draft is an interesting modern arrangement of the so-called "crackle" weave. It is another four harness weave which offers a great variety of different ways to thread the pattern. It is a very simple pattern with most of its interest in the texture.

Warp - Carpet warp natural, 390 threads
Weft - For pattern shots, heavy rug filler Dark blue. Use carpet warp like the warp for the plain weave shots that alternate on thread A and B after each pattern weft shot.

Sley - 12 dent reed, one to a dent

Arrangement for warp of 390 threads

Thread A to B, group I, III, II, III, IV, V, 94
B to C, group VI, repeat 4 x 8, 32
C to D, group VII, repeat 23 x 6, 138
D to E, one thread on harness 1, 1
C to B, group VI, repeat 4 x 8, 32
B to A, group V, III, II, I, 93

Total 390

For a wider rug, repeat group VI, as desired.

Heddle Count in Groups

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<table>
<thead>
<tr>
<th>Harness</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>4</td>
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</tr>
<tr>
<td>2</td>
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<td>4</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
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Total heddle count on each harness

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Harness 1 - 85; Harness 2 - 134; Total = 390
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Weave a heading of plain weave, alternate thread A and B for 2 inches for a hem.

Weave a heading of plain weave, alternate thread B and C for 2 inches for a hem.

For the border, thread 2-8x. Then thread 4-2x, 1-2x, 2-5x, 3-3x, 4-8x, 3-3x, 2-5x, 1-2x, 4-2x. Now thread 3-16x. For center of rug, repeat thread 2-2x, 3-2x, alternately, for length desired. Then repeat back in reverse to the beginning for border and end of rug. Finished width is about 30".
Rug No.2 Pattern threading Page 13.

WARP--Save natural carpet warp
WEFT--Pattern grey rug filler or 3 strands of home-craft soft spun cotton wound on the shuttle as one weft thread. Plain weave rose carpet warp for tabby thread.
By "tabby" we mean plain weave. One skein of rug filler will weave about 18 inches in this width. Six balls of home-craft will weave 54 inches in length.

Weave as much heading in plain weave as desired with the carpet warp weft.
Rug Border, Treadle 4-3x, 1-2x, 2-6x, 3-2x, 4-7x, 5-2x, 2-6x, 1-2x, 4-3x. For center of this rug, repeat treadle 2 for the entire length desired. Of course use the plain weave A and B alternately with Treadle 2 as usual. Then repeat the border treadling for the other end and the heading.

This is a very interesting way to weave this pattern. After you have tried these two rugs, try making up some of your own ways of weaving by varying the use of the treadles.

The purpose of this book has been to show you how to use the 6 harness folding floor loom. It is the hope of the author that all the important steps have been given so you can warp and thread your loom and weave a rug. If this is the first time you have set up a loom, you will need much patience and you will need to carefully follow through each step of these directions. Read and then do what you have read, right on the loom. If you find that you do not understand what to do next, write to me. Tell me the exact place where these directions are not clear and it will be possible for me to help you.

Learn the names of the parts of the loom, or the language of weaving. Study the outline on Page 2, or what it is necessary to know in order to design or plan your weaving projects.

Warp your loom by the sectional method. Thread your loom to the twill threading. Sley the reed and tie the warp to cloth beam. Study how to tie up lamms to treadles, then actually try out each treadle to see how it works when it is tied to the harnesses. Good edges are the aim of every weaver. This is given on Page 7.

Let hope you haven't made any threading mistakes. If you have, don't let them stay in your work. Correct them according to the directions on Page 8.

Weave a rug in plain weave of rags or filler.

Now that you have woven a rug, perhaps you will want to try another threading. If so, thread the loom again to either the herringbone or rose-path threading on Page 10. You can use the 350 threads which you have on the loom, unless you have used it up to weave more rugs.

The threading on Page 11 shows how to arrange a pattern in the loom, and how to get the heddle count on each harness. This is important too. Study this to see how it is done, so you can arrange a pattern threading in the loom. On Page 12 and 13 are two more rug threadings you can also try out if you wish. These are both different, try them out.

Suggestions for use of other threads.

It is possible to use all kinds of threads and yarn on your new folding six harness floor loom. Watch the Sears Roebuck & Co. catalog and see what is available. Try using colored carpet warps, and heavy Maysville rug filler for weft. Maysville home-craft soft spun yarn can also be used for rugs if three strands are wound on the shuttle at once. Candlewick cotton may be used the same way. Buy this by the pound. It is cheaper.

Crochet cottons No. 10, 20, 30, and 40 can be used for fine warps. When using these warps to weave curtains, drapery, bags, and dress materials, you will need to put the warp closer in the reed. A 16 or even a 20 dent reed is needed for this, and also more heddle eyes. These can be supplied.

Germantown, Shetland, and sport wools can be used for baby blankets, coverlets, neck scarves, etc. Luncheon sets can be woven of the new belastraw, plastic, and corde threads. In fact your loom will do all of these things for you if you learn how to use it, and put your imagination into your weaving too.

Handweaving News

This is a monthly instruction leaflet which has been sent out since 1933, for $3.00 a year. Its purpose is to give help and instruction on handweaving problems. Send for a list of back issues.

Special lessons on different handweaving techniques have also been prepared. These include complete directions for the technique, and also actual woven samples are loaned for a period of two weeks. These are very helpful. For further information, or help, write to Nellie Sargent Johnson, Weaving consultant 12439 Mendota Ave., Sears Roebuck & Co., Detroit 4, Mich.