

**INSTRUCTION
BOOK**
for
UNION LOOM



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FOREWORD

THE IDEA OF WEAVING: Examine any cloth, rug, or carpet and you will see that part of the threads run lengthwise and the other part crosswise. Those running lengthwise are the **warp**, and the others are the **woof** or **filling**. The idea in hand weaving is that new warp is used by the loom and old rags, etc. (or new yarns, if desired) , are used for filling.

AT FIRST GLANCE, it may appear difficult to operate a loom, but as you get into it you will be surprised how easy it is after all. A few things may bother a little but as you become familiar with the loom, you will have no trouble. As you start in, spend a little time going over our instructions on the following pages—there are reasons for doing everything just as the book says. It is best to stick to plain weaves; then after you have gained a little experience, you may try some of the fancy weaves and different methods of warping your loom.

THE ILLUSTRATIONS used in this book are of various Union Looms but the principle is alike and the illustrations clearly show the details of what is being explained about your loom.

UNPACKING

Take the loom, crated as it is, as far as the door, and if the loom will not pass through readily, remove the crating, spool rack with treadles, and the long strip above it (the strip with two rows of staples). Take out the two bolts on both sides that hold the harness uprights and get parts in position as shown in the picture below. Then lay the loom with its back end down as shown in Fig. 1 below, and you can easily put it through the door by pulling one pair of legs through first, then turning the loom and pulling the other pair through.

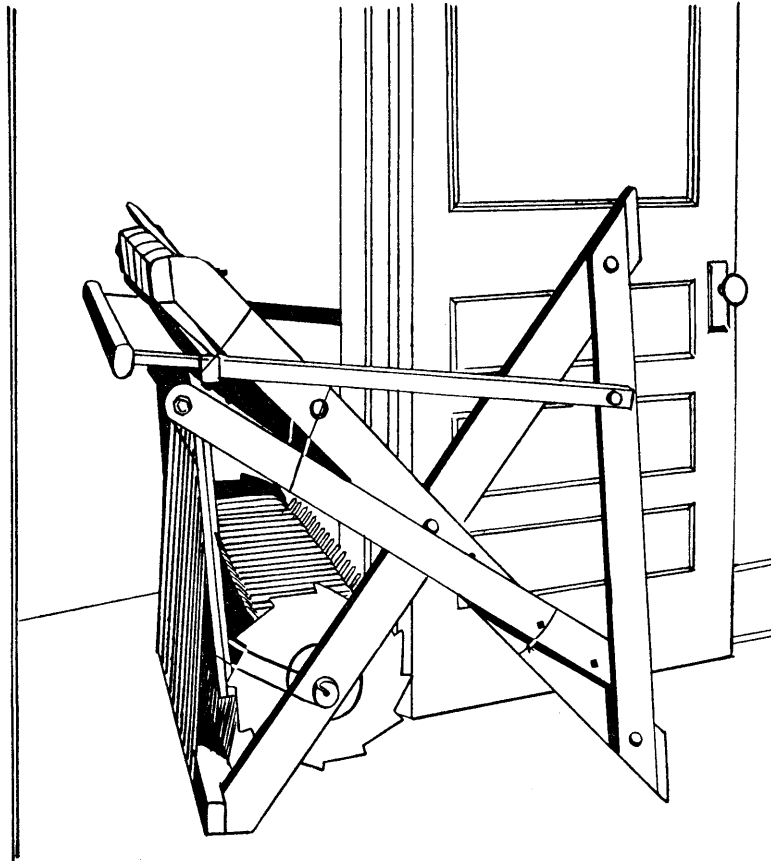


Fig. 1

When you have the loom in the room where you want to use it, assemble parts that were loosened or removed, cut all the cords that are tied on to keep moving parts and accessories from rattling around in shipment. Be careful not to cut the lease cords. Drive the steel pins or nails into the holes provided in spool rack. Attach warp beam crank. Tighten all bolts and screws as they frequently loosen somewhat in shipment.

Should any warp threads have become broken in shipping, trace them out and tie on a short piece of warp or cotton twine and tie ends together, being sure not to get them twisted but in exact order as they come in front and back. Tie them just as tight, but no tighter than the rest of the threads.

TAKING THE LOOM UPSTAIRS

In some houses it may be necessary to take the loom apart in order to move it through a narrow hall or up a narrow flight of stairs. Remove all bolts and screws that hold the sides or ends of the loom to the center parts consisting of carpet roll, warp beam, harness roll, front and rear breast beams, treadle strip, etc. The ends may then be moved separately and the center parts holding the warp, if very carefully handled, may be moved without tangling the warp, and the loom reassembled when you have it all moved. Mark each place where the loom is taken apart so that you will get all the parts back in their proper position. We ship our looms set up, so that you can see just how the loom looks when ready to weave, and thus make certain that if it is necessary to take down the loom, that you will get it back together correctly. As it is necessary only about once in a hundred times to take the loom apart to move it where you want to use it, be sure first to try to move it without taking it apart.

We illustrate below a Union Loom with everything in position for weaving. The various parts are named, so that you will know just which part is meant when the different names and terms are used later.

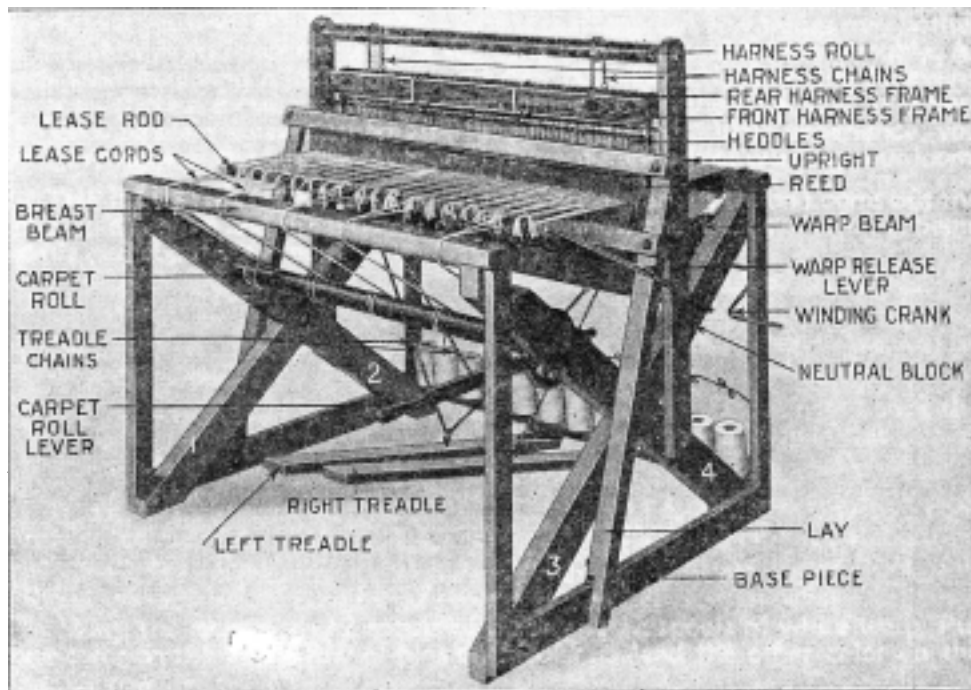


Fig. 2

EXPLANATION OF WEAVING TERMS

Beaming the Warp or Warping: The process of winding warp from spools to the warp beam.

Breast Beams: The front and rear cross rails over which the warp passes from the warp beam to the harnesses, and down over which the carpet passes after it is woven.

Carpet Roll: The round beam on which the carpet is wound after it is woven. It is rotated by means of the CARPET ROLL LEVER.

Draft: The plan a weaver follows for threading and weaving any figure or pattern.

Harness Frames: The part of the loom that moves when you step on the treadles. There are two harness frames, the FRONT and the BACK one. The coppered wires in the harness frames are called HEDDLES.

Lay or Beater: The frame that carries the reed, consisting of UPPER and LOWER REED STICKS, and the RIGHT and LEFT LAY STICKS.

Lease Rod: The stick to which the warp is tied when starting a new piece of weaving. Connecting the lease rod and the carpet roll are the LEASE CORDS.

Reed: Or sley. The row of steel pieces which separate the threads of the warp and with which you pound the filling together.

A Section is the space between two pegs in the warp beam. A SECTION of warp is the warp that goes between two pegs.

Selvage: The running edge of cloth or carpet; also refers to the binding of warp woven in at the beginning and end of a rug to prevent raveling.

Space: One division, or opening, between two of the steel pieces in the reed. The steel pieces themselves are called DENTS.

Single-Sley, or Single Threading: Putting one thread through each space in the reed. Likewise, HALF-SLEY, putting a thread through every other space in the reed; DOUBLE-SLEY, putting threads through every space, etc.

Shed: The opening or spread in the warp through which the shuttle passes, formed by depressing either treadle, which shifts the harness frames.

Shuttle: The implement on which the rags are wound, and which is used to carry the filling from one side to the other between the threads of the warp, through the SHED.

Stretcher, or Temples: An instrument for keeping the woven fabric full width, thus preventing it from shrinking narrower as you weave.

Shot: Each passage of the shuttle through the shed is called a shot. Also, each strand of rags or filling is called a shot of filling.

Warp: The threads which extend lengthwise in the loom, passing through the harnesses and reed.

Woof or Filling: The rags, yarn or other material which is interwoven with the warp.

Warp Beam: The large, square beam at rear of loom, provided with rows of wooden pegs, on which the warp is wound preparatory to weaving.

Warp Release Lever: The handle which, when lifted, allows the warp beam to turn freely.

HOW TO WEAVE

(If your loom was shipped already threaded, you will find that we wove in a few strands of warp. It is necessary to weave this selvage of warp at the beginning and end of each rug or length of work as a binding to prevent ravelling.)

Wind one of the shuttles nearly full of sewed rags, yarn, or whatever filling you are using, and proceed:

Operation 1. Stand or sit in front of the loom, whichever is most convenient. Take the shuttle in your right hand, and unwind about a yard from it. Push the reed back as far as it will go. Step on the right treadle with the right foot, which will move the harnesses, one up and the other down, making an opening in the warp called a **shed**. Throw the shuttle quickly through the shed, catching it with the left hand, thus leaving one **shot** of filling through the shed.

Operation 2. Pull the reed toward you quickly, pounding firmly the shot of filling you have just put in. Now step on the left treadle with the left foot, keeping it firmly pressed down while you pound the reed once or twice more toward you. By thus pounding the goods well, at the same time keeping the warp crossed behind the last shot of filling, you are assured of good results.

Operation 3. Unwind about a yard from the shuttle again, and still keeping the left foot firmly pressed on the left treadle, throw the shuttle through the opening from left to right, catching it with the right hand.

Operation 4. Pound the reed toward you as far as it will go. Then step on the right treadle again, and beat once or twice more with the reed vigorously, keeping the foot firmly pressed on the right treadle, which will cross the warp threads behind the last shot of filling, preventing it from slipping back out into the shed and making loose work.

You now have the right treadle down, ready to start Operation 1 again. Keep up this process, going through Operations 1, 2, 3, and 4, one after the other in regular order. Do not forget to weave the warp selvage on the last end, the same as the first end. It will surprise you to see how fast you can weave when you get into the swing of it.

FIXING THE SELVAGE EDGE

As some rags are stiff, others soft, it requires special care to have the selvage edge nice and smooth. Weavers take pride in producing a perfectly straight selvage edge. When passing the shuttle through, do not draw the rags tight in a straight line, as this will cause the rug or other work to draw narrower. Hold each shot of filling with the thumb and forefinger at the selvage edge as you draw the shuttle through the shed, leaving the shot of filling so it **curves away from you four or five inches** in the center. Leaving this curve is very important as it will insure your work keeping out full width.

If the end warp threads chafe on the reed and tend to break, your work is shrinking in width. Leave the filling more loosely or in a larger curve. Cotton rags shrink more than softer materials. When you weave with 8 or less than 8 threads warp per inch, leaving proper curve in filling will adjust for width

shrinkage and you need no stretcher, but when weaving with 12 per inch you may get along better on some work by using a stretcher.



Fig. 3

Remove the bolt, pull the two parts of the stretcher apart until the distance between the points is the same as the width of the warp in the reed, put in the bolt, fasten the points at each end into the edge of the work, press the stretcher down flat and fasten it so it will stay down.

INSTRUCTIONS FOR QUALITY WORK

When the Rags Break, or when you start a new shuttle full, do not have the ends meet at the tips, but overlap them an inch or so; otherwise there will be a hole in the finished goods.

Beat the work firmly. Good results do not require any unusual exertion; but give the reed a quick swift jerk, rather than a slow pull.

Cross the harnesses and keep your foot on the treadle when beating up the filling. When you have become accustomed to it, it takes no longer to do this, and it is one of the most important things for good weaving.

If your finished work has a curve in it, or if it does not lay flat, pay special attention to the following: (1) While weaving, the warp should be tight to insure firm work, but **not too tight** as this will put undue strain and stresses in the woven work. (2) Do not draw the filling too tightly, and leave a big curve in each shot of filling as mentioned before. (3) If work still narrows up in width while weaving, use a stretcher to keep the work full width. (4) Even when taking all of these precautions there may be a little curve and some bulges in the work. This is the nature of hand weaving. After taking from the loom, it is an easy matter to stretch and hand shape woven work and a few moments spent drawing and stroking by hand will increase the value of the articles.

HOW TO MEASURE WOVEN WORK WHILE WEAVING

Use a tape measure or cord and wind it up with the woven work. Work will shrink slightly when taken off the loom. Allowance of about an inch shrinkage to the foot will be sufficient.

To get stripes arranged properly, make a pencil drawing or pattern on a piece of paper indicating the color and width of each stripe, and weave accordingly. In the case of rugs, be sure to be especially careful about getting stripes correct on both ends or the rug will be spoiled.

HOW TO WIND UP WOVEN WORK

After you have about 8 inches woven, the treadles will work hard and it is now necessary to let off more warp and wind up what you have woven. Raise the warp release lever quickly as far as it will go, then drop it down in place again. Now tighten the carpet by working the carpet roll lever.

Do not use the crank in the warp beam for tightening the warp. You will break it if you do; it is intended only for winding new warp onto the loom.

USING LEASE ROD TO LENGTHEN OUT WARP

Weave until you get so near to the end of the warp that no more can be let off without the row of knots slipping off the pegs on the warp beam. Raise the warp release lever, then slip the knots off the row of pegs. Carefully insert a lease rod through the row of knots, putting on a lease cord at equal intervals. Now run the cords down around the rear cross beam and hook the loops onto the pegs in the same row, on the warp beam. Wind the warp beam back until the slack is taken up, drop down the warp release lever, then tighten the weaving tension with the carpet roll lever. In this way you can use up the warp to the last few inches, saving just enough to tie onto the ends of the new warp. An excellent lease rod can be made by cutting off an old broom handle or mop stick. Good lease cords can be made from 15 or 20 strands of carpet warp.

HOW TO TAKE OFF WOVEN WORK

Raise the warp release lever and hold it up with the catch attached to side. This will release the warp beam so that it will spin freely. Turn the warp beam until there is about a foot of slack warp; then cut the warp all the way across in front of the reed, tying the warp in loose knots to prevent it from pulling out of the reed. Do not cut the threads too close to the rug or woven work, but leave enough so that the ends can be tied to bind the selvage; or, if you want to make fringe, leave about 6 inches of unwoven warp on each end of the rug.

Flip back the pawls that keep the carpet roll from turning backward, and pull the woven work off from the carpet roll. Several rugs or lengths of carpet can be woven before taking them off the loom by leaving a little space between each.

To get the loom ready for weaving again, unwind the lease rod nearly as far as it will go. Then, if your warp will not quite reach the lease rod, let off enough so it will, and firmly tie the warp onto the lease rod in bunches of about 24 threads as shown in Fig. 2. Tie it with even tension on all threads way across, and if necessary, use the carpet roll lever to get it tight enough for weaving; first dropping down the warp release lever to keep warp beam from turning.

CARE OF LOOM

TIGHTEN ALL BOLTS when you first get loom, and occasionally thereafter. Also, from time to time **OIL harness roll, lay or beater, treadles, carpet roll lever, warp beam, and carpet roll.** After using a while, some weavers give loom another coat of varnish to maintain new appearance.

IF THE WARP BEAM BINDS, the loom may not be standing square. Loosen the four corner bolts and pull one corner forward or backward until beam turns freely, and then tighten bolts. If this does not do it, drive the loom ends outwardly at the back corners to give the beam more end play.

IF THE LAY OR BEATER DOES NOT STAND STRAIGHT: (1) loom may not stand level and one leg should be blocked up on floor; (2) loom may not stand square which can be remedied by loosening four corner bolts, squaring loom, and tightening again; (3) beater may have twisted, which correct as follows—loosen the four bolts in the beater, twist the beater about as much crooked the other way from which it was. This will show openings either at top or bottom of slots where beater rails fit onto lay or swinging uprights. Drive hardwood wedges in where these openings show and tighten bolts. You may have to try this a couple of times before getting it to stand exactly straight.

WARPING THE LOOM

Four-ply cotton warp regularly comes in half-pound spools. 24 spools are required for warping the loom in the common way, that is, with 12 threads to the inch.

It requires about one-third pound of warp per square yard when weaving 12 threads per inch, and 24 half-pound spools of warp weighing 12 pounds will produce about 36 yds. of yard-wide woven work. However, in order to get 36 yds. woven work, you must wind on about 40 yds. warp as work shrinks about one-tenth when taken off loom. If you weave other than 36 inches wide, you will get proportionately more or less yardage from 12 lbs.

As it naturally requires some little time to warp the loom, weavers nowadays prefer to warp for as large a piece as possible, enough for several jobs, instead of warping separately for each job, as in former days. The weaver generally supplies the warp, and can thus buy it in the most convenient form. If you must warp a small piece, and do not wish to buy 12 pounds of warp, you can buy any smaller amount, and wind off on tubes of cardboard or wooden spools until you have 24 spools, partly full.

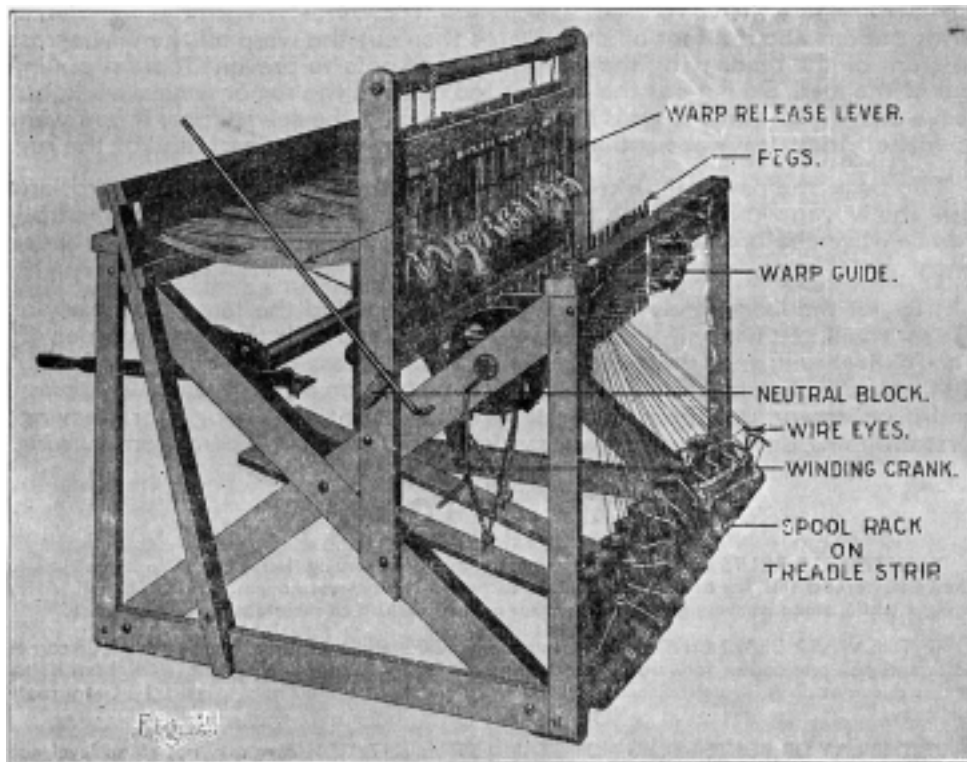


Fig. 4

NOTE: Instead of wire eyes on spool rack, recent Union Looms have a wooden strip over spool rack with staples up through which you pass threads of warp from nearest spools.

HOW TO WARP

If the loom was warped before, and the warp extends through the reed and harness, cut off the warp straight across, close to the warp beam, taking off the remaining warp from the beam, leaving it bare. Then tie the threads hanging from the harness with a few loose knots as shown in Fig. 6, so that they cannot pull out and will not be in the way.

If the loom is bare, pay no attention to the above paragraph, but proceed:

Put 24 spools of warp onto the spool pins, which are on the treadle strip at the base of the loom in the rear. Wedge the WARP GUIDE on the rear breast beam as shown in Fig. 4, directly in front of the first section. Put each of the 24 warp threads up through the wire eye or staple nearest its spool and then through the warp guide in the following order: the 12 LOWER holes in the warp guide are threaded in order, first an upper, then a lower, from the INSIDE row of spools on the spool rack. The 12 UPPER holes are then threaded in the same way from the outside row of spools. Take care not to twist or snarl the threads.

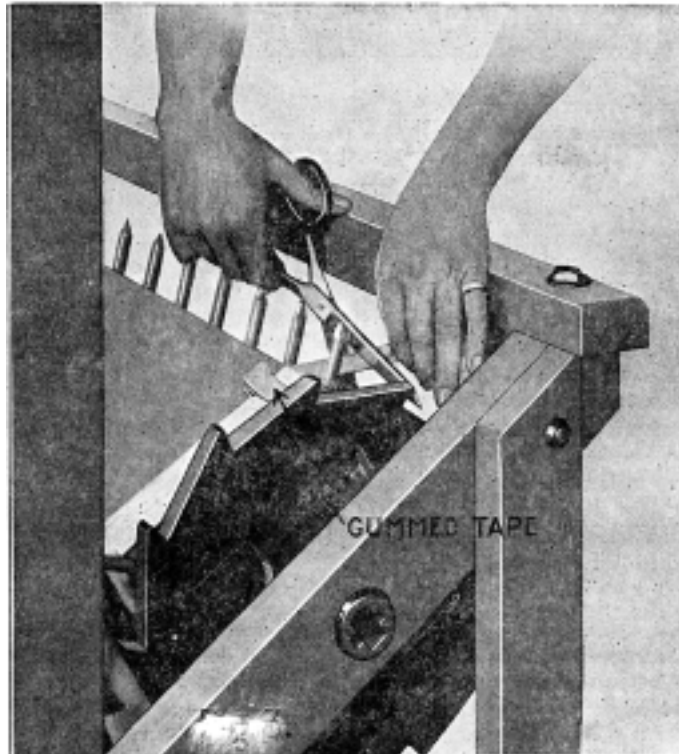


Fig. 5

Now tie the warp threads in a firm knot and hook the knot over the first peg on either side of the warp beam if you want to weave full 36 inches wide. To weave any width less than 36 inches, hook the knot over the second, third or fourth peg, according to the width you want to weave. Each section weaves just a little less than 2 inches wide. If you want to weave less than a yard wide, warp the center sections; that is, omit about the same number of sections at both ends so as to center the work in the loom.

Hold the warp release lever up by turning the neutral block. The warp beam will now rotate freely. Wind on the warp by turning the crank in the direction so that, as you stand behind the loom, the top of the warp beam goes away from you. The warp guide will help but you must still guide the warp by hand to make sure that it does not hump up in the middle or does not climb the pegs. As the warp passes through your hand, keep the tension even.

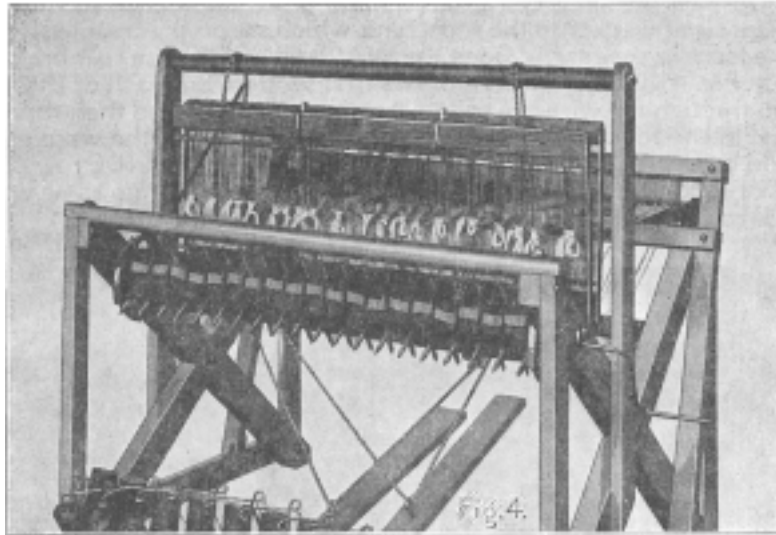


Fig. 6

HOW TO MEASURE WARP

First wind off a strand of warp as long as the number of yards you want to put on the loom, and wind this measured thread as one of the threads of the first section. Count carefully the number of complete turns of the warp beam that are required to just use up this strand. Warp varies somewhat; but, approximately you can go by the following table:

Turns of Crank	Yds. Warp	Yds. Woven 36" Work	Lbs. Warp
20	10	9	3
38	20	18	6
70	40	36	12
126	80	72	24

When you have as much warp as you want on the first section, paste a piece of sticky paper onto the section of warp (see Fig. 5) so as to hold the threads in order like a ribbon. Then cut them off between the pasted paper and the warp guide and tuck the paper under some of the threads on the beam so the end will not flop around. Be careful not to let the threads pull out of the warp guide.

Then tie the 24 threads leading from the warp guide in a firm knot the same as the first time but hook it onto the next peg and wind on the next section the same as the one before. And, in the same way, wind on as many following

sections as are necessary to weave the width you want. Be sure to turn the crank in the proper direction all the while and be careful to get the same number of turns on each section as you did on the first section.

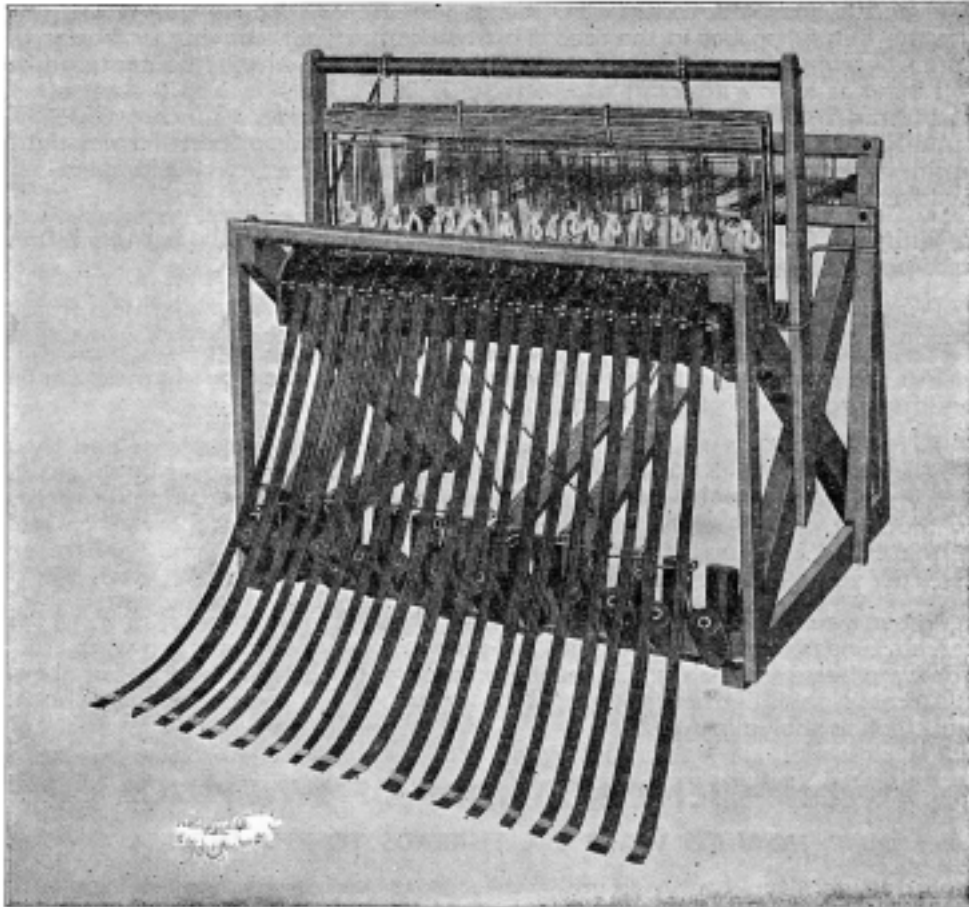


Fig. 7

Now, if the loom was warped before, unwind enough warp, straight out on the floor as shown in Fig. 7, so that the new warp will reach the old warp. Lower the warp release handle so no more warp will unwind, and tie the ends of the old and the new warp, one by one. Tear the new warp threads off, one by one, from the gummed paper, and be sure to take them in order, across the loom from left to right. If you get them twisted, they may bother you in weaving. Make the knots firm and small, and try to get the tension even on all threads. When all are tied, tighten the warp and you are ready to weave.

If the loom was not warped before, or if the warp does not extend through the reed and harnesses as shown in Fig. 6, you cannot tie them end to end as explained above, but must proceed as follows: Unwind enough warp from the warp beam, straight back on the floor as shown above, to nearly reach to the front of the loom. Put down the warp release handle so no more can unwind. Take the FIRST thread at either end of the warp beam and put it through

the eye of the first heddle in the back harness frame, then forward through the first space in the reed, provided you want to weave 36 inches wide. If you want to weave less than 36 inches wide, skip the first 6 spaces in the reed for every inch you want to weave less than 36 inches wide. For instance, if you want to weave 27 inches wide, which is 9 inches less than 36 inches, you would not use the first 54 spaces in the reed. This will center your weaving in the loom. When weaving less than full width, the work should always be centered in the loom as nearly as possible. Likewise, it is also better to skip the first 3 heddles in EACH frame for every inch of weave less than 36 inches wide. IT IS A GOOD IDEA to tie heddles not in use on both ends of both frames tight against sides of harness frames to keep the extra heddles from pushing against heddles in actual use.

Put the SECOND thread through the first heddle of the front harness frame and forward through the NEXT in the reed.

Put the THIRD thread through the second heddle in the back harness frame and forward through the next unoccupied space in the reed.

Put the next thread through the second heddle in the front harness frame and forward through the next vacant space in the reed.

And so on, way across, first through a heddle of the back frame and then through a heddle of the front frame, working across the reed space by space. Be very careful to make no mistakes such as skipping heddles or skipping spaces in the reed, or putting two threads through one space. Also, be very careful not to twist any threads between the harness and reed. A good way to tell whether you are doing it correctly is to step on a treadle every little while.

When you have the threads all through the reed and harness, unwind the lease rod nearly as far as it will go, and if necessary unwind enough warp from the warp beam to reach it. Tie the warp onto the lease rod in bunches of about 24 threads, then tighten the warp with the carpet roll lever. The loom should now look as shown in Fig. 2.

DIFFERENT METHODS OF WARPING

HOW TO WARP SIX THREADS TO THE INCH

If you want to weave with only 6 threads to the inch, put only 12 spools of warp onto the spool holders, and wind only 12 threads on each section of the warp beam. When threading, skip every other heddle in the back frame, every other heddle in the front frame, and every other space in the reed.

For heavy rugs, such as fluff rugs, made from old carpet, the best way is to wind 24 threads on each section of the warp beam, the same as for rag carpet. Take the threads in pairs, instead of singly, and thread a pair through every other heddle, and every other space in the reed.

HOW TO WARP EIGHT THREADS TO THE INCH

Wind 16 threads on each section of the warp beam. One way, then, is to thread the harnesses and reed as follows: One thread through the back harness frame, then through the reed; next thread through the front harness and the next space in the reed. Skip a space in the reed, then repeat as before. This will look a little different than it would with a reed having 8 spaces to the inch. If you want to do much weaving with 8 threads to the inch, it is better to get an 8-space reed.

HOW TO WARP 10 THREADS TO THE INCH

Wind 20 threads on each section of the warp beam. This will give you 10 threads for every 12 spaces in the reed, which will be 10 threads per inch. Follow the directions given on pages 9 and 10, threading the same as if you had 12 threads to the inch, but **SKIPPING** every sixth space in the reed. The finished carpet will show these skipped spaces at intervals of about a half inch, but this will add to, rather than detract from, the appearance. In order to economize on warp, many weavers use 10 threads per inch for all carpet and rugs, in which case it is best to have a 10-space reed.

WARP DESIGNS YOU CAN EASILY MAKE

HOW TO THREAD YOUR LOOM FOR VARIOUS ATTRACTIVE EFFECTS

There are many different ways to thread your loom. Each different method will give the finished rug or carpet a different appearance. Threads may be skipped in any regular pre-arranged order. Colored warp can be wound onto the warp beam in any desired stripe pattern. Sometimes the use of two shuttles, together with a certain way of threading the loom, will produce a novel effect.

Although our directions give exact number of threads to use, or to skip, this can be varied to suit your individual preference. There is really no limit to the range of designs and patterns that can be made on your loom. Your ingenuity will doubtless suggest scores of other patterns besides the ones we give here.

HOW TO FIGURE WARPING

As nearly all our looms are shipped with a 12-space reed, and this reed will be used in carrying out most of the designs here given, our calculations are made for this size reed. If you use a reed having less spaces to the inch, you will use proportionately less warp; and if you employ a reed with more spaces, you will use more warp.

NO. 1—SEERSUCKER PATTERN

When weaving 36 inches wide, all 19 sections of the warp beam will be full of warp. For yard-wide weaving, wind 12 threads on a section, using all 19 sections. Thread either four or six threads through the reed and harness, the same as for carpet. Then, **SKIP** four or six spaces in the reed; thread four or six spaces again, and so on to the end. The number of threads may be varied, also the number of spaces skipped. However, as you have wound on half as many threads as would be required to fill the reed, you should skip just as many spaces, and in the same regular order, as you thread.

The spaces skipped give the woven goods a puffed appearance, hence the name. Colonial bathroom rugs are very attractive when made up in this weave.

NO. 2—CHECK OR BRICK PATTERN

Two colors of warp are used, say black and white, although any two contrasting colors may be used with good results. The checks will be about an inch square, if these directions are followed, although you may have your squares double the size if preferred.

Warp the loom with 12 spools of black and 12 spools of white warp. Put one color on the inside row of pins on spool rack and the other color on the outside row.

The first thread, through the back harness, should be a black one; the next one, through the front harness, should be white. The next is black, the next white and so on, until you have six black and six white threaded through the

reed. The 12th thread will thus be white; then make the 13th thread a white one also. Thread them alternately, which will make the 24th a black thread. Make the 25th black, also, and proceed as before, until you have the loom threaded all the way across. This method of threading will produce the BASKET weave, the CHECKERBOARD weave or the HONEYCOMB weave, depending on how the rags or other filler is put in.

The BASKET weave is produced by weaving alternate shots with two shuttles full of filling in contrasting colors.

The CHECKERBOARD weave also requires the use of two shuttles, but one shuttle is filled with filling, such as rags, and the other with ordinary carpet warp. Weave a shot of filling, change harnesses, then weave a shot of warp. Weave another shot of filling, then a shot of warp, and so on until you have woven a little over an inch. By thus weaving in a shot of warp every other time, the same color of warp is kept on top of the rags. Now omit the shot of warp once, which will bring the other color to the top, then continue as before. Continue until you have another inch woven, then omit the shot of warp once again. This method will produce a pleasing check effect in the woven goods, and is especially attractive when used in the border of a rug.

The HONEYCOMB effect is obtained by warping, as explained above, and using one shuttle, filled with hit-and-miss or plain colored rags or filling. Mottled filler will give you an usually handsome effect, especially in the body of a rug.

STRIPE PATTERNS

The wide variety of colors in which carpet warp can now be obtained, and the numberless different combinations that may be used in planning a stripe pattern of two or more colors, make the possibilities almost limitless for securing handsome effects in the woven rug or carpet.

Generally speaking, there are two main ways to obtain stripe patterns on your loom, which has a warp beam fitted with sections. One way is to put spools of two or more different colors on the spool rack, so that when the colors are wound onto the warp beam they will be in stripes, and then wind each section the same. The other way is to obtain broader stripes by winding an entire section of one color, such as red, the next section all blue or white, the next section brown or green, and so on, until you have warped as many sections as you want to use.

This last method would require you to have 24 spools of each color of warp used in warping the full sections.

Combinations of these two methods may be followed, which will make it possible to obtain many different effects in the woven rug or carpet. In planning warp for carpet, it must be kept in mind that the carpet is to be woven in breadths or strips, which will be laid side by side on the floor. If you have red warp along one edge of your carpet, you would want some other color along the other edge, or your carpet would show a double-width red stripe where the breadths joined, which would spoil the appearance. With rugs, it is just the opposite. Whatever pattern is followed in warping along one side of the rug should be exactly reversed when warping the sections near the other side or edge. Thus your rug will be symmetrical.

ARRANGING A PATTERN FOR WARPING

Sometimes you may see a warp design which you wish to copy and use in warping your next piece. It will be often necessary to slightly modify the design, making some stripes wider, and some narrower, to allow you to warp it conveniently by sections on your loom.

PREPARATION OF MATERIAL

HOW TO SORT, CUT, SEW AND WIND RAGS FOR WEAVING SORTING

In order to make good carpet and good rugs, good rags are needed, although almost any kind of goods can be used for something. If rags are not fairly clean, they should be washed to free them from starch and dirt, you will then have rags that will work up nicely, making a new and sanitary carpet.

Grade your rags, keeping each kind separate. Do not try to combine materials, but classify each kind by itself. Do not mix wool and cotton, or materials that will give a different surface in the woven fabric. Goods that will stretch, such as knit goods, should be woven separately, or you will have an uneven surface and an irregular selvage edge.

The best grade of rags is all wool, medium weight, such as skirt goods, blankets, etc. The second grade is composed of cotton goods: gingham, calicos, muslins, sheets, etc. The third grade is heavier wool fabrics, coarse cotton goods, like denim, work shirts, overalls, etc.

DO NOT USE stiff material, such as window shades, etc., or material such as felt, which cuts with square edges. It will twist and turn when weaving and will refuse to beat up tight.

By carefully selecting and choosing material, preparing it properly, you will be certain of having attractive, smoothly-woven carpets and rugs, a real credit to yourself and to your loom.

CUTTING

Your own preference as to the weight and thickness of the finished goods should be your guide in cutting the material into strips of the proper width. Cut cotton rags for carpet into strips about $\frac{3}{4}$ inch wide; ————— this mark is $\frac{3}{4}$ inch long. Cut lengthwise or crosswise of the weave, — never on the bias, as the rags will pull apart.

Muslins and similar thin material should be in strips from 1 to 1 $\frac{1}{2}$ inches wide; thicker material not so wide. Twist the strips of material from time to time to see how thick it is going to be in the finished rug. It should be less in diameter than a slender lead pencil.

DISCARD garments or rags that have a great many seams, lumps, button-holes or bindings. It may sound strange to be so explicit, but weavers often have sent to them useless material containing buttons, hooks and eyes, belts, braids, fur strips, laces, shoe strings and all kinds of things which they cannot use. Remove all hems, patches, etc., from the goods before cutting in strips; humps in the rags means humps in the finished carpet.

Some weavers practice what is known as "tearing back and forth" on a piece of goods, leaving half an inch or so untorn at the ends, to save the necessity of sewing. If this is done, be sure to cut the corners rounding to prevent them from sticking up in the finished goods. It is poor practice, however, as it causes the weaver trouble, and makes poor carpet. The only proper way is to sew the strips end to end.

Old underwear can be cut lengthwise of the rib if you desire a smooth weave, but cutting across the rib produces a curious rough weave that is very pleasing. The same is true of ribbed hose, which can be cut spirally, round and round.

SEWING

Rags are joined by lapping ends about $\frac{3}{4}$ inch, folding over, and running the stitching diagonally, if on a sewing machine, or lengthwise, if by hand. Do not knot the rags. Test them every now and then by giving a pull to test their strength. Weak rags should never be employed. Cut out all weak places. Strip off all ravellings.

WINDING ONTO BALLS

Do not leave rags in skein form, but wind them into firm balls of medium size, say 5 inches through the center. Hit and miss rags are wound just as they are sewed, starting a new one when you have one wound. Plain colored rags should be wound into separate balls, a ball for each color, so that the weaver can gauge his stripes and borders.

DYEING RAGS

Faded, dingy or plain light material may be made much more attractive by the use of dyes. Reliable dyes that will not rot the fabric can be obtained at local stores.

Wind material to be dyed into skeins about 30 inches long and about one-half pound in weight. Use the dye according to directions.

A pretty, mottled rug or carpet can be made from rags treated as follows: Wrap the skein tightly at intervals with a bandage of rags so the dye cannot penetrate. Then throw into the dye bath as usual. When the process is completed, and the rags have dried, take off the wrappings and you will find the rags underneath in the original state, while the unwrapped part will of course be dyed the new color. If desired, you can now wrap the part just dyed, and color the remainder some other shade, making a two-color filler.

Usually it is better to dye the material in the piece, before cutting, as it makes the material a little more pliable. However, this wastes dye if the material is full of seams, linings, etc., in which case it should be skeined before dyeing.

For the dye bath, use any old pan or kettle, preferably tin, brass, porcelain or agateware, and large enough to easily contain the rags without crowding. A wash boiler is good for very large batches. While boiling, stir and turn the rags, so the dye will penetrate to the center.

RAG CARPET

SELECTING WARP

Black, brown or some other plain dark color is generally preferred for rag carpet, although white warp is often used, especially if the rags are fairly light in color. Bright colored warp will brighten up dark-colored rags, and may be attractively used in stripe patterns.

STRIPED CARPET

In weaving striped carpet, or carpet in any design other than straight hit-and-miss, be sure and divide the rags of each color into as many parts as you want breadths of carpet, so that you will have enough of each color to make the pattern in each breadth alike. Also be careful to measure the stripes as you weave them, so that they will match when laid on the floor. It takes from $1\frac{1}{4}$ to $1\frac{3}{4}$ lbs. of rags, depending on the thickness, for a square yard of rag carpet.

SPECIAL INSTRUCTIONS FOR HIT-AND-MISS

The easiest kind of carpet to weave is hit-and-miss. This means all colors of rags mixed; first a short red stripe, then a white, next a black, and so on.

Strips for making hit-and-miss carpet should not be over half a yard in length—the shorter the rags, the more the colors will be mixed and the nicer the carpet will be. Do not mix cotton and woolen rags, however, as this will make the carpet pucker up.

COLONIAL RUGS

These highly popular rugs are made in all sizes, from 18x36, or even smaller, up to 9x12 feet by sewing together matching widths; and in different colors and materials, for every room in the home.

The same washable material is used as for carpet, and the same general rules in regard to sorting, classifying and cutting material also apply, except that rags for rugs are cut wider, usually about $\frac{7}{8}$ inch; _____ this mark is $\frac{7}{8}$ inch long, as rugs should be slightly heavier and thicker than carpet which is tacked to the floor.

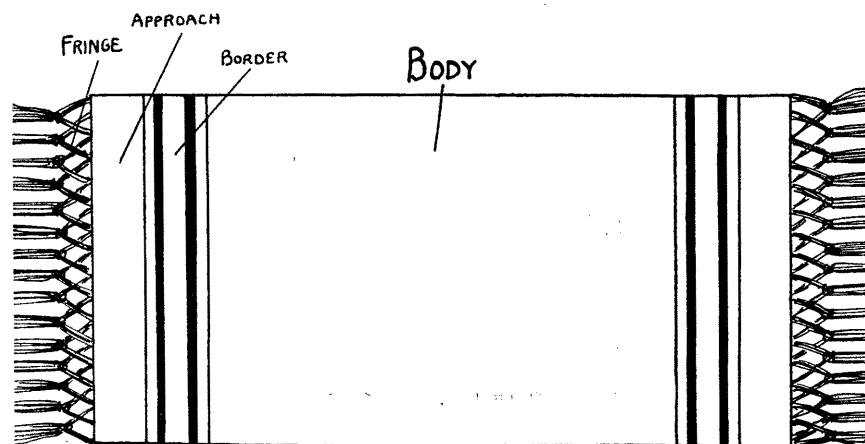
A rug of any size should be heavy enough to lie smooth and flat on the floor, but not so heavy as to be clumsy. A moderately heavy rug will have a more luxurious appearance than a light flimsy one, but if too heavy, will look coarse. Cotton rugs that are to be washed frequently should not be too heavy. Very light starching is recommended for rugs that are washed often, as they have a tendency to grow flimsy and limp, but after being rinsed, the fringe should be whipped to make it appear new again.

White warp is generally used for Colonial Rugs made from light colored materials, but where darker rugs are preferred, you should employ dark rags and brown, red, black, blue or green warp, in plain colors or stripes.

To make fringe on the ends of Colonial Rugs, skip about a foot of warp after weaving the warp selvage on the end of one rug, before starting to weave the warp selvage on the next one. Then, when you take the rugs off the loom, cut them apart in the exact center of the skipped warp, straight across, and tie about every ten threads into a tassel.

DESIGNS FOR COLONIAL RUGS

For purposes of explanation, Colonial Rugs may be divided into three component parts, the APPROACH, the BORDER and the BODY, as illustrated below:



The body of the rug should measure two-thirds of its length, the remaining one-third being divided between the two ends, each border with its approach measuring one-sixth of the length of the rug.

The body of a rug may be hit-and-miss, solid color, or striped. The approach generally matches the body, although sometimes it is made from darker material.

DESIGNING BORDERS

The greatest opportunity in varying designs of rag rugs is in planning new borders. The easiest border pattern is a plain striped pattern, using some color that offers a pleasing contrast to the body color, and also a few shots of white, to set off the border color.

First weave the approach, five or six inches on a rug 27x54, or 30x60. You are now ready to weave the border. Remember, the border on each end of a rug should be symmetrical with respect to its center; that is, whatever pattern or order of stripes you follow in weaving up to the center of the border pattern should be followed IN REVERSE ORDER in completing the remaining half of the border pattern.

Borders can be varied by employing the following methods of preparing rags for the border.

HERRINGBONE. Twist a strand of light rags with a strand of dark rags, winding them as you twist them. Twist another strand of light with a dark, but twisting in the OPPOSITE direction. Using a shot of each of these twisted strands will produce a pleasing effect, known as herring-bone or feather-stripe. This pattern should always be set off by one or more shots of white rags on each side of it.

SAWTOOTH. The rags are twisted the same as explained above, but in one direction only. Weave two shots from the same shuttle, setting it off with white filling on each side, as explained above.

FIGURES. You can weave squares, diamonds and other small figures, by cutting small pieces of cloth and wrapping the filling at the desired point. It requires a little extra time, but oftentimes a very few figures introduced in some contrasting color make a pleasing change.

PRETTY RUGS FROM ODD MATERIAL

You can work all odd rags,—worsteds, woolens, and other goods that do not work up well into rag carpet or Colonial Rugs, very easily into beautiful rugs by dyeing them black or some dark color for the body and approach, and weaving in a bright-colored border.

Bright colored warp; red or orange, should be used. Or you may make a design with the warp by using more than one color and arranging it in stripes.

SEMI-FLUFF RUGS

These handsome rugs are made the same as in the preceding paragraph, except that the rags are gathered through the center on a strong thread by hand; or they may be run through a sewing machine with a ruffler, and twisted before weaving.

Six or eight threads to the inch should be used in making this weave.

RUGS MADE FROM OLD CARPETS

SEMI-FLUFF INGRAIN RUGS

Cut the carpet lengthwise in strips about one-half inch wide; ——— this mark is one-half inch long. Sew the ends together, twist the material, and weave. Sometimes, instead of sewing the strips of carpet together, weavers prefer to weave the short strips and overlap the ends about an inch.

Black or dark colored warp is best. 12 threads to the inch with two in a space is best. Weave an inch of warp for selvage on each end of the rug. This selvage may be used as a binding or ready-made fringe may be sewed onto it.

After the rug is woven, take a curry comb or something rough and scrape over the rug so as to bring up the filling a little. This makes a semi-fluff rug of it. Clip off all rough edges and lumps that may appear on either side of the rug and brush it well.

These rugs are prettiest with the body all alike and a different shade or color border at each end.

GENUINE FLUFF INGRAIN

Fluff rugs are much prettier and better than semi-fluff rugs. They require more carpet and a little more work but this is nothing compared with the added beauty and durability. We advise you to always make genuine fluff rugs instead of the semi-fluff.

Cut the ingrain carpet lengthwise in strips about $\frac{3}{4}$ inch wide. Fray out the threads on both edges with your fingers; leaving three or four threads in the middle to hold the material together. Frayed carpet strips will not hold well when sewed together and the best way is to weave the short strips and overlap the ends about an inch. The strips should be twisted before or while weaving.

Black or colored warp may be used. 12 threads to the inch with two in a space is best. Weave about an inch of warp selvage at each end and use this for binding or sew fringe onto it.

Fluff Rugs, Made from Other Kinds of Old Rug or Carpet

These rugs are made the same as ingrain fluff rugs, only you must find out whether it is better to cut the strips lengthwise or crosswise. Cut a little strip both ways. Fray both pieces, see which leaves the fluffiest and softest material after it is frayed, and cut all the carpet that way.

BURLAP RUGS OR MATS

Good serviceable mats for the porches, summer kitchen, etc., may be made out of old grain bags and burlaps. They can be made very attractive if you dye the material before weaving. Green is a good color for porch use.

Prepare the material in strips about $\frac{3}{4}$ inch wide. No fringe is necessary but short fringe the same as on Colonial rugs look well.

PILLOWS—For the Sofa, Porch, Etc.

Prepare the material for pillows as for rag carpet. They are prettiest when made of silk, but velvet, woolen, or cotton rags may be used. If you use velvet rags, weave them so there will be a good plush side on top.

Use crochet thread for warp, or cotton warp. Warp the loom the same as for rag carpet but only as wide as you want to make the pillows. It is better to make several pillows when you have the loom warped for them.

Make fringe out of the warp, the same as on Colonial rugs, either on one end or both ends.

SILK OR RAYON PORTIERES

Cut the material into strips $\frac{3}{4}$ inch wide. Sew them the same as material for rag carpet. Strips for hit-and-miss should not be over a half-yard long of one color. Short pieces in well assorted colors are best. They are usually woven with a hit-and-miss body and color border. The profusion of colors in hit-and-miss will harmonize with the furnishings of nearly any home. Or, if you have lots of black rags, you can use red warp and make the body black with wide fancy colored striped or hit-and-miss borders.

Each portiere $2\frac{1}{2}$ yards long and 36 inches wide requires about $2\frac{3}{4}$ pounds of cut and sewed material. No. 25 red or black linen thread is best for warp. No. 8 cotton thread will do almost as well and is much cheaper.

There are various ways to warp for fluff portieres. The main idea is to have a few threads close together and then skip an inch, or a little less; way across.

A good way is to put 2 threads in each of the first 3 spaces of the reed, skip 9 spaces, 2 threads in each of the next 3 spaces, skip 9 spaces, and so on way across. Put one thread through a heddle of the back frame and the next through the front frame, the same as for rag carpet. For this way of warping you wind 12 threads on each section of the warp beam.

BEDROOM PORTIERES

Portieres for bedroom use are generally made from gingham strips or other cotton material. Ordinary carpet warp is used.

Warp the loom the same way as explained above for silk portieres, using the carpet warp. Cut the material into strips about $\frac{3}{4}$ inch wide—about the same width as for rag carpet.

Follow the same weaving directions as given above under Silk Portieres, making a center of hit-and-miss and colored border, or a plain color body and hit-and-miss or colored border.

A very attractive bedroom set can be made by weaving two or more rugs in varying sizes, a pillow top and a pair of portieres, from the same lot of rags or materials, striping them with the same border pattern and using the same colors for the body of each.

SHOPPING BAGS

Silk or rayon is the best material for this purpose, and mercerized cotton thread makes the best warp, as it more nearly matches the appearance of the silk.

Cut the material into strips $\frac{3}{4}$ inch wide, sew them end to end, and wind onto small balls. Keep your different colors separate, or if you mix part of your material for hit-and-miss, keep some plain colors separate for the borders.

The average size for shopping bags is 15 x 18 inches. Warp the loom for 30 inch weaving, using 10 or 12 threads to the inch. Weave an inch or two of

selvage, then an inch of the body color for an approach, then an inch and a half or two inches of the border color, then 10 or 11 inches of the body, after which repeat with the same amount of border and finish off with the approach and a warp selvage. This will make your bag about 15 inches deep.

Leave about 6 inches of warp between bags, when weaving, as you may want to tie fringe on top and bottom.

Handles can be braided from warp, or you may use curtain cord or any heavy cord.

SCHOOL BAGS. By using cotton rags instead of silk, and carpet warp instead of mercerized thread, you can make utility bags that are widely used as school bags.

BLANKETS

Various kinds of wool yarns can be obtained from your local dealers or from manufacturers, that will weave up into splendid article of use and attractiveness.

Ordinary carpet warp can be used, or you can employ mercerized thread or medium fine woolen yarn.

Heavy wool yarn can be worked up into blankets, rugs, etc.

Using medium weight yarn as warp and filling will produce a homespun cloth that finds ready sale.

Scarves, ties, etc., may be planned and woven, using your own ideas of color combinations.

A 12 space reed is generally used for weaving these articles.

MANAGING THE WEAVING BUSINESS

HOW TO START

As nearly everyone has a supply of old rags, wornout clothing and other waste textile material, it is usually easy to obtain orders for custom weaving from your friends and neighbors as soon as you mention having ordered a loom. Custom weaving means working up your customers' rags into rugs, carpet or other furnishings, charging a fixed price per yard for doing the work, and adding the cost of the warp; or you may do as many weavers do and quote a price high enough to include the warp.

Good work is its own best advertisement, and a poor piece of work should never be permitted to leave your shop. Many successful weavers never do any advertising, but obtain their orders by recommendations from pleased customers.

In large towns or cities where it may be difficult to get customers without resorting to some means of giving your business publicity, the following methods may be employed. Some of them may just suit your needs, or perhaps you can think up some other plan that will be even better.

SIGNS. Place a large placard on a tree in front of your home, tacked to the house-front itself, if preferred, or put inside a front window. The sign may read: Rug and Carpet Weaving; Custom Weaving; or any other desired wording. This method is good anywhere, but is especially good if you reside where there is considerable traffic past the house.

ADVERTISING. A small display or classified advertisement or announcement in your local daily or weekly newspaper will produce inquiries and get customers started your way.

If classified, the ad can be listed under HOUSEHOLD GOODS, BUSINESS SERVICES, or perhaps the newspaper will grant you a special heading: RUG WEAVING or HOME WEAVING. In this ad you may simply state that you are prepared to weave old rags, clothing, etc., into new-looking bathroom and bedroom Colonial rugs. Invite interested parties to call and inspect samples or to write or phone for prices.

If you advertise often, you should change the copy of the ad to give variety and to call attention to special, seasonal or other features of your business.

A combination price list and direction sheet for preparing rags for carpets and rugs, together with price list, is an excellent thing to hand out to prospective customers. The information how to select and prepare material may be copied from this Instruction Book, and your printer will quote you on a supply.

FORM LETTERS. Your local printer will quote you on a quantity of printed form letters, which you may address and mail to a list of housewives taken from your local city or telephone directory. This will familiarize your name and address with hundreds of prospective customers in a very short time.

NAMING YOUR BUSINESS

In weaving, as in any other business, an appropriate and distinctive name is a valuable publicity aid, and gives the weaver an individuality that lifts his enterprise out of the commonplace. The following list contains several ideas that may be worked out in choosing a name for your weaving business:

Associated Weavers; JOHNSTOWN RUG WORKS; Klever-Kraft Studios; HOME-CRAFT WEAVERS; The Warp and The Weft; ARTS AND CRAFT SHOP; Ye Old-Time Weavers; COLONIAL RUG WORKS; Jones Rug Shop; ECONOMY WEAVING WORKS, Etc.

WHAT PRICES TO CHARGE

Different factors enter into the price question, making it almost impossible for us to tell you exactly the proper price to charge for each job of weaving. In general, we may say that you should be sure to charge enough for your work so that you will receive a good return for the time spent. You should make from 75c to \$1.50 per hour depending on how the rates run in your locality and how fast you want to work.

In figuring the price of warp, you should take the actual cost of the warp delivered to you and add at least 10% to cover handling and any waste that you might have at the end of each warping. If 12 threads to the inch are used, it will require about 6 ounces of warp for a yard of rug or carpet. It is a good idea to keep track of exactly how many yards of work you get from each warping to make sure that you are charging enough for the warp.

If you make rugs from new rug filler, it is very easy to figure the cost of the material. Warp and filler cost about the same per pound. Just weigh the finished rug and you can easily figure your cost. Of course your profit must be added to this.

MEETING COMPETITION

Should other weavers be located near enough to you to take some of your business, you will usually find the best way to overcome this competition is to do your very best work, using good taste in choosing and arranging colors, making attractive borders, and sheer quality of work will hold your old customers and gain new ones, even in the face of cutting prices. By turning out an article superior to your competitor's it is easy to convince your customers that a few cents more per yard is little enough to pay for real and lasting satisfaction.

Promptness in filling orders also counts heavily in retaining a customer's good will.

EXPANDING YOUR BUSINESS

Weaving generally proves so profitable and fascinating that the weaver soon plans to give it his full time, and go into it on a larger scale. To do this, it is necessary to develop it into manufacturing business, MAKING GOODS FOR SALE.

COLONIAL Rugs for bedroom and bath are among the most popular products, and find ready sale everywhere. Although our suggestions apply mainly to these rugs, they may be applied to any other specialties you wish to make and market on a large scale, such as porch or auto pillows, couch covers, shopping bags, rag or stair carpet, mats, or other hand woven novelties and furnishings.

PROCURING MATERIALS

If you are located near a cloth mill, textile factory or clothing manufactory you will have a good source of supply for new clippings, mill ends, etc., that can be purchased and worked up into splendid carpet rags, giving you absolutely new filling at low cost.

Prepared cotton yarn, known commercially as Roving or Rug Filler, can be purchased in a variety of colors and works up into attractive colors that sell readily. This Rug Filler is washable, reversible, durable and makes an attractive rug of universally acknowledged charm.

SELLING RUGS

If you are located favorably, you can open a salesroom, and sell your rugs direct to the retail trade. Or you can employ agents, giving them a liberal commission for selling your rugs direct to the housewife.

Many weavers supply large department stores with a certain number of rugs per month. Call on the large stores near you with a sample rug, and get an order for a stated number to be delivered monthly. Some large stores sell hundreds of dozens of these rugs every month.

In common with other manufacturers who brand their products, it is best to call your rugs by a distinctive name, if you make them for sale. You may call them COLONIAL MAID Rugs; KRAFT WOVEN Rugs; DOUBLE WEAR Rugs; or you may call them by some local Indian or historical name.

OTHER SUGGESTIONS

TEACHING WEAVING. Many customers who become proficient on their looms find lucrative and enjoyable employment showing others how to weave. Sometimes they form classes, thus swelling their income by a considerable sum.

WEAVING FOR CHURCHES. Many church aid societies hold sales of different kinds at certain times of year, and weavers very often can get a nice large order for rugs or custom work for them. The societies furnish the sewed rags and the weaver makes up an assortment of attractive rugs, which are placed on sale. Besides the profit which the weaver makes on this order, the resulting publicity is sure to bring in new customers, especially if a small tag or label, bearing your name and address, be fastened to each rug.

Group your orders, so that you can weave all the orders calling for white warp while you have white warp on the loom, then, if you have a number of orders calling for gray warp, thread the loom next time with gray warp. Oftentimes, if a customer intended to have you weave with some special color of warp, but does not want to wait until you warp again, she will tell you to go ahead with whatever color you have on the loom at the time.

As your custom trade develops, it may be advisable to have two looms, one kept warped with white, and the other with colored warp and for special jobs.



CARPET WARPS
and
WEAVING SUPPLIES

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