

**The
Madmar-Bush
Lap Loom**

WEAVING BOOKLET



MADMAR QUALITY CO.
UTICA, NEW YORK

THE PROCESS OF WEAVING

THE Madmar-Bush Lap Loom is particularly designed for the weaving of table runners, luncheon sets, knitting bags, purses and pillow tops. It can be used for the weaving of rugs. Articles longer than the loom itself can be woven on it. It is suitable for various types of pattern weaving as well as plain weaving.

WEAVING TERMS

LOOM—Frame or machine for weaving cloth.

WARP—The foundation threads stretched on the loom.

WOOF OR WEFT—The threads which are woven into the warp and at right angles to it. Often called *filling*.

WEB—The woven cloth.

HEDDLE-BEATER—The part that guides the warp threads and beats the woof up to the web.

SHUTTLE—The long flat piece of wood on which the woof is wound and on which the woof is carried through the shed in weaving.

SHED—The space in the warp through which the shuttle passes.

This loom gives a woven product similar to that of Navajo Indian weaving; that is, the woof is beaten closely together, entirely covering the warp. This is the result of the wide spacing of the warp threads (four to one inch).

The weaver may achieve variety in both design and texture (1) by using heavier or lighter threads in the borders than in the background, (2) by using threads of an entirely different material.

The web may be developed in more than one color (1) by using different colors in the woof, thus giving color stripes *across* the material, (2) by using two shuttles of different colors alternately in the woof. This will give stripes *lengthwise* of the material.

MATERIALS

WARP—Cotton carpet warp is recommended. Any warp used must be strong and firmly woven.

WOOF—Yarn (old or new), chenille yarn, candlewicking, silk stockings, cotton rags, looper clips, or rug filler may be used. Materials used for the weft must not be too fine since the spacing of the warp is wide.

SETTING UP THE LOOM

The frame of the loom is composed of four pieces. The shorter pieces with teeth are crosspieces or end pieces; the longer pieces with slits and holes are the side pieces. On one side of the crosspieces there is a narrow groove or channel cut across the base of the teeth. This side is the *under* side of the crosspiece.

To assemble the loom, place the two side pieces so that the *slits* in each will come at the top of the loom. Following this, place the crosspieces on top of the side pieces in such a manner that the holes in the ends of the crosspieces will coincide at the top with the slit, and at the bottom with a hole, keeping the frame a rectangular shape and with the teeth forming the *outside* edge of the frame at the top and bottom. (See illustration). Insert the bolts from the under side of the frame, placing a washer next to the wood on each side. This brings the wing nut, which tightens and holds the frame firm, on the top side of the loom.

If a small piece is to be woven, it is not necessary to assemble the frame full size. However, it must be made sufficiently large to allow enough warp length for the play of the heddle.

STRINGING THE LOOM

This loom is strung up with threads in pairs. For example, a thread must start at the bottom of the frame, be passed through a slit in the heddle, then hooked around a tooth in the top cross bar, come back through the hole adjoining the slit in the heddle, and back to the bottom of the frame. The 21-inch loom takes for full width, 36 threads, making 68 weaving threads. This allows double threads as outside threads on each side, to give extra strength to the selvage. The loom should be strung about one inch wider than desired for the finished product as the warp tightens in weaving, narrowing the finished product approximately one inch.

The following formula will determine the entire number of threads needed to string the loom: Decide width of article to be made, add one, multiply by two, add two. Cut each thread two yards long.

If the loom is not strung to its full width, be sure the threading is in the center, leaving approximately the same number of spaces vacant on each side.

Thread the heddle entirely before inserting it in the frame. To do this, pass warp thread through a slit and back through the adjoining hole, pulling until the two ends of the thread are even. Continue until all threads are strung, taking care to use double outside threads.

Place the frame flat on a table and lay the heddle between the crossbars close to the top of the frame. It is then easy to pull each thread sufficiently to hook over the corresponding tooth in the frame, taking care the thread seats itself in the slot or groove on the underside of the frame.

When these loops are all in place around the teeth, pick up the first pair of threads to fasten them at the bottom of the frame. Pass them over the bottom crossbar between the teeth that correspond to the top teeth on which they are looped and continue them around the crossbar; bring up the right thread on the right of the parallel pair of threads and the left thread on the left of the pair. After drawing the threads *taut*,



then a single bow knot on top. Like drawing first, then a single bow knot. Continue until all threads are drawn taut and tied. It is important that the threads be tight. If they loosen up while weaving, tighten by pushing top crosspiece further up the side slits.

When strung to its full size, the 21-inch loom can weave a piece approximately 17 inches by 22 inches; but articles longer than the frame can be made. For this procedure, subtract 22 inches from the length desired, then multiply by two and add the result to two yards to give the length of each warp thread. For example, if a 36-inch length is desired, 22 from 36 leaves 14; multiplied by two gives 28; this added to two yards gives 2 yards 28 inches for the length of each warp thread. An easy quick way to cut warp threads to definite uniform length is to wind as many turns as you need threads on a thin board or cardboard, making length of cardboard one-half that of threads desired and then cut all threads at one end of board. Proceed as previously directed with the threading of the heddle and looping around the teeth of the top frame. Next, remove the bolts holding the top crosspiece and carefully loosen the crosspiece from its rigid position. Using it as one would in winding a spool, turn it around enough times so that the extra thread length is wound around it, *taking care that each thread, as it revolves, falls into its proper niche between the*

teeth. It is necessary, while doing this, to place a weight (books may be used) on the loose threads so that they are wound *evenly* and *tightly*. When the surplus warp length is thus wound, lay the crosspiece in position in the frame, insert the bolts and finish by tying the threads on the bottom crosspiece. (See illustration).

In weaving thus, as the fabric begins to fill the loom, the bolts are removed from the frame and the crosspieces are revolved, winding the fabric on the lower crosspiece and unwinding thread from the top crosspiece. This is an operation requiring care. Replace the crosspieces and make the threads taut again before proceeding to weave. Adjustment is made by means of the slits in the top and holes in the bottom of side pieces. As the fabric grows, it is sometimes tiring to reach the distance necessary to handle the heddle and shuttle. This can be avoided by winding the woven fabric on the bottom crosspiece and placing the crosspiece in position at the highest holes on the side pieces. Any necessary adjustment in tightening or loosening warp can be made by means of the top slits in the side pieces.

WEAVING

The woof or filling must be wound on the shuttle. Tie one end of the woof to an ear of the shuttle and wind the thread evenly around the shuttle lengthwise. Avoid filling the shuttle so full that it will not slip through the shed easily. In using the shuttle, always insert the end first that has the loop tied around the ear. This will keep the thread from unwinding from the shuttle. To push the shuttle through without catching, allow it to lay flat on the warp threads, pushing it through with the tips of the fingers on the extreme end of the shuttle.

Leave about one yard of woof unwound. Push the shuttle through the shed formed by *lifting* the heddle, leaving a few inches hanging at the end.

Bring the heddle down toward the bottom crosspiece, thus pushing the woof thread into place at the bottom of the frame.

Take the few inches of thread that are left hanging and darn the thread in with the fingers above the row just woven and on alternate threads, pressing into place with the heddle. This brings the end of thread in the same row that is woven by next *lowering* the heddle and bringing the shuttle back through the shed thus formed. All ends are fastened in this way when beginning new weaving.

Change the shed by alternately lifting or lowering the heddle for every thrust of the shuttle. In passing the shuttle back and forth through the shed, keep the heddle either lifted or lowered as the case may be, until the woof is seated, ready to be pressed into position. In seating the thread, it is necessary to first lay each thread across the warp diagonally. Bring the heddle down and the extra thread in the slant is evenly distributed across the warp thread, thus avoiding drawing in the selvage.

Watch the selvage formed. Care should be taken to secure a good turn at the edge — tight enough to avoid a loop — loose enough to avoid pulling in the warp thread. It is better, however, to have irregular loops on the selvage than to draw the outside threads of the warp too tight, for the latter will make the finished piece misshapen. The threads will draw in somewhat in any case, therefore measure with a ruler while weaving to take care that the product is being kept an even width.

The woof is spliced by overlapping the ends in the shed. If the woof thread is heavy, cut the ends to be spliced to a long point to make the splice less noticeable.

Because warp threads are stretched tightly on the loom, tension is released when the material is taken off. This causes the fabric to draw up, making a closer texture. For this reason it is particularly desirable, when weaving a material that stretches, to lay it in place loosely, *without tension*.

An article may be shaped on the loom by the manipulation of the shuttle. If it is to be narrowed, insert and bring the shuttle up at the warp thread where it is desired to narrow, ignoring the other outside warp threads. To widen again, insert and bring the shuttle up and take the warp threads up again. The unwoven warp threads are afterward cut and woven back with a blunt needle on the wrong side of the fabric.

To take a piece off the loom, start at the top and cut the outside pair of warp threads, leaving ends long enough to tie together against the fabric. Proceed with each pair until all are tied, taking care to tie them with a non-slipping knot. Then reverse the loom, untying the outside pair at the bottom and proceed as before, finishing each pair of threads as soon as cut loose.

The ends may be cut as fringe or the fabric may be bound or faced. Extra fringe also may be tied in. Another satisfactory finish is to thread the ends with a blunt pointed needle and work them back in the fabric on the wrong side for an inch or two and then clip the ends close.

COLOR

The choice of colors used for stripes should be considered even more carefully than the placing of the stripes. The stripes may be emphasized by contrasts in color, in light and dark, in brightness. It is desirable to have a cool color used as accent for a warm color scheme and conversely a warm accent for a cool color scheme.

If two colors used are nearly alike in light or dark, separate them with white, black or some color which will offer contrast in either light or dark, whichever is needed. Colors that are not pleasing next to each other may be harmonized by using a neutral tone between them. Black, white and gray are familiar neutrals.

DESIGN

Borders or stripes add greatly to the color interest of an article. They should vary in width to be most effective. The borders can consist of plain or pattern weaving. However, it is suggested that practice should be had in plain weaving before making pattern weaving.

PATTERN BORDERS FOR WEAVING

FIG. 1.—A border consisting of vertical stripes may be developed by using two shuttles of different colors *alternately* in the woof. In using two shuttles, there is a tendency for the woof thread to pull back in the fabric away from the selvage. To avoid this, take care to pass the shuttle around the outside selvage warp thread after every thrust of the shuttle. This will wrap the woof thread around the warp thread so that when the next thrust of the shuttle is made, the woof thread cannot pull back in the fabric.

When weaving with more than one shuttle, a better selvage is obtained if the weaver proceeds as follows: When changing shuttles, pass the thread of the new shuttle under the thread just carried across the loom, before inserting the new shuttle in the shed.

FIG. 2.—A border consisting of checks may be developed by weaving with two shuttles of different colors. The check is started as in border 1 by weaving with two shuttles alternately until the first block of squares is finished. To start the second block of squares, pass the shuttle for the *first* row through the *same shed* as the *last row* of weaving of the first block of squares. Then continue alternating as before until it is time to start a new block. In other words, every time it is desired to start a new row of squares

it is done by placing the thread of the last row of finished squares and the thread of the first row of new squares in the same space between the warp threads.

FIGS. 3 AND 4—Borders 3 and 4 are suggested combinations of 1 and 2.

FIG. 5—Border 5 is an exaggerated drawing of the effect that can be obtained by weaving alternately with two shuttles of different colors. It differs from border 1 in that both shuttles are thrust through the *same shed* before changing for the next row of weaving.

In making narrow stripes consisting of two thrusts of the shuttle, splice invisibly as follows: Pass the shuttle through once, leav-



Fig. 1



Fig. 4



Fig. 2



Fig. 3

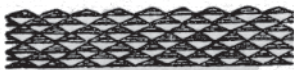


Fig. 5

ing ends of woof on either side long enough so that, with the next change of shed, the ends may be brought together and spliced in the body of the material.

An attractive tweed effect can be obtained by using three shuttles of different colors, always following the same order of placing colors.

DYEING

Materials may be on hand which are satisfactory from every standpoint except color. The dyeing of material for weaving is a simple process. It is not essential to secure even color. A changing depth of color gives a fine shading to weaving.

One may dye, using the three primary colors—red, yellow and blue—or one may find the shade desired already mixed by searching through the color cards of the various dye manufacturers.

In mixing dyes it is well to remember :

Red plus Yellow equals Orange; to dull Orange, use a little Blue.

Yellow plus Blue equals Green; to dull Green, use a little Red.

Blue plus Red equals Purple; to dull Purple, use a little Yellow.

In using these combinations, varying colors may be obtained according to the amount of one or the other used. For example, in a yellow and blue combination, a predominance of blue gives a blue green, whereas if more yellow is used a yellow green is obtained. For pastel shades, dye bright colors in a weak bath of gray.

In dyeing over old material, the original color will affect the dye color in the same manner as if it were mixed with it.

SILK STOCKINGS

It takes about thirty stockings to make a runner twelve by nineteen inches.

To prepare silk stockings for weaving, discard mercerized foot and top. Cut the stockings in lengthwise strips about $\frac{3}{4}$ " in width for service weight. If chiffon stockings are used, they may be cut wider. Join the strips by cutting a slit like a buttonhole on each end and passing a second strip through the slit on one end. Lock the second strip in place by passing one end of it through the slit in the other end; then pull in taut, forming a type of slip knot. The

strips thus formed should be wound on the shuttle with only slight stretching.

In weaving silk stocking woof, lay the woof in *loosely*, without stretching. Keep the heddle depressed or lifted, thus keeping the shed open until the strip is in position to press into place.

In dyeing stockings, only the lighter shades will take a light color. The darker stockings will be a neutralized shade of color used in dyeing.

Before starting to weave, sort out the dyed stockings and arrange them in a planned color order. They may be alternated in lighter and darker shades, giving a color rhythm.

COTTON RUG

This can be woven from rug filler yarn or from cotton rags. Rags can be cut a more even width if time is taken to press the material. If the material is stiffened with starch or ironing, rub it well between the hands to remove all dressing before cutting. If this is not done, it will not weave evenly if combined with a softer material.

When ready to weave cotton rags, first open the shed and insert a flat stick which can be an extra shuttle or a piece of yardstick the width of the loom. Beat the heddle against it, forcing the stick down in place as if it were a woof thread. Next, change the shed and insert the rag woof and weave as usual. The reason for inserting this stick is that it allows the selvage threads to be drawn in at once, narrowing the weaving at the very beginning and thus enabling the weaver to keep an even width to her weaving.

In weaving cotton rags, it is easier to keep the weaving an even width if the weaver will pass a piece of cord around the outside selvage threads and the wooden side pieces of the loom, tying the cord so that the warp thread is held the same parallel distance from the frame. These cords should be tied about every two inches as the weaving progresses.

In cutting cotton rags, it is wise to cut first a sample strip or two and test them out in weaving to find the desirable width. The width is determined by the weight of the material and the object to be woven. A rug for the floor must be much heavier than a table runner so that it will lie flat and will not crumple.

One way of weaving a rug on this loom is to make squares and sew them together. For a rug made up of 9" squares, use 21 warp threads. This allows for the double threads on each selvage, mak-

ing 19 pairs strung upon the loom. Take great pains to measure and keep the blocks even. It is better to weave them slightly longer than wide as in taking them off the frame the warp threads may be drawn tight, thus making them square again.

The fabric will be much firmer and heavier if a coarse toothed comb is used as well as the heddle to push the woof tightly together. After weaving one nine-inch square, turn the loom around and, after inserting the stick, as suggested previously, weave a second nine-inch square on the other end. To remove from the loom, cut one pair of threads at a time in the *center* of the loom and immediately tie the ends against both squares before cutting the next pair of threads. After these are done, the other edge of the squares is tied as previously directed.

After the squares are woven and removed from the loom, take a tapestry needle and work the warp ends back into the fabric. Sew the squares together with a rag strip for the thread, arranging the squares with the weave alternately horizontal and vertical.

YARN

To prepare old yarn for weaving, after ravelling wind the yarn in short skeins. Tie the skeins loosely about two inches apart all around the circumference. Woolen yarn makes better ties than string as it is not so likely to slip. Wash the skeins carefully in neutral soap suds and dry without wringing. This will freshen the color and remove all kinks. If the yarn is to be dyed, place it in the dye bath directly after washing.

TO MAKE A ZIPPER PURSE

For pleated purse with 7" zipper, weave an oblong approximately 9" x 11 $\frac{3}{4}$ " finished.

In weaving fabric for a purse which is to have a pleat, do not beat the fabric too hard.

Materials needed: 2 oz. wool yarn of background color, 8 yds. of contrasting color yarn, one 7" zipper, warp thread, lining.

To weave set up loom with 22 threads. As the outside pairs are double, this gives 40 weaving threads.

1. Weave 1 $\frac{1}{2}$ " background, then across and back once with shuttle of contrasting color to make a stripe. Splice these *narrow* stripes as previously directed.
2. Weave $\frac{3}{8}$ " of background color, then across and back with shuttle of contrasting color for second stripe.

3. Weave again $\frac{3}{8}$ " of background color, then across and back with shuttle of contrasting color for third stripe.
4. Weave $7\frac{1}{8}$ " of background color, then across and back once with shuttle of contrasting color to repeat stripe.
5. Weave $\frac{3}{8}$ " of background color, then across and back once with shuttle of contrasting color for stripe.
6. Weave $\frac{3}{8}$ " again of background color, then across and back once with shuttle of contrasting color for stripe.
7. Weave $1\frac{1}{2}$ " of background color.

Remove from loom and tie threads. After knotting warp threads securely, take large tapestry needle and darn ends in wrong side for about $1\frac{1}{2}$ ". Press with warm iron.

To make the purse, fold fabric and sew zipper into place with closed end of zipper close to a selvage edge, thus leaving the open end of the zipper about $1\frac{1}{2}$ " from the other selvage edge. Overcast the selvage edges together on the wrong side.

Cut the lining slightly smaller than the woven fabric, fold and sew up the side seams. Insert the lining and overcast the top to the zipper. Lay an inverted inch pleat in at the open end of the zipper and tack in place at the top. Press pleat into place.