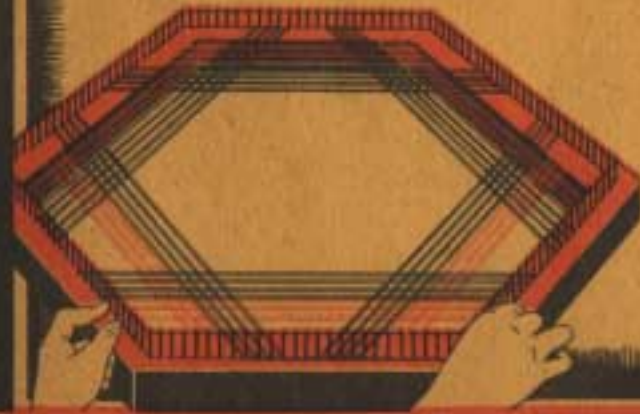


HONEYCOMB

WEAVING

C H I C A G O
P A R K
D I S T R I C T

B O R N H A M
P A R K
C H I C A G O



M O D E R N
R E C R E A T I O N
S E R I E S

Honeycomb Weaving

MODERN RECREATION SERIES

This book, like all others in this series, contains material adaptable to the uses of the recreational groups in the Chicago Park District. It is designed primarily as an instruction manual and reference book for those groups. It records for present and future use in the Chicago Parks the accumulated experience of many groups and professional workers. Besides serving the foregoing purposes, this book and the others of the series form a medium through which the advantages offered in the park system can be extended to the home and to other communities.

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DEVELOPED IN PART THROUGH
THE COOPERATION OF THE
WORKS PROGRESS ADMINISTRATION

As Conducted

Under

The Recreation Division

of the

CHICAGO PARK DISTRICT

THE BEES taught us our first lesson in honeycomb weaving, a process by which we make beautiful table mats, pillow covers and centerpieces which give the appearance of having been wov-

en. It is not certain who first took the idea from the bees and developed it into a so-called weaving process. It has been used by the United States Navy and by various institutions to provide recreation and handwork for convalescents. One form of the process is known as waffle weaving.

Honeycomb weaving has been used for recreation in the Chicago parks for several years. The original procedures have been developed and modified by various groups in the park recreation centers. Consequently the directions for honeycomb weaving given in this book are based on the work done by many people and on the experience gained in showing them how to carry on this interesting craft.

HONEYCOMB WEAVING IS SIMPLE

The process is simple, the cost nominal. Equipment consists of four items: a darning needle; eleven or twelve balls (800 or 900 yards) of mercerized cotton, such as is used for crochet or embroidery work, in similar or contrasting colors; an alignment stick (see Figure 7) which you can make pointed, triangular and smooth from a piece of hard wood; and lastly a frame. Directions for making frames are given on Pages 15 and 16. Let us begin the work with a 10-in. hexagonal frame (Figure 1) although eventually you will want frames of various shapes and sizes.

After assembling your equipment and supplies, as described above, you are ready to begin the work.

WINDING: Because of the differences in winding and tying on the square frames, it is

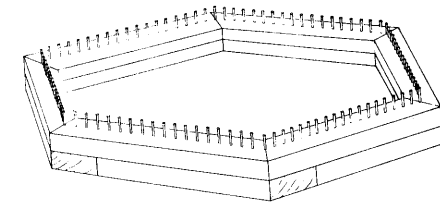


Figure 1. This is the 10-inch hexagonal frame. a convenient size for beginners.

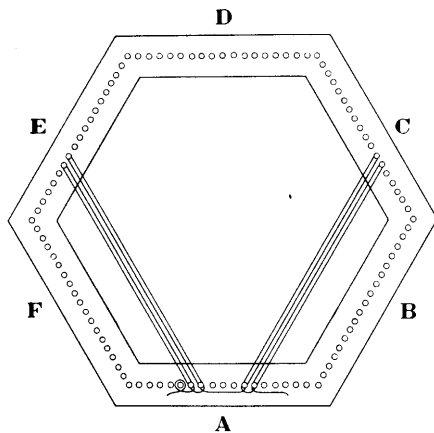


Figure 2. Begin winding the first layer of border from side A

nail and back to the left of the nail from which you started. Continue winding thread over to the eighth nail on side A, holding the thread each time tightly to the frame with first finger of left hand so that no slack will develop, then cross to the eighth nail on side E and return. Always wind thread first around the right side of nail, drawing it as tightly as possible without breaking. This is the first section of border.

CONTINUE WITH THE WINDING

After you have passed thread around the seventh and eighth nails as described, bring it directly over to the twelfth nail on side A, counting from the left-hand corner as before. Pass it around this nail and cross to the same nail on side C, this time parallel to side B of the hexagon. Returning on the left of this nail, wind thread in like manner around the thirteenth nail. This operation forms two sections of border as shown in Figure 2.

Turn the frame until side B is in front of you and wind the succeeding two portions of the border in the same way as before, as shown in Figure 3.

The frame should then be placed so that

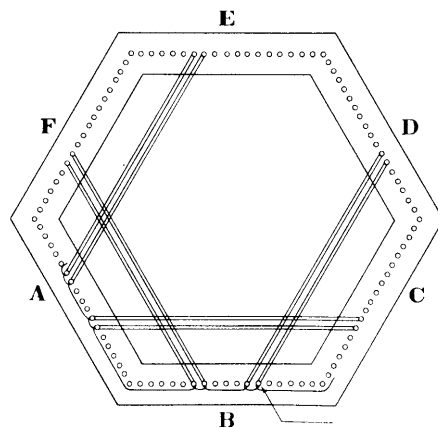


Figure 3. Turn frame with side B facing you, then wind more border

strongly recommended that you work first on the hexagonal frame. Place your hexagonal frame so that side A (which may be any one of the six sides) Figure 2, is directly in front of you. Tie thread with a secure knot to the fifth or sixth nail, counting to the right from the left-hand corner; next bring the thread around to the right of the seventh nail, then cross to the right of the seventh nail on side E of the hexagon so that the thread runs parallel to side F of the frame. Next bring thread around the

side C is directly in front of you and thread wound as shown in Figure 4. Again turn the frame and wind. Tie the thread firmly to a convenient nail, using knot shown in Figure 4 A. This completes the winding of the first layer of the border. The whole border should preferably be of a color contrasting with that of the body.

The first layer of the body is begun by tying the thread to any convenient nail, winding it around the ninth nail, see Figure 5, crossing to the corresponding nail on

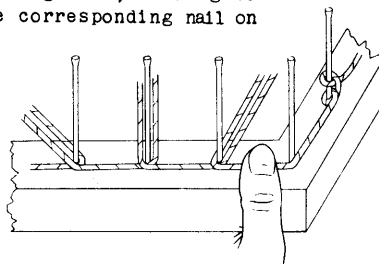


Figure 4A. When winding first layer of border, tie thread thus when you finish.

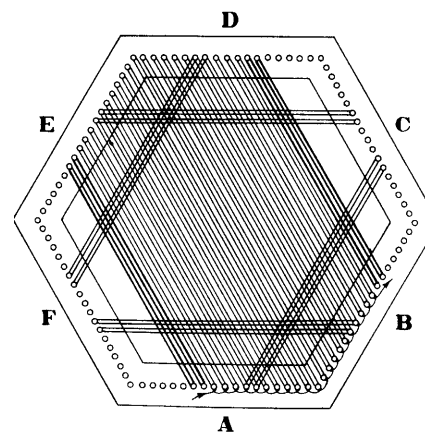


Figure 5. After the first layer of the body is wound, the work should appear like this

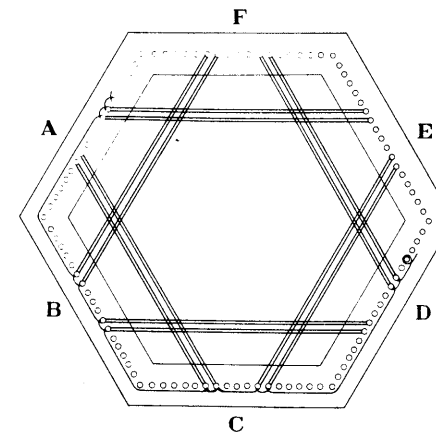


Figure 4. Turn side C to face, then finish first layer of border

frame side E, so that thread lies parallel to the border, then returning around the left of the ninth nail. Wind in this manner until you have reached the border on opposite side of the frame. Then hold thread taut with left hand and, with the first finger of right hand, press threads down to the frame at each nail on the side opposite you. Properly done, your work will now appear as in Figure 5.

Next turn the frame until side B is in front of you and wind the thread in the same way you did from side A. This process should be repeated on side C of the frame, which will complete the winding of the first layer of the body. The work should now appear as in Figure 6.

Succeeding layers are wound in the same way, winding first the border and then the body

alternately. The border for this frame consists of thirteen layers and the body of twelve layers. By winding the last border layer twice, you will make it somewhat more distinctive. The thread need not be cut after forming each layer but it should be securely tied to an adjacent nail to prevent any looseness in the winding. To eliminate, as far as possible, thread wasted in winding outside the nails, the border is not always started from the same point. Always start the body-winding, however, from the nail from which you first started. When you reach the end of thread, add a new spool; in doing so, make sure the knot lies outside of nails. You do this by winding surplus thread back and forth around several convenient nails until the knot lies outside, then resume the winding.

TYING: The next step is to turn your frame face down, as

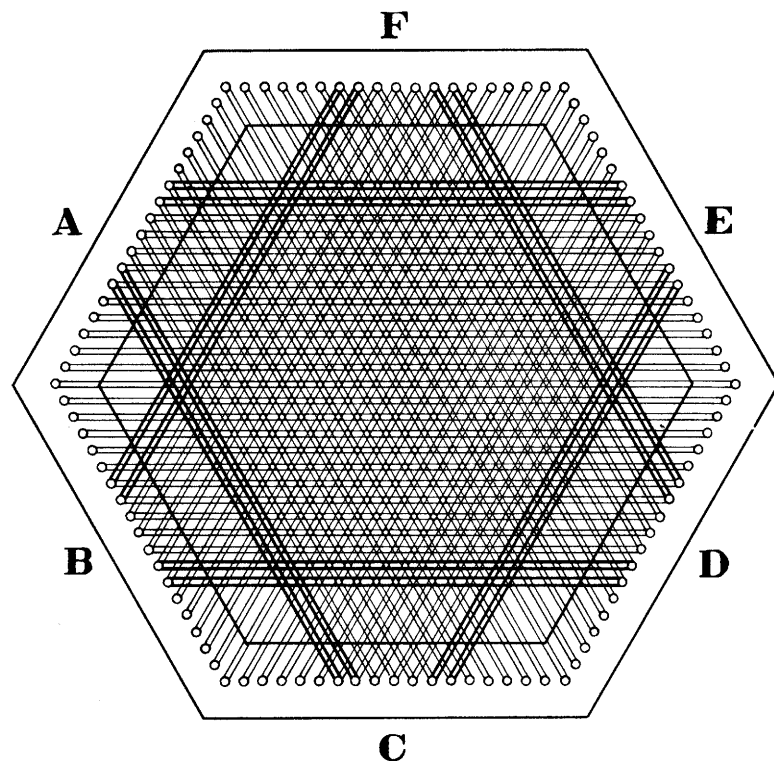
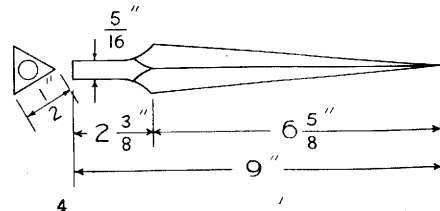


Figure 6. The work should look like this after first layer of body is wound from side C

Figure 7 (right) Details of the alignment stick used to align threads when tying



tying will be done from the reverse side. Ties are made at each point where the threads intersect, except the part that lies outside border and forms the fringe. To make these ties, use a large darning needle or bodkin with a piece of thread about three feet long. This thread may be of the same or contrasting color. Use the aligning stick (Figure 7) to align threads during the entire tying process, pushing it through triangular openings until the strands of thread in each line are pushed closely together. This need not be done on the entire piece of work at one time, but it should be done before tying. The outer border row is to be tied first; therefore align the border and several rows adjoining it with the stick, maintaining this margin until the piece is completely tied.

Before you start tying make a slip knot in the end of thread. Start at any corner where the

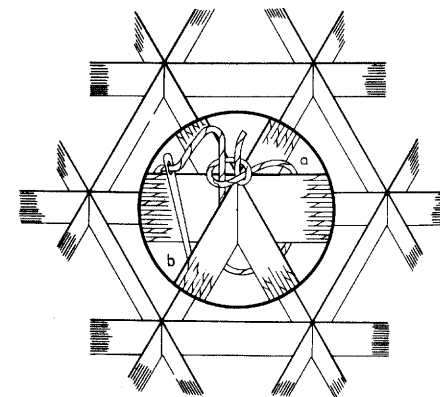


Figure 8. First step in tying thread intersections

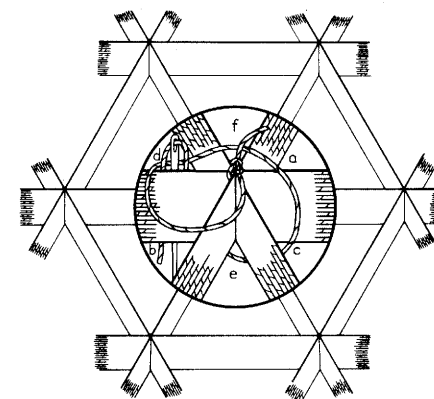


Figure 9. How knot is finished in tying an intersection

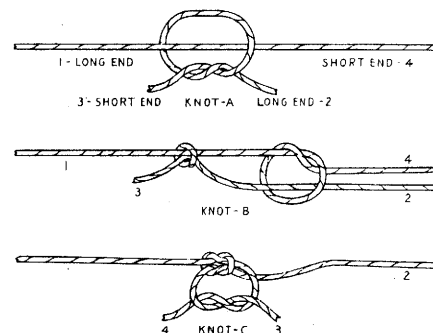


Figure 10. Use this knot for adding thread, when working thread is used up

strands of outer border lines cross and put the threaded needle or bodkin through space shown at (a), Figure 8. Pull it through until you come to slip knot. Then bring needle back through space shown at (b) in Figure 8 and on through slip knot. Pull the thread up tightly. Insert needle in space (c) and return it through space (d), Figure 9, passing thread around needle in the man-



Figure 11. Two good designs for the hexagonal frame.



Figure 12. Two more good designs for the hexagonal frame



6



7

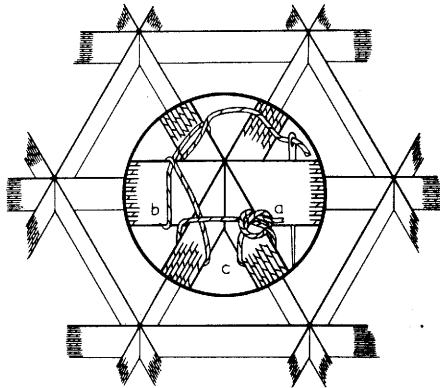


Figure 13. This is the way you begin a rosette that forms the design

border row in the same manner, then the next adjoining row and so on until the work is tied completely to the center. The firmness of the finished article depends to a large extent upon tight winding and tight tying.

DESIGN: The work is now ready for the design, which you may take from a pattern or develop by your own ingenuity. Figures 11 and 12 show several designs that have been considered appropriate. Much depends, of course, upon a proper choice of colors.

Designs are made up of a succession of spider webs or rosettes. To form such a web or rosette, tie the thread with slip knot around the spoke, as shown at (a) Figure 13, reversing the frame and working from the bottom side. In forming the design, you do not pull thread as tightly as when tying the intersections. Insert the needle through space (b) and return it through space (c) always keeping the thread behind needle, as shown, for in this case you make no ties. Continue in the same manner until you have built several wraps around each row as in Figure 14 which is viewed from face side.

This is the basis of rosettes or spider webs of which all designs are made. The number of wraps around each row may be three, five or more. Contrasting colors may be used to bring out the design. The small hexagon center of the piece is usually filled in completely with two or three different colors for a flower effect.

If two different colors are desired in rosettes, two wraps of one color are usually made and contrasting color

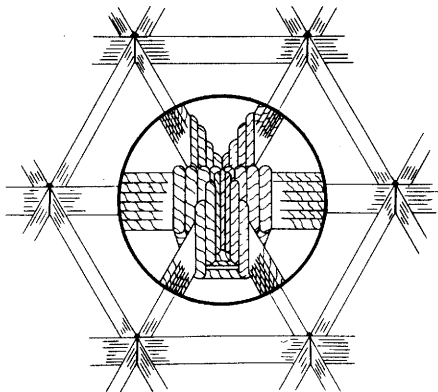


Figure 14. An unfinished rosette looks like this from the under side

ner illustrated and drawing the thread tightly. Follow in the same way through spaces (e-f) Figure 9. Then draw thread along the border line to the next intersection and tie this intersection in the same way. You must, of course, omit the slip knot that was used to tie thread at the beginning. When you reach end of thread, tie a new piece to it as shown in the three steps in Figure 10, taking care to pull knot A down close to the work. Tie the entire outer

used to form the last three wraps. Each section of the design should be wrapped completely with the first color, then finished with the second, because this eliminates cutting the thread. When all thread in the needle has been used, a new piece is tied on as explained in Figure 10.

In forming different designs it is not always advisable to continue wrapping around the spoke in strictly consecutive order because, in moving from one rosette to the next, the thread must lie along the row and not cross the space where it will be visible from the face of the finished piece. Attention must be given, therefore, to the points where the wrapping is to end. This is illustrated in Figure 15, where the thread should lie along row (x). To obtain this result, make first wraps completely around spokes in consecutive order but, when going around the second time, make wraps two and three at spokes (e) and (f) as illustrated, enabling you to end at (d). This permits the thread to lie along the row when starting the next rosette as shown in Figure 15. This method will vary slightly as the desired point of termination varies but, in some cases, it is best to make two wraps at one or more of the spokes.

A distinctive touch is added by weaving a one-half inch ribbon of harmonizing color around the border of design. But the use of too much ribbon has been found to detract from rather than add to the appearance. When ribbon is used, it should be woven rather loosely through alternate rows of the winding and ends of the ribbon should be sewed together where they meet on the reverse side of the work. Figures 11 and 12 illustrate the use of ribbon and the method of weaving.

When large hexagonal frames are used the border is often constructed of three rows instead of two. A proportionate number of layers is also added to both border and body. After some experience, you will find that you can introduce many ideas that will add to the beauty of the work.

REMOVING WORK FROM

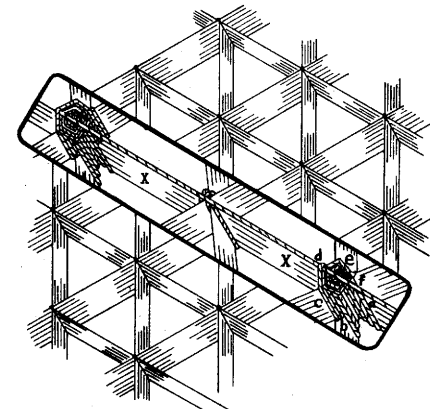


Figure 15. In making the rosettes, vary wrappings to suit direction of connecting thread

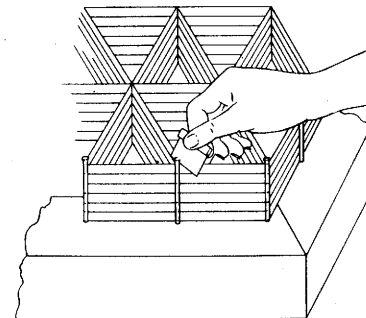


Figure 16. Cut threads from the nails, preferably with a razor blade

FRAME: After you have completed the work, cut it from the frame with safety razor blade. Cut strands along one side of each nail as shown in Figure 16. In doing this, it is advisable to leave intact the threads on three nails at each corner; these hold the work firmly during the cutting process. Threads at these points should be cut last. When you have removed work from frame, lay it on a table or board and trim off long threads with scissors. Comb out fringe and trim it several times, if necessary, until edges are even.

HONEYCOMB WEAVING ON SQUARE AND OBLONG FRAMES

For explanatory uses, we take the twelve and one-half inch square frame. Referring to Figure 17, you will see that the border winding is begun at the ninth nail from the left on side A and is wound progressively as in Figure 17 and 18. These windings complete first layer of the border and, if the drawings have been carefully followed, the work will appear as in Figure 19.

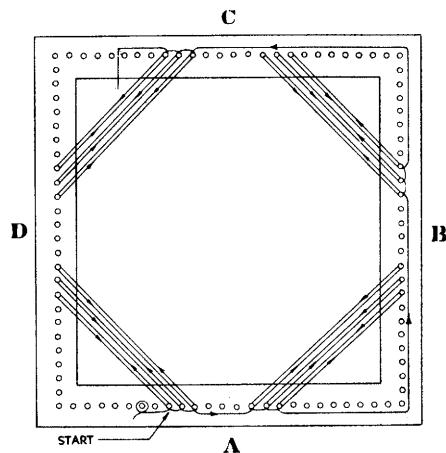


Figure 17 This is the first section of diagonal border, wound on a square frame

be studied carefully.

TYING SQUARE FRAMES:

As layers are thicker at many points, it is very necessary for you to tie temporarily with strong thread the intersections lying outside of border.

The aligning stick, is of slightly different shape from the one used with hexagonal frames. It is triangular in section but with only two sides equal, the third side being longer. On the square frames the entire piece of work should be aligned with the stick before tying is started and the stick should be used con-

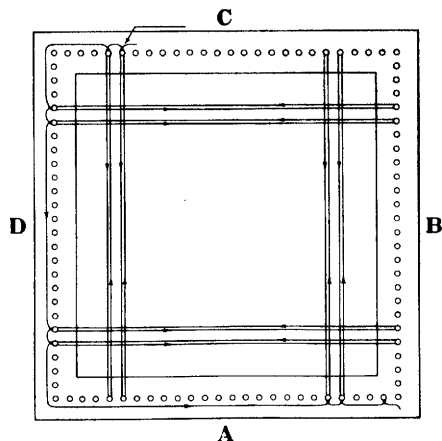


Figure 18. Second section, side border on square frame

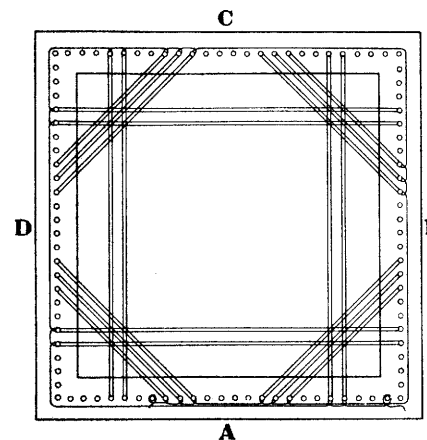


Figure 19. After first layer of border is finished, work looks like this

tinually to keep the threads together in a straight line.

The principle of the tying is the same as that used on a hexagonal frame, but on a square frame there are more spokes at some of the intersections and fewer at others. The sectional drawing, Figure 25, illustrates the method used and the way in which the thread lies along the row when proceeding from one intersection to the next. After you have tied the entire piece of work, it is ready for the design.

DESIGN: When you work in the design on these square frames, you will find that

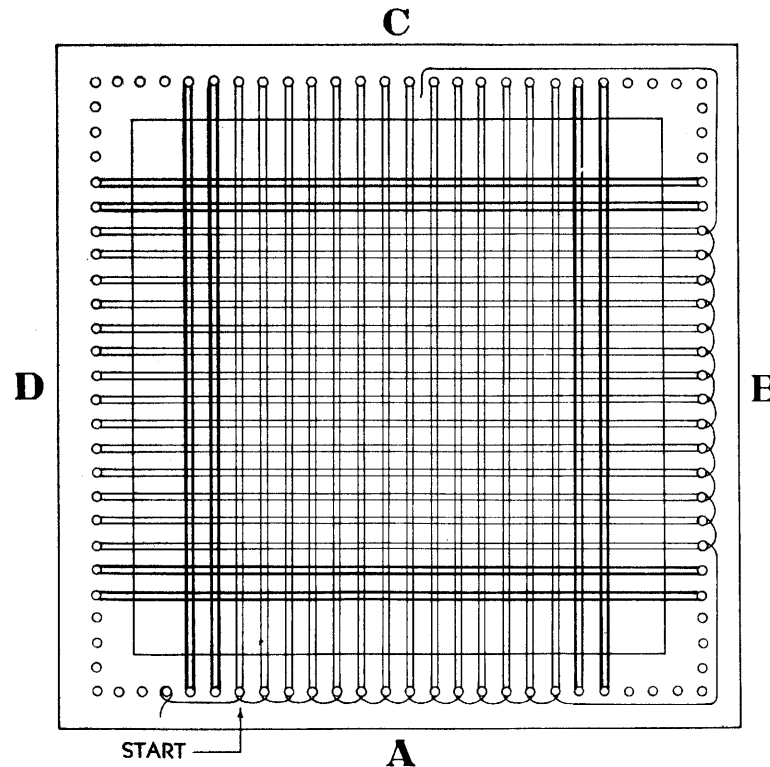


Figure 20. Start the body winding in this way on the square frame

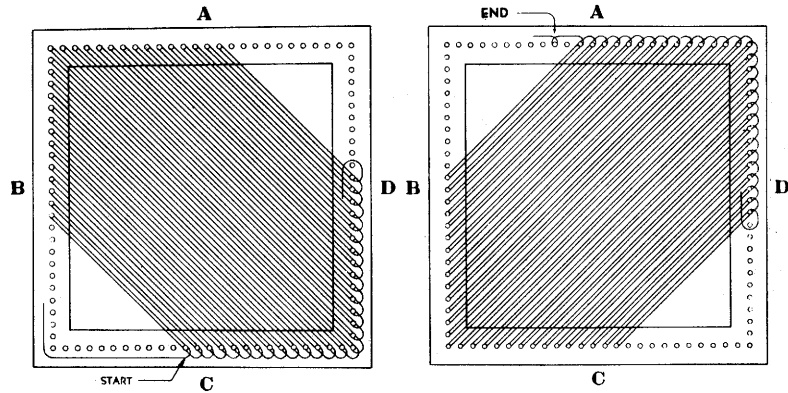


Figure 21. The diagonal body winding follows the straight winding, one layer going to left

Figure 22. The diagonal body winding, layer to right

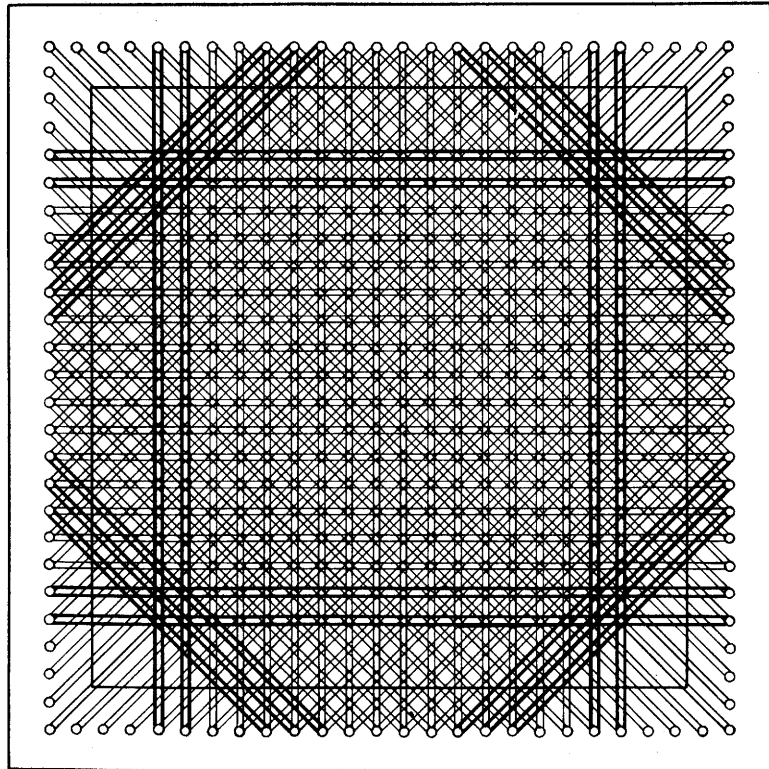


Figure 23. This is the way the square frame should look with border and body windings completed

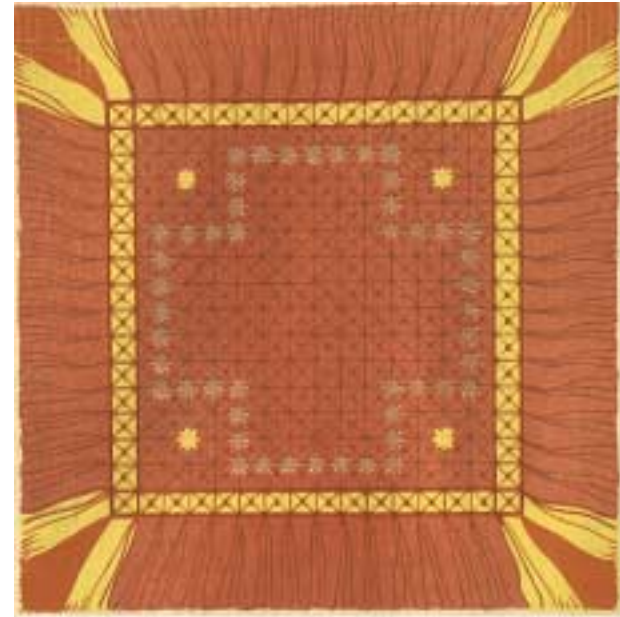


Figure 24. Designs for the square frame from the face side



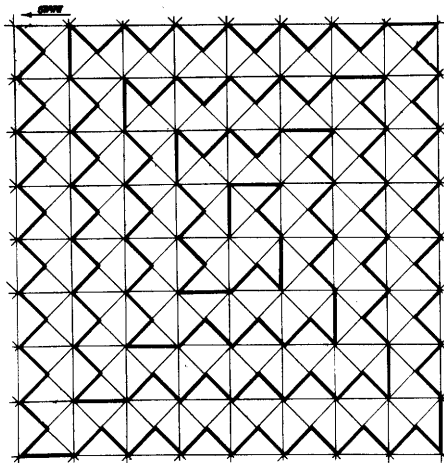


Figure 25. Diagram to show principle of tying square frame

the rosettes or spider webs have eight spokes. The intersections with four spokes in the center of the small squares are seldom used in the design. Rosettes or spider webs that make the design are formed in the same way as those on the hexagonal frame. Figure 24 shows two typical designs for the square frame. Square or oblong frames provide slightly more opportunity for complete expression of conventional designs, as the worker will perceive.

After design is finished, remove temporary ties which were placed outside the border. Cut the work from the frame;

trim and comb the fringe as explained previously.

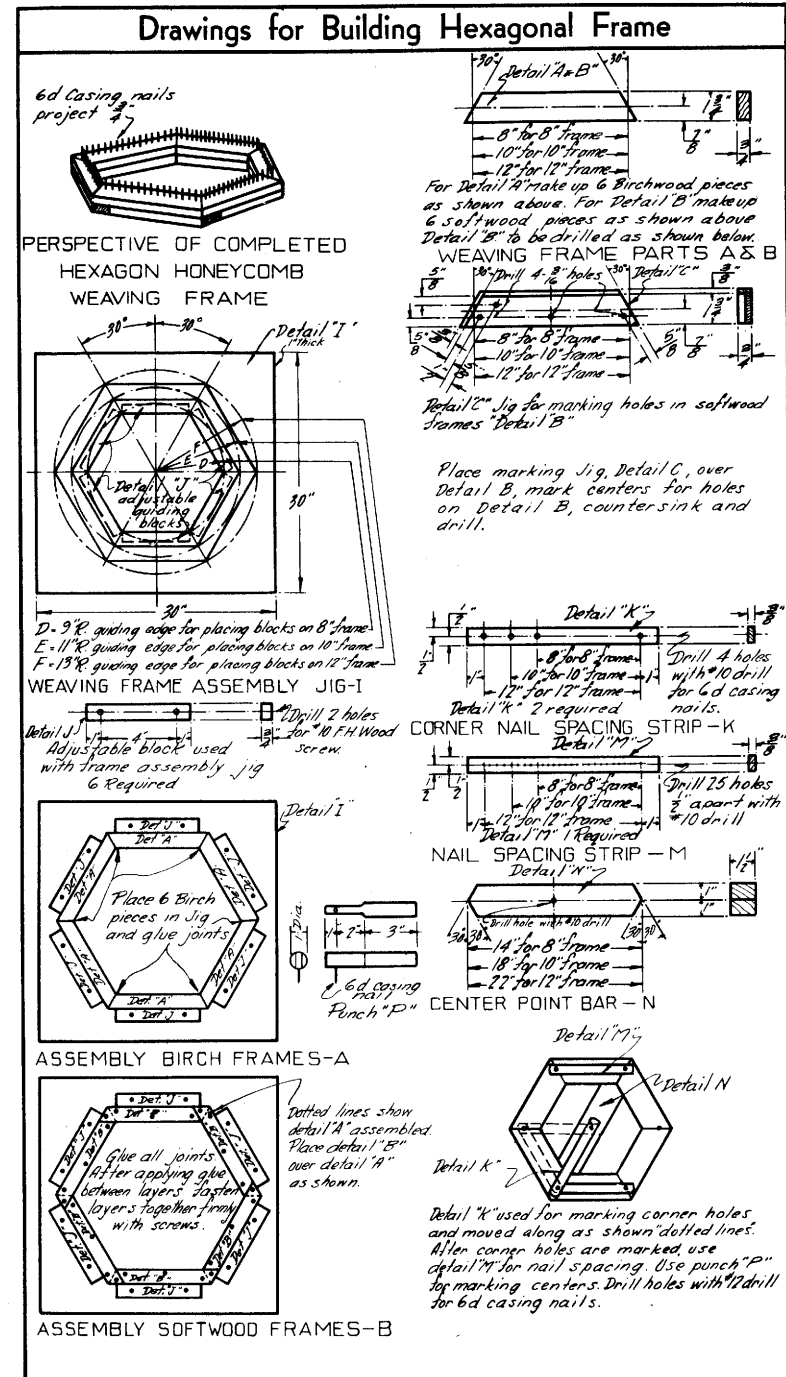
BILLS OF MATERIALS FOR VARIOUS HONEYCOMB WEAVING FRAMES

For 10" Hexagonal Frames				For 12" Hexagonal Frames			
No.	Size	Material	Part	No.	Size	Material	Part
12	3/4"x1 1/2"x1 1/2"	birch	frames	12	3/4"x1 3/4"x1 3/4"	birch	frames
24	#10 1 1/2"	f.h.wd.	screws	24	#10 1 1/2"	f.h.wd.	screws
108	6 d	casing	nails	132	6 d	casing	nails
	oz		glue	1	oz		glue
	oz		shellac	1	oz		shellac

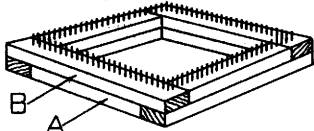
For 14 1/2"x14 1/2" Square Frames				For 16 1/2"x16 1/2" Square Frames			
No.	Size	Material	Part	No.	Size	Material	Part
4	3/4"x1 3/4"x12 3/4"	birch	frames	4	3/4"x1 3/4"x14 1/2"	birch	frames
4	3/4"x1 3/4"x16 1/2"	birch	frames	4	3/4"x1 3/4"x18 1/2"	birch	frames
20	#10 1 1/2"	f.h.wd.	screws	20	#10 1 1/2"	f.h.wd.	screws

For 10 1/2"x14 1/2" Oblong Frames				For 12 1/2"x24 1/2" Oblong Frames			
No.	Size	Material	Part	No.	Size	Material	Part
2	3/4"x1 1/4"x8 3/4"	birch	frames	2	3/4"x1 1/4"x10 1/2"	birch	frames
2	3/4"x1 1/4"x12 1/2"	birch	frames	2	3/4"x1 1/4"x16 1/2"	birch	frames
2	3/4"x1 1/4"x16 1/2"	birch	frames	2	3/4"x1 1/4"x22 1/2"	birch	frames
2	3/4"x1 1/4"x16 1/2"	birch	frames	2	3/4"x1 1/4"x26 1/2"	birch	frames
20	#10 1 1/2"	f.h.wd.	screws	24	#10 1 1/2"	f.h.wd.	screws

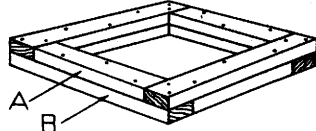
Note.—Number of nails will vary, of course, depending on size of frame. One ounce of glue and one ounce of shellac will usually be enough for these frames. To reduce cost and weight, these frames can be made of strips of birch for the top and of some soft wood, such as pine or whitewood, for the bottom. The hardwood should be used for the top of the frame in all cases.



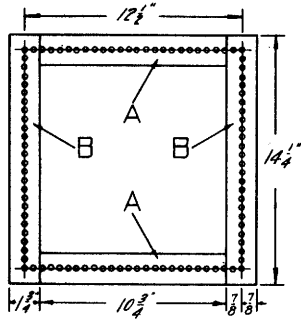
Drawings for Building Square Frame



Perspective of Top View showing completed frame with overlapping construction at corners

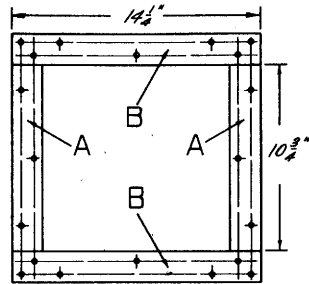


Perspective of Bottom View showing assembly of long and short pieces with screws in place.



TOP VIEW

Holes located with nail spacing strip "C". Drill for 6d casing nails 1/4" deep. Use #12 drill

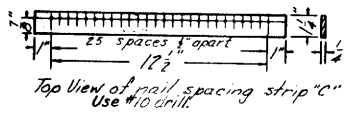


BOTTOM VIEW

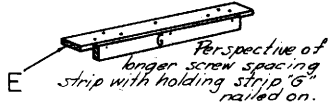
Screw holes located with spacing strips "E" & "F". Drill from inner face for accuracy. Countersink on outside for #10-1/4" F.F. Wood screws



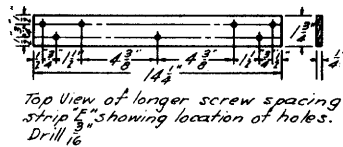
Perspective of nail spacing strip.



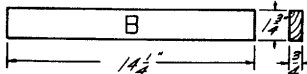
Top View of nail spacing strip "C"
Use #10 drill.



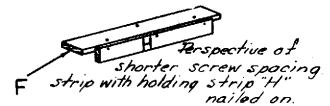
Perspective of longer screw spacing strip with holding strip "G" nailed on.



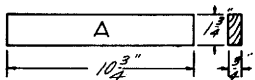
Top View of longer screw spacing strip "E" showing location of holes. Drill 1/8"



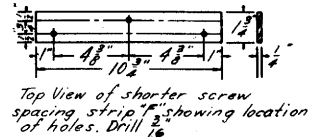
Longer frame piece "B" as indicated in top and bottom views.



Perspective of shorter screw spacing strip with holding strip "H" nailed on.



Shorter frame piece "A" as indicated in top and bottom views.



Top View of shorter screw spacing strip "F" showing location of holes. Drill 1/8"

