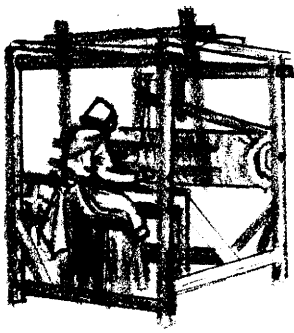


Introduction to Weaving

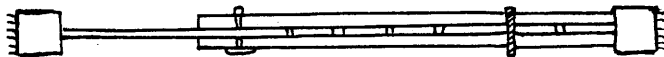
by LILLIAN HOLM

PART TWO



When weaving fine linen or suit material it is necessary to use a stretcher. see Fig. 20.

Fig. 20



This is to keep the material the right width during the weaving. The stretcher may be made of iron or wood.

Between the yarnbeam and harness are placed two lease sticks (see Fig. 4 in the first article, Weaver, Jan. 1936), which keep the warpthreads in order and help to find the broken ones. After the warpthreads have gone through the heddles and reed, tie the warp on to the ropystick. This stick can be connected to ropes or burlap direct to the clothbeam.

In finer weaving with many warpthreads it is quite necessary to wind the threads on to what we call "Bobinor", see Fig. 21.

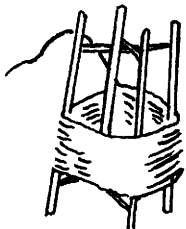


Fig 21

The number of bobiners needed depends on how many warpthreads are used in the making of the warp. In handweaving, we never use less than two, from the bobins the threads are wound on to the warp-reel, see Fig. 22.

Tie the two warpthreads together in a weaver's knot and start from the upper peg on the warpreel, hold the threads tightly and gradually go around the number of times the warplength requires, when reaching the two pegs below go over the first peg under the second and the reverse coming back, the crossing being called a "shed", see Fig. 23.

Going back to the upper peg one must not go on top of the other warpthreads but should stay below close to the former. In going down stay above the former, in

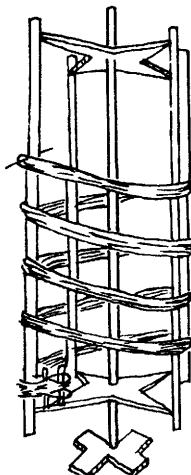


Fig. 22

doing this the warp will be very even. To simplify the counting divide the warpthreads into langs, one lang may consist of any number of threads all according to the number used in the making. If two threads are used, starting from the upper peg of the warpreel going around down to the crossing and back again the lang will have eight threads and so forth.

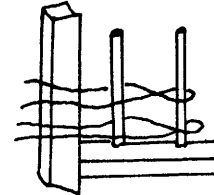


Fig. 23

EXAMPLE

Tablerunner "width" 18 x 24 "length".

Reed No. 12 = 12 dents to 1 inch.

$18 \times 12 = 216$ threads.

$216 : 4 = 54$ langs.

Then divide the langs into bunches of 10 langs.

$54 : 10 = 5$ bunches of 10 langs and 1 bunch of 4 langs.

Count the langs at the crossing and keep them apart until the tenth lang is made, then push them together and tie a heavy string around, when the next ten are made bring the string forward and cross them in front of the next bunch, continue this until the warp is made.

It is very important to get the tying correct before the warp is taken off the reel. Tie a bowknot on both sides of the crossings upper and lower level, tie a good solid bowknot between every other warparm, then separate the warp on the upper peg and tie both levels. In order to release the warp from the warpreel the upper peg will have to be pulled out, but hold on to the reel at the same time, or the warp will be on the floor, now put your hand through the loop and grab the warp, pull enough warp through for another loop and repeat until the first tying is reached then tie chain together. See illustration "warpchain".

After the warp is made you are ready to dress the loom. Place two heavy sticks in the vertical direction across the loom "Support Sticks." Find leasesticks and place them on supportsticks in back of the loom, put warptail in front of the loom and put leasesticks through the shed, the leasesticks should always be provided with holes on both ends. Tie leasesticks together $\frac{1}{2}$ inch apart, untie the shed and release one bunch of langs at a time and start threading the reed.



WARPCHAIN.

Any reed can be used for the first threading, the idea is to divide the warp evenly into the width that is needed. If coarse reed is desired for the weaving, i.e. 1 6-8-10-12 or 15 the same can be used for the first threading, the warp should then be threaded in every fourth dent.

If a fine reed is desired for the weaving, i.e. 20-25- or 30 then a coarser reed is necessary for the first threading.

FOR SKEDS EXAMPLE FOR THREADING EXAMPLE

Thread number 350.

Reed No. 25.

Weavewidth 14 inches.

Reedwidth $15 \times 1 = 15$ inches.

First divide the thread number with 1 lang which is 4 threads and you will get the lang number.

$$350:4 = 87 \text{ langs} + 2 \text{ threads.}$$

In practical weaving we will make the same = 88 langs. The reed chosen times the weave width gives you the dent number. Reed No. $16 \times 15 = 90$ dents

88

2=how many dents

in the reed you have to skip.

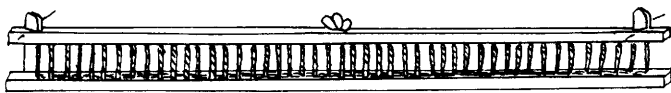


Fig. 24

Thread 1 lang in every dent except 2 places where you skip one dent.

In the early days of weaving another type of reed was used called "redkam" or Orderreed.

See Fig. 24.

This reed was of a standard type which measured about 3 inches between every dent.

The ordinary reed has proved practically very successful and is used in all modern studios today.

After the warp has gone through the reed the same must be attached to the warpbeam, in order to get the warp on the ropestick the reed must be turned over and laid on top of the leasesticks.

Count the number of ropes and divide them evenly into the warp, if uneven number of ropes there will be a rope in the center of the warp, if even number of ropes there will be warp in the center of the ropestick, the measurement between the ropes is according to the distance between the holes on the yardbeam where the ropes go through, the same measurement starting from the center should be in the warp, pull one section of warp straight up and the warp will divide, slip the same on to the rope stick, slip a rope on and continue.

After the warp is attached to the ropestick the warp will have to be straightened out from the front of the loom, therefore hold on to the chains first tying, never comb the warp, pull pat and shade it evenly.

Change leasesticks, in doing this another person will have to hold the warp from the front of the loom evenly and tightly. Raise the reed and pull out the leasestick nearest the reed, push second leasestick close to the reed and raise the same.

A shed will be formed on the other side of the reed, put the first leasestick through and pull out the second one and place the same in with the ropestick, tie leasesticks together and place reed in the beater. Measure from the end of the beater to the beginning of the warp, both sides should measure alike. Untie the first tying and go down to the second, hold on to the knot and pat warp evenly, straighten the warp on the ropestick and begin to turn the yarnbeam while the other person is holding the warp evenly and tightly.

When the ropestick has reached the beam the warp must be protected from the ropes which is done by putting thin sticks two inches wide between ropes and warp, continue this with one inch between every stick until the ropestick is reached where another stick will be put on top of ropestick, keep on turning until the warp has come to the end, if it is a long warp paper should be placed between every third level.

When the warp has come to the end it will catch on to the reed, push leasestick over to the stretchingbeam and tie them on the same, cut warp in small bunches close to the reed and tie each bunch in a slip knot.

Take the reed out of the beater and place supportsticks across the loom, place harnesses in front of the stretchingbeam and begin to thread the heddles.

If a two harness weave is used alternate first harness, second harness and so forth, double the first and two last ones if it is a fine warp, the first and last one if it is a coarse warp.

THREAD THE REED

Where the warp is double in the heddle it will be double in the reed. Find the middle of your reed and measure half the width of your warp and start threading from the right side; your right side is always from wherever you stand in the loom and every thing should be started from the right.

Place reed in the beater and measure. Tie warp evenly on to ropestick first in large bunches, straighten the warp and then tie in smaller bunches, starting from the middle alternating from one side to the other.

After the first tying, connect harnesses to heddle horses, after second, weave a double string in the warp by picking up the bunches that go over and under the ropestick and continue to the end, tie ends to ropestick evenly and tight on both sides without disturbing the warp, the warp should be in a straight line from the reed. Connect harnesses to lams and pedals (see illustration, Fig. 11b and c in the first article), wind spools and begin to weave, start with a heavy cotton string and weave 1 inch before the actual weaving begins.

KONTRA MARCH

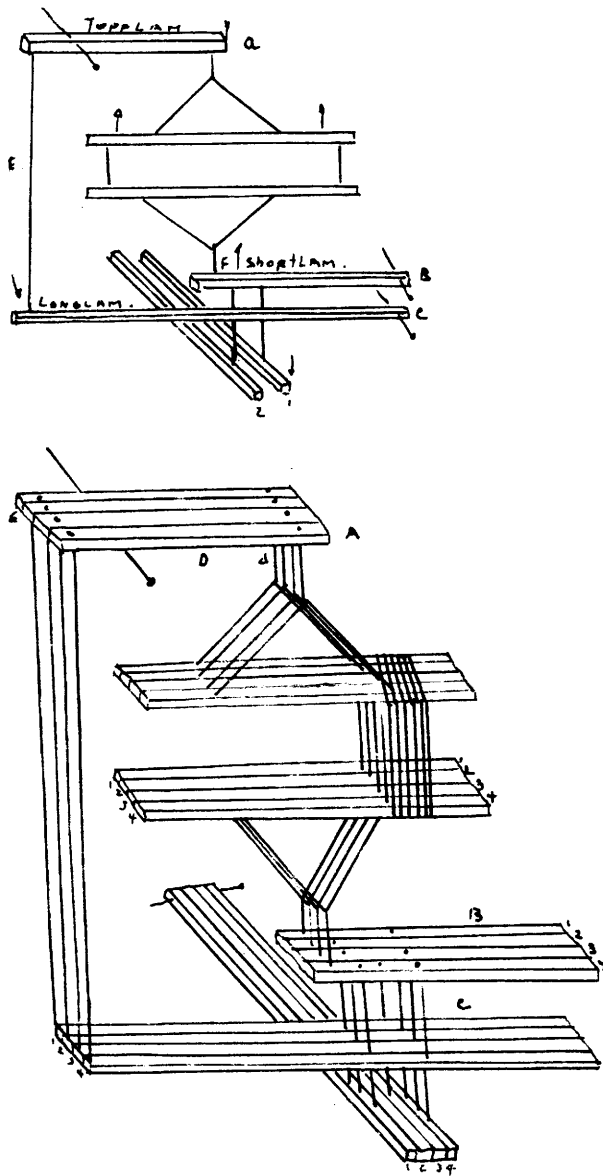
Weaving that requires a number of harnesses. See Fig. 25.

This type of loom consists of three different types of lams.

Toplams, A. Shortlams, B. longlams, C.

Every harness is connected to the toplam's inner end. See 25 A. The longlams are connected to the toplam's outer end with long strings. See Fig. 25 E.

Every short lam is connected to the lower harness stick. See Fig. 25F.



HARNESKRUSTNING

When weaving opphämta or damask the harneskrustning is used. See Fig. 27-28-29 — and consists of patternharnesses which are connected to a side frame and upon which the upper harness sticks are to rest. The harnesses are connected to a narrow board fastened to the top of the loom and provided with lines of small wheels the board is connected to a square frame in front of the loom, the upper part of the frame is provided with holes. See Fig. 27B. The under part of the frame is cut out dents wide enough for a string to go between and deep enough for a handle to catch. See Fig. 27D.

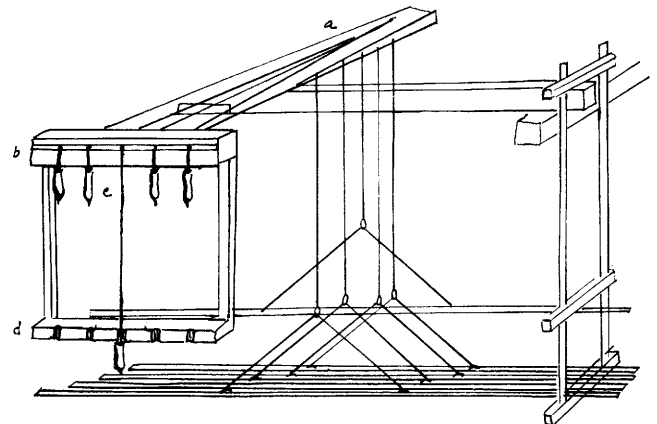


Fig. 27

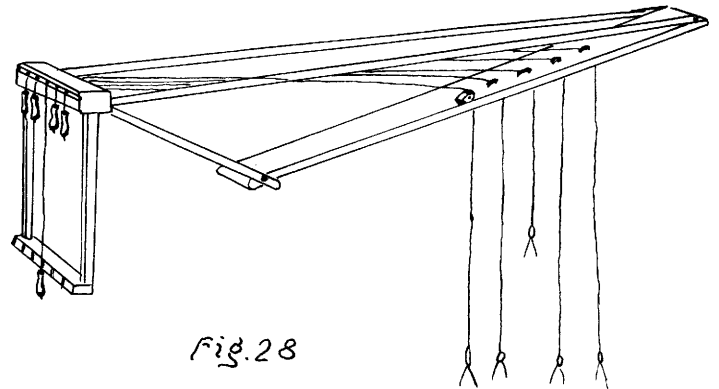


Fig. 28

The long lams and short lams are connected to the pedals. The number of harnesses = the number of lams, for every harness one lam of each kind is needed.

When tying from a tabby every colored tabby square represents the tying of the short lams to the pedals and every white tabby square represents the tying of the long lams to the pedals.

If the warp is in the middle of the heddle eye or closer to the heddle eyes lower knot then the harnesses are tied in the right height.

After the warp has been tied to ropestick then connect the harnesses to the short lams.

The strings from the short lams go between the long lams and straight to the pedals, every lam is to be tied in the same position.

Every patternharness is connected to a string coming through the board and around the wheel. See Fig. 27A.

When pulling one handle and fastening the same in the dent of the frame one harness is lifted, when releasing the handle the harness will fall back to the original position both ends of the harness stick should be provided with weight.

Every pattern harness requires one wheel in the board and a hole and dent in the frame, the wheel board should be fastened in a rectangular line in order to give more freedom to the strings that are pulled. See Fig. 28. In a loom like this two groups of harnesses are used, one group for the pattern and called harneskrustnings harness which weaves the pattern, the ordinary group used for plain weaving is called ground harnesses.

The loom used for harnesskrustning should be twice the length of any ordinary loom, the space between the two groups of harnesses requires 35 cm. the heddles used for the pattern harnesses should be quite long with a tiny eye where the upper loop measures 35 cm. the underloop 33 cm. and the heddle eye 1½ cm.

The position of the pattern harnesses is quite low, the heddle eyes upper knot should rest on the warp. The ground harness heddles upper and lower loop measure 13 cm. and the heddle eye 9 cm.

This heddle eye is longer in order to form a shed when the pattern harness are pulled.

The pattern or harnessshed must stay open while stepping on the ground harness pedal.

When weaving opphämata from a draft where the weft is to form a pattern every white pattern unit square represents one harness, and if the pattern is to be formed through colored threads that are added in the warp every colored square in the unit represents one harness. The same is true when weaving damask.

For the ground harness tying "Kontramarch" is also used for the same technique, one long lam and one short lam are tied to the same pedal.

The threads of the ground harnesses that are not tied will not move but will stay in the harness over or under level all according to the pulling of the harnessk. See Fig. 29.

BINDING CONSTRUCTION

The pattern that indicates how the warpthreads are to be lifted or lowered for the weft is called "Binding construction."

When making a bindingpattern or draft graphpaper is used. Every vertical square line represents a warpthread and every horizontal square line represents a weft thread, the square that signifies the weaves lower warpthreads should be colored.

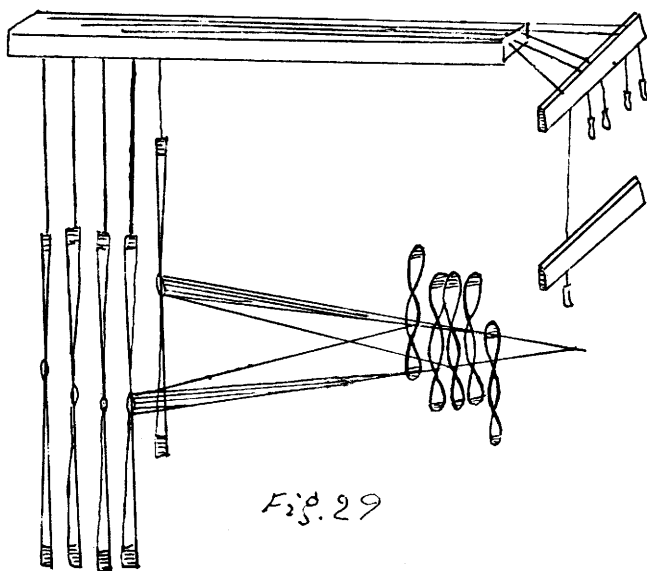


Fig. 29

Any binding or draft can be made in one color but to simplify the more complicated patterns like dubbelbinding several colors are used. EXAMPLE:

White, Yellow and Green represents the lifting of warpthreads.

Red, Black and Blue the lowering of warpthreads.

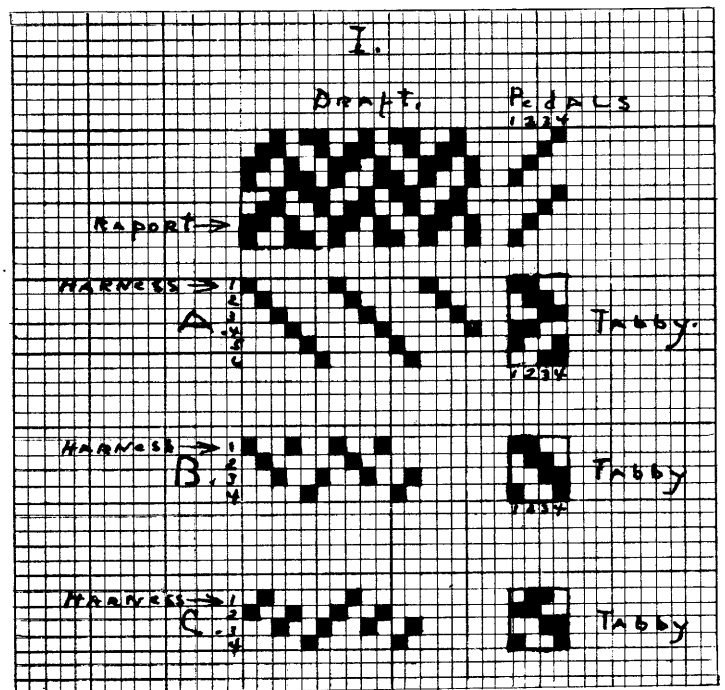
The pattern in height and width until the same is repeated is called "Raport" = one unit.

In representing a weave a larger or smaller number of harness are needed on which the two warpthread systems are arranged.

All warpthreads that go on the same harness will always follow each other when moving and will always weave the same. The binding requires as many harnesses as the different weaving warpthreads.

The arrangement of the threads on the harnesses is called "Inredning" = disposition or solving = threading.

In the inredningspattern every horizontal square line represents one harness and every square one heddle and one warpthread.

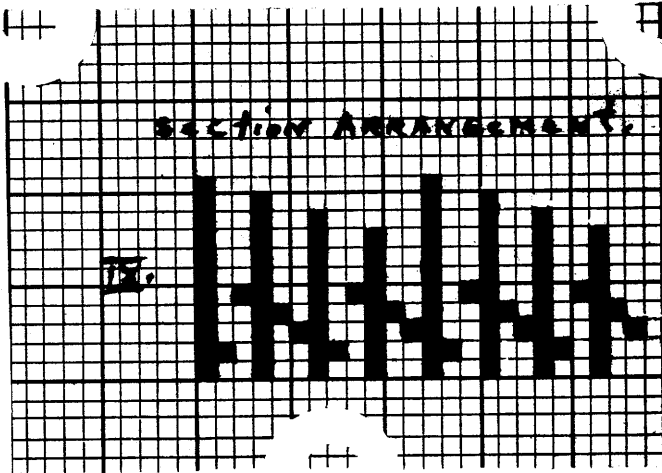
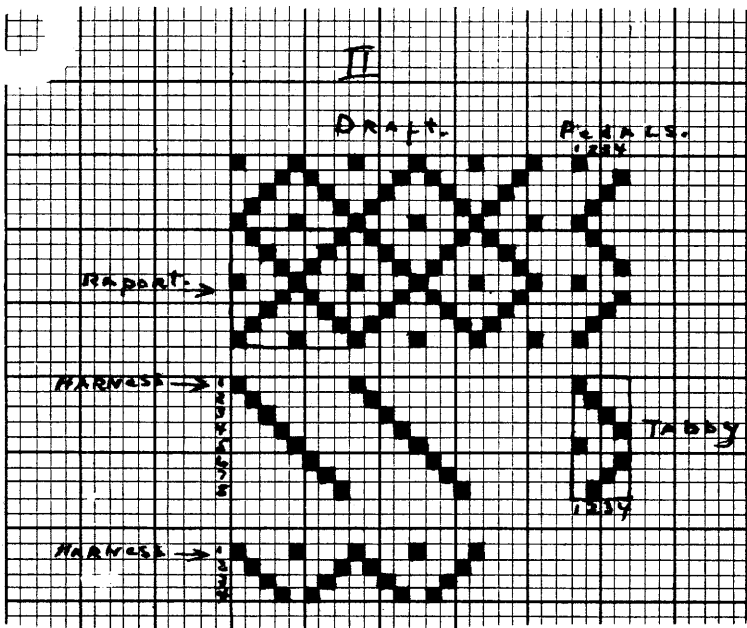


The order in which the warpthreads are arranged on the harnesses should be very simple so that mistakes during the weaving and broken warpthreads can be avoided, in pattern 1-2 are two different types of inredning.

Pattern I has three different inrednings, A is simple but takes six harness. B. and C. takes only four harness and therefore preferred in handweaving.

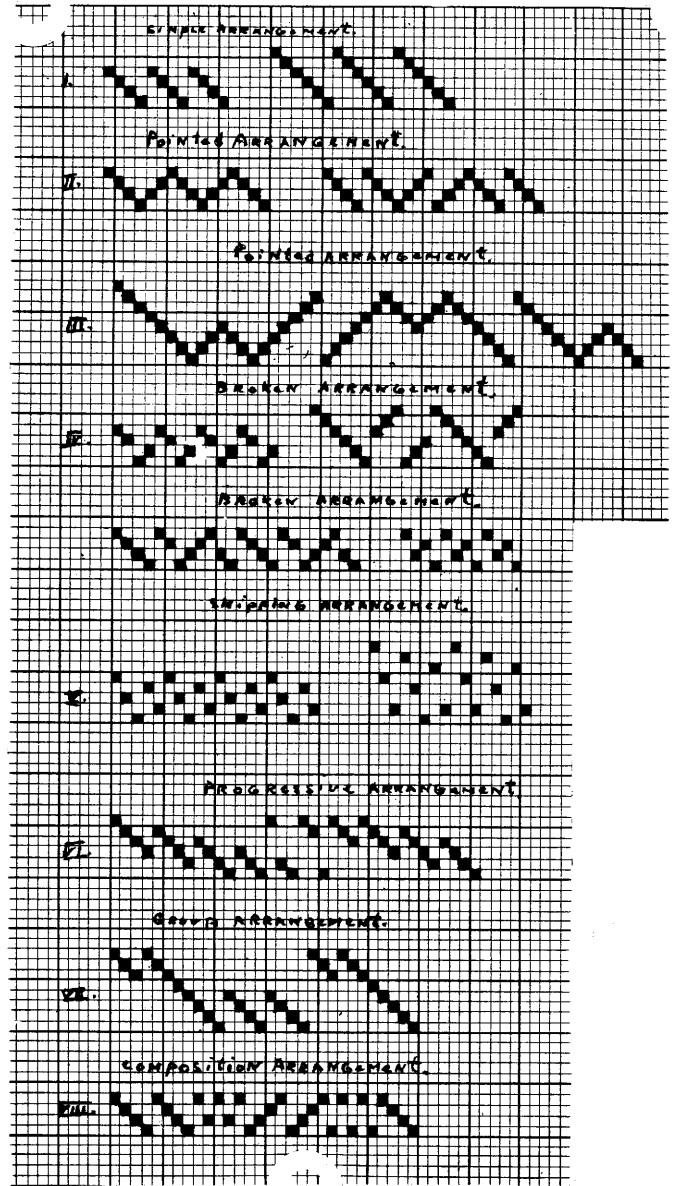
After the inredningspattern is painted the Uppsnöringspattern = tabbypattern has to be taken care of. The principle of the tabby is to indicate which warpthreads are to be lowered for the first or second weftthread therefore a few vertical square lines are chosen on the right side of the harnesses which are to represent the pedals.

The first pedal is to be marked with color to indicate the harnesses that are to be lowered for the first weftthread, the second pedal is marked with color to indicate the harnesses that are to be lowered for the second weftthread and so forth.



Very often the number of pedals equals the number of weftthreads within the raport but if two weftthreads weave alike the same pedal is used.

The number of pedals used equals the different weaving warpthreads within the raport. To know what pedals to use when weaving, a pedal arrangement two squares above the tabby on the right side of draft is marked with color. Step on the first left black square for the first weftthread, the second for the second weftthread and so forth.



When weaving different bindings several different inrednings are used. See 1-2 and so forth.

To be continued in an early issue of the Weaver.