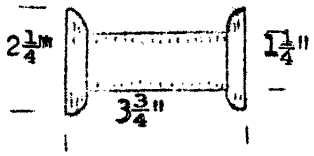
MODERN WEAVER

SPECIAL OFFER

USED WOODEN BOBBINS in good order. Very useful for those who use the sectionnal warp beam for short warp and many colors
The hole is suitable for "LECLERC" bobbin winder.
PRICE: $0.06 each. Per cent $5.00.
Plus shipping charges.



LINEN THREAD:"Golden Rule" trade mark. Fast colors, imported from Ireland. No. 20/2 in 1/2 pound skeins. Colors: Gold, Oriental blue, Orange, Light Green, Emerald Green, Royal Blue, Rose, Mauve Yellow. PRICE: $2.50.

No. 40/2 in 4 ounce bobbins. Colors: Oriental Blue, Orange, Green, Emerald Green, Royal Blue, Brown, Yellow, Mauve. PRICE: $1.65.

WORSTED BOUCLE: Colors: Gold, Pale Blue, Turquoise, Beige, Rose, White.
PRICE: $1.25 a BB.

DISCOUNT for quantities.

The above offers are in limited quantities. Be sure to order sufficiently for your need.

SHOPPING BAG HANDLES: Made of maple.
Dimension: 14" long, 2¾" high.
PRICE per pair: $0.40. Per dozen pairs $4.25.

SHED REGULATOR: To get a perfect shed on "LECLERC" loom, when weaving is made with three harnesses working against one i.-e., Bronson, waffle, double face weave, etc.
For "LECLERC" standard or folding looms.

27"-36" or 45" looms.....$7.00
60" " $8.00

SERVING THE PUBLIC SINCE 1876

NILUS LECLERC INC.

L'ISLETVILLE, QUE.

MODERN WEAVER

Bulletin for Handweavers - Published by Handweavers

Publisher
"Modern Weaver",
Nilus Leclerc, Inc.
L'Isletville, P.Q.

Technical Editor:
S.A.Zielinski,
Z - Handicrafts,
Fulford, P.Q.

Managing Editor:
Robert Leclerc,

Six issues per year

Subscription $3.00 a year plus exchange.

No. 1

October, 1954.

From The Editor:-

When publishing our "Master Weaver" we have often met with a criticism that "all this is above my head". This is why we decided in collaboration with Nilus Leclerc Inc., to start another publication, which would be as technical as the "Master Weaver" but designed to meet the needs not only of very advanced handweavers, but of less advanced and even of beginners as well.

Since many articles published originally in the "Master Weaver" and now out of print, are of general interest - these articles will be reprinted here. Besides this we shall have discussions of common weaving techniques, as well as of modern weaves, always from the point of view of contemporary trends in weaving. We shall have also systematic lessons of drafting for beginners.

As an addition to every issue of the "Modern Weaver", you will find 4 pages of the 2-nd edition of the "Encyclopedia of Handweaving". This second edition is a revised one, and will be available only to our subscribers. The pages can be detached and kept in a loose-leaf binder.

We shall welcome any cristisism or comment on this first issue of the Modern Weaver, and we shall try in the future to act upon the received suggestions.

SINGLE LINEN.

First of all let's limit our subject to single linen, both for weft and warp. If we can weave single linen we shall have no difficulty in weaving two or three-ply one. On the other hand single linen is the one which gives the best results, and which looks like real linen, when the other kind although easier to weave, looks and behave very much like cotton, or even like rayon when it is mercerized.

The reason is very simple: single linen yarn flattens and spreads when ironed for the first time, filling the spaces between the threads, and thus giving the fabric an evem glossy, and soft texture hard to imitate in any other medium. When two or more threads are twisted together, they cannot be flattened since part way they lie one on top of the other. The more plies and the harder the twist - the poorer the yarn from our point of view.

What are then the principal difficulties encountered in weaving single linen? The trouble seems to be that most weavers try to weave linen as if it were wool, or cotton, and this is why we think that it really more important to avoid certain mistakes in handling linen, than to stick to any particular set of rules and prescriptions. We might say that to weave linen one has to know only how not to weave it.

The best proof that single linen is not more difficult to work with than any other yarn, is that the beginners if started on a single linen warp have no more trouble with it than, let us say - with wool. On the other hand weavers of long standing but used rather to cotton and wool, have unending difficulties with the same warp.

The physical properties of linen are not only different but often diametrically opposed to the properties of wool and similar yarns. First: linen is not elastic. Second: linen does not stand friction. Otherwise it is a very strong yarn as you will notice if you try to break a 10 lea in your fingers. There is one more property of less importance and rather working to our advantage: when stretched it does not break immediately, but stays stretched. This makes linen one of the best wefts, because it has no tendency to draw the edges in.

These factors outline the whole technique of handling linen. It can be condensed into one short principle: avoid tension and friction.

Although the directions for handling linen seem to be so simple, they must be carefully observed thoughout all the weaving operations. We shall take now these operations one by one in chronological order.

1. Warping. Warp directly from tubes (better avoid skeins) without rewinding on bobbins. If the outer layer of a tube is worn out better save the first once or so of the yran for weft. The tubes can be placed on a rack, but the warping will be faster if they are set vertically in a simple stand on the floor (fig.1). Two screw-eyes should be fixed in a bench or table directly above the stand. That is, if you warp two ends at a time, which is probably the easiest. If you have four or more, you will need more pegs in the stand and more screw-eyes in the bench. Each thread goes from the tube through the proper eye to the warping reel or frame. All tubes should unwind in the same direction.

Warping frame, a horizontal warping reel, or a warping mill may be used for warping. A frame is better for short warps up to 12 yards. In any case there should be no tension on the warp - let the yarn slide through your fingers without the slightest friction. The hand should be quite dry - if not, use a smooth leather glove (not chamois!). It is still better to work with a metal hook (fig.2), and not to touch the yarn at all. The hook can be made of copper tubing or wire not less than $\frac{1}{4}$" in diameter, and must be kept clean and polished. It takes quite a while before one gets used to this gadget.

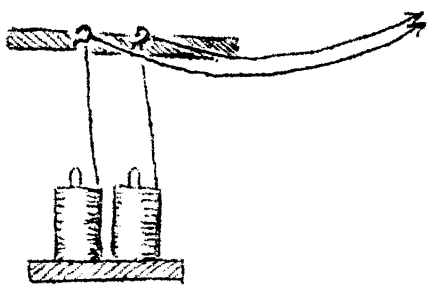


Fig.1

2. Beaming. The finished warp is not chained. If you can place the reel or the frame right in front of the loom, secure the lease and unwind only enough of the warp to reach the back of the loom. In case of a frame the rest of the warp should be tied to the frame. Now put the lease-rods in place and tie them to the loom frame between the harness and the slabstock. The harness has been lowered down already, or the heddles parted in the middle and moved to the right and left. The lattern method can be used with narrow warps only. Spread the warp using an open raddle, and attach it to the apron. Now ask your helper to stand as far as possible from the loom, but directly in front (of the reel is in the way, move it to one side) holding one half of the warp in each hand. The warp should be held just as it comes from the reel or frame. The different warp ends or whole strands of warp will have different length and tension between the loom and the helper, due to the disaarangement of the warp during the operations of spreading and tying it to the apron. This can be corrected by shaking and pulling the warp as a whole, but not by pulling individual ends. If the warping itself has been properly done all ends should have now uniform tension, and the beaming can start.

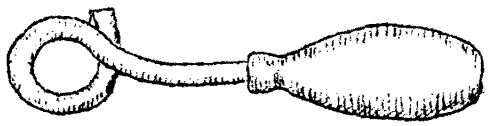


Fig.2

When beaming, insert sheets of heavy paper between layers of warp, or still better have one continuous length of paper in a roll. Not impregnated building paper is excellent for looms not exceeding 36" in width. When working with sheets overlap them by 2 inches or more. The layers of warp must be separated, because the warp will be tightened before or during the early stages of weaving, and should two layers slide over each other, the resulting friction may ruin the warp. For the same reason (to avoid friction) we do not thread and sley the loom before beaming.

The lease-rods are left in the lease. They can be removed if crosses are made on both ends of the warp. Then they are put back into the second cross after beaming. In the first case the beaming is slightly slower, in the second the warping takes a little more time.

The tension of the warp during beaming is kept rather low, and the beaming should be done as fast as practicable. Linen ends do not break without warning. The first warning are twisted ends which do not separate until they reach the lease rods. The second warning are bent lease-rods, which should be thin and pliable just for this purpose. The weaver who turns the beam should keep under constant observation the lease, and stop at the first sign of trouble. Untwist the faulty ends by inserting a comb or a pencil between them, and push the twist gently backwards.

The helper walks with the warp toward the loom - never let it slide through the fingers. When one length of warp is thus beamed, the whole operation starts from the beginning, and so on, until the whole warp is beamed.

But the beaming does not always go as smoothly as that. Sometimes without anybody's fault the ends keep twisting or sticking to each other. The simplest remedy then is to stop and to comb the warp - from the loom toward the helper. The combing must be done in one long stroke. Repeated short strokes do not help and wear the yarn out. A long, open, and very smooth comb should be used. If this does not help it means that the warping was not perfect - which again is not necessarily the weaver's fault. As a rule all wasrping reels and frames are too small to give perfect results. Whenever in warping two strands of warp are piled one on top of the other, the second strand obviously is longer than the first, and the warp will not have a uniform tension. This is of no importance with such yarns as wool, where the elasticity takes care of the difference in tension, but since linen is not elastic, a warp end which is even slightly longer than the other ends, will remain so until something is done about it.

So if we notice that a part of the warp is sagging, when the rest is tight - we must correct the tension by pulling at the slack portion of the warp until the whole warp has the same tension. This process must be repeated every time the helper starts a new length of warp to be beamed. It is evident now why the helper should stand as far from the loom as possible. If this distance is for instance 6 yds, and the warp 24 yds long, the beaming will be done in four stages, but the shorter it is, the more often the whole straightening process must be repeated, and the more will the warp suffer. This is why warps longer than 30 yds are not very suitable for ordinary equipment. Large warping mills can handle warps of any length.

With wide and closely set warps the difference in length of individual ends combined with the tendency to twist and stick can make beaming really difficult. Then the following technique never fails, although it is rather slow. Untie the lease rods from the loom frame, and move them through the warp toward the helper. If they get stuck, it can be easily found out why, and the corresponding part of the warp straightened out. Then beam until the lease comes to the slabstock , and start all over again.

Whichever method is used we have to remember that to correct the difference in length we have to pull the offending ends, and never to use the comb for this purpose. The comb may be used only when all ends have the same length and tension, to separate these which are either twisted or stuck together.

Under difficult conditions a warp of 500 ends should be beamed at the rate of about one yard per minute. In good circumstances - about 5 yds/min, and with a warping mill - 10 yds/min.

3. Threading and Sleying. There is nothing special about threading linen except that it is advisable to perform both threading and sleying in one operation. But this is not absolutely necessary.

4. Adjusting the loom. The lease-rods should be left in place about 6 to 8 inches back from the harness. This will give both sheds (front and back) of about the same size, and consequently a minimum of friction between the heddles and the warp.

The harness should be hung so that the lower portion of an open shed be just slightly tighter than the upper one, but not much tighter, or the upper part will sag, again due to the lack of elasticyty.

The batten must be rather heavy and so adjusted that neither the lower nor the upper shaft of the reed will touch the warp when a shed is opened.

The loom itself must have some arrangement for fine adjusting of the warp tension: either a ratchet wheel with fine teeth, or better - a friction brake.

Shuttles and bobbins may be of any kind on one condition: that the weft unwinds smoothly but not too freely from the shuttle. If the shuttle has nothing to brake the bobbin, we can wind a piece of yarn around the spindle to increase the friction. A piece of fur glued inside the shuttle and just touching the bobbin may work as well. The winding of bobins is as important here as in iny kind of weaving.

4. Weaving. The tension of warp during weaving should be as low as possible, i.e. the lowest which still gives a clear shed. Do not try to improve the edges by increasing the tension - not at first, at any rate. This tension should be not only low, but always the same. It may be difficult to maintain it with a ratchet wheel. It is much simpler with a friction brake: we move the warp forward and stop with a too high tension. Then we gently release the brake until the tension checked on an open shed gets just right. After weaving an inch or so the brake must be released again because weaving takes up some of the length of the warp.

The fell (last pick of weft) should be never farther from the batten than 8 inches, and not nearer than 6 inches. Do not weave more than two inches at a time, move the warp forward very often.

Beat only once, but beat hard - linen can stand it. Beating should be done without pressing, only by the weight and speed of the batten. One swift stroke will do more than protracted pressing, and is much easier on the yarn, requires less effort, and takes less time. Beating and treadling should be so synchronised that at the moment when the batten starts moving forward, the shed begins to close; when the batten touches the cloth, the shed is closed, and by the time the batten returns to its original position, the next shed is already open.

Provided that the warping and beaming were properly done, there are only two difficulties likely to occur in weaving: broken ends, and uneven edges. Here are the remedies:

Ends break at the edges. Before they do, the edges become fluffy - thus giving us a fair warning. Release the brake on the shuttle, if you have one. Do not beat until the hand moving the shuttle away from the reed has stopped, thus releasing the tension of the weft. If possible, decrease the tension of the warp.

Ends break in the middle. This happens when the shuttle strikes an end hanging loosely in the shed. Clear the shed by adjusting the harness, the tie-up, and the tension of the warp.

Edges uneven with nothhes. The fault is always in the shuttle, the bobbin, or the way it is wound. Every notch means that the weft was caught in the shuttle. Check the shuttle, and rewind the bobbin if necessary. Braking the bobbin with your thumb should be avoided - it is never satisfactory, when weaving fast.

Edges uneven with loops. Irregular loops means that the bobbin rotates too freely, and a brake in the shuttle should be used. Small regular loops on both sides can be often avoided by beating a little earlier - when the hand carrying the shuttle still moves

Unweaving is hard on linene and usually it leaves a mark on the fabric, thus it is advisable not to make mistakes. But if necessary it can be done in the following manner: increase the tension of the warp, open the shed as wide as possible, release the weft by pulling it gently with your fingers, make sure that the weft does not stick to the warp (particularly at the edges) and only then throw the shuttle. Even so one inch of unweaving is about the limit for fine fabrics.

As a rule there is no need to use a size on the warp, but there are exceptions. When the weave has a tendency to draw in the edges (twills and pattern weaves without binder), or any yarn other than linen is used for weft, we may have broken ends at the edges even with a very low warp tension. Then some kind of sizing is indicated. Probably the best and the least messy is pure paraffin wax. It may be rubbed into the edges right on the loom, or if trouble is expected in advance, the warp may be impregnated with the same wax dissolved in gasolene. It increases the resistance to friction of linen yarn nearly 10 times, when water only about twice.

As a final remark we may say that all the precautions described above are really needed when one starts to work with single linen. Later on some of them can be dispensed with, at least to a certain degree, but only long experience will teach us how far we can go diregarding the rules without getting into trouble.

****

Technical terms used in the above article:

Harness - the whole set of heddle frames of one loom.
Slabstock - or thread-carrier - the upper, horizontal, back beam of the loom frame.
Sleying - passing the warp through the reed.
Friction brake - wire or heavy cord wound around the warp-beam.
Beaming - winding the warp on the warp-beam.
Warping mill - a half-automatic horizontal warping reel.
Back shed - triangular opening in the warp between the harness and the lease-rods, similar to the front shed, through which passes the shuttle.
Spindle - the metal shaft in the shuttle.
Size - a solution or paste used on warp to make it stronger.

****

LOCKED WEFTS.

(or CLASPED WEFTS)

This is the only free weave which can be performed at a reasonable speed. It can be woven on any loom and in any texture. It can be combined with any technique or pattern. It does not require any special equipment. It is excellent in teaching, since the results are very spectacular and encourage the student.

The principle is not very involved. In each shed instead of a single weft, there are two coming from opposite directions. They interlock or clasp each other and return to the same side of the shed from which they came. The point of interlocking can be shifted along the shed by pulling one of the wefts. Thus any pattern which requires only two colours in one row can be woven easily. Fig.2 a, b, c, and d (page 9) shows examples of such patterns.

Equipment necessary for "Locked Wefts" consists of a loom, a small bobbin rack, and of several paper quills (twice as many as colours used). Quills should be much shorter than the shuttle spindle, so that the weft will unwind without any resistance.

The weft is wound on the quills as usual, each colour on two quills. One of them is placed in the shuttle, the other on the bobbin rack. Thus if we have four colours in the pattern, there will be four shuttles and four quills on the bobbin rack.

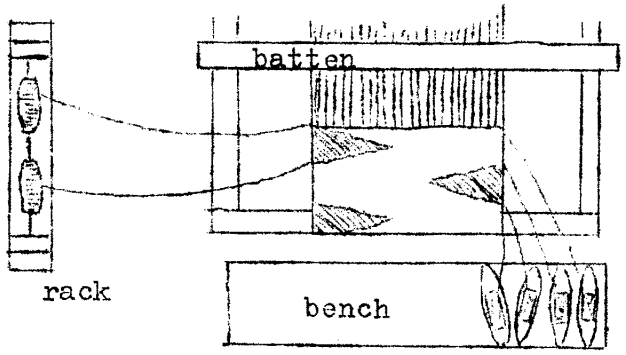


Fig.1

The rack should be placed to the left of the loom (fig.1) near enough for the weaver to reach it without getting up, but not too close. The quills should be at about the same height as the weaver's shoulders. All shuttles are always on the right hand side of the weaver on the bench, with the exception of the one in use at the moment. After checking that all the quills both on the rack and in the shuttles unwind freely, we tie the ends of the wefts coming from the rack to the warp at the left hand selvedge, and then weave an inch or so of plain tabby.

Now let's suppose that we shall weave the pattern on Fig.2-a. At first we shall need white colour on the left and beige on the right. We pass the left hand under the white thread which comes from the rack and over all other colours, and keep this hand ready to catch the shuttle. With right hand we throw the shuttle with the beige weft, catch it, pull it over the white thread on the left, and throw it back into the same shed. The two wefts are locked or clasped now.

The action of moving the shuttle over the white weft is difficult to describe, but it takes only a small fraction of a second. The shuttle is held in the left hand by its left hand tip. Then its right hand tip should move in a small circle. When doing this circular movement it catches the white thread, and then is thrown back.

Now we can move the crossing point of the wefts by pulling either on the white, or on the beige. In practice we pull only the weft in the shuttle, by stopping the quill with the thumb and moving the shuttle away from the shed until the desired crossing place is reached. Then we change the shed and beat. The crossing point has a tendency to move from its original place, always toward the center of the warp. We can prevent it by changing the shed before beating. The whole operation is repeated in the next shed, and so on, until these two colours are used.

When the point marked "A" on fig.2 is reached, we replace the beige shuttle with the brown one, and the white weft on the rack with beige. At "B" we change to white in the shuttle, and beige from the rack. At "C" - shuttle: beige, rack: white. At "D" shuttle: brown, rack: beige. At "E" shuttle: beige, rack: white. At "F" shuttle: white, rack: beige. And so on.

The above pattern is one of the easiest. Although the bands of colours should be of about the same width, their sides should be rather irregular, and there is no point in wasting time on careful adjusting of the wefts. With a little practice it can be woven as fast as any pattern weave, which requires two shuttles. Other patterns in fig.2 may require more time, particularly the ones with vertical lines.

In general vertical lines should not be too straight, or a ridge will result. They must be rather blurred by pulling alternate picks of weft a little to the left or right of the line. Diagonals are easy to make and they do not produce ridges even if geometrically straight.

When plain ground is wanted (Fig.2-b from "A" to "B") the weft for this part of the fabric must be doubled to look exactly as the weft in the pattern. This means extra shuttle, or shuttles. If there is not too much of the ground, the shuttle of one colour may be crossed with the weft of the same colour from the rack.

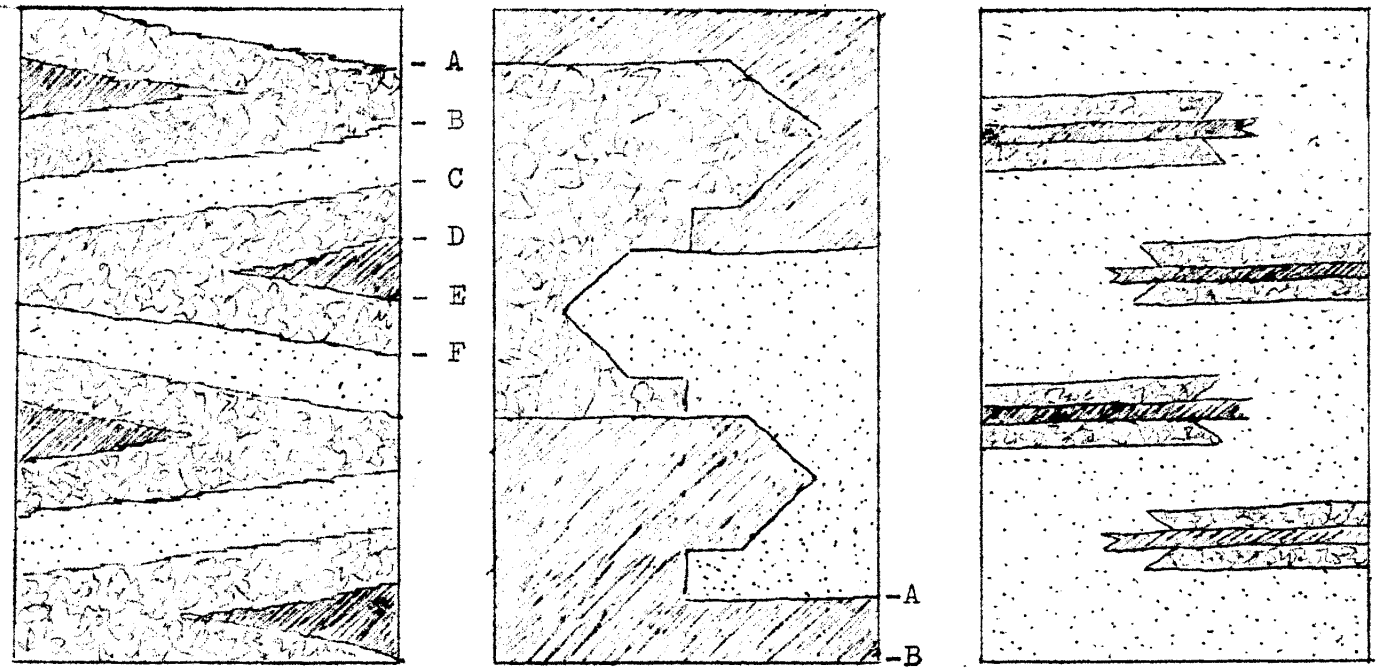
Binder may be used between rows of pattern, but it should be very fine compared to the pattern weft, and of a neutral colour. The resulting effect will be one of a corded fabric.

The yarn is of a certain importance. For instance it will be noticed that the edges are pulled in more than in ordinary fabrics. Consequently linen warp is not indicated. The weft should be smooth and slide easily. Here again linen is poor material, particularly single linen. Cotton is the best, rayon and wool - second best. In all cases however there is one most important condition: the two wefts used in the same shed must have the same direction and the same degree of twist. Otherwise they clasp each other so firmly that they cannot be moved at all. Their grist (number) should be identical for different reasons. In other words the wefts should be of the same yarn, grist, twist - possibly of the same make.

For the first experiments with Locked Wefts one should start on a narrow warp, but it is quite possible to weave even bedspreads in this technique. The speed of weaving will however diminish rapidly with the growing width of warp.

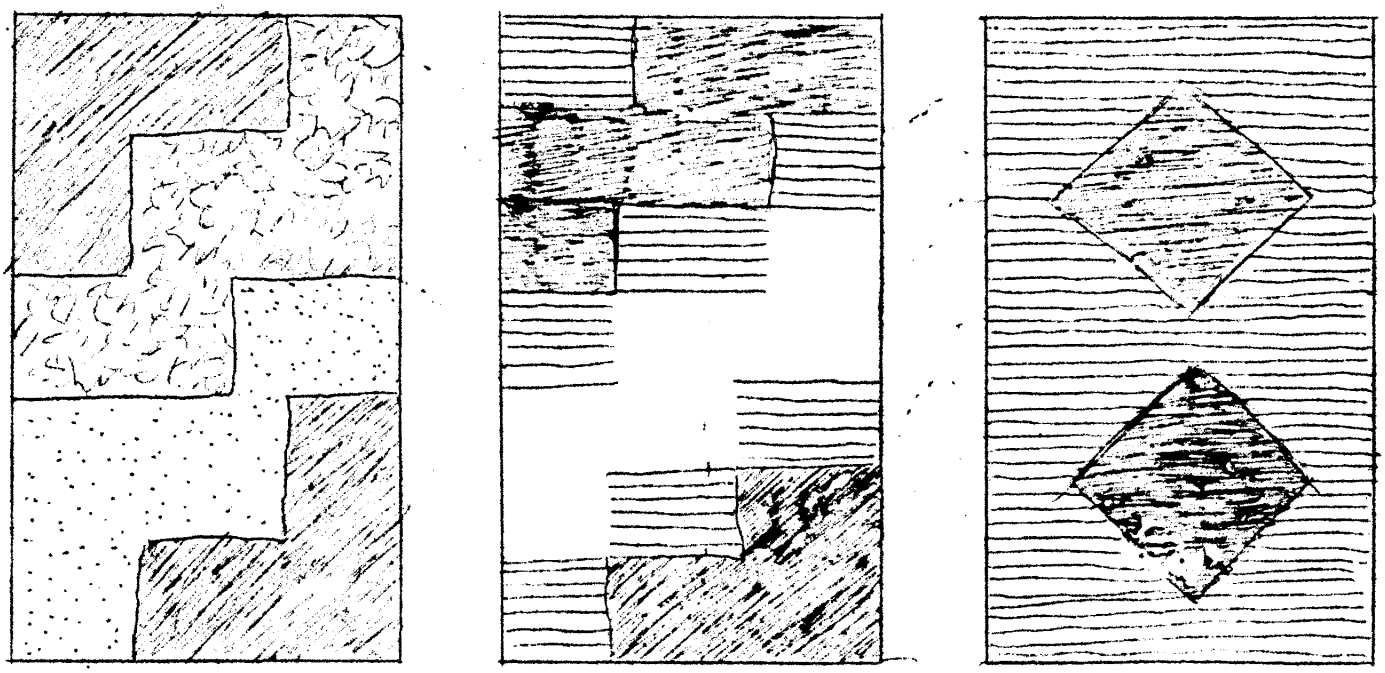
The patterns "d" and "e" should be nto attempted until we get quite familiar with the technique.

****



a b c

In "e" and "f" two colours are laternated all the time; first shed: white from the left, black from the right; second shed: black from the left, white from the right. In the center we have pure black, where black overlaps black. In "e" we laternate besides these, one short and one long shot of dark weft.



d e f

"Locked Wefts" Fig.2

ENCYCLOPEDIA OF HAND-WEAVING

by S.A.Zielinski.

The terminology of hand-weaving is extremely confusing. This is due to several factors. Different weaving communities in Great Britain remained for centuries sufficiently isolated from each other to develop their own technical language. Then the infiltration of French weavers (in the 16-th century) often with a superior weaving knowledge introduced a new vocabulary of French words which became later on assimilated or corrupted.

When weaving started in North America, the emigrants, even when good artisans, were not necesarily familiar with the proper weaving terminology. Consequently they adopted some new technical expressions, retaining most of the old ones, but only too often in the wrong meaning.

Then in the beginning of the 19-th century the handweaving practically disappeared, except in the most backward communities, and at its revival nearly a century later, the pioneers were at loss as to the meaning of the simplest weaving terms. It was then that the hand-weaving language was built anew for the third time, and this process is still going on. The parallel development of power weaving resulted in still different set of terms and this was not without influence on handweaving. Thus it came about that we have at the present time not only several terms to designate the same weave or operation, but also cases when one term has several different meanings.

To illustrate: "harness" means in Britain a set of "leaves", or "shafts" (the latter in power weaving) together with the "upper tie-up". In America "harness" is nothing else than one "leaf" or heddle-frame. "Heddle" means always one "leash" (or hook, or needle) in America, but in Great Britain it may be used either in the American meaning, or as an equivalent of "leaf", and it may be spelled: heddle, headle, heald, or even yeld. As a matter of fact the old English expression "leaf" is hardly ever used now. To designate a row of heddles mounted on one frame the following terms are used: harness, heddle, heddle-frame, harness-frame, heddle-stick, leash-rod, shaft, and leaf. Most of these terms have more than one meaning. On the other hand some weaving expressions are completely lacking, e.g. there is no American equivalent to the British "harness".

In many cases it is possible to trace back a doubtful word, but not always. As an example we can take the word "Dornick". It came undoubtedly from a weaving center in Northern Scotland, where a particular kind of turned twill was developped. The fabric was later known by the name "dornock" or "Dornick", and hence the weave itself got its

name. But later on in America the same term has been used for a herringbone twill, and the origin of the word ascribed to Belgium or even Scandinavia. At first it would seem that there is no possible connection between these two weaves, but a closer examination shows that the way of joining blocks in the original weave is exactly the same as the way of joining vertical stripes in the American Dornick. The point in both cases is to avoid long floats. It is obvious then that a colonial weaver familiar with the first weave invented the second one, and called it accordingly "dornick twill", or another similar name which later became just "dornick".

In the case of "harness" it is hard to say who made first the mistake, since even in colonial times the word "leaf" was widely used and there was no reason to change it. What must have happen is that the full expression "four leaf harness" was often shortened to - "4' harness", and probably during the revival of hand-weaving this was interpreted as "4 harnesses".

Since most of this terminology is in use for decades at the least, it is not easy to decide which terms are right, and which are wrong. If an expression is used long enough, it becomes the right one regardless of its original meaning. Consequently what we are going to attempt in this work, is not only to explain the meanings of the different terms, but also to indicate their origin, whenever known, and to select this meaning which seems to be the most appropriate and yet most widely used. It is possible to reconcile these last two conditions in all cases but one, i.e. in the case of "harness", which is most widely used in an obviously wrong sense.

From a purely practical point of view, the main purpose of this encyclopedia is to enable the reader to understand any weaving literature regardless of its age or place of origine, as long as it is written in English. On the other hand it is quite easy to use this work as source of general information about weaving. Starting with the word "Weaving" and taking advantage of the cross-references, the reader will be able to acquire quite an extensive knowledge of the subject, although the information is given in a condensed form.

- - - - -

When explaining a technical term we must express it in simpler and unequivocal words. For this purpose we have selected the following expressions:

Heddle - in the American meaning . The same as British leash.

Frame, or Harness-frame - is a set of heddles mounted on one frame. The same as Am. harness, Br. leaf, shaft

Harness - a set of frames through which every warp-end is threaded once, together with the upper tie-up.

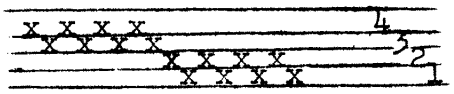
In case of synonyms, the description follows the most appropriate term. Other - more doubtful, obsolete or rare expression are explained only as far as their origin is concerned, and in each case a reference to the selected term is made.

The following abbreviations are used in the text:
(v) = see.... , fr. = from, R = rare, Am. = American, AS = Anglo-Saxon, Br. = British, En. = English, Fr. = French, G. = German, Gr. = Greek, Lat. = Latin, Sc. = Scandinavian, Sp. = Spanish.

- - - - -

ABACA - (fr.Filipino) The same as manila hemp.

ACCIDENTAL - (Am.) When weaving overshot written on opposites (v) small blocks appear in places when none were intended. This will happen for instance when shed 2,3 is used in the following draft:

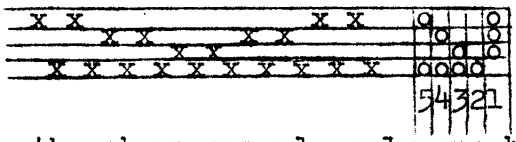


ACETATE - Yarns and fabrics made of Cellulose Acetate (v).

AKLAE - Norvegian low-warp (v) tapestry technique. Wefts interlock between two warp ends.

ALBATROSS - (fr.Sp. alcatruz) Light woolen fabric woven in tabby.

ALL-OVER SPOTS - (Br.) A spot weave (v) in which the pattern covers the whole fabric; and consequently gives 3 blocks of pattern with 4 harness-frames. The pattern is formed by weft floats on one side and warp floats on the other (Bronson). When two shots of tabby are made after each shot of pattern, the warp floats disappear, and the pattern on one side is in tabby only (Swivel effect). The number of blocks is always one less than the number of frames in the harness. E.g.:

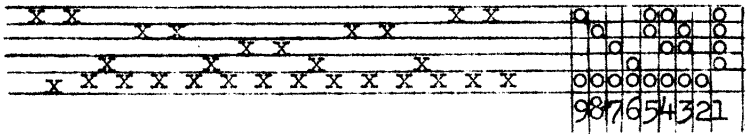


1, 2 - tabby treadles,
3, 4, 5 - pattern treadles.

In the above example only one block of pattern can be woven at a time, for instance:

figure:  or  can be made, but not 

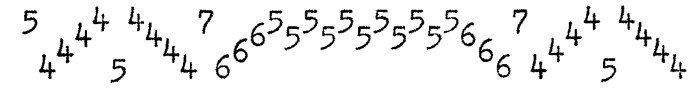
If combination of two or more blocks is necessary, an additional frame must be used. Its purpose is to space the blocks and thus to avoid too long floats:



1,2 - tabby,
3-5 - combined blocks,
6-9 - single blocks.

ALPACA - (Sp.) Yarn and fabric made of wool of Alpaca (Auchenia Pacos, South.Am.), or any fabric ressembling more or less the genuine alpaca.

AMERICAN BEAUTY - Colonial pattern (v) of the Star-and-Wheel group.

Short draft: 

ANALYSIS OF FABRICS - Such a description of a sample of weaving, which would enable a weaver to produce a fabric identical with the sample. In analysis the following data must be found:

1. Yarn, or yarns used. Their composition, colour, twist (direction and degree), count of yarn.
2. Count of cloth. Number of threads per inch in warp and weft.
3. Weave and pattern if any.
4. Finishing.

1. Probably the most difficult part of analysis is the yarn itself, particularly if the yarn is a mixture of different fibers. A complete analysis requires a well equipped laboratory, however here are a few simple tests:

Burning test. Wool smells like burned feather, and neither burns well, or smoulders. The burned ends stick together and are covered with thick layer of carbon.

Silk behaves in a similar way except for the smell.

Linen burns better, and smoulders for a short while. The ends are straight and clean.

Cotton burns still faster, and smoulders indefinitely. Ends spread slightly.

Rayon as a rule is fast burning.

Chemical test. Wool can be dissolved completely when boiled in 5% solution of caustic soda.

Cotton dissolves in 2% sulfuric acid.

Acetate (rayon) fabrics dissolve in acetone or acetic acid.

The direction of the twist is either right or left hand. The degree of twist in handweaving is described in terms: tight, medium light, loose.

The count of yarn can be established by comparing threads pulled out from the sample with other threads of known number.

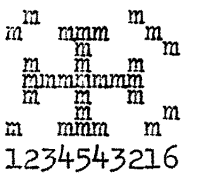
2. Number of threads per inch can be easily counted using special magnifying glass. Correction should be made for shrinkage.

3. Except for the simplest weaves which can be analysed at a glance, the following procedure is necessary:

One whole repeat in warp and weft must be reproduced on graph-paper (v. Draft). If it is difficult to distinguish between the warp and weft, the sam le must be pulled apart thread by thread. When a thread is loosened it is much easier to see how it is interwoven with the opposite set of threads.

When the whole draw-down is made on paper, we examine the vertical lines, giving the same number to all identical lines. The highest number thus obtained is equal to the number of frames required to weave the sample. Then we repeat the operation for the horizontal lines. Here the highest number gives the number of treadles. Now we write both the threading and the treadling drafts on the same piece of graph paper and in line with the draw-down. By looking up from each line of weft in the draw-down to the threading draft we find out what combination of frames was necessary to produce this line, and this gives us the tie-up.

Pattern:

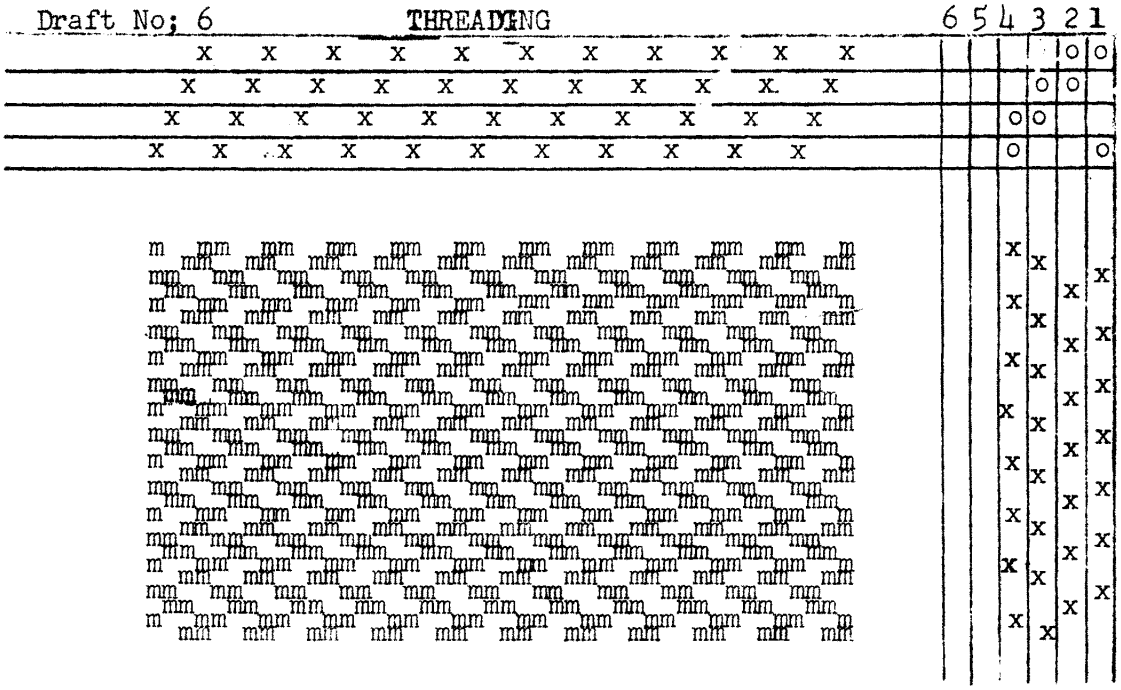


Vertical lines have 6 as the highest number which means 6 frames.

Horizontal lines have 5 as the highest number which means 5 treadles.

The numbers used in analysis now become the numbers of frames and

WEAVING PATTERN



REED NO: 12 THREADS PER DENTS: 2 WIDTH: as required more 10%
NUMBER OF THREAD: 24 per inch.

WARP: single linen SIZE: 14 COLOR: natural

WEFT: single linen SIZE: 14 COLOR: pale blue
cotton 2/8 rosewood
cotton 2/8 old gold
Wound together on one bobbin.

FABRIC: linen-room.

Note:

Weave with very low tension on the warp. Beat once the reed, but very hard. Work close to the reed.

The edge will be poor, but it is of no importance in linen-room.

If ends at the edges break, use dressing: paraffin wax dry or dissolved in cleaning fluid. Dress the edges only.

Finishing: Iron through a damp cloth with a medium hot iron.

SHED REGULATOR

The counterbalanced loom, i-e, one on which the shed opens by the movement of the lams and separates the threads, some raised and others lowered is the most logical loom that exists as its action on the threads is divided and thus streches them less at each shed.

The surest way to obtain this is to balance the tie-up of the lams; this is most easily done with a four-harness loom. The multi-harness loom necessarily renders it difficult to adjust the harnesses.

One could use a loom with a rising and a sinking shed; but the tie-up would be complicated as it would require a double set of lams and as many tie-ups as there are points of intersection between the treadles and the lams. For example: a 12-harness loom would require 144 tie-ups part on the upper lams and the rest on the lower set. For this reason the system is not in general use. Here, therefore we shall consider in particular the four-harness loom.

The only drawback of a counterbalanced loom is that the shed opens at the same level only when the tie-up is balanced, i-e, when the same number of frames is tied to each treadle. Otherwise the shed opens at different heights, so that with each shot of weft one has to adjust the position of the shuttle, and some threads will be too loose to support the shuttle at all. In other sheds the uppert part may be so loose that there will be a number of warp threads hanging in the shed. This is particularly true with un-elastic warps such as linen or metallic threads.

A Shed Regulator corrects completely this deficiency of counterbalanced looms. It is moderately priced, easy to set up and to operate. One installed it can be used for both the unbalanced and the balanced tie-ups. In the second case it can be put out of action in a few seconds and the loom works as if it had no regulator attached to it.

The principle is shown in Fig. 2. The whole harness (all heddle-frames and rollers) is hung on an additional roller (A) with two cords (93). The weight of the harness is balanced with two springs (C) so that the frames remain in neutral position when the treadles are not depressed. But the cords are tied at the same time to a cross-piece (B) running parallel to the harness, and this piece is tied to the treadles with adjustable cords(H)

Now since the springs balance the weight of the harness, lams and treadles, the slightest pull on the cords (93) will result in the harness going up. At the same time the treadle through the normal tie-up will pull it down and the final position of the harness and consequently the position of the shed will depend on the length of the cord (H). Thus if the shed opens too high, the cord is too short; if it opens too low it is too long. By adjusting the cords (H) we can have each shed in the best position for weaving.

When using fine yarns it may be advisable to use the shed regulator even with balanced tie-ups, so as to make sure that each shed will just touch the batten when fully opened, but that there will be no friction between the

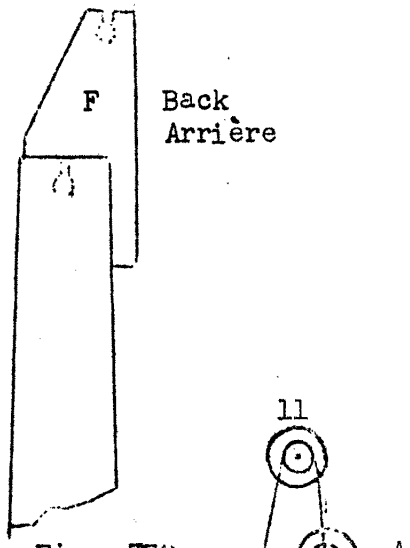


Fig. 378

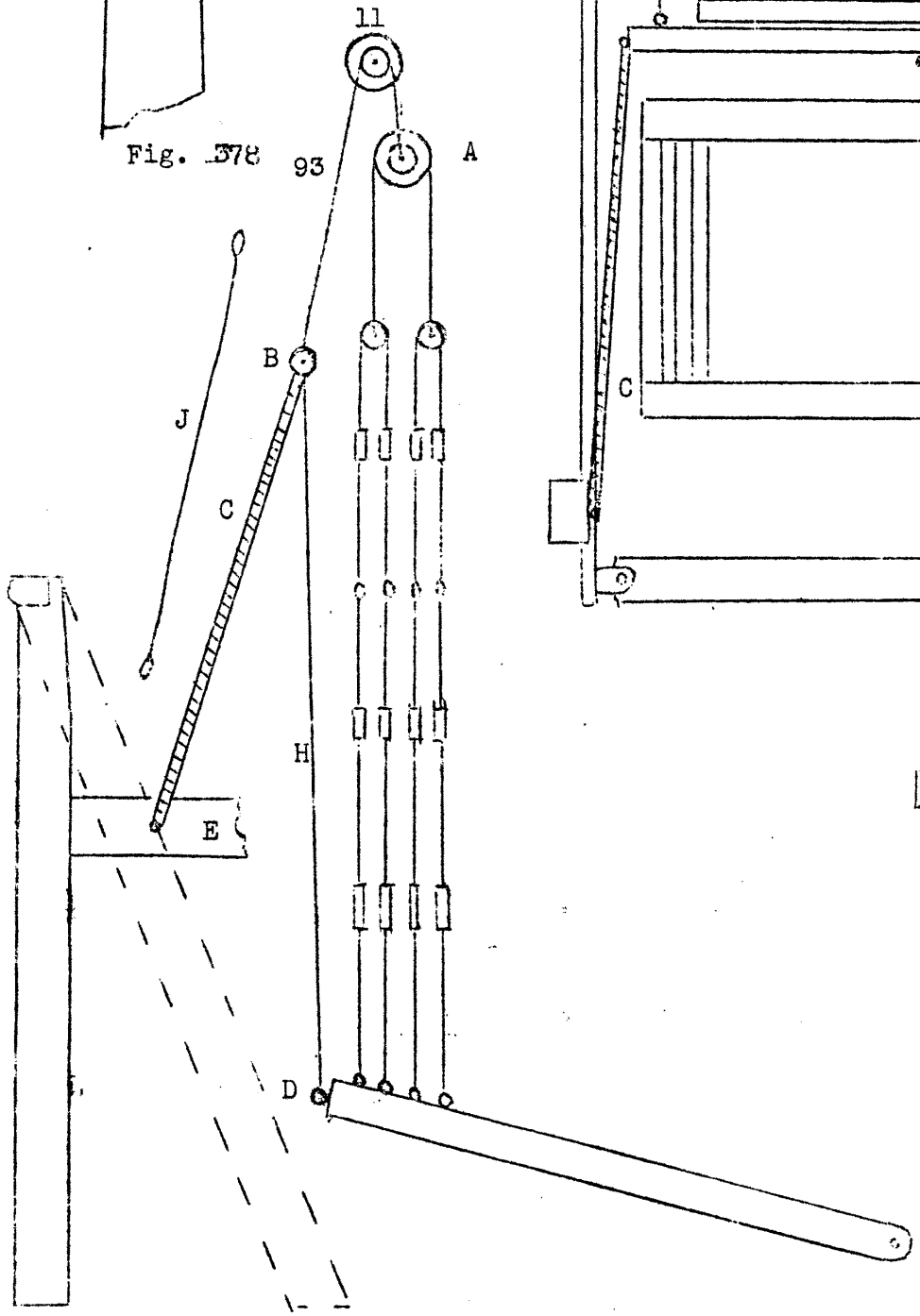


Fig. 379

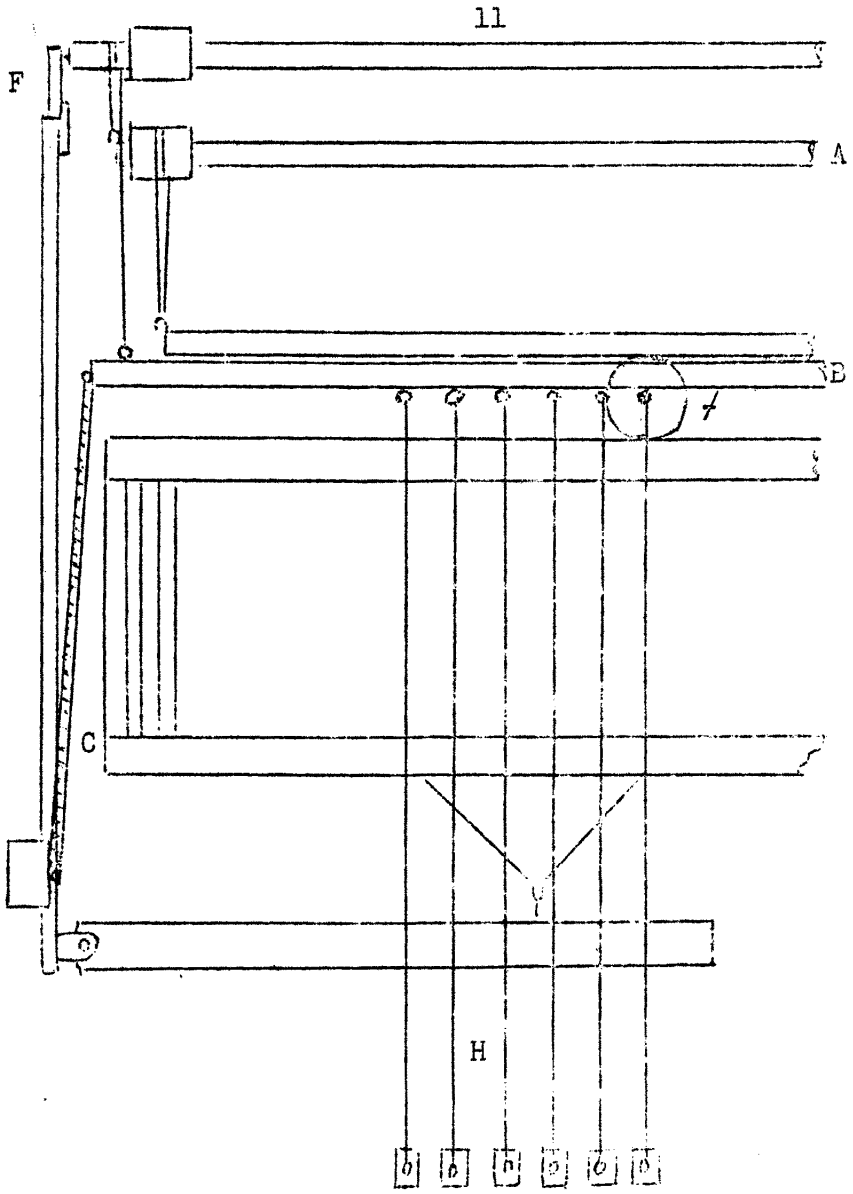


Fig. 380

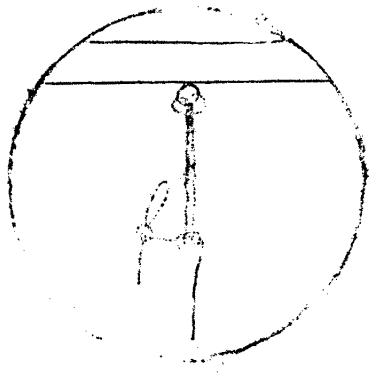


Fig. 381

batten and the shed during beating.

The loom must be threaded, and the warp tied-in before the shed regulator can be connected with the treadles. First the tie-up between the treadles and the lamms is made. Then one shed is opened and the corresponding treadle tied (through the warp) to the cross-piece with a cord. The length of this cord is adjusted until the shed opens at the proper height. This operation must be repeated with all treadles until the whole tie-up works properly.

All ties between treadles and the cross-piece are not always necessary. For instance, if all treadles but one are tied to two frames, and one treadle to one frame, then we can retain the by-passing cords on the springs, and tie only the latter treadle to the cross-piece. The same rule applies to a case when several treadles are tied to 3 frames, and one or two less than 3 frames.

The by-passing cords are then adjusted for 3 frames (made slightly longer) and additional ties made only on the treadles with one or two frames. However when tere is only one treadle tie to 3 frames and all the other treadles to less than that each treadle must be tied to the cross-piece of the shed regulator.

If the shed regulator is not needed the springs are by-passed with cords of such length that the harness will hang in neutral position even if all the frames are pulled down by hand. When the regulator is used these cords are removed and the treadles are tied to the cross-piece.

QUESTION BOX

The "Question Box" is a free information service offered to weavers who send in questions of general interest and not requiring too much detail. This is due to the limited space allowed. Address Questions to "MODERN WEAVER c/o Milus Leclerc Inc., L'ISLETVILLE, Quebec.

For questions requiring long detailed replies, or those of only particular interest, satisfaction will be obtained by addressing requests to Z- HANDICRAFTS, Fulford, Quebec. Kindly inclose the fee of $1.00.

All questions should bear the signature and address of the sender but no names will be printed in this bulletin.

QUESTIONS AND ANSWERS:

1. I am weaving Baby bibs in Bronson but the shed does not open sufficiently to carry the shuttle. Can you tell me what I should do to correct this?

The trouble can easily be remedied by installing an inexpensive Shed Regulator as explained in this issue. Or you may raise your harnesses 3/8" higher and use a reed 5" wide. To raise the harnesses quickly without changing the length of the cords just place a block under the little hend-roller screw. This will help a little but the result is less satisfactory than with the shed regulator.

2. Can we remount a reed of which we have all the dents?

No. Reeds are made by a machine that cuts the dents at a uniform length along a steel band and at equal distances as the cord entwines the rod. The work to remount a broken reed must be done by hand and would be more expensive than to buy a new one.

3. Can bent dents in a reed be straightened?

Yes, with the help of a small screwdriver or a knife or a small tool you can force the dent in the opposite direction till it retains its proper place. Of course care must be taken not to scratch the dents as this would damage the warp.

4. Can the end piece of a red be repaired?

Yes. This is easily remedied by replacing the metal ferrules but if the ends are too worn it will be necessary to shorten the reed a little

5. Why do new reeds soil the textile?

New reeds soil because as explained above in Question 2, the machine must work with oil and this is not completely removed to prevent the reeds rusting at the warehouse or in the transport. Before using a new reed wipe dents with a soft dry cloth to absorb excess of oil. It is preferable to begin to weave a colored or a washable fabric.

INDIVIDUAL WEAVING LESSONS

at

Z- HANDICRAFTS

Fulford, Quebec, Canada.

A unique way of learning weaving

You can spend your vacations in the country near a summer resort and study weaving at the same time. You can bring your family (except children). You can buy a loom (duty free), and you can take it with you or have it sent later on

Teaching adapted to the requirements of every weaver.

LESSONS: 2 hrs of theory, 6 hrs of weaving a day, 5½ days a week.

Beginners: plain weaving, basket, twills, overshot, free weaves, draft reading, developping, squaring.

Advanced: crackle, summer-and-winter, bound weaves; spot weaves: lace bronson, double, turned, paper spots; huckaback and its variations lace, waffle, turned huck; M's-and-O's, honeycomb, corded fabrics; theory of overshot, short drafts, transcribing.

Seniors: Turned twills: dimity, dornick, damask; satins, fancy twills swivel weave, clasped wefts; double weaves: double cloth, patterns in d.w., quilt weaves, pile weaves: weft pile, (corduroy, chenille, tufted weave), warp pile (velvet), patterns in chenille rugs; cross weaves: gauze, leno, pickets, free weaves, pattern harness; draw loom; analysis of fabrics, composition of patterns.

TERMS: Room and board (2 persons to a room, 3 meals a day), instruction and weaving - $35.00 - per week per person. No extra charges for yarn, unless the weaver wishes to keep the articles woven during the training.

LOCATION: Eastern Townships, Quebec. Picturesque tourist district of wide renown. Hilly country, pleasant surroundings, good roads. The studio and living quarters are located in a large farm house, 1 mile from the station of Fulford (CPR line: Montreal - Sherbrooke) 65 miles from Montreal, 35 from Newport, Vt., 2½ from Brome Lake (boats to rent, fishing), ¾ of a mile from the village, ¼ of a mile from the river.

RESERVATIONS: Only a very limited number of weavers may be accommodated. Make your reservations (from Sunday to Sunday) early. Write or phone.

Z-HANDICRAFTS, FULFORD, QUE. CANADA.