

# Nilus Leclerc INC.

L'ISLETVILLE, QUEBEC.

The easiest way to warp is with a  
"LECLERC"  
Horizontal Warping Mill.

Il est plus facile d'ourdir avec un  
Ourdissoir Horizontal  
"LECLERC"

L'opérateur ne touche le fil  
que pour faire la croisée.



Fig. 321

The operator only touches the thread when  
making the crossing.

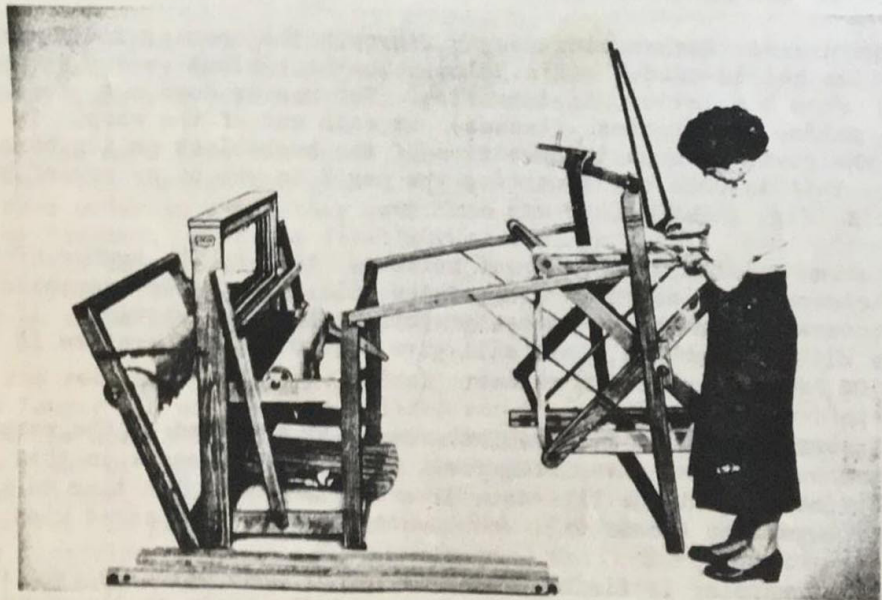


Fig. 322

On fait la croisée des deux bouts  
et elle se prend sur l'ourdissoir.

You make the crossing of the threads  
with both ends and it is taken from  
the mill.



INSTRUCTIONS FOR OPERATING  
THE HORIZONTAL WARPING MILL.

SETTING UP

The mill is delivered folded. To set it up, we first open it, (fig. 321) placing the cord under the pins (A); the heck-block should be placed on the rail (E fig. 310).

The next step is to open the revolving frame (read), put in place the cross-piece (G) with wing nut under, and insert the pegs H (fig. 310).

Finally the counter (T fig. 310) is screwed to the heck-block and the rigid heddle (U fig. 310) is placed in the support in the same block, the cord K is wound around the cylinder first then tightened at the heck-block.

The warping mill is now set up, but not adjusted.

PRINCIPLE OF WARPING

The rotating frame (fig. 321) works exactly in the same way as any warping reel, with the exception that it is horizontal and not vertical. For that matter, the warping mill may be used as a plain warping reel, simply by disconnecting the cord K.

When the cord K is in place it is attached to the heck-block (guide) and around the cylinder (R fig. 310) and passes on pulleys which keep it away from the wooden parts of the mill. We should take care that the cord at the right hand side of the mill rolls from the back of the cylinder, and the left hand side cord from the front, so that when rolling at one end, it unrolls at the other. When the rotating frame turns, the cylinder R turns also, and pulls the cord one way or the other depending on the direction of rotation. The cord in turn makes the heck-block E slide on the rail S. Thus the heck-block travels all the way from the left to the right and back.

The yarn used for warping passes through the opening in the guide "M", and through the heddle-reed V (fig. 310). The heck-block guides the yarn wound on the reel when the latter is in motion. The weaver does not touch the yarn except when making the crosses (leases) at each end of the warp. To avoid piling up of the yarn, change the position of the heck-block on its base from time to time. This is done by inserting the peg Z in one of a row of holes made in the base E (fig. 310-304).

The counter shows the number of portees, that is the number of times the heck-block comes to the extreme right of the mill. One portee contains twice as many warp ends as the number of tubes or bobbins used for warping. If the warping is done with two bobbins, this will give 4 warp ends, therefore if the counter marks 100, we will have 400 ends.

It is very important to make the crosses at each end of the warp. This is done the same way as on the vertical reel. To make the crosses in this manner use 2-3 or 4 bobbins so that the threads will avoid tangling. (The time we take warping with not more than 4 ends will compensate by the time saved when weaving).

When the warping is finished the beaming is done directly from the warping mill. To get the proper tension of the warp, set the brake on the right hand side of the mill (Q fig. 310). This brake is released when warping.



## ADJUSTING

First find the proper position for the left hand cross-piece (G). The right hand piece is mounted always as far to the right as possible. The other can be set in any place whatsoever. One turn of the reel corresponds to 3 yards of the length of warp. If the warp is 15 yards long then we make 5 turns of the reel, always starting on the right hand side. Then we attach the cross-piece (G) to the reel, opposite the guide in the heck-block (fig. 310).

If, as mentioned above, the two cross-pieces are on opposite sides of the reel, the latter is balanced. If not, it must be balanced with additional weights. (Small sand bags easily balance, and are noiseless). It must turn freely without tendency to stop in any particular position.

To prevent the reel from turning beyond the ends of the warp which might damage the cord or push the counter out of place, we use end of cross-pieces (G fig. 310) which are longer at one end, strike the heck-block when it approaches the end of the warp. Finally we adjust the cord K so that it will be rather tight; otherwise it may slide on the cylinder R. At the same time it must be so adjusted on the cylinder that the counter on the heck-block base just touches the metal bracket stop Y (fig. 310) at the end of each portee. This adjustment is very important, and should be checked several times before starting the warping. This can be done by loosening the wing nut that holds the bracket. Tighten same when the counter strikes perfectly. The length of the cord should be adjusted by disconnecting the end from Base E and making a knot inside of the cylinder R.

## WARPING

After the warp is figured out, we have to decide whether we shall warp from 2 or 4 tubes or cones.

When warping from two or four tubes, we pass the threads only through the guides (M & E fig. 310), and the heddle-reed (U) can be completely removed. The crosses (one at each end) are made two by two threads.

When we use more than two tubes, the threads are passed first through the heddle-reed and then through the guide, M. When threading the heddle-reed take the ends in the same order in which they come from the bobbin rack, so that they are not crossed or tangled. Pass the first thread through a hole, the second through a dent (slot), the third, through the hole, the fourth, through the dent and so on. Then all threads together go through the guide M. The guide is not straight, it is set at an angle nearly equal to the angle of the warp on the reel.

Turn the reel until the heck-block reaches the extreme right - hand position. The longer end of the cross-pieces should strike the heck-block; this is adjusted with the cord K attached to the heck-block. We place 2 pegs in the cross-piece at the front of the mill, and tie the ends to the lower peg; then turn to the left cross-piece. The crosses are made as on H (Fig. 310). This end of warp will have crosses in groups of 4, 8 or even more threads. Now turn the reel in the opposite direction without touching the yarn until the heck-block will come to the left hand cross, where it will stop by itself.

If we have different colored threads in the warp, the ends are cut and tied to the next color. It is better to do this at the right hand cross where we first started. It is also preferable to always finish the warp at the same end we started.



The warping can be done with many ends up to 16 or 32, as follows: (not recommended to amateurs who seldom warp). To make a single cross, we grasp the warp ends on the outside of the heck-block with right hand and on the inside of the guide with the left (fig. 304). Now if we move the right hand down, we shall open a small shed. We insert the index finger of the left hand into it, turn quarter of a turn to the right (clockwise) and bring the opening to the first peg in the cross-piece. Then we move the right hand up, thus opening another shed, and repeat the performance with the second peg, turning the shed in the same direction and turn all ends around the third peg. Now we come back to the second peg and to the first making the same operation.

After the single cross is made we start turning the reel backwards, and come again to the first cross, where we cross the threads in group. The counter registers the first portee, and the whole cycle is repeated over and over again.

After we have made approximately  $\frac{1}{4}$  or  $\frac{1}{6}$  of the warp, we move the pin Z in the base F of the heck-block one hole of the left. For instance if we have a warp of 480 ends, and we warp from 8 tubes, it will take 30 portees to make the whole warp. We can divide these into 6 groups or 5 portees each, and move the pin Z by one hole when the counter shows 5, 10, 15, 20 and 25.

#### BEAMING

When the warping is finished, we should have the required number of threads to weave. By multiplying twice the quantity of bobbins used to warp by the number registered on the counter, this will give the number of threads. If we are not sure that this is correct, the crosses can be counted same as on the vertical reel which has no counter.

The brake (Q fig. 310) should be set by tightening the wing nuts. (Little grease or oil should be put in hinges of the mill otherwise it will be useless). A good tension should be kept so that all threads warp properly, but not too much as we risk breaking the threads or even the mill.

Place the whole mill in front of the loom. It is important to prevent the mill from sliding towards the loom during beaming. Put the front of warping mill on top of the loom after having removed the top cross bar from the loom (fig. 322).

The lease sticks are inserted in the pegs on the right hand side of the mill and tied firmly on both ends (fig. 322). The 2 cords are untied from the heck-block and rolled around the wooden cylinders on each side of the mill. The heck-block should then be moved to the left side, taking care not to place it opposite the left cross-piece. The pegs on the right side are then removed and placed at center in the 2 holes on top of the mill. (fig. 323)

The cross in which are inserted the lease sticks should pass on top of the mill between the two pegs and moved towards the loom, then through the harnesses on which the heddles have been pushed to the sides (looms series M-F or P) if the material is narrow. The harnesses should be taken out for wide material. On looms series N or L, you pass on top of the harnesses.

The lease sticks are tied to the thread beam of the loom (fig. 324). A raddle with two dents per inch is placed in the beater at the place of the reed where the batten handtree has been taken out. We spread out the threads as much as pos-



sible on the lease sticks; then try to put a full number of portees in each dent and divide them according to the size of reed used. The batten handtree is now put back in place on top of the raddle.

Now we take the steel rod and pass it through the back loop in the warp. The rod and warp are then pulled gently; the warp is spread a little to facilitate the lacing.

If a reed is used instead of a raddle, we fasten the lease sticks to the front of the mill that has been put on top of the loom. The warp is spread carefully. The ends are passed through the reed, taking care to skip the right number of dents so that the warp will spread evenly, example: if we have warped with four bobbins and we weave two ends per dent, we pass eight ends through one dent, skip three, pass eight, skip three, and so on. For further details, follow the instructions given in the book supplied with the loom.

### LACING (fig. 324)

The important operation which comes next is lacing the warp to the apron.

Now we take a rather long and smooth cord, about 5 times as long as the material, attach one end to the rod in the apron (not the free rod in the warp) at the edge of the warp and lace the warp itself (not the rod) to the apron, by passing the cord through the loops of warp, then around the rod, then again through a group of loops, and so on until the whole warp is attached to the apron. The groups of loops should be all of the same size - so many portees of warp in each group (about one half inch).

While lacing, it is important to have an equal tension on all threads. If the warp is as wide as the reed, when starting to lace, we leave about 5" between the apron and the warp. You will notice that the tension of the warp is not uniform. It will be higher at the edges than in the center of the warp, due to the fact that they all come from the center of the mill. This is why we have laced the warp directly to the apron instead of tying it to two steel rods.

When the lacing is ended, we remove first the lease rods, then the steel rod and adjust the cord by pulling it from the center toward the edges until the tension is even all across the warp. (fig. 325).

To beam fast without stopping, we use continuous paper, either heavy wrapping paper or building paper in rolls or corrugated paper. When starting such a roll of paper, we have to make sure that it is straight, that is, that the edge of the paper in the 2nd layer will come exactly on top of the edge in the 1st layer. Once the position of the paper is adjusted the beaming may be done at the top speed (fig. 326). If we have a very long warp and the beam is not uniform, that is higher at the center than on the edges we place wooden sticks all around and continue beaming with the paper. When we come to the end, that is when the 2nd cross will be at the top of the mill, we insert the lease sticks in the 2nd cross and tie them together as before, taking care that the warp does not twist when taking out of the pegs. (fig. 327)

Now to finish the beaming without any help, tie a few yards of strong cord to the end of the warp (the last loop in the cross) and wind it around the reel in the same direction as the warp. Tie the other end of the cord to the reel. This



operation could be done as well before beaming. Then, the beaming goes on. The cross will slip off the pegs, and the lease rods will stay in the warp. When the end of the warp reaches the breast piece of the loom we stop, and push the lease rods to the back of the loom to their normal position. Now the last loop of the warp is cut, and we are ready for threading. (fig. 328)

FOR MATERIAL OF MORE THAN 30 YARDS OR TOO WIDE, SUCH AS ON THE 90" LOOM.

The heck-block cannot be used. The warping should be done by hand same as on the vertical mill. If we are very careful, the threads can even be transferred to the loom.

If the number of threads is too high for one warp such as the 90" loom, the warp should be chained in two or three sections but cannot be transferred directly to the loom except if the beam of the loom is equipped with a flange at the center to divide equally in two warps, or if we can wind with paper leaving 6" between each warp, that is 3" in the center each side of the warps.

If the warp is not more than 12 yards on a 90" loom, we can warp two sections on the horizontal mill. That is one after the other, but in this case an extra crossing should be added. The second warp cannot be counter except if there is a stop for the counter on the rail E (fig. 303).

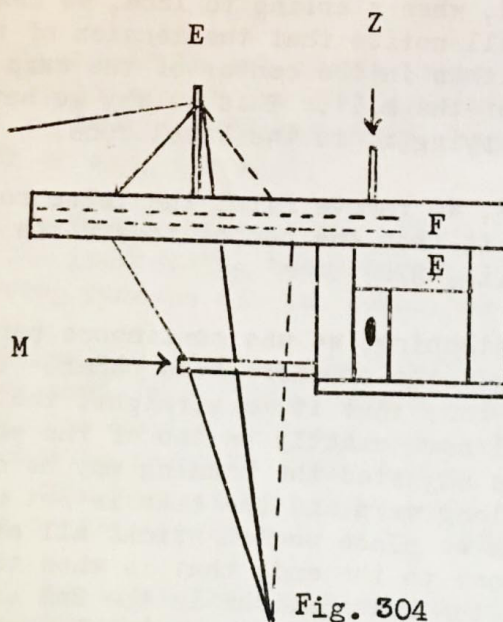


Fig. 304



La chaîne se transfère directement de l'ourdissoir au métier.

The warp is transferred directly from the warping mill to the loom.

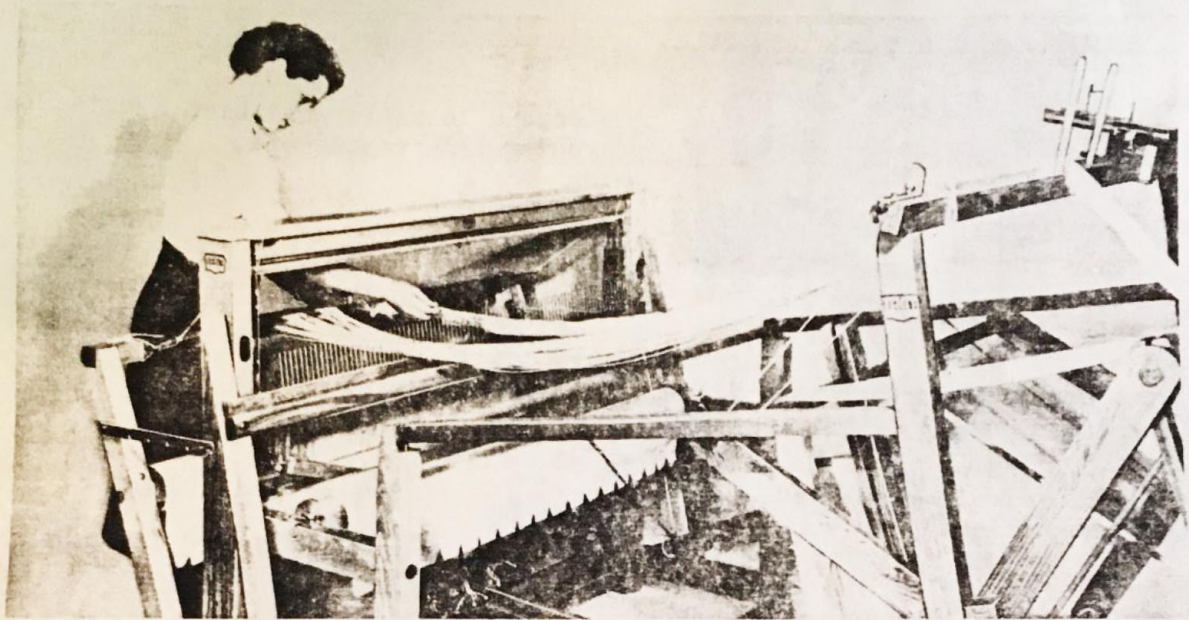


Fig. 323

Pour faciliter le travail on emploie un râteau pour placer la chaîne.

To make the work easier you use a raddle, which will put the warp in it's place.

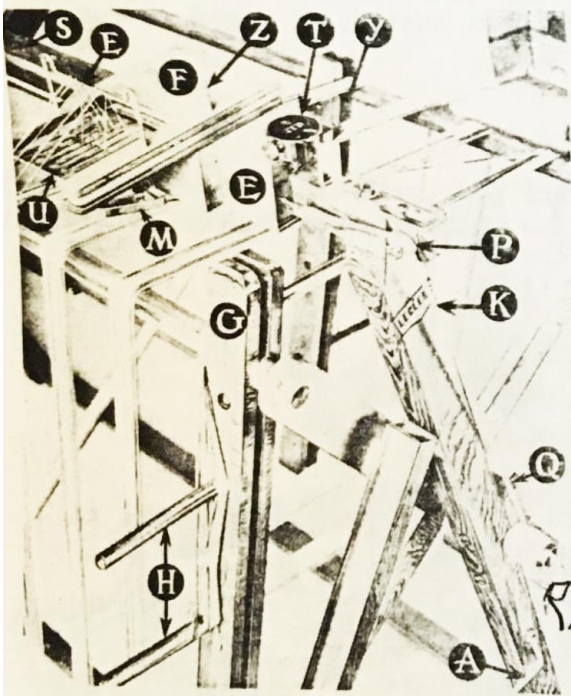


Fig. 310

Le frein sert à tenir la tension.  
The brake is used to hold the tension.

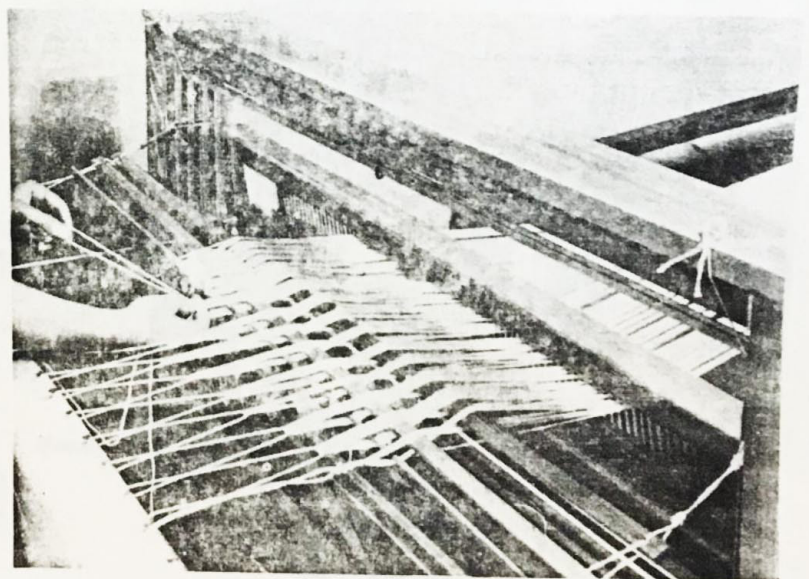


Fig. 324

La chaîne doit être lâcée pour égaliser la tension.

The warp must be entwined so that the tension may remain uniform.



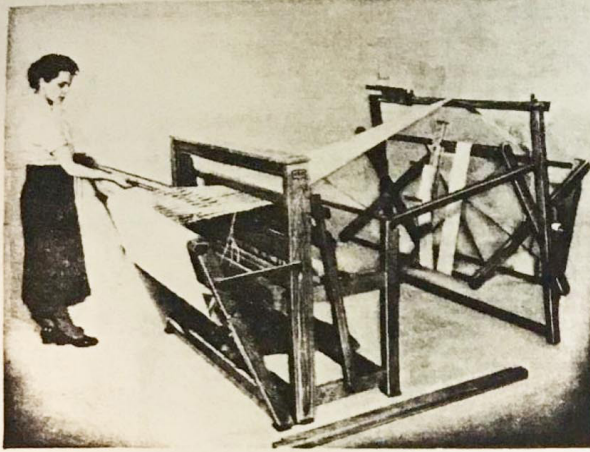


Fig. 325

After the piece is fastened, you may remove the cross sticks.

When the paper is well regulated, you can roll up very quickly.

You retake the crossing of the threads at the end of the rolling process and one cord continues holding the tension.

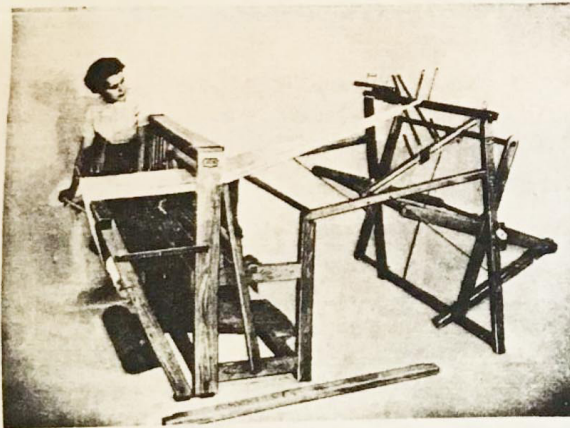


Fig. 327

The comb may now be removed and the cross sticks easily passed behind the work.

**Nilus**  
**Leclerc**  
INC.  
L'ISLETVILLE, QUÉ.

← Après que la pièce est attachée, on enlève les baguettes d'encroix.

Lorsque le papier est bien ajusté, on peut enrouler très rapidement.

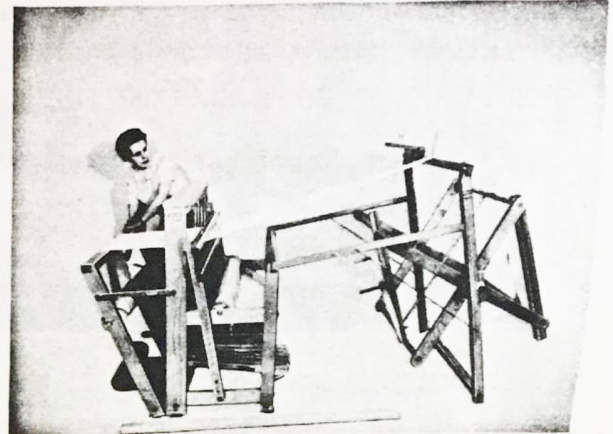


Fig. 326

← On reprend la croisée à la fin de l'enroulage et une corde continue à tenir la tension.

Le peigne peut maintenant être enlevé et les baguettes de croisées passées facilement à l'arrière.

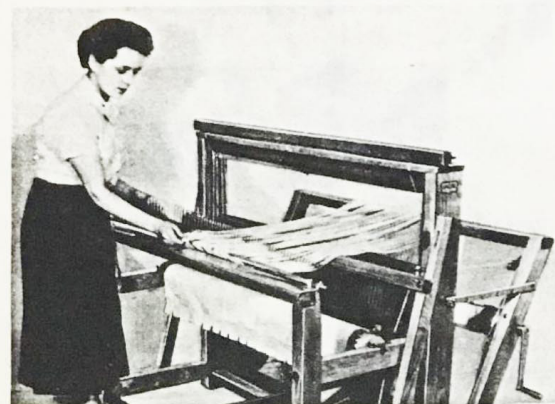


Fig. 328