# HOW TO TIE UP A VARPAPUU LOOM

A beginner - and sometimes a more experienced weaver too - might fear the c o u n t e r m a r c h e   l o o m because the tying up of the loom seems so complicated. However the tie-up is not difficult at all - if you know how to do it properly.

Do it in the following manner - and follow the instructions accurately - and you will not have any problems with your loom.

For tying up the loom use special Finnish linen cord "Hauen-koukkusiima No. 4" or any other strong, not stretchable cord.
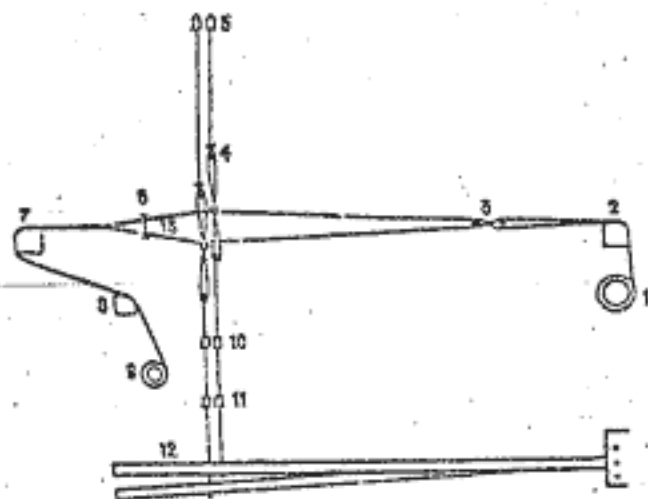

I.

A diagram of the warp and of the cross-section in a countermarche-loom:

1. Warp beam (back roller)
2. Back bar (back beam)
3. Lease sticks (cross sticks)
4. Harnesses (shafts)
5. Jacks
6. Reed (in the sley or beater)
7. Front bar (breast beam)
8. Knee bar
9. Cloth beam (front roller)
10. Upper lamms
11. Lower lamms
12. Treadles (pedals)

From the diagram you can see how a countermarche-loom works: when one treadle goes down one or more harnesses go down and the others go up. This makes the shed (13) so open and clear, a necessary qualification for multiply harness weaves.

II.

**TIE-UP OF THE COUNTERMARCHE-LOOM**
seen from the back of the loom:
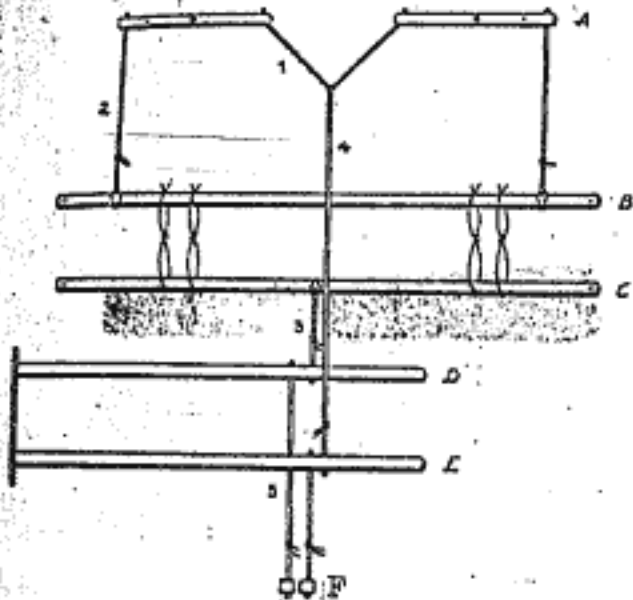
A. Jacks
B. Upper harness stick
C. Lower harness stick
D. Upper lamm
E. Lower lamm
F. Treadles

1, 2, 4: Jacks are attached both
to the harnesses (2) and to the
lower set of lamms through the
Y-cord (1,4).

3. Harnesses attach to the upper
set of lamms.

5. How the upper and lower set of
lamms are attached to the treadles
depends on the pattern you are
weaving.
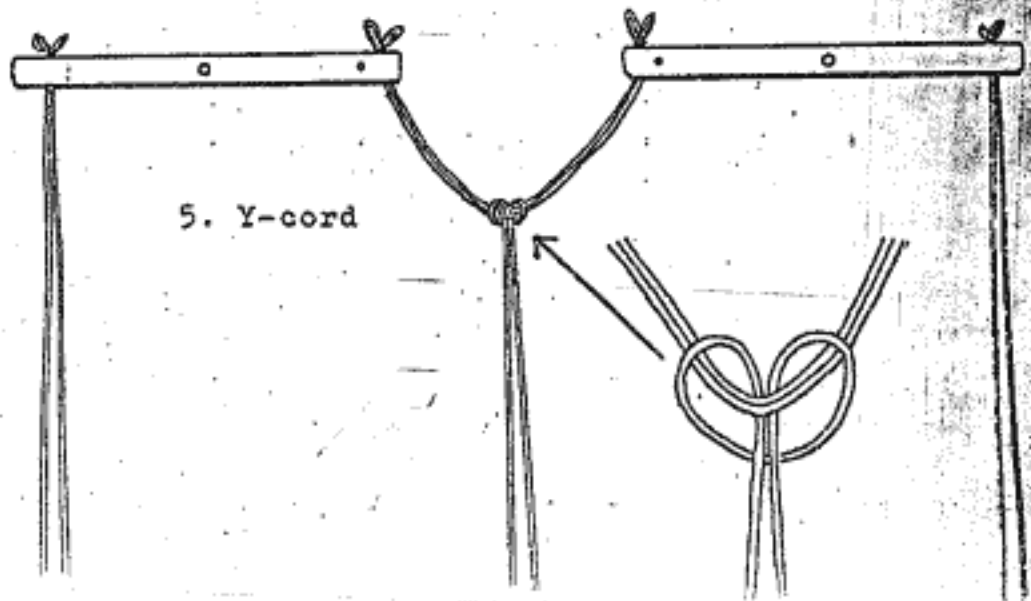
And then to the work!

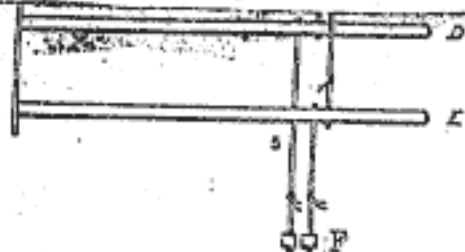## TIE-UP OF THE COUNTERMARCHE LOOM   STEP BY STEP:

1. Always start from the top of the loom and work down. The first
   thing to do is to fix (lock) the jacks with two thin metal rods (R).
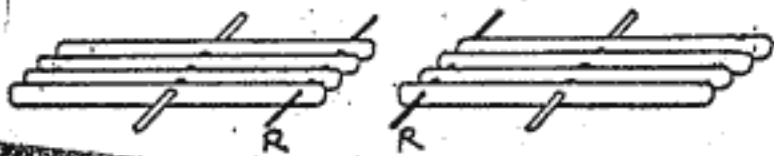
.... through double or single cord,
butterflies in the both ends.

5. Y-cord from the jacks to the lower set of lamms.
    For central cord you need about 65" cord.

5. Y-cord

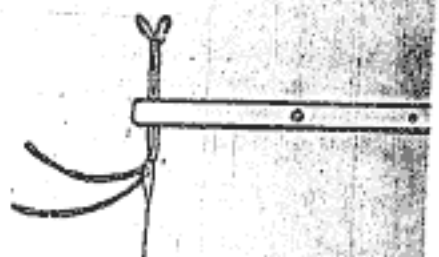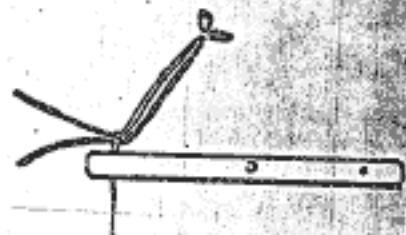to the harnesses (2) and to the
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TIE-UP OF THE COUNTERMARCHE LOOM STEP BY STEP:

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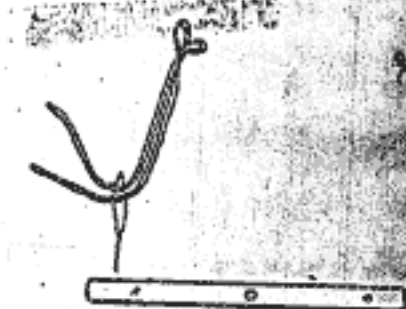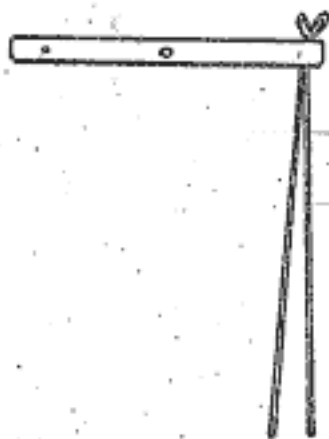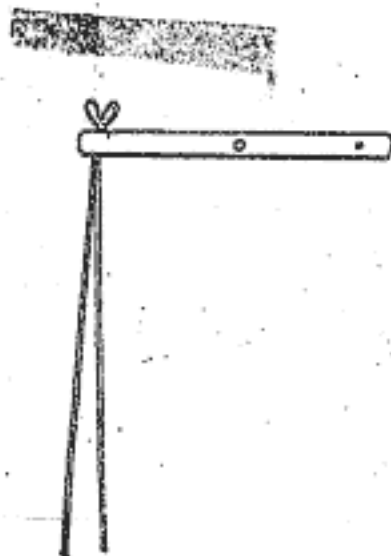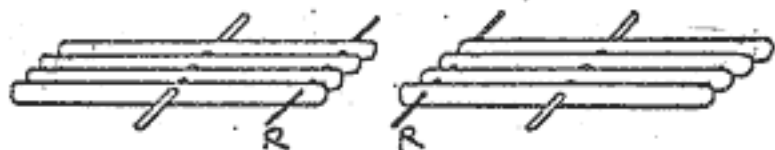
2. Start with the cords from the jacks to
   the harnesses. Take about one yard cord,
   put it double, make a butterfly knot in
   the middle and pull it through the jacks
   with a double wire (or a hair pin) as
   shown in the picture.
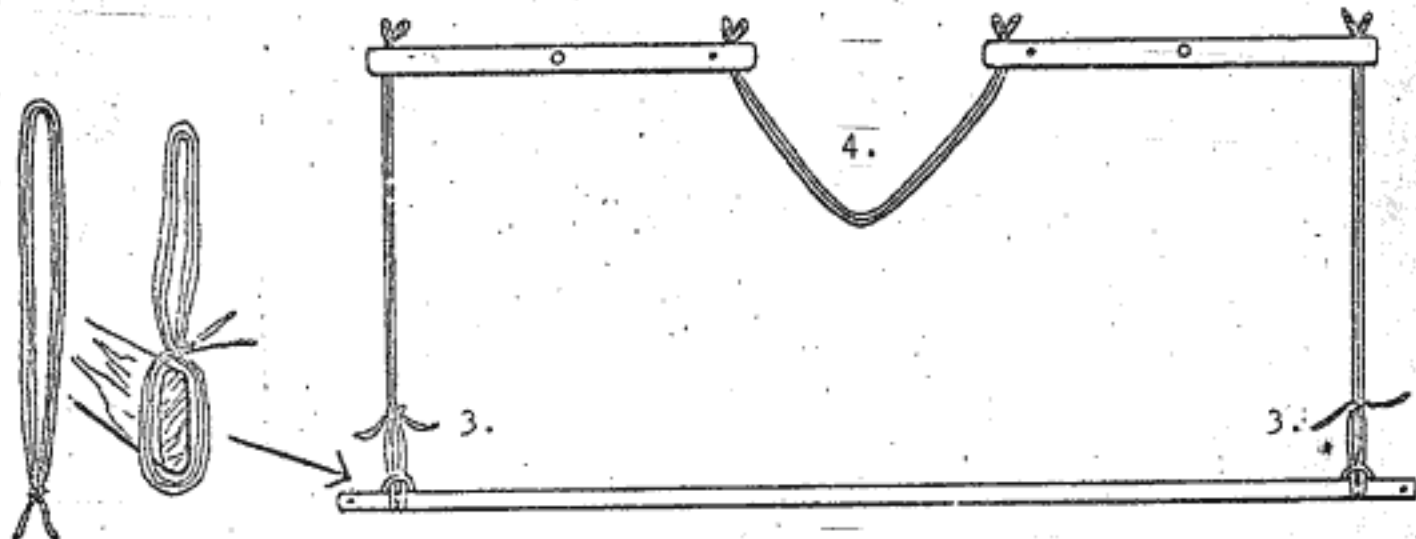
3. Jacks are attached to the upper set of harnesses through double cord and short loops like shown in the picture. Use always here slip knots (right) and you can easily make the cords longer or shorter if needed to adjust the harnesses on the right level.
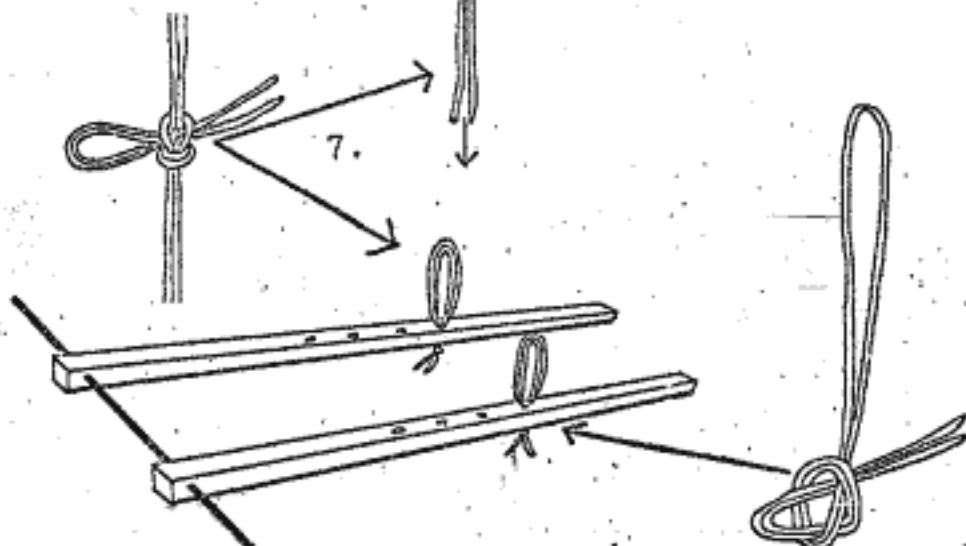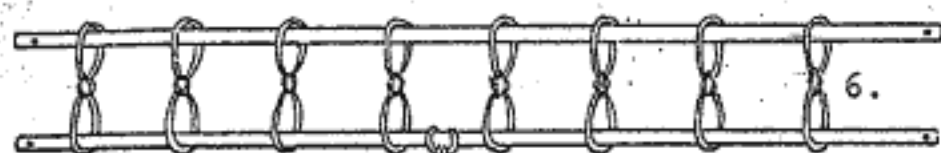

Slip knot.
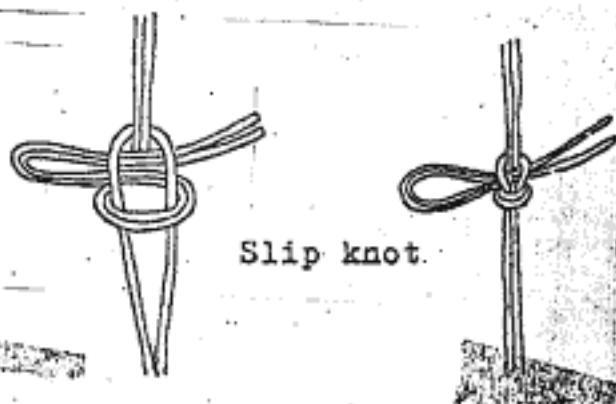
4. Jacks are attached to each other through double or single cord, butterflies in the both ends.

5. Y-cord from the jacks to the lower set of lamms. For central cord you need about 65" cord.

5. Y-cord
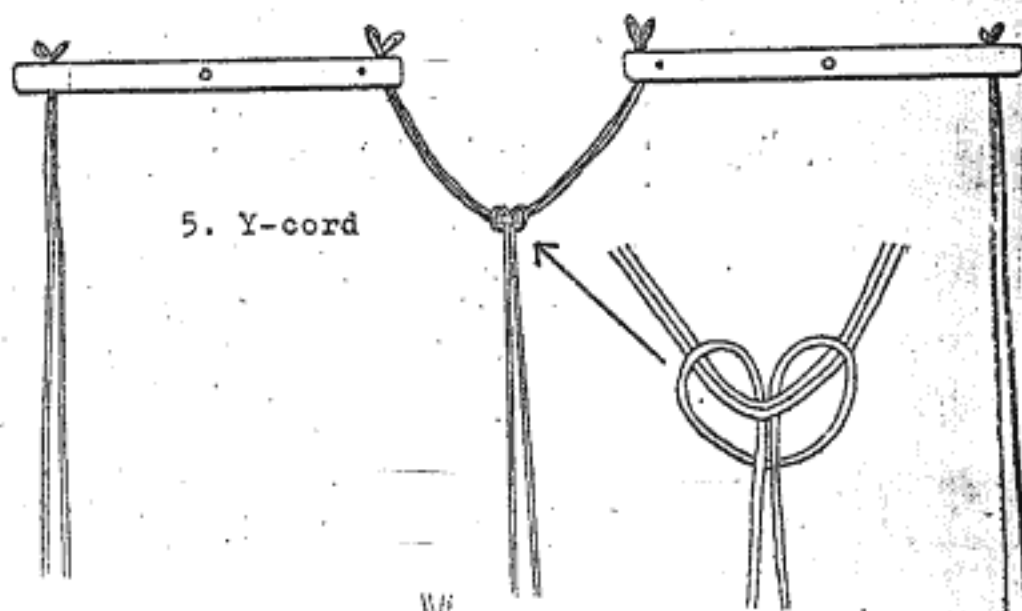
6. Put the heddles on the harnesses

7. Harnesses attach to the upper set of lamms through double
   cord and loop.
   Use slip knots again.

This kind of a loop
you need for upper
lamms and for treadles.
Take about 15" cord,
put it double and make
a butterfly in the end

8. Treadles attach to the upper and lower set of lamms through
   cord and loop. In every treadle you have to have as many
   loops as you have harnesses.
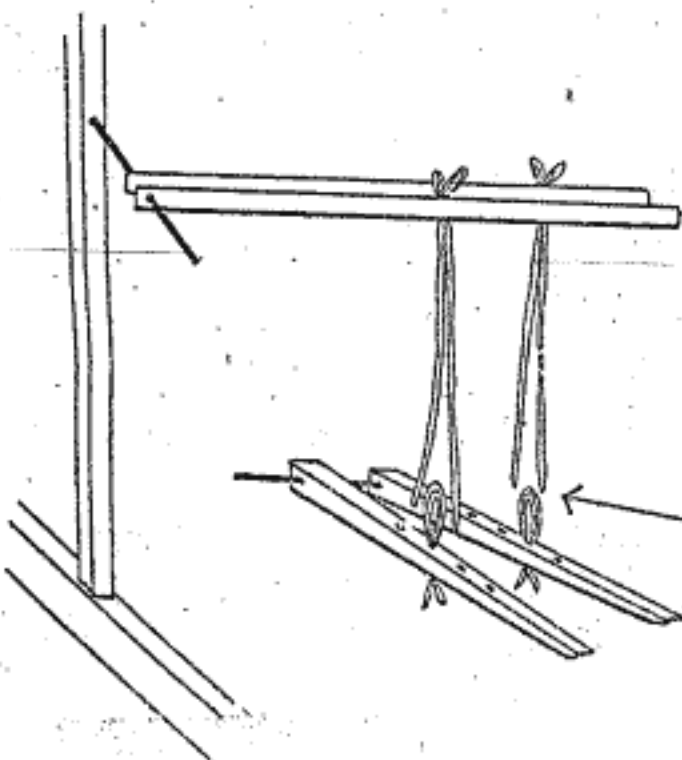
Always make sure that the cords
don't cross. The cord have to go
so straight as possible, straight
from the harnesses to the lamms,
straight from the lamms to the
treadles. And the cords have to
be as tight too: if one cord is
loose, one tight the countermarche
does not work properly. Pay atten-
ion to this.

Use slip knots!
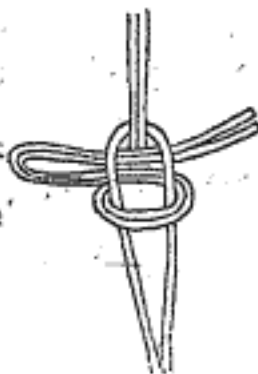
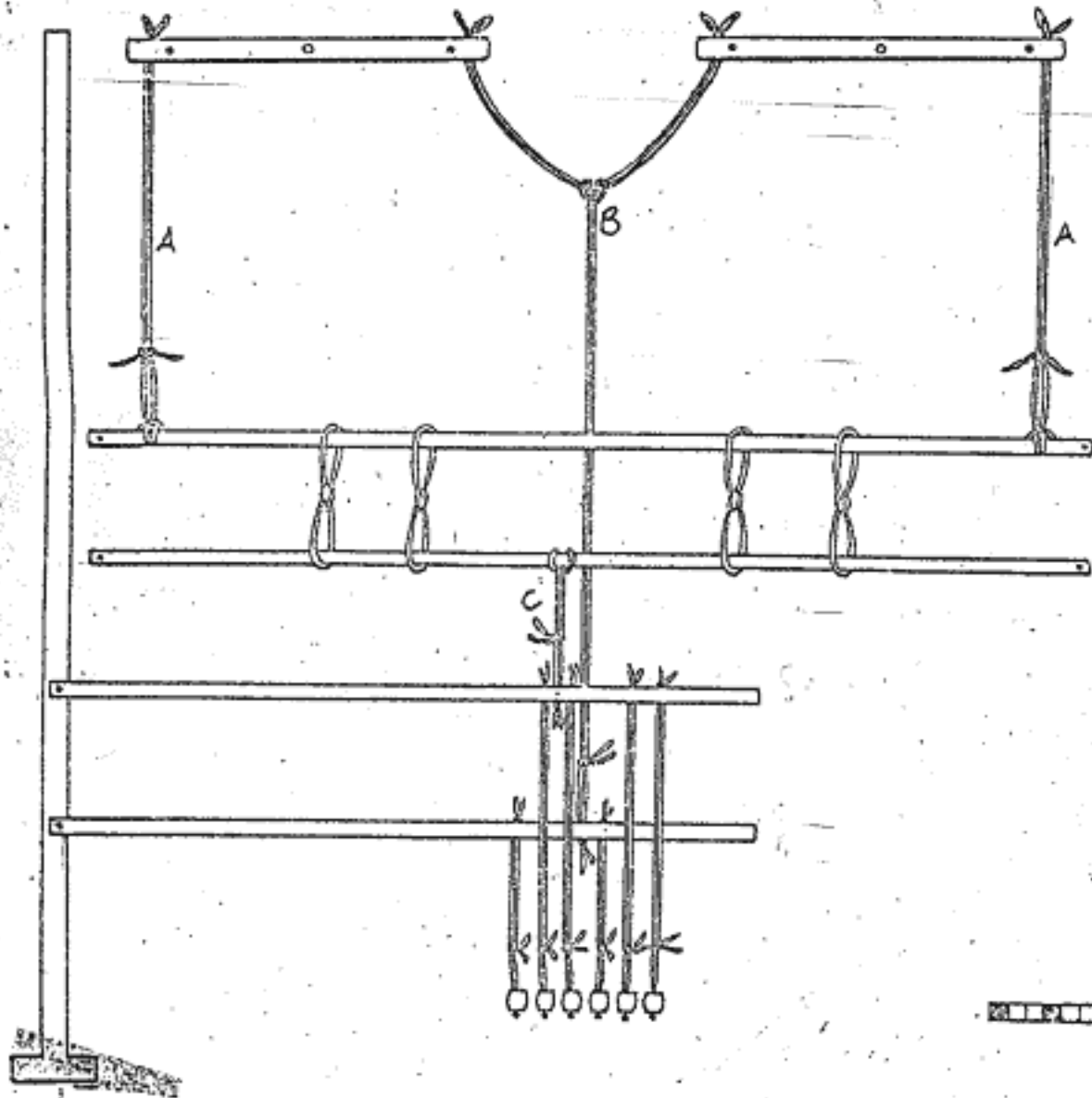The cords and the tie-up is always the same

- from the jacks to the harnesses (A)
- from the jacks to the lower set of lamms (B)
- from harnesses to the upper set of lamms (C)

Notice: the first Y-cord goes behind the first
harness and then every other cord makes the
same: always behind the harnesses. Y-cords are
always attached to the lower set of lamms.

Every treadle is usually attached to every harness
through lamms. In the picture one set of jacks,
harnesses and lamms is tied up with six treadles
and the tie-up draft is shown on the right: When
there is a white point in the draft, the treadle
is attached to the upper set of lamms, when there is
a black point in the draft, the treadle is tied to
the lower set of lamms or as the Finnish weavers say:
WHITE IS SKY AND BLACK IS EARTH.
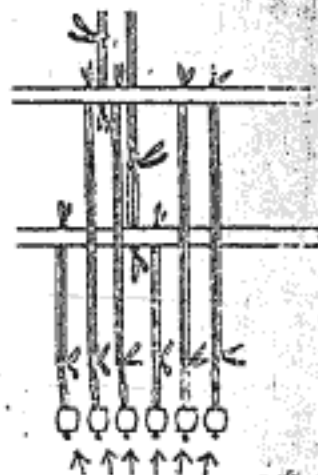
11. Note also that for the widest possible shed opening, the distances between each of the following parts should be equal as diagrammed down:
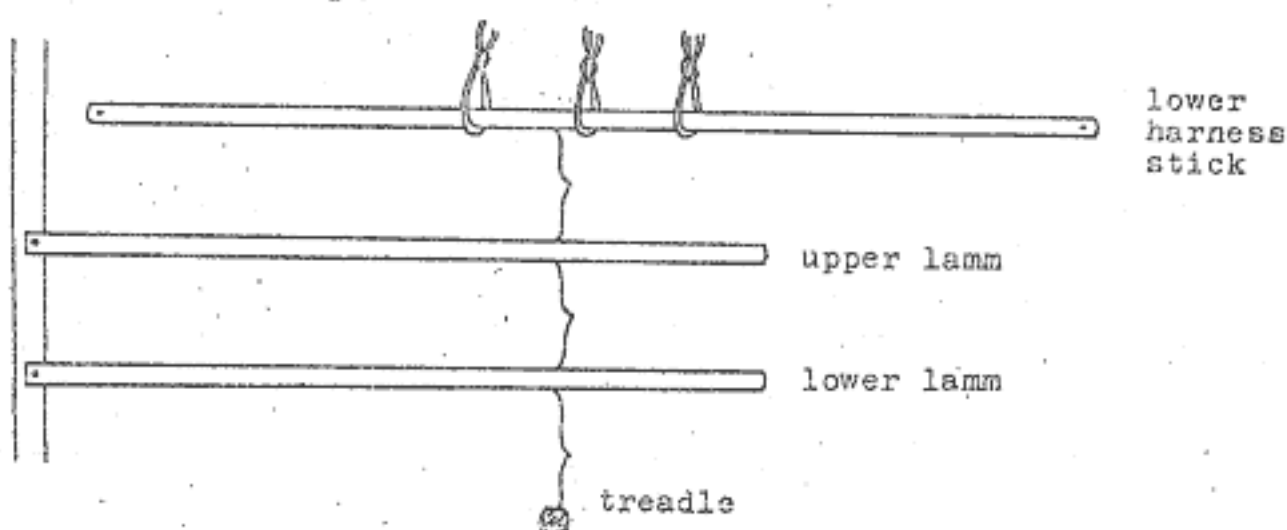
Pedals should be tied so that they are approximately 6" from the floor : all should be level when tied properly.

12. How to tie up p l a i n   w e a v e on two harnesses:

Weave plan

Order of treadling

Treadles

Order of threading
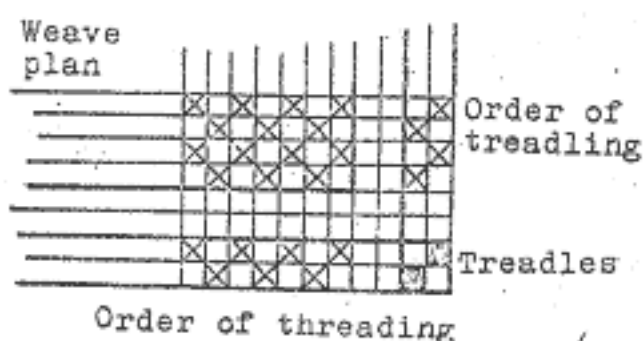
1. treadle
2. treadle

1. treadle is attached to the first lower lamm and second upper lamm.
2. treadle is attached to the first upper lamm and second lower lamm.

Plain weave on four harnesses and two treadles:
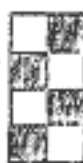
Treadles

Threading draft

1. treadle
2. treadle

1. treadle is attached to the first lower lamm, second upper lamm, third lower lamm and fourth upper lamm.

2. treadle is attached to the first upper lamm, second lower lamm, third upper lamm and fourth lower lamm.

Twill weave on four harnesses and four treadles:

Weave plan

order of treadling

treadles

threading draft

4. treadle
3. treadle
2. treadle
1. treadle
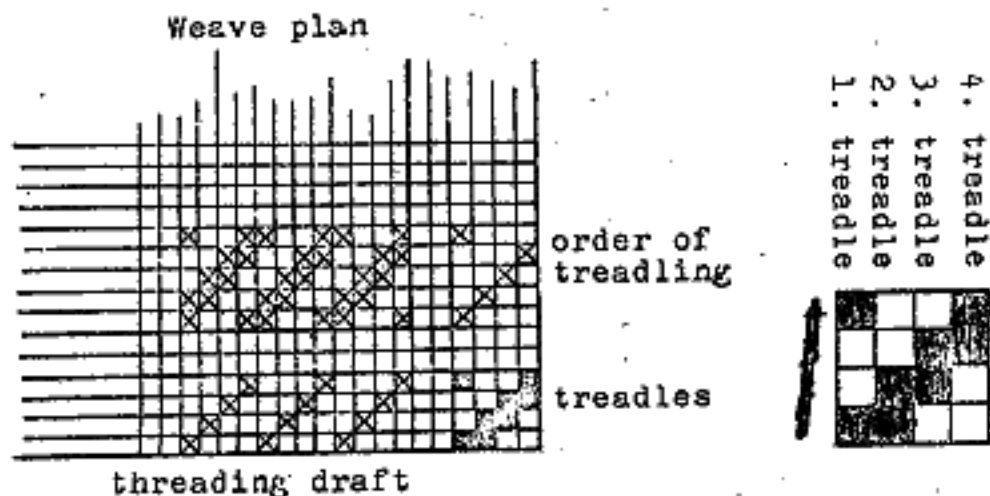
1. treadle is attached to the first lower lamm, second upper lamm, third upper lamm and fourth lower lamm.

2. treadle is attached to the first lower lamm, second lower lamm, third upper lamm and fourth upper lamm.

3. treadle is attached to the first upper lamm, second lower lamm, third lower lamm and fourth upper lamm.

4. treadle is attached to the first upper lamm, second upper lamm, third lower lamm and fourth lower lamm.

This way by using pattern drafting, threading draft, treadling draft and order of treadling you can decide how the treadles have to be tied up to the lamms.

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When the tie-up is finnished take away the metal rods which locked the jacks. Check that everything works properly: that the cords don't crisscross, that the harnesses are on the right level, that the shed opens well and evenly.

In the beginning the new cords slide. But don't worry: only go again under the loom and check the cords: it is good gymnastics and keeps you young.

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We hope this small booklet solves the problems you might have with your countermarche loom.

MANY HAPPY WEAVING HOURS!