

Weave >> Scan to Wve or Crd Img... converts a gray-scale scan of a weave draft into a useable weave.

This weave draft was scanned at 300 dpi in gray scale from page 151 of Oelsner's 1915 "A Handbook of Weaves". The basic weave repeat is 16x16 so the Spatial Sampler was set for 16 *Ends* and 16 *Picks*.

The sampling grid was aligned as follows:

- Click on weave Upper Left Corner - this moves the entire grid to align its ULC to that location
- Opt-click on Upper Right Corner of weave - this adjusts the grid to align its URC
- Ctrl+Opt-click on Lower Right Corner - this adjusts the grid to align its LRC.

Then make small adjustments as needed to get the best possible overall alignment of the sample boxes with the weave marks. Inaccuracies in the originals, or in printing, can make this a balancing act - just try to get the best average centering.

Using the Arrow keys is often the quickest approach - ctrl-Arrow to jog the grid's ULC, opt-Arrow to jog the URC, ctrl+opt-Arrow to jog the LRC, plain-Arrow to jog the whole grid.

With **Preview** checked (the normal setting), each sample will be evaluated against the Thresholding value; if less the box will be an open box, if equal or greater a solid box will be drawn. If **Preview** is unchecked then all boxes are drawn open. Cmd-V is a shortcut for switching **Preview** on and off.

The Threshold value (under the Threshold check box) defines the cutoff between Black (Cut) and White (Miss). This example has good contrast so a cutoff of 128 (half-way between 0 and 255) works well. Darker scans need a higher threshold.

Sampled pixels: lets you choose between sampling only a single pixel, or averaging either 9 pixels (3x3) or 25 pixels (5x5) centered around the sample point. If the scan is "grainy" then larger sampling areas can reduce the noise.

Save copies the results to the Clipboard for subsequent Pasting into a window. If [X] **Thresholding** is checked (the normal setting) the results will consist of only colors 0 or 255; if UNchecked the actual sampled values will be saved to the Clipboard as a gray image.

In this example, Pasting into a new window created the pattern shown at the right. We can then use **Select All** followed by **Weave >> Convert Select to Weave...** to convert this into Weave format.

Recommended scan resolution is at least 10X the resolution of the weave draft,

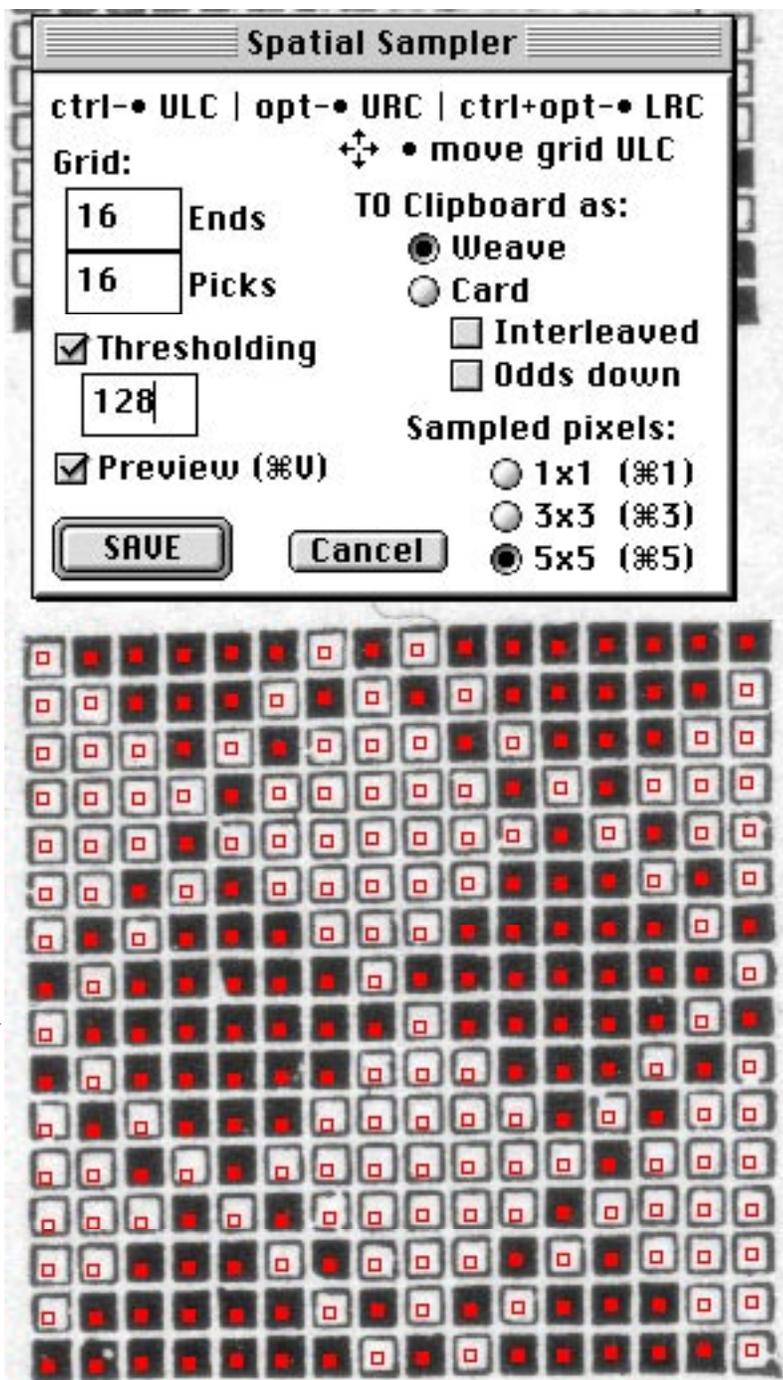
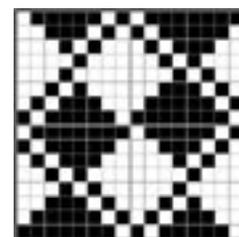


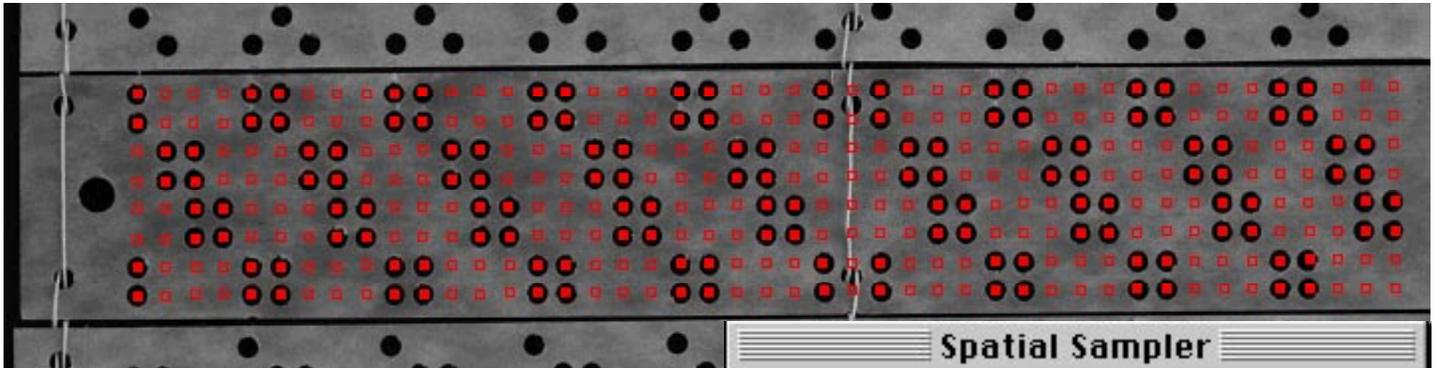
FIG. 748.



i.e., 100 dpi for a weave drafted at 10 weave marks per inch. Even higher scan resolutions do no harm. If the original is printed with “half-toning” (dots) then some “smoothing” or “descreening” may be helpful in converting the dot patterns into actual gray shades.

Other uses:

A museum needed to scan in some “hard cards” from their antique Jacquard loom. These were photographed in groups of 5 on a black background, brought in to JacqCAD as gray-scale images and then converted into a “card image”. In the image shown below, Hook #1 is at the top left and standard Hook numbers increase going downwards before moving right to the top of the next column. Checking TO Clipboard as: *Card* sets this numbering sequence, as well as setting Save to store as a 360 x 1 line pattern instead of a 45 x 8 weave array.



Each card resulted in a “line” of 360 Ends; the lines were pasted one above the other in a 360 x 20 window to capture the entire 20-card design. As a final step, Ends 201...208, which sampled from the middle column used for the central lacing, were deleted to leave just the 352 pattern hook ends.

Note that the low contrast / dark card stock required an increase in the Thresholding value to 200 so that the mid-gray card stock would be judged as “white”.

Trial and error adjustment of the Thresholding value works well, but here is a more “scientific” approach:

UNcheck Thresholding, Save, Paste into a new window, Set, then use Measure >> Show Histogram (cmd-H). This shows the distribution of gray levels being seen in the sample itself. Inspection shows a clear gap between two groups - those on the left which are the card stock and those on the right which are the black background seen through the punched holes. Setting the threshold to 212 (see + cursor) would be optimal for splitting between the two groups.

Having determined the best Threshold value you can return to the card image, call again on the Spatial Sampler (whose settings will have been preserved), change the Threshold value, CHECK Thresholding, and Save again. This time the result will be the desired Black/White format.

Spatial Sampler

ctrl-• ULC | opt-• URC | ctrl+opt-• LRC

Grid: +↔ • move grid ULC

Ends TO Clipboard as:

Picks Weave

Thresholding Card

 Interleaved

Odds down

Sampled pixels:

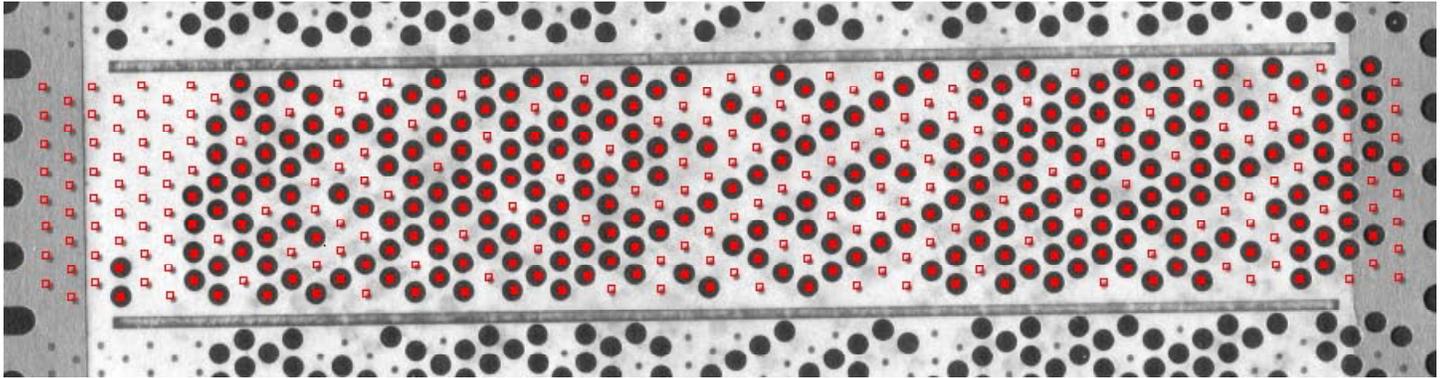
Log by # **Histog. of "Untitled-..."**

■	C 212	Settings	R 43	H 0°
	# 0		G 43	S 0%
	% 0.00		B 43	D 17%

By the way, the museum's ancient 20-card deck turned out to contain the following design:



The *Interleaved* and *Odds down* checkboxes are used with images of cards which use offset rows, such as Verdol 1344 hook continuous cards:



In this usage checking *Interleaved* causes alternating vertical offsetting of the columns while *Odds down* controls which columns are offset downwards.

Using 5x5 sampling was also important - because the blank Verdol paper is printed with small black marks at each hole position. If only 1x1 sampling were used, when the sample point happened to fall on one of those small printed marks it could be mis-interpreted as a hole. By averaging 25 pixels (5x5) around the sample point, the effect of any printed mark is diluted (averaged out).

Each card results in a "line" of 448 x 1. Note that we are working only on 1/3 of a full card - the cards are too wide (18") to scan and the columns of 448 hooks are separated by columns reserved for sprocket holes.

One could finish converting each column of cards into separate 448 x Length files and then cut/paste to merge them into a 1344 wide finished product. This is probably easier and more reliable than Pasting each 1/3 into a full width window.

Of course the right way to read Verdol cards is to find someone with a proper card reader... The example above is included just to explain the use of the *Interleaved* checkbox.

