

Veneer Repair

Presented to NAWCC Chapter 142

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By Bill Daniels

History of Veneer

- Early clock veneer thickness was as much as 1/8" (0.125") in 1725.
- By the nineteenth century the thickness was down to 1/40" (0.6 mm; 0.025")
- Today veneers are available in 1/16", 1/40" and 1/64".

Veneer Adhesives

- Most veneer originally attached using hide glue. Best available technology at the time.
- Modern repairs can be made with hide glue, white glue, yellow wood glue or even contact cement. White and yellow glues being the most forgiving and allowing time to position the repair piece before setting up.
- Combination of wood glue and Cyano acrylic (CA) can be used to provide quick hold while the wood glue dries.

Veneer Cutting

- Squared off logs called flitches are cut using a stationary knife blade that shears off veneer from 1/20" to 1/42" thickness.
- Rotary cutting is essentially a lathe which rotates the log into a fixed blade to peel a continuous piece of veneer from the log.

Veneer Slicer

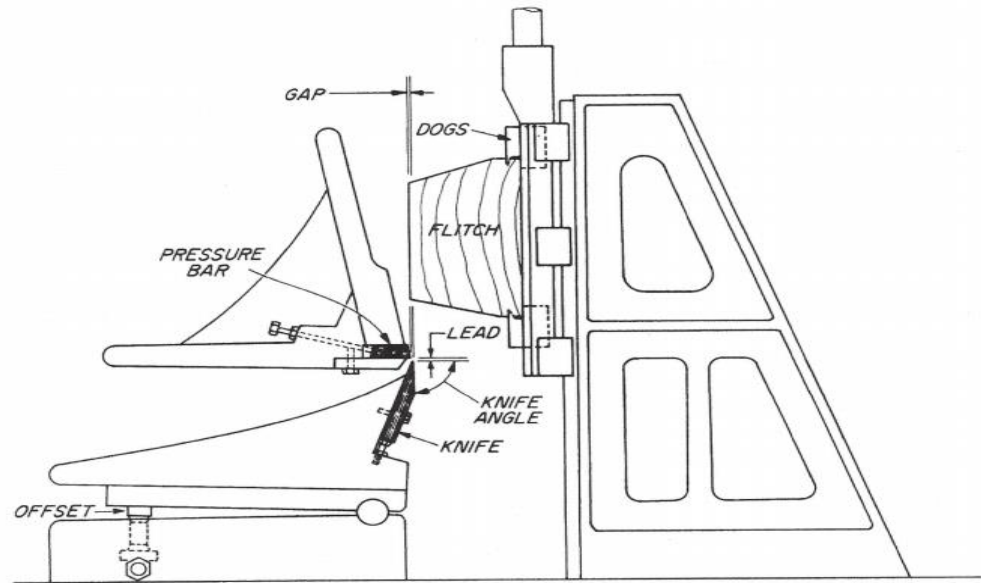


Figure 18.—Cross section of a vertically operating veneer slicer.

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Veneer Slicer

for knives on a lathe or slicer. The knife used on a lathe may be slightly more hollow ground.

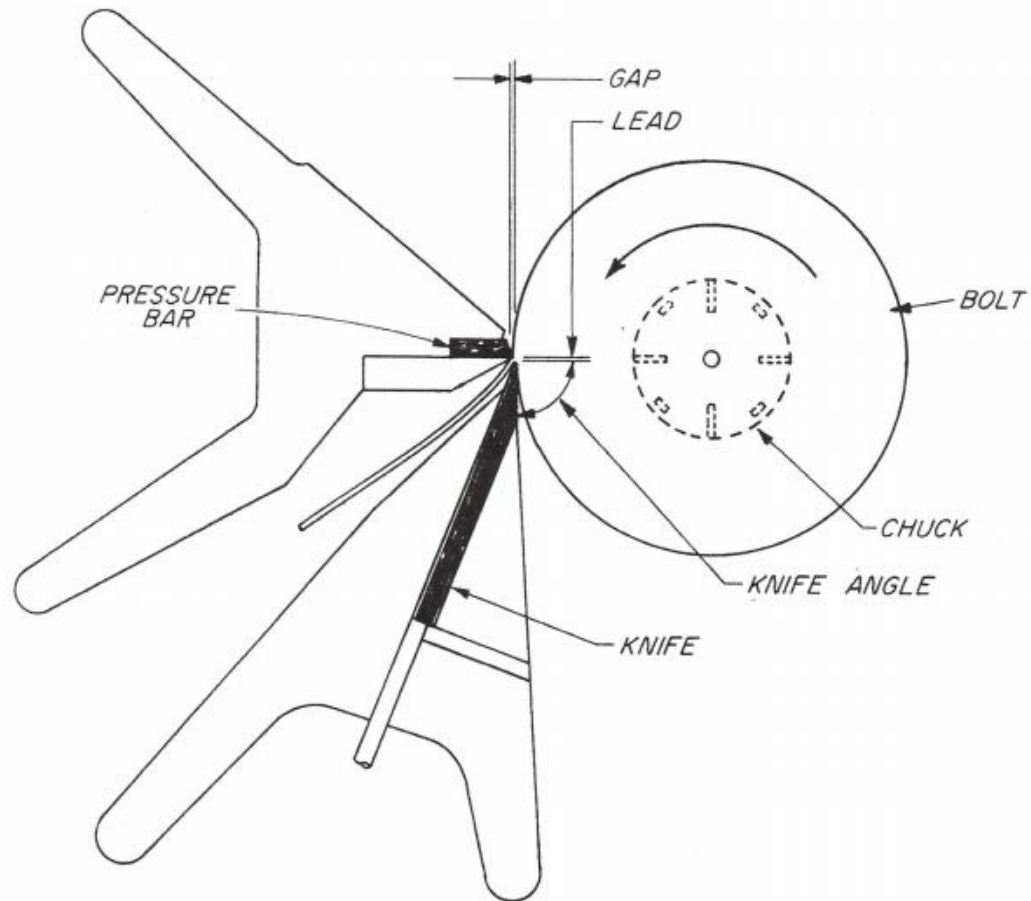


Figure 17.—Cross section of a veneer lathe having a fixed pressure bar.

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COMMON VENEER CUTS

ROTARY CUT



The log is centered on a lathe and turned against a broad cutting knife set into the log at a slight angle.

PLAIN SLICED



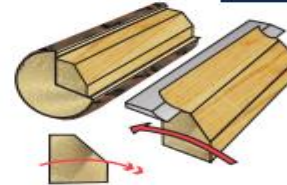
By slicing parallel to the center of the log, a raised "cathedral effect" is formed by the innermost growth rings

QUARTER CUT



The slicing is made perpendicular to the annual growth rings of the tree. This creates a vertical grain appearance. Quarter Cut Oak will produce "Flake".

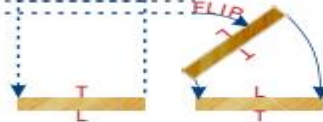
RIFT CUT



This straight grain cut is derived by slicing red and white oak at a slight angle to minimize the irregularities in the wood.

VENEER MATCHES

BOOK MATCH

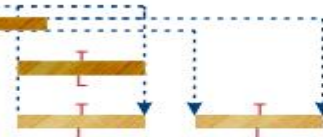


Book Match: This is the most commonly used match in the industry and it occurs when every other leaf of veneer is turned over, like the pages of a book. Visually, it offers a symmetrical pattern and it also yields maximum continuity of grain. Book matching is used most often with plain-sliced veneers.

BOOK MATCH



SLIP MATCH



Slip Match: This type of matching is often used with quarter sliced and rift cut veneers. It is similar to book except that every piece is simply "slipped" off the stack and joined together with its neighbor, always with the same side up. Visually, it shows the grain figure repeating but the joints will not show a mirrored effect.

SLIP MATCH



Veneer Suppliers

- Commercial sources of veneer include Rockler ($2/83$ "th), Constantines ($1/16$ "th, flitch veneers $1/40$ " to $1/32$ "th), Van Dykes
- Veneersupplies.com provides samples at $1/42$ " x 8" x 10" (\$4.79/ea)
- Salvaged from existing furniture or clock cases beyond repair

Indian Rosewood



Red Oak Quarter sawn



Cherry Quarter Sawn



Plain/Straight Cut Cherry



Quartersawn Mahogany



Salvaged Veneer

Salvaged veneer from furniture draw sides, removed by wetting with water



Salvaged Veneer

Salvaged veneer moistened & clamped between brown paper to wick moisture away and to flatten and dry



Salvaged Veneer

Flattened veneer prior to sanding



Salvaged Veneer

Flattened veneer after sanding



Basic hand tools for veneer work



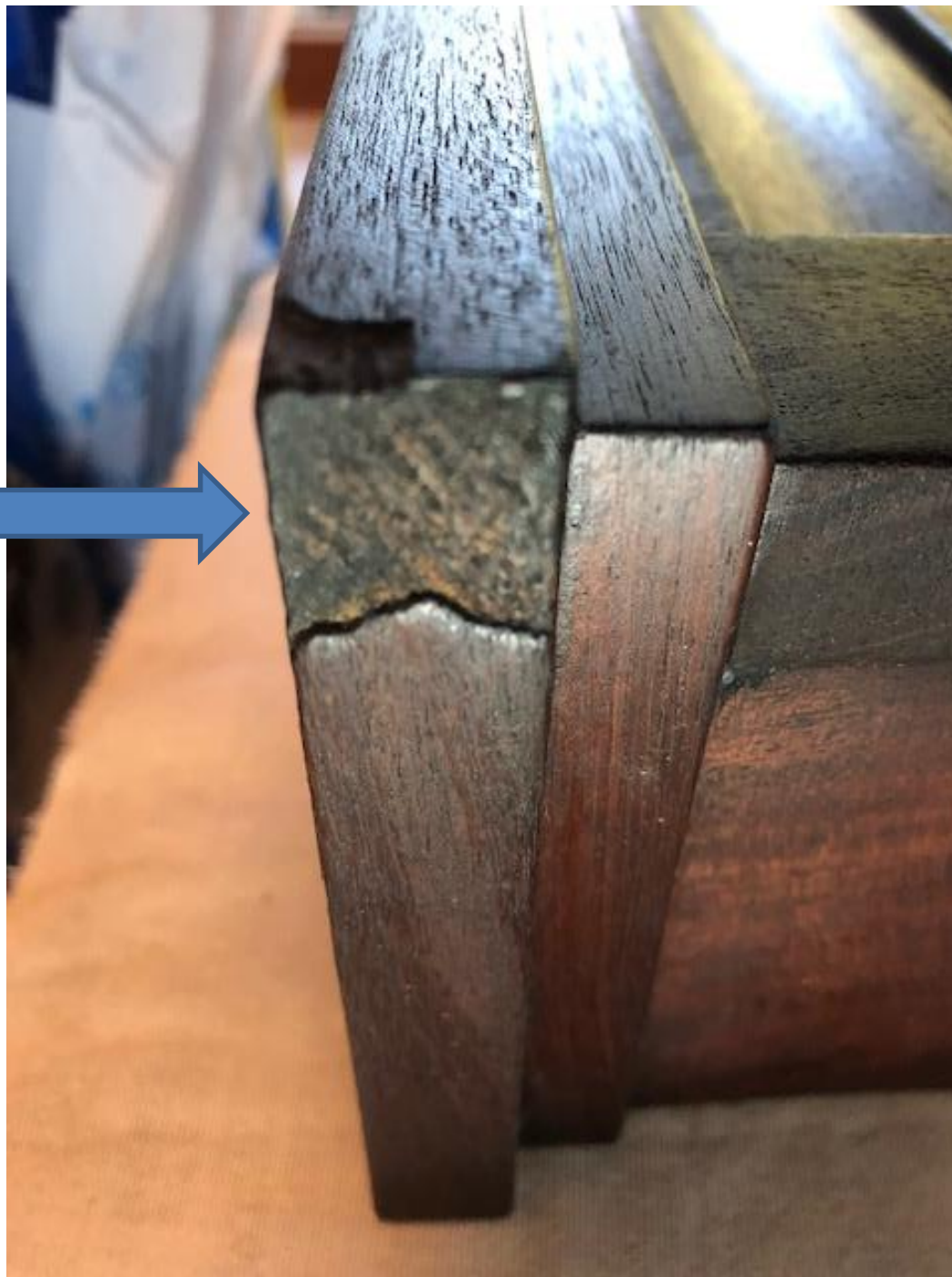
Considerations before starting repairs

- Clock is rare or has historical significance – work to retain as much original material as possible and use products and methods that were used at the time of the clocks manufacture. Hyde glue would be the most common adhesive for most of the earlier examples. The ability to reverse any work done on the clock in the future should be kept in mind.
- Clock is more common and being “restored” to functional state. Modern adhesives can provide better results and are easier to work with.

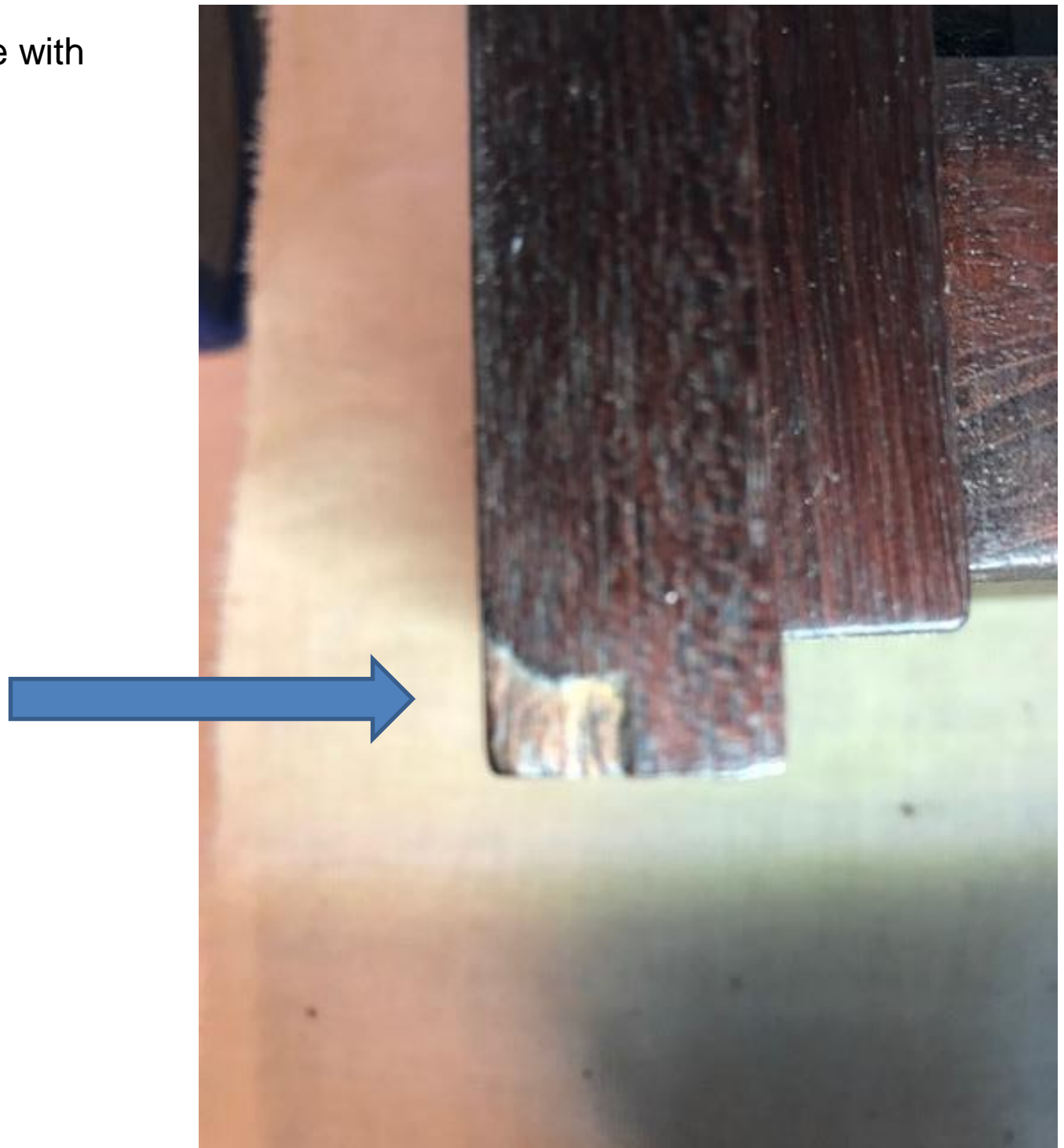
Subject Clock

- Seth Thomas 30-hr $\frac{1}{2}$ column shelf clock
- Plymouth Hollow, CT
- Lyre style movement
- Circa 1847 – 1849 based on printer label
- Elihu Geer, No 1 State St, Hartford, CT from 1847-1849.

Existing condition of case with missing veneer. Stain used to hide missing areas.



Existing condition of case with missing veneer.



Checking thickness of existing veneer against replacement material. If the veneer is loose the available material can be measured prior to re-installing.

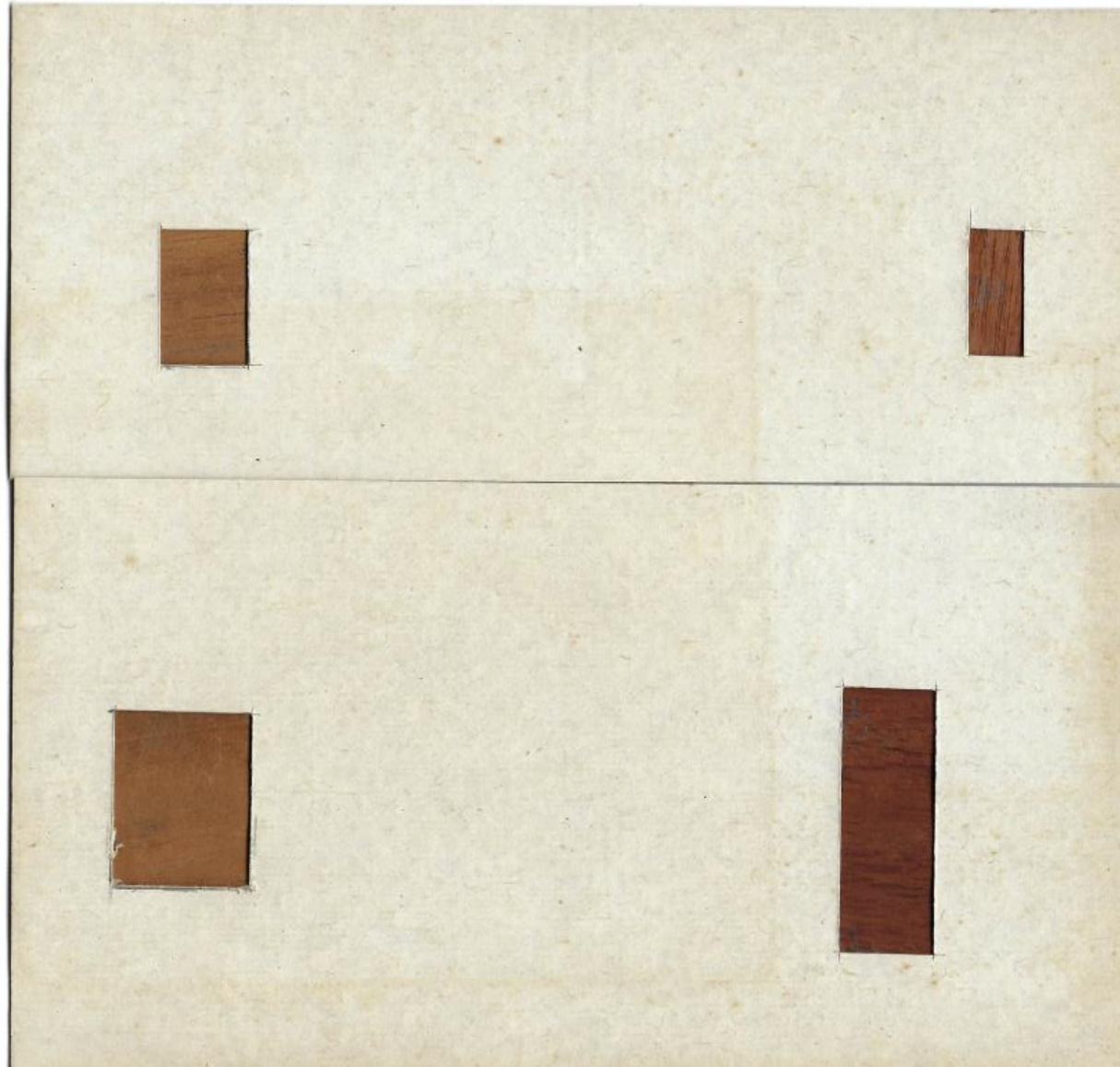
Two layers may be needed depending on thicknesses involved.



Making the Veneer Patch

- Find an area that best matches the existing grain pattern use a cut out slightly larger than the area to be covered.
- Look for the overall grain direction and pattern, details or highlights can be added later in the finishing process.
- Once you have decided on the area to use mark it and cut slightly oversized.
- To minimize splitting on small patches tape the face of the veneer.
- Determine the side of veneer to face up (chipping side down)
- With multiple patches the front facing piece should be the last piece installed.

Create Veneer Template



FRONT
TOP
LEFT

FRONT
SIDE
LEFT

Initial sanding for thickness and fit



Initial sanding for thickness and fit



Sanding in Progress



Applying the Patch

- Apply adhesive and clamp patch into place with wax paper to act as a release paper. Larger flat areas can be held in place with weights or a vacuum press.
- Curved areas will require a curved form be clamped over the veneer. Veneer should be preformed to the basic shape prior to gluing. Dampen veneer and clamp in form. Rubber cement or CA can be used but the veneer must be positioned precisely, no room for error.
- After glue has set, the patch can be trimmed to final size with Exacto knife or veneer saw. Tape on the surface can reduce the chance of splitting or breakout.

Sample stains of Minwax 225A Red Mahogany & McCloskey Tungseal 999 Spanish Walnut



Finishing the Patch

- Sand edges and reduce thickness of new veneer if necessary.
- Front & side patch stained with 3-coats Red Mahogany & 1-coat Spanish Walnut. Side patch given additional coat of Cherry to increase red background color.
- Fill seams with shellac stick, wood filler paste or sawdust and white glue.
- After staining patch, use acrylic paint and stain to blend seam into surrounding area before final finish application.
- Orange shellac flakes by J.E. Moser's brand used as final finish for this project

Initial Applied Patch



Initial Applied Patch



Application of paste wood filler and acrylic paint

- Veneer patch grain more open than existing grain, fill with Benwood Paste wood filler No 238 Natural color
- Acrylic paint base background color applied to joint between new and old veneer and black grain highlights added
- Shellac finish applied to bring up gloss, side too dark overall and too much gloss.
- Re-sanded side patch, applied Red Devil 40 Cherry stain to add red tone

Finishing Patch



Finishing Patch





Sealing Patch



Finished Patch



Another Project



Finished Patch



Other Side



Resources

- Veneering Simplified by Harry Jason Hobbs 1975
- Extreme Restoration by T. E. Temple 2011
- Constantines.com
- antiquevintageclock/author/Ronjoiner2015
- Vandykes.com
- Woodworkerssource.com
- Wood Veneer: Log selection, cutting and drying Forest Service US Dept of Agriculture Tech Bulletin No. 1577
- Veneer presentation by Richard Baker NAWCC Chap 25