

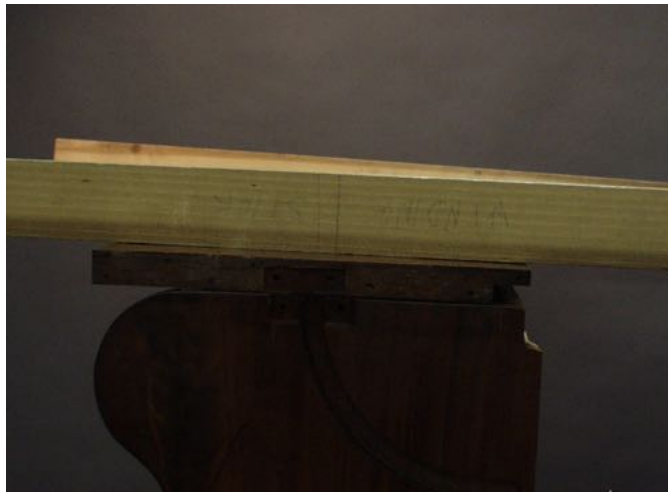
## The Repair of a Warped Lid on a Butler's Desk

v.5.2  
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I hate kerf-cutting to repair cupping or warpage! It is not reversible or “retreatable” as my friends in the conservation community like to call it. It is an extremely radical and intrusive technique and my past attempts have yielded less than satisfactory results. Often, the kerfing telegraphs through to the show face or a split occurs during the flattening. But in spite of my experience with this technique, a problem came into my shop which, after one attempt at a repair, forced me to reconsider. A decision was made by my client, an antique furniture dealer, and me, to employ a fairly radical series of kerf-cuts to remove a “wind” on the drop front of a butler’s desk.



*Lid to butler's desk.*



*Note 3/4" - 7/8" wind.*

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## History

My client had sold the butler's desk in the summer of 2005 to a person living in a New York City apartment and, while the lid was slightly warped, forcing one side of the lid and engaging the latches would straighten it acceptably. Unfortunately, the combination of New York apartment life (low humidity in the winter) and a worn catch made the lid too warped to properly lock into position. Under warranty by the dealer, my first attempt was to build out one of the desk's sides, an additive solution that could be retreated in the future. While this worked quite well allowing both side catches to engage, as we had expected, one side no longer lined up with the case. This solution proved unsightly and unacceptable to the owner.



*First attempt: add to side to reset catch.*

This was when the discussion to “cure” the warp began in earnest. Because the show side was veneered and inlaid as well as having a somewhat faded finish that would be impossible to duplicate, I felt a solution that would not involve refinishing the front was necessary. I also felt any attempt relying on water and clamping would be only a temporary measure. I had heard of using Woodloc® (Cash Coatings) and heated blankets with clamps, but had no experience with this material or technique and was concerned about damage to the finish on the outside considering the water and heat. Kerf-cuts seemed to be the only solution which I felt had any chance of success, albeit with certain limitations, i.e. evidence of the underlying kerfing might be visible on the opposite side, the restoration would not be retreatable, and it seemed likely the cock-bead molding would need to be replaced.

## The Plan

The solution that ultimately was decided on was to cut a series of parallel kerfs into the lid at an angle oblique to the grain, and opposite the direction of the warp so that when clamped straight the kerfs would open up. Also by cutting oblique to the grain some of the strength would remain thereby minimizing the chance of cracking as

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well as reducing the chance that the kerfs would telegraph through to the show face. These kerfs would then be filled with wood splines and glued in with epoxy. Epoxy was the choice for two reasons: it is a gap-filling adhesive with good strength and it would not introduce water into the system that might otherwise interfere with getting the lid straight. Finally, the inside surface that was kerf-cut would be planed flat and veneered.

In retrospect, the kerfing could have been cut on either diagonal. Had the kerfs been cut in the opposite direction to that which was performed in this restoration, the kerf would have closed up when the lid was clamped straight rather than opened.

### Implementation of "The Plan"

In order to perform this repair, the cock-bead moldings were removed as well as all the hardware. This solution required that the moldings be sacrificed to keep from introducing steam into the glue joints to undo them and thereby risking damage to the veneer or the finished front. The moldings were chiseled and planed off the lid. The kerfs were laid out and cut using a Skil-saw® set for 2/3 the thickness of the lid. A neater and straighter job would have resulted had I used the first spline as a guide for subsequent splines though functionally this made no difference.



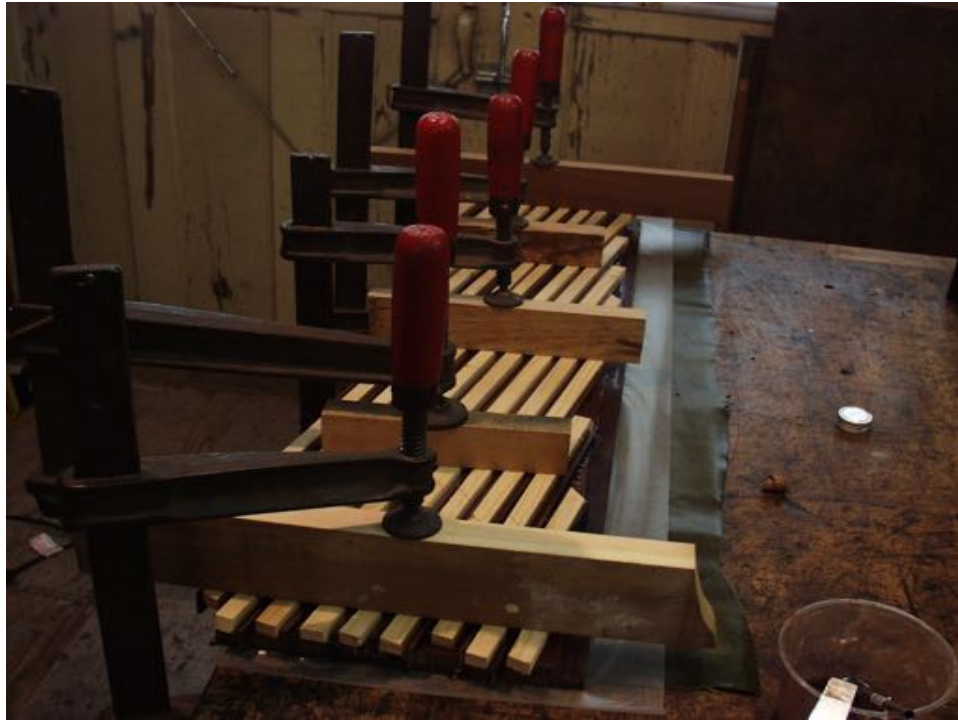
*The die is cast. No turning back now! Note 1/2" spacers.*

I then put the lid down onto a flat surface with a piece of soft leather underneath to protect the face and set in the splines with epoxy (West System® 105/205 resin/hardener with 403 fiber filler). Since the splines would stand proud of the surface, spacing cauls (all the same height) were placed between the splines so that I could clamp down the surface evenly. While this arrangement worked well, it did not completely eliminate the wind. First: by clamping the entire lid down onto a flat surface I was introducing pressure that the kerf-cut repair would not cure. There had been a slight warpage near the lock. Once unclamped, the wind reappeared though to a lesser extent. Second: some tension still existed on the 1/3 thickness I did *not* cut into.

Better to err on the side of caution! What had been about a 7/8" wind was now about 3/16", not bad, but not perfect. I ended up re-kerfing the few splines on the corners and rather than clamping down on a flat surface, I clamped the lid onto boards placed on the ends and checked the system for wind. This worked much better and the result was almost perfect, a little cupping but no appreciable wind on the interior and about an 1/8" on the show face. Only one kerf near the corner was at all visible on the show face and no cracking had occurred.

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*Under clamps.*

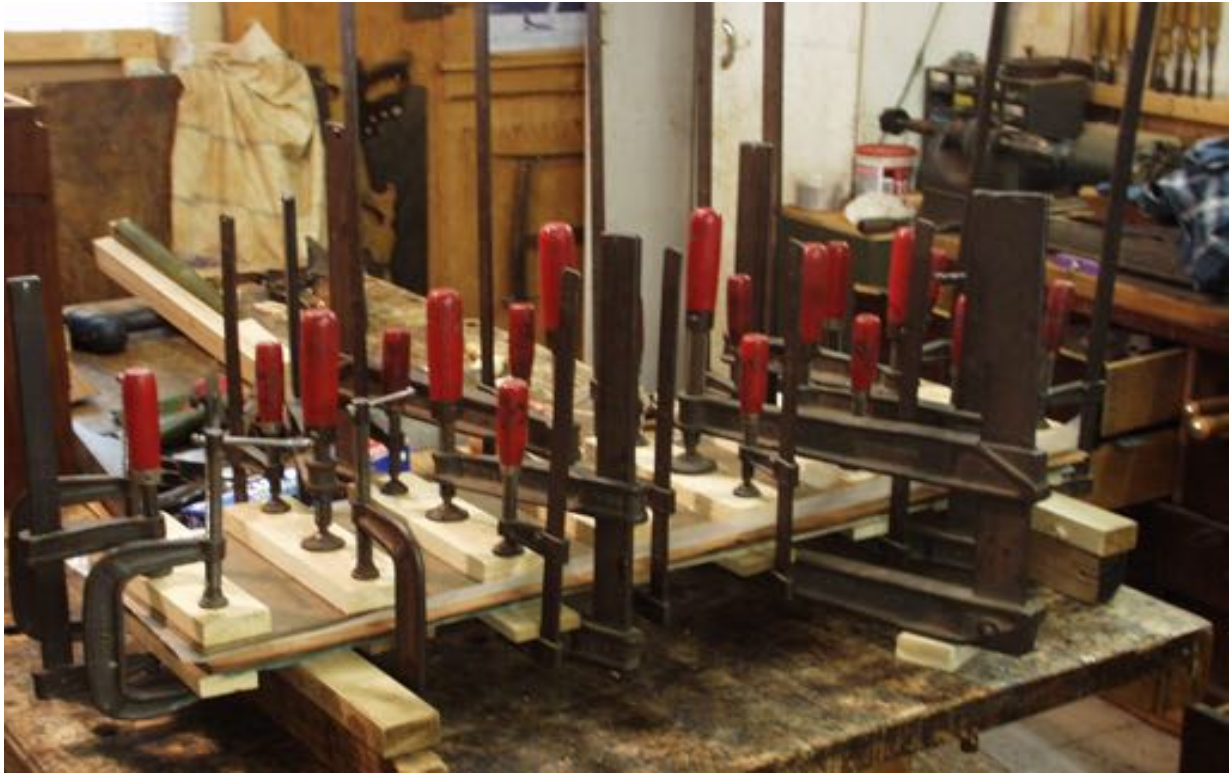


*Kerfing procedure completed with extra set of splines near corners.*

The splines were planed flat as well as the entire interior face of the lid and then veneered with some 1/16" mahogany using the same epoxy mix as was used in gluing in the splines. 1/4" untempered Masonite® over a layer of wax paper was the primary caul with 7/8" x 3" x 9" pine blocks set every 6 inches or so to evenly distribute the clamping pressure over the Masonite®. This arrangement of cauls would follow any slight undulation on the ground.

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*Clamping down the veneer. Can't have too many clamps!*



*Surfacing and leveling veneer. Overhang trimmed after.*

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*Prepared for finishing.*



*Level enough?*

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*One very happy restorer!*

Once the glue had set, the veneer was surfaced with a scraping plane and the surface checked again for straightness. New cock-bead molding was made and applied to top and bottom of the lid. When making this molding as with most replacement molding, the best quality mahogany should be used so staining is not necessary. This makes such a difference not only in appearance but saves a great deal of time in touchup. Using a beading plane, the moldings were cut from an old table top of some San Domingo (*Swietenia mahoganii*) that I had scavenged for just such a project. These moldings were then glued in place using hot hide glue and using small nails to hold the moldings in place while being clamped. One note: By the time the cauls and clamps were applied, the glue had already gelled. I should have mixed some urea into the glue to extend the gel time. I ended up applying a hot iron over sections of the molding until the glue re-liquified and then I reapplied the clamps. This technique worked well.

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*Making cock-bead using beading plane.*

The salvaged mahogany was beaded on one edge with three beads. The necessary width was ripped on the bandsaw and then each bead was separated from each other, again, using the bandsaw.



*Cock-bead being glued on top and bottom first.*



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The moldings and new veneered surface were then sanded in preparation for finishing. The interior surface was given an initial French polishing as the filling stage is the most time consuming and is most easily done when there is nothing in the way such as the quadrant guides or catches. Afterward the hinges, lock and quadrant guides were mortised and installed. Then the hinges were removed and the remaining side moldings applied (over the quadrant guides).

A small repair had to be made to the male portion of the catch which had broken during disassembly. It had been filed very thin in an earlier attempt at fitting and broke when I stupidly tried to pry the catch out of its mortise during disassembly. A new piece of brass was dovetailed and soldered in place. It was then shaped to fit the locking portion of the catch. These catches were then mortised into a recess on the interior portion of the lid. This was done by first securing them to the locking part and closing the lid so the alignment spikes marked their position. Removed from the catches and positioned on the lid, the rest of the mortises were marked, cut and the male part screwed in place. They worked without adjustment!

The brass pulls then needed to be installed. A small drill was used to drill through the lid from the front. This hole became the centering hole for a 1/2" Forstner bit which bore a hole on the interior to house the nuts (for the Hepplewhite pulls' posts) and plugs. The extension from the earlier restoration attempt was removed with the button catch reset to its original position – one of the benefits of "retreatability".

The lid was secured to the drawer, all the hardware reinstalled and only polishing and touching-up remained to complete the job.



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*Completed restoration!*

### **Conclusion**

This job took approximately 20 hours, much of it spent removing and then reinstalling the molding and hardware.

Kerfing, gluing and trimming the splines: 6 hours

Veneering the surface: 2 hours

Surfacing and finishing: 3 hours

Molding making and installation: 3 hours

Fiddling with hinges, repairing the catch, and installing all the hardware ate up the rest of the time.

Lessons learned: Kerf only the half of the lid that has the greatest warp first. You can always return and kerf some more. Kerfing oblique to the grain does prevent cracking and telegraphing through the show face. Fitting the hardware always takes more time than you think!

All in all, this proved to be an acceptable and satisfactory repair despite the radical and un-retreatable technique. During the discussion with the client we had noted that while we both might have preferred to live with the defect, the new owner would not, and would likely return the item to the dealer. This defect would compromise future sales. As it turned out, the owner was thrilled, the antique dealer didn't lose a sale and I pushed the envelope of my own craftsmanship. What was lost was the original surface of the interior of the lid as well as the cock-bead moldings and a few bucks out of the dealer's wallet, a compromise we all could live with.