



Fig. 1 – Marvin did this work as a prototype in the spirit of the Lancaster/York School rather than as a copy of a specific existing rifle. Photo by Ric Lambert.

In Praise of Simple Carving, Part I: Tools and Patterns

by Fred Stutzenberger

“The shooter of the 17th and 18th centuries was hardly satisfied with a gun that had no carving at all. Even the meanest fowlers or rifles usually had some vestige of carved decoration, no matter how simple.” — *John Bivins* (Bivins, 16)

Carving, whether raised or incised, was (and is) the primary medium for the elevation of the muzzleloading gunstock to an art form. The carving of wood has ranged in complexity from simple moldings all the way to the lavish sculpting of wood that dazzles the eye and invites the touch. Today, artisans such as Marvin Kemper (libertylongrifles@gmail.com) are creating lacy carving patterns (Fig.1) that rival the best of the original period builders in artistic grace and execution. The prospect of carving at that level would be intimidating to the first-time rifle builder as well as many veterans of the craft. Comments such as: “I’ve built a bunch of rifles, but never anything fancy” or “I tried it once, but it didn’t work out” or “I just never could draw,” have been uttered by builders who have made some nice looking rifles, just not carved rifles. Some comfort can be taken in the fact that many of the

prolific builders of the Golden Age, including Melchoir Fordney, Henry Albright, Peter White, Johan Gumpf, Henry Young, and Abraham Schweitzer, have left at least one ornate, but uncarved rifle surviving to the present day (Chandler & Whisker, 47-209). Many of the American longrifles exhibit a folk art that is more simplistic than sophisticated (Fig. 2). They are to be treasured for their rightful place in American history. However, as observed by Timothy Hodges of Aspen Shade, Ltd., “Unique artistic details on a rifle that are well done enhance desirability” (<http://www.aspenshadeltd.com/contact.html>). That translates into monetary value, since a nicely carved rifle might sell for twice the price of a plain one, all other things being equal.

In the 18th century, even utilitarian military arms such as the British Brown Bess had raised moldings (Neumann, 52). Although moldings are formed via the same tools as raised carvings, a distinction between the two should be made. To my mind, moldings are indispensable to the architecture of a Golden Age longrifle; they slenderize the wrist, integrate the cheekpiece, and extend the lock panels. Moldings are archi-

tecturally necessary to the grace of a longrifle, whereas raised carvings merely decorate surfaces that could stand smooth and proud without them. So if you feel intimidated by swirling tendrils and overlapping fronds, then introduce yourself to stock carving by cutting moldings first, leaving carving to the future until your skill catches up with your desires.

You cannot chicken out from cutting moldings by saying “I can’t draw.” You don’t have to be an artist to achieve nice moldings. I have a variety of French Curves (the plastic kind, not the sexy kind!) that will enable me to trace almost any curve I might need (Fig. 3). For some surfaces, one can use the French Curves directly; for more complex ones, trace

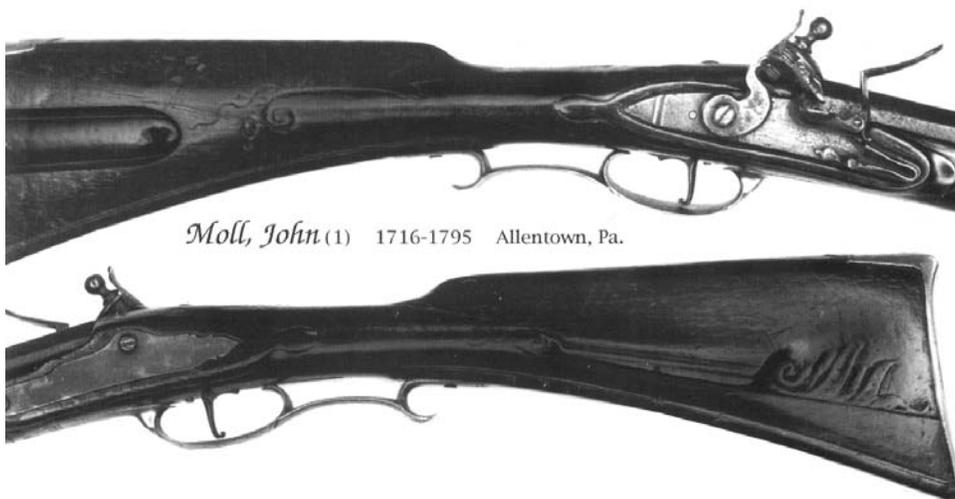


Fig. 2 – John Moll displayed his initials in cryptic symbolism that seems incongruent with the graceful lines of the Bethlehem School of rifle making (Chandler and Whisker 107).



Fig. 3 – My collection of French curves can be used to trace any molding, either directly or from a paper pattern.

off the desired curve onto a manila folder or some other material that is strong yet flexible enough to conform to the curvature of the stock. Producing a pattern from a photo of an original rifle is as easy as using a copier with an enlarge/reduce capacity. If the pattern copy is too floppy to easily trace around, glue it to a section of manila folder that will provide a durable edge for tracing. If your pattern defies your attempt to use a paper pattern, then go to drawing directly on the stock, drawing and erasing as many times as it takes to get a smooth graceful effect.

Don't get impatient with drawing and erasing; remember that the old gunsmiths didn't have pencils equipped with erasers – they used pieces of graphite for drawing and stale bread crusts for erasing (English engineer Edward Nairne developed the first rubber eraser in 1770, but it wasn't until 1858 that Hymen Lipman attached one to the back end of a pencil). Since you will be erasing a lot, you might want one of those little retractable erasers (like the Pentel Clic eraser) having a soft vinyl rod that removes pencil marks easily from wood and lasts much longer than a pencil eraser.

Furthermore, you can't use the lame excuse "I don't have fancy tools for that sort of thing!" to resist cutting moldings; it does not require a vast assortment of gouges or special tools. My molding tool kit includes a pencil with a hefty eraser, a little flexible 6-inch ruler (companies give these free as advertisements), a small veining tool (60° included angle) and a customized background tool (Fig. 4a). That little V-shaped veiner is a versatile tool for cutting incised carving and for outlining moldings or raised carving. However, it is important to understand its structure and function. The veiner has a "heel," much like that of a graver (Fig. 4b). Understanding the function of the heel is essential to good incised carving (as it is to engraving) because the angle of the heel determines the depth of cut. In other words, the heel acts as a fulcrum on which the tool pivots from shallow to deep. Practice will give you the feel and the feel is your feed-back as to whether the veiner is coursing too deeply or about to skitter across the surface of the wood. If the veiner is digging into the wood and making the cut too wide, lower the handle. If the veiner tends to ride upon the surface of the wood rather than cutting a neat little V, raise the handle a bit. Practice on a smooth, flat piece of scrap wood (preferably a piece of the same

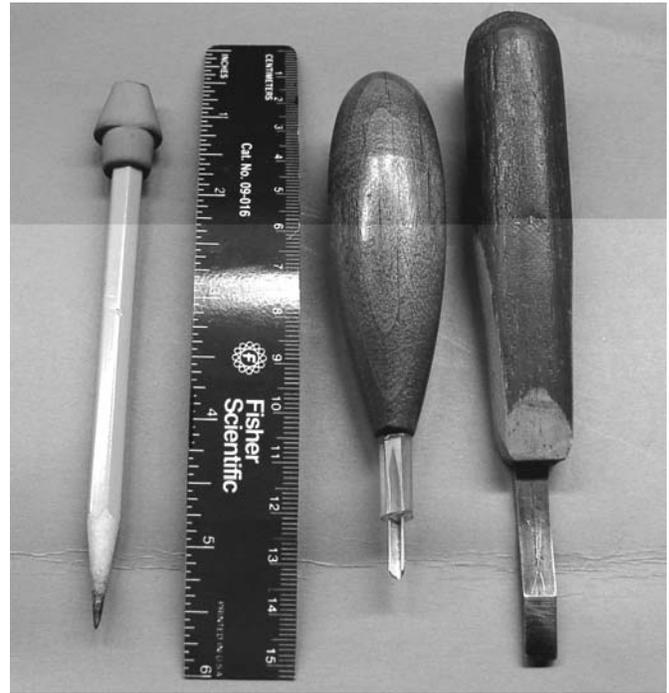


Fig. 4a – The tools needed for forming moldings are few and inexpensive. The only tool you might add would be a pocketknife with a blade custom-ground to get into tight crevices. Note the Tygon tubing on the veiner to protect the fingers from its edges



Fig. 4b – The veiner, like the graver, has a "heel" beveled into the belly of the tool. The graver (upper) requires only a tiny heel because it makes a relatively shallow cut into the metal and can negotiate tight curves. The veiner cuts a deeper, wider path that requires a more authoritative heel for control of the cut.



Fig. 5 – The shape and length of the chip will tell you if your veining tool is cutting with the grain of the wood.



Fig. 6 – Even under bright oblique light, a good tool will level the background to the point where little sanding is required



wood as your stock, or even better, waste wood that will later be removed from the stock). Once you start getting the feel of the veiner reacting to straight and curved cuts across the grain in flat surfaces, then work on some concave or con-

Fig. 7 – A pocketknife with a modified blade or a very sharp skill knife will get into the tight areas at the intersection of moldings. It is wise to tape a pocketknife open to prevent it closing. Although it is easier to follow a scribed line by pushing the point forward, a pocketknife blade can suddenly collapse closed and cut fingers. Safety first always!

vex surfaces. It is much more difficult there because the surface is constantly changing the angle of the heel, rather than your positioning of the handle.

The function of the veiner is also grain-sensitive; it is “happy” when it is cutting with the grain of the wood. You can tell if the tool is happy with the direction of the grain by the type of chip it produces. If the chip is continuously curling up from the work (Fig. 5), you are cutting in the right direction. If the chips are fragmented and the sides of the cut are tearing, you must change the direction of cut. Hard, straight-grained maple is pretty forgiving in this regard; highly figured “chippy” wood is not, nor is soft wood with low grain integrity. Of course, a dull tool will not cut cleanly in any direction.

The customized background tool (in Fig. 6) was ground at a 15° included angle from an offset tool steel blade purchased from Dru Hedgecock. Despite the thin angle, the edge stays sharp longer than any other chisel I own. If used carefully, it will level the background so that little sanding is necessary. Additional tools for getting into small crevices (of which there are not many in moldings) are a skill knife with a long, slender point or a pocketknife with a custom-ground blade (Fig. 7).

Moldings are functional as well as decorative, in that they are architecturally significant. On most carved rifles, moldings



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Fig. 8 – This simple molding serves the architectural necessity of delineating the transition of buttstock to wrist. A little bit of cleanup will smooth the raw edges.

are seen in the following areas: extending from the cheekpiece to the foot of the comb (Fig. 8), over the wrist and terminating (often in a minor decorative flourish) on the opposite side (Fig. 9). Moldings also define the tang of the breech plug (Fig. 10) and the lock/sideplate panels, often in one continuous bilateral molding. Moldings sometime run the length of the upper forestock to the muzzle cap. They usually terminate in a deco-



Fig. 9 – On the lock side of the wrist, the molding can end in a bit of a decorative scroll or continue down to integrate with the curvature of the trigger guard.



Fig. 10 – This simple molding around the tang allows reducing the vertical dimension of the wrist to produce a slenderizing effect.

orative flourish at the lower forestock, but some continue on as a raised rail back to the lock and sideplate panels.

My step-by-step procedure for cutting a molding:

1. Bring the stock to its “final” shape and smoothed to a 150-grit surface or finer. Do not leave extra wood – it won’t be needed. Moldings are only relieved .030-.040” except possibly the flutes of the cheekpiece edge. Then scrub the stock thoroughly with a clean toothbrush – nothing dulls a cutting tool faster than silicon carbide or aluminum oxide grit in the pores of the wood – so brushing and vacuuming are essential to lengthening the life of your tools.
2. For comb/wrist molding, draw the molding on one side of the stock right up to the crossover point on top of the wrist.
3. Draw the molding up from the other side to meet the first at the crossover point.
4. If the moldings need to match on both sides (as they would around the lock and sideplate panels), then draw locator lines using your flexible straight edge (Fig. 11).
5. Although you can’t see both sides of the rifle at the same time (unless standing in front of a mirror), the lock/sideplate moldings should be identical in shape and dimension as dictated by your indicator lines.
6. Make sure the lock and side panels are identical in shape before drawing the moldings. Insert the lock bolts in their nor-

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Fig. 11 – These locator lines will help to keep the lock panel and the sideplate panel as symmetrical as possible. I bolt my trigger plate and guard together as a unit, so I spread some AcraGlas™ under the forward return to stabilize it against the pull of the lock bolt.



Fig. 12 – Moldings around the lock panel of this little girl's rifle lead the eye forward and back to create a slenderizing effect.

mal positions and press a piece of typing paper down over them. Punch out the impressions, then gently trace around the edges of the lock panel with the side of a pencil lead (as one would do a pencil rubbing of tombstone lettering). Cut out the panel tracing and transfer it to the other side. Insert bolts

through paper and stock, and pencil around the template. Finally, shape the sideplate panel to the paper template before starting the molding.

7. Lock and sideplate moldings extend the panels fore and aft to achieve a slenderizing effect (Fig.12). Look at many



Fig. 13 a

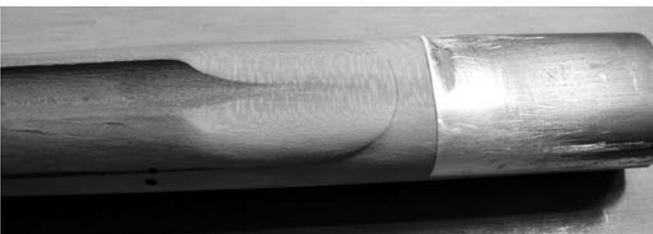


Fig. 13 b



Fig. 13 c

Figs. 13 a, b, c – Forestock moldings of the girl's rifle began just behind the muzzle cap (a). This molding usually ends short of the muzzle cap (b) to allow a little more room for the fingers to grasp the ramrod. The molding diminishes from raised to incised in the area of the entry thimble (c).

pictures of the period/school of rifle you are building and narrow down the appropriate choices before drawing directly on the stock. Keep erasing until you get it right.

8. Forestock moldings usually run from the muzzle cap (Fig. 13a, 13b) to the area behind the entry thimble where they often terminate in a raised or incised flourish (Fig. 13c). Likewise, a simple molding forward of the trigger-guard return (Fig. 14) provides a nice brass to wood transition and also allows a bit more slimming of the lower forestock. However, take care to determine the thickness of wood covering the ramrod hole in that sensitive area, lest you create the necessity for a "wear plate" (a euphemism for a patch covering a boo-boo).

9. Cut your molding lines using the little V-shaped veiner (refer back to Fig. 5) as previously described.



Fig. 14 – This little molding is probably the simplest to form, yet provides a significant architectural function in the slimming of the lower forestock.

Sculpting the edge of the cheekpiece would seem to be one of the easiest raised carvings to do since it mostly consists of straight lines (Fig. 15). However, straight lines are unforgiving of even minor errors and the eye is a harsh taskmaster. On Golden Age rifles, there were variations on variations in sculpting the cheekpiece, (combinations of incised lines, convex, concave, rounded or angular) but two characteristics seem to be inviolate: the lines are straight and they are also convergent. In other words, they lead the eye forward from the deep, angular butt to the slender arching wrist. In that sense, they are more architectural than decorative. When the beavertail cheekpiece (like those on Hawken rifles) came into vogue in the 1830s, the converging straight lines were replaced by a continuous sweeping curve from butt to wrist, sometimes flanked by a complementary, full-length panel (Fig. 16).

If you have completed a nice set of moldings, you should be proud that you have elevated your rifle to a higher level of

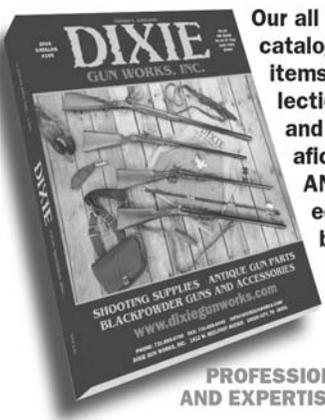


Fig. 15 – Two incised lines flanking a section of a tapered cone converge going forward to lead the eye from the angular butt to the arching wrist.

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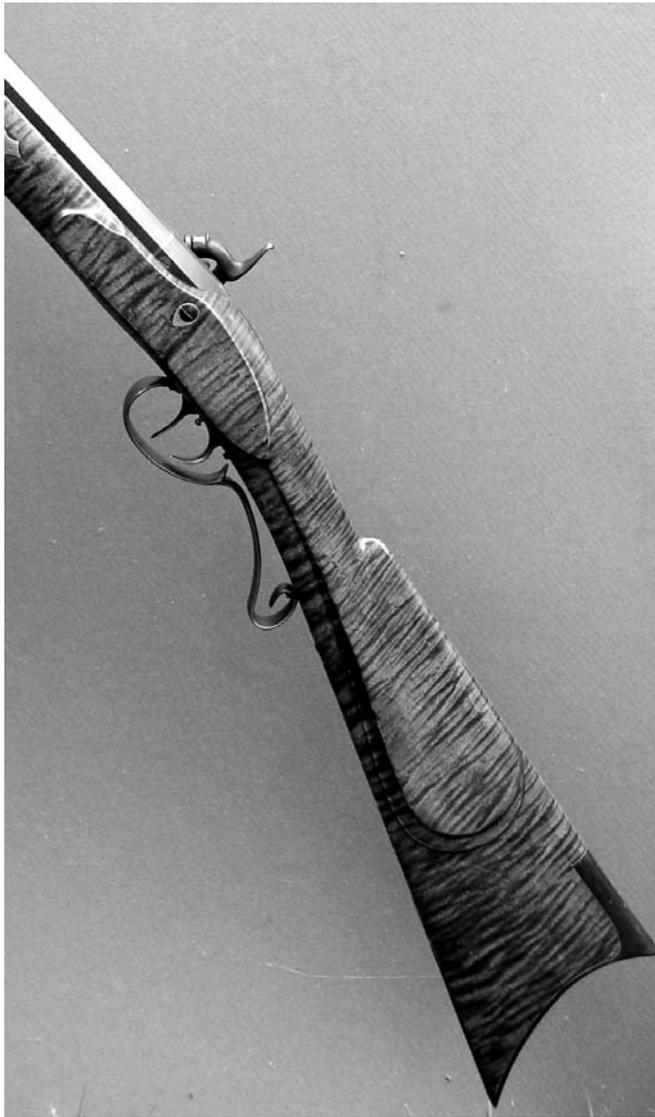


Fig. 16 – Even a molding can be “consumed” in the flame of highly figured wood, but it is there around the beavertail cheekpiece. It tapers to nothingness as it approaches the wrist and integrates with the point of the sideplate panel.

architectural sophistication. Moreover, you have shown yourself that the structured removal of wood is not a daunting task best left to higher beings. So, now you are prepared to do some decorative carving.

Next month, in Part II, that adventure will begin.

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