



# FORM FOLLOWS PROCESS

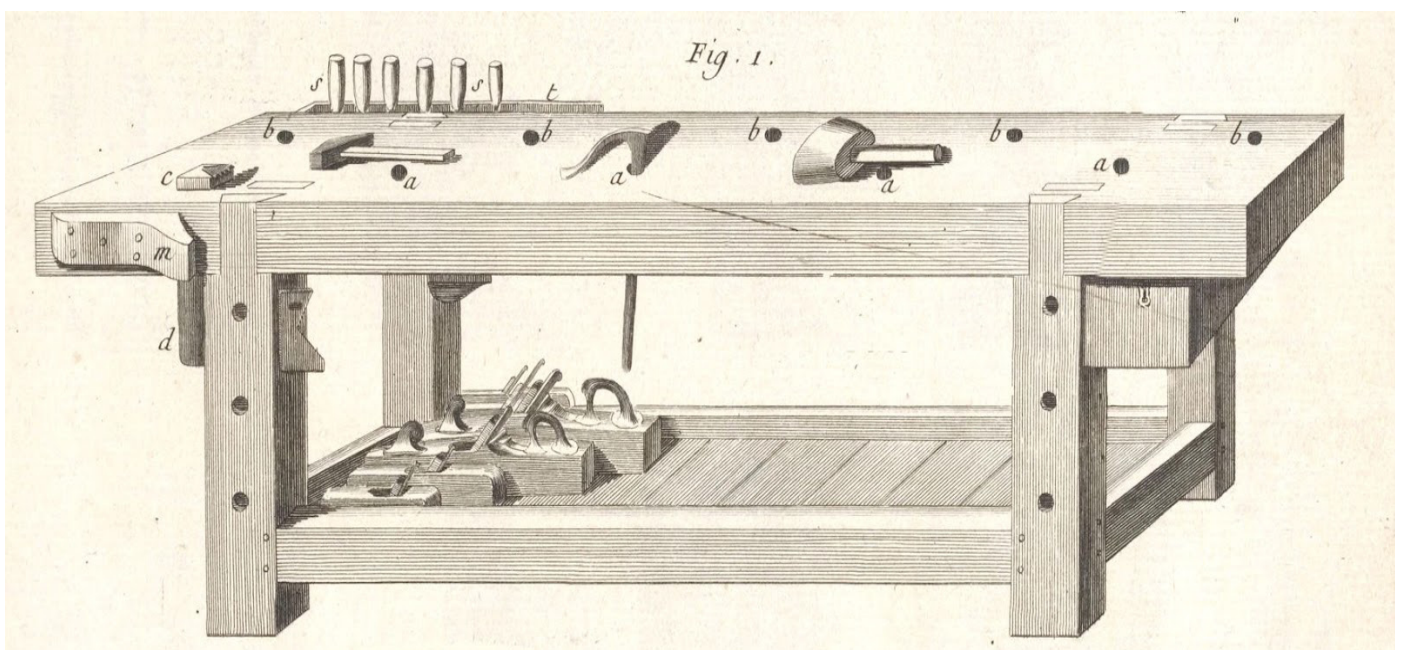
SOCIETY OF AMERICAN PERIOD FURNITURE MAKERS

W. Patrick Edwards  
January 2001

Today, furniture makers have a wonderful choice of hand and power tools available to them. There are those furniture makers who choose to use only hand tools, those who use only power tools, and the rest who will use any tool that will get the job done. It is important to recognize that the choice of tool is significant, and it will be evident in the final result. The form and decoration of the furniture is directly affected by the process used to make it. It maybe subtle, or it may be dramatic, but it is always apparent to the discerning observer. I use traditional hand tool processes to re-create period furniture at the bench. I say “at the bench” because I feel a reverence for the craft of furniture making, and a deep respect for those craftsmen who worked in pre-industrial shops.

I have spent 30 years working at the bench, restoring and re-creating period furniture pieces, and I have learned from careful observation of traditional construction methods. Hand tools were used in a pre-determined process, and each tool leaves some evidence of its passage. The scribe lines for marking, the chamfered corners, the jack plane, the scrub plane, the smooth plane, even the tothing plane leaves marks in areas which are not normally viewed. It is essential to leave unseen surfaces rough to make the piece as profitable as possible, and faster to make. I believe that using pre-industrial wooden planes create a pre-industrial surface, and that this has a direct impact on the final appearance of the work.

Since the industrial revolution there has been a continuous dialogue between philosophers, architects, mechanics, artists and craftsmen which seeks to explain the relationship between man and machines. Influential thinkers such as Pugin, Ruskin, Eastlake, Sullivan, Wright, Stickley, Hubbard, Moholy-Nagy, and others have all written extensively on this subject, with a wide range of divergent views. In recent times, the English woodworker, David Pye, made a distinction between “hand work” and “machine work.” He defined “craftsmanship” as the “workmanship of risk,” and contrasted this with the “workmanship of certainty.” The real question, Pye asks, “Is the result predetermined and unalterable once production begins?” (David Pye, “The Nature and Art of Workmanship” Cambium Press 1998 page?)





I know that there is certainly an element of risk when working with traditional hand-held tools. There is also an element of satisfaction when the tool is sharp and the work clean. Pre-industrial craftsmen were careful to keep their tools well tuned, and the method of using a series of hand planes, at the bench, produced very even results. Provided it is stable and fitted with a good clamping system for holding the work, the ease and efficiency of a proper workbench make it possible to produce a great deal of quality work in a short amount of time.

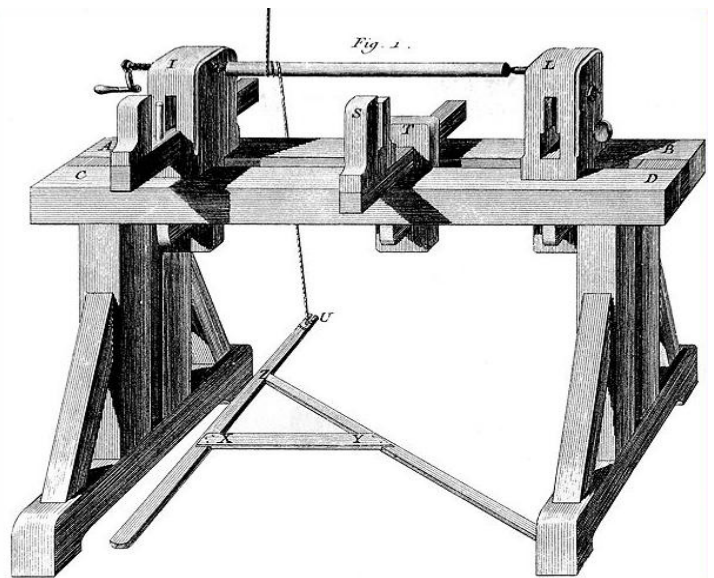
The amount of time it takes to create a piece of furniture has always been a consideration, and many workshops used a combination of workers and skills necessary to make the final result competitive. Young apprentices would assist the journeymen and the master could be left to perform the most important details. Passing the work through a system of craftsmen, increasing in skills and abilities, reduced the risks. By using a series of single purpose hand tool procedures in a pre-determined method, the quality was controlled, and production was efficient.

The surviving examples of pre industrial furniture from Europe and America bear witness to their high standards of quality, and the sheer numbers testify as to their efficiency of production..

Before the industrial revolution, the tools and the methods of working them dictated the overall appearance of the furniture. Three primary methods of creating furniture relate directly to the tools used: turning, carving and veneering. Each of these craft procedures went through long periods of popularity, and they directly affected both the form and decoration of the furniture.

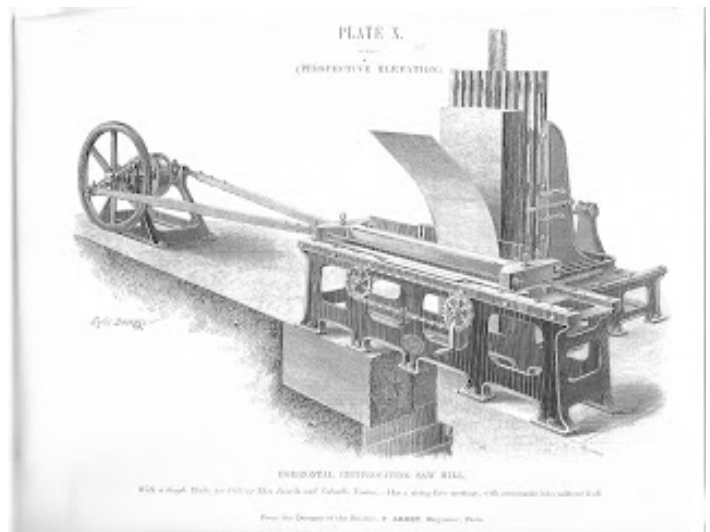
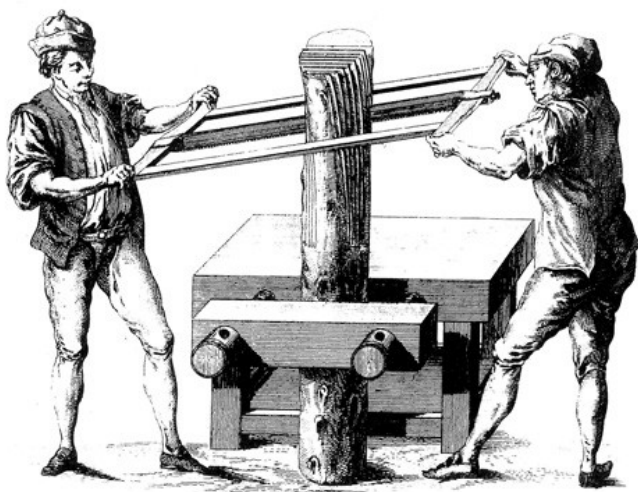
If turning was the primary method, the furniture included turned structural and decorative elements.

Very early Colonial furniture was frequently made with lathe turned elements, since a simple pole lathe was relatively easy to set-up and use. Even more complicated wood lathes were worth the effort, since a single turner could easily supply several furniture makers with turned elements, making the job profitable. The marks left by the turning tools on slow speed turned wood are evident, even under many layers of paint.



If carving was dominant, the overall form became shaped in all dimensions, with carving shapes pre-determined by the sweeps of the chisels. As trade increased in the Colonies, and wealthy clients demanded more expensive furniture, carving tools were imported and used to create highly decorated, shaped forms. The selection of chisels and the sequence in which they were applied to the work determined the final appearance rather precisely. The character and skill of the worker combined with their choice of tools to make a unique product. Each of the major cities developed schools of carving which are recognized by scholars today as discrete regional features.

If veneering was the principle method, the form generally featured flat surfaces with molding or inlay decoration. By the end of the 18th century a wide variety of imported exotic hardwoods were used in veneer form. At first the veneer was sawn by two men using a veneer frame saw. The marks of the saw were removed with the toothing plane, and both tools leave their impression which is visible on the glue surface of antique veneer. Early in the 19th century a water driven horizontal wood frame veneer saw was used in France, and this tool leaves very fine regular saw marks on the back of the veneer. These saw marks were so fine it was no longer necessary to tooth the back of the veneer. With steam power, large circular saws were constructed which cut the veneer much faster, leaving a rougher surface, again requiring the toothing plane. It wasn't until much later in the 19th century that techniques were developed to steam the log and slice the veneer with a knife, leaving a smooth surface. The presence of sliced veneer proves that the furniture was made in a post-industrial workshop.

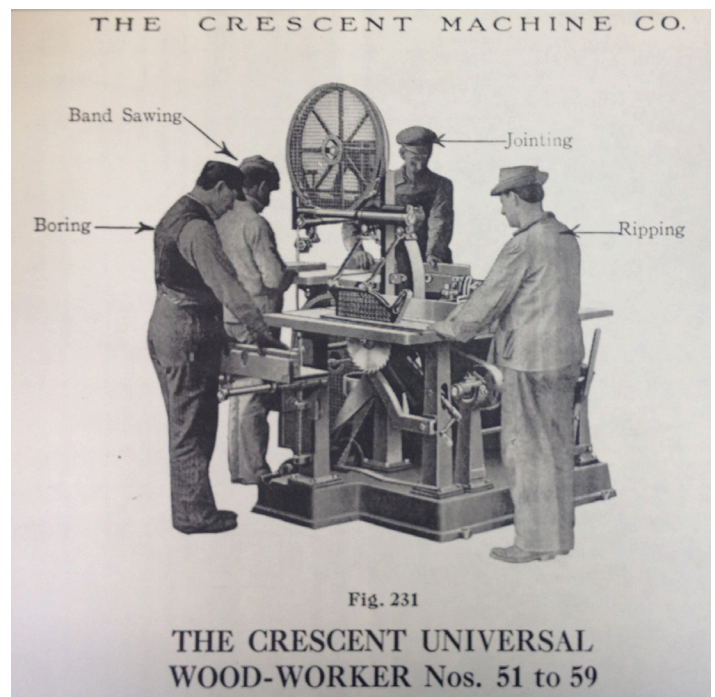


In the field of decorative arts, the start of Queen Victoria's reign in 1837 is generally considered the period when the effects of the industrial revolution began to affect the general population. "By 1840, with a rapidly expanding market, there had been a definite change from individual assembly of furniture to the mass production of parts, which were shaped with the aid of lathes and scroll saws powered by steam driven machines." (Metropolitan Museum of Art, "19th Century America" 1971, p.xiv) Combined with rapidly improving water and rail freight systems for distribution of goods, the emerging middle class was able to furnish their homes with spool turned and highly decorative furniture in the latest revival styles.

Victorian industrial inventors created an explosion of new tools for woodworking. Powerful cast iron tools, driven by leather belts from water and steam power sources, transformed the craft of furniture making. In 1844, Mitchel and Rammelsberg, established the first large furniture factory in Cincinnati. By 1870 the majority of the factories in the Cincinnati region were using steam power to drive circular saws, scroll saws, cross cut saws, mortisers, planers, borers, lathes and tenoning machines. Each new invention in process was followed by a sudden popularity of decoration made possible by that machine. "The relative ease with which templates for carving machines could be changed and patterns for tracing lathes could be replaced is...related to the rapid succession of revival styles in the late 19th century." (Polly Anne Earl, "Craftsmen and Machines" Winterthur Conference Report on Technological Innovations and the Decorative Arts, 1973 page 324).



The introduction of these new tools changed the workplace environment, altering the relationship between the worker and his methods. Since these early power woodworking tools were large and fixed in place, furniture was made more and more “at the machine” and less and less “at the bench”. Consider how this change in process affected the act of carving. Before the introduction of power, carving consisted in fixing the work to the bench and holding the chisel in the hand. During the Victorian period, the belt driven carving machine, with a small rotating head mounted onto a fixed base, was used in the opposite manner; the work was held in the hands and pushed against the machine. As technology evolved into the 20th century, it has become possible to use portable power tools at the bench, as well as highly efficient fixed power woodworking tools in the everyday workshop.



Contemporary woodworking studios usually contain a combination of power and hand tools, with either the workbench or the table saw as the center of activity. “Lest we retreat entirely into romantic nostalgia for the good old days of handcraftmanship, it must be observed that fine craftsmen are the first to welcome labor-saving devices into their shops.” (Johathan Fairbanks, “The Craftsman in Early America” Winterthur 1984 page 316)





During the 20th century only a small percentage of furniture shops have continued the tradition of pre-industrial methods of production, making a living with specialized hand work. In Europe and England a stronger craft tradition has survived, while in America the trade of producing furniture with hand tools almost disappeared. The resurgence in interest in traditional techniques during the last decades of the 20th century has led to the creation of furniture guilds and individual trade schools. There is a growing interest in hand made traditional furniture and a commercial acceptance of its high cost. As the value of the original period furniture rises dramatically, attention is focused on re-creations of early designs which are made using the same techniques. Educated collectors carefully look for pre-industrial tool marks which are evident on antique furniture to prove its authenticity. These same tool marks should be visible on the re-creations, since the form follows directly from the process used in its creation.

The difference between a period reproduction made in a large factory in High Point, North Carolina and an individual re-creation of the same piece made in a one man shop is dramatic. Industrial technology is too perfect. The “workmanship of certainty” which produces identical forms at a high rate of speed and a low cost can only make reproductions which look modern. As we enter the 21st century, we must realize that there is an important place in our lives for the “workmanship of risk” and that knowledge, skill and craftsmanship still have a respected position in the marketplace.

W. Patrick Edwards