

# MIND, HAND, AND EYE

## *Creating Marble Sculpture*

BY FRED X BROWNSTEIN, FNSS





Fred Brownstein at work. Photo: Andy Lay.

*Andy Lay*



Creating marble sculpture requires the simultaneous coordination of mind, hand, and eye. Like any true art form, one learns this with training and practice. We define “carving” as cutting stone with edge tools.

When Daniel Chester French (1850 -1931) decided to have his sculpture carved in marble, he shipped his plaster models to Italy. Fortunately, in 1888, the Piccirilli brothers emigrated from Massa, Italy, relocating their studio to Bronx, New York. The Piccirilli were a family of six brothers who worked with sculptors and architects to realize their concepts in marble including the Lincoln Memorial, completed in 1922.

It is commonly thought that a marble sculpture is made by one person; however, this is the exception, not the rule, and generally sculptors always hire a crew of skilled craftsmen called *artigiani* in Italian to translate their original models into marble sculpture. Historically, marble carving was considered a trade or craft; however, an Italian *artigiano* is familiar with art history, a variety of aesthetic styles, and will understand an individual artist’s intention.

Each carver is specialized in a particular phase of the work and a statue was passed from hand-to-hand as everyone contributed toward the finished sculpture. There is great camaraderie among stone carvers in the studio or *laboratorio*. They know each other well from years of laboring together toward a common goal. Marble sculpture is hard work and takes a lot of time. Each phase must be done precisely and there are at least four phases or “passes” over the initial marble block.

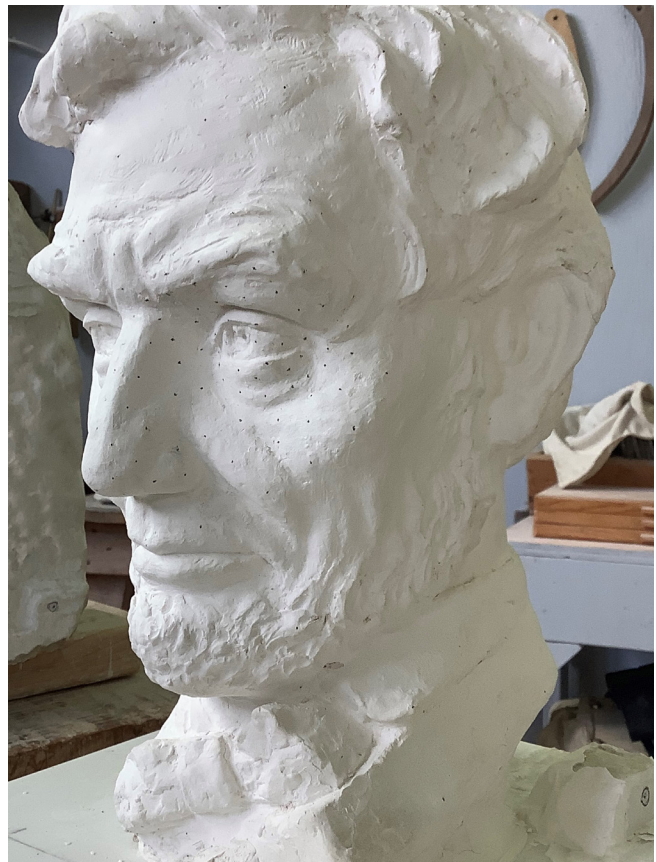
For Daniel Chester French, the term “sculptor” meant an artist who created the original artwork in clay. The clay sculpture was given to a mold-maker (*formatore*) who made a mold over the clay and took a plaster cast from the mold. The plaster cast served as the model for the marble sculpture. Sculptors would often do some final finishing after the work was completed by the *artigiani*. In the end, their personal touch and approval was needed before the artwork was ready for installation or exhibition.

## PROCESS

Of course, one begins with an appropriate size and quality marble block. The block is roughed out removing the



Above: The sculpture is “born from the block.” “X” marks are one pencil width from the final surface. Points are on the final surface. Below: Close-up view of points on the plaster model. Photos courtesy of the artist.







Above: Fred Brownstein using a pointing machine. Photo by Andy Lay. Below: This photo shows the points on the plaster model and the various stages of the process: roughed out, transfer of points, *ungbietto* marks, tooth chisel marks, and flat chisel. Photo courtesy of the artist.





extra stone and shaping the main planes around the form. Form is defined as: “where the object meets the air.” The roughed-out work has a “fat” inch of marble left over the entire sculpture in the front and two inches in the back. Marble is carved top to bottom, front to back; never undercut. After roughing out, the work passes to the *smodellatore* who carves it to the depth of the width of a pencil, cutting to the next, more complex level of planes. The sculptor uses a tool called the *unghietto* to prepare the surface for modeling with tooth chisels. The edge of the *unghietto* has the shape of a fingernail. He also sets the points precisely on the surface of the sculpture. *Smmodellare* in Italian means “modeling by removing.”

Points are precise measurements taken from the plaster model and transferred to the marble. These provide a “guide to the eye” for the *scultore* who completes carving the form. A *scultore* is specialized in carving the figure, hands, feet, head, and prepares the work for the fourth pass—the surface finish. Each surface may reflect light differently, giving life to the work. For example, skin has a smooth surface done with special rasps that have tiny teeth which leave a skin-like effect on the stone. Drapery is finished with the texture of cloth depending on the type of material. There is an *artigiano*, called a *raspatore*, specialized in finishing. The *raspatore* is responsible for skin texture and details of the fingernails and toenails. Drapery is completed by the *pannista* with special tools for the interior of folds. Another carver, called an *ornatista*, may be hired to finish the flowers and foliage. The *ornatista* would carve any decoration (ornament) and would create the resemblance of sheep’s wool, dog hair, or fur.

## POINTING

There are two methods for pointing. When the sculpture is to be the same size as the model, 1:1, we use a tool called the *macchinetta*. A *macchinetta* is a measuring device that shows the exact depth and placement of any point on the form. If the work is enlarged from the model, then three compasses are used to locate the point with a ratio of enlargements, i.e., 1.25:1. This technique is passed down from ancient Greek sculptors who understood spherical geometry. It is too complex for me to adequately describe in a brief article. The methods of marble

sculpture can only be learned by hands-on practice with a master stone-carver.

## MODERN TECHNIQUES

It is difficult to know just when pneumatic hammers became commonly used in sculpture studios. The first ones in the United States were made in the mid-1920s but took years to become ubiquitous as marble-carving tools. Until then, sculpture was made with either iron or steel hammers and the variety of chisels were handmade by blacksmiths. Both pneumatic hammers and standard ones use the same type of carving tools except the back end of a pneumatic tool is turned on a lathe to fit into the open end of an air hammer.

## TOOLS

There are a few basic tools with a variety of dimensions to suit the work:

*Scapezzino* – The pitching tool removes large pieces of stone from the edge of the block.

*Subia* – Point for roughing out major planes.

*Unghietto* – Used to further reduce the roughed-out planes and prepare the surface for tooth chisels.

*Gradino* – Tooth chisels which are used to model the planes between points and develop the form.

*Scalpello* – Flat chisels to carve the final surface of the form.

Finishing the surface requires cuts with sharp-edged tools or a variety of abrasives such as rasps and honing stones. If desired, the sculpture could be polished using tin oxide polishing powder with a damp felt cloth.

## DIGITAL TECHNOLOGY

No discussion of marble sculpture is complete without mentioning computer-controlled milling machines. The artist scans the desired shape and a robot uses various diamond wheels and bits to grind out the sculpture. These machines have advantages and limitations—I only hope they don’t contribute to the extinction of a long, great tradition of craftsmanship. Marble sculpture is already an endangered art form because as the older generation of *artigiani* passes on, there are fewer active studios and



Top row, left to right: rasps - honing stones. Second row: eye and hearing protection, paper hat; pneumatic hammers and chisels: unghietti, tooth chisels, and flat chisels. Third row: iron and steel hammers; pitching tools, points, *unghietto*, tooth chisels, and flat chisels. Photo courtesy of the artist.

younger sculptors are choosing less labor-intensive media for their artwork. The good news is that there still is a demand for custom hand-carved stonework and a dedicated group of sculptors supply architectural restoration, lettering, custom cemetery monuments, and accept sculpture commissions.

In the United States, the Stone Carvers Guild is a nation-wide organization of professionals capable of all types of custom carving. And, of course, there are a few remaining active studios in Italy, in Pietrasanta and Carrara. There are also workshops with experienced instruc-

tors such as Southwest Stoneworks in Dixon, New Mexico, and workshops are offered in Colorado, Vermont, and New York, as well as by organizations of stone carvers in California and the Northwest.

A sculptor may be considered archetypal in the evolution of humanity. One has the ancient passion for creating artwork with stone. We are connected to the long line of artists who have given us marvelous architecture and masterpieces of sculpture. We are last in line but, when our work is worthy, we may feel the presence of the Muse guide our hands. ●

---

Fred X Brownstein, FNSS, lived and worked in Italy for 16 years, from 1975 through 1991. He was an apprentice in the Enzo Pasquini sculpture studio in Querceta, Italy, for four years, training with masters Vincenzo Donati, *smodellatore*, and Sirio DeRanieri, *scultore*. Brownstein's studio is in Vermont where he creates contemporary marble sculpture with traditional techniques.