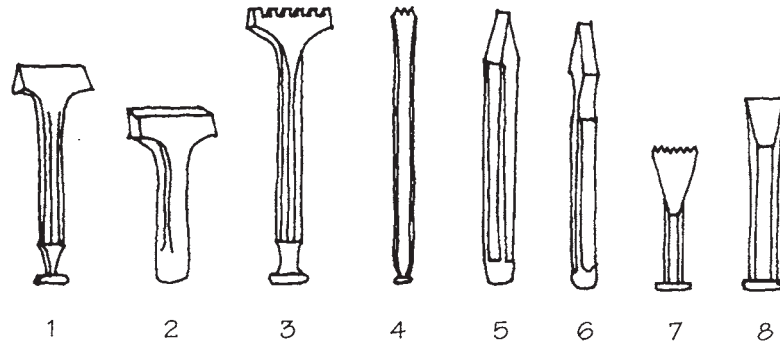




Figure 5-2 Quarrying stone. (Photo courtesy Georgia Marble Co.)

dust. Larger surfaces are done by machine, smaller surfaces and moldings by hand. Polished surfaces require repeated rubbing with increasingly finer abrasives until the final stage, which is done with felt and a fine polishing material. Only granite, marble, and some very dense limestones will take and hold a high polish. Power-driven lathes have been developed for turning columns, balusters, and other members that are round in section.

Hand tooling is the oldest method of stone dressing. Working with pick, hammer, and chisels (see *Fig. 5-3*), the mason dresses each successive face of the stone, giving it the desired finish and texture. The drawings in *Fig. 5-4* illustrate the various steps in dressing the face, beds, and joints of a rough stone. Other hand-applied finishes include the bush-hammered, patent-hammered, pick-pointed, crandalled, and peen-hammered surface (see *Fig. 5-5*). Many of these finishes are now applied with pneumatic rather than hand tools, resulting in a more uniform surface. Ornate carving is still done by hand,



1. 2-3" wide drove chisel
2. 3-1/2—4-1/2" wide boaster or bolster tool
3. 19th century tooth chisel
4. 16th century Italian tooth chisel
5. 19th century narrow chisel
6. splitting chisel
7. 1-3/4" 7-tooth chisel
8. 1-1/2" chisel

Figure 5-3 Traditional stone chisels. (From Harley J. McKee, *Introduction to Early American Masonry*, National Trust for Historic Preservation and Columbia University, Preservation Press, Washington, D.C., 1973.)

both for new construction and for restoration and rehabilitation projects, although it is sometimes aided by pneumatic chisels.

Another finishing technique that produces a roughened surface is called flame cutting, or thermal finishing. A natural gas or oxyacetylene flame is passed over a polished surface that has been wetted. The water that has been absorbed by the stone changes to steam and breaks off the surface, leaving an irregular finish. This finish can be selectively applied to portions of a stone surface to provide contrast.

A polished finish, by providing some measure of sealing of the stone pores, helps protect the surface of the veneer from deterioration by atmospheric weathering agents. A thermal finish, frequently used on granite, reduces the effective thickness by about $\frac{1}{8}$ in. Bush-hammered and other similar surface finishes also reduce the effective thickness.

In addition to geologic origin and mineral composition, stone can be identified by the form in which it is used. Stone is used for masonry construction in many forms and is available commercially as (1) rubble stone, (2) flagstone, (3) dimension stone, (4) thin veneers, and (5) tile. Stone rubble is irregular in size and shape. *Fieldstone rubble* is harvested from fields in its natural form. It is weathered smooth, but irregular and uneven (see Fig. 5-6). *Quarried rubble* comes from the fragments of stone left over from the cutting and removal of large slabs at the stone quarry. It has freshly broken faces, which may be sharp and angular. Rubble may be either broken into suitable sizes or roughly cut to size with a hammer. Some common types of stonework are shown in Fig. 5-7. *Flagstone* consists of thin slabs from $\frac{1}{2}$ to 2 in. thick in either squared or irregular shapes. It may be quarried material that has been cut into flat slabs, a field stone that is naturally flat enough for paving, or a stone that naturally splits into thin layers. Surfaces may be slightly