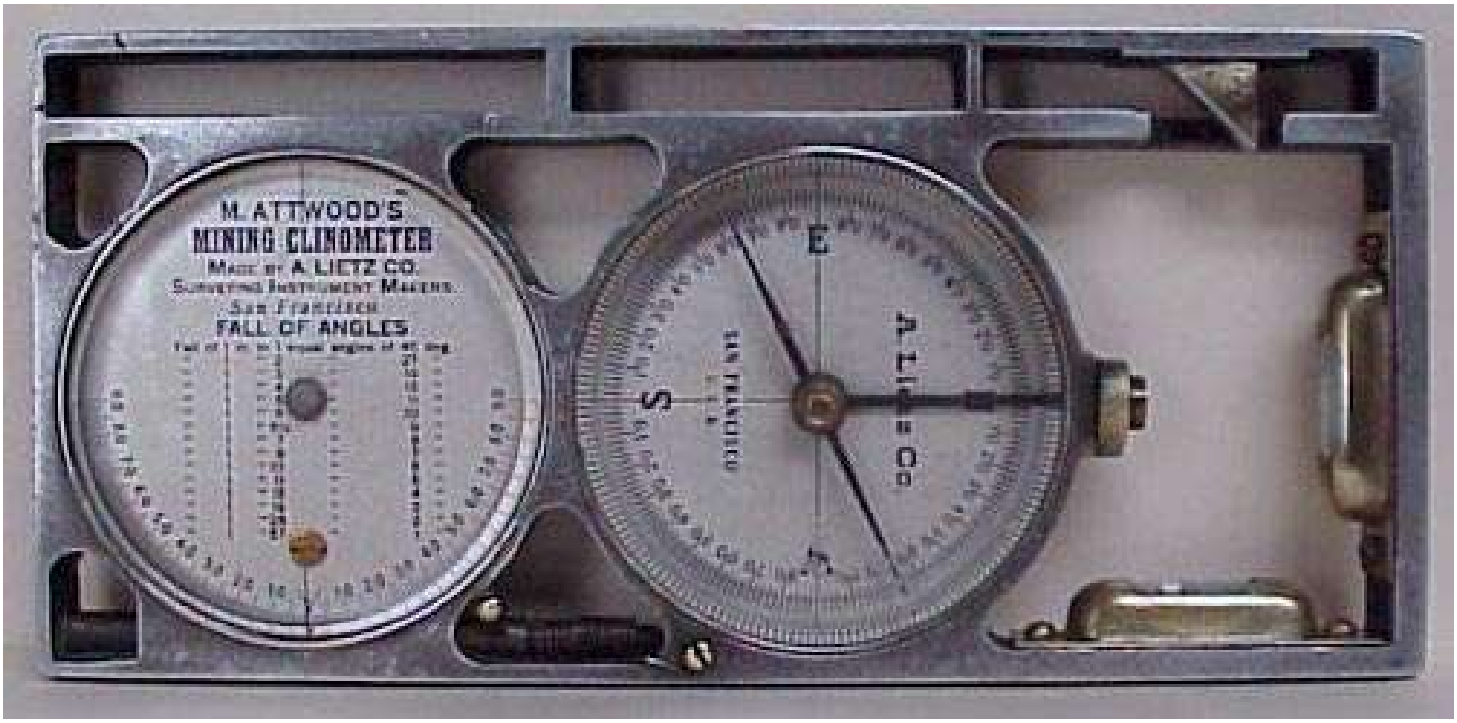
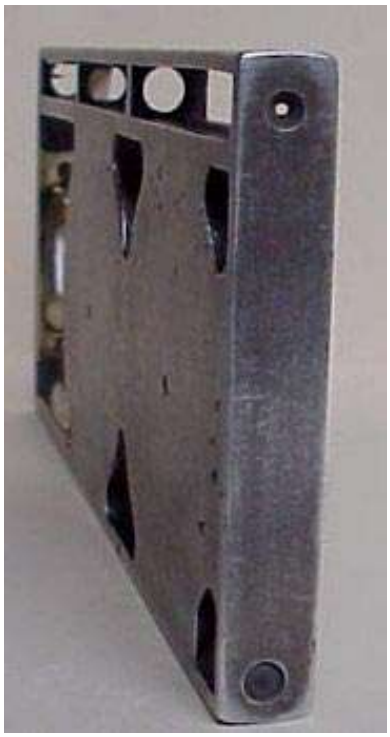
Mining Clinometer

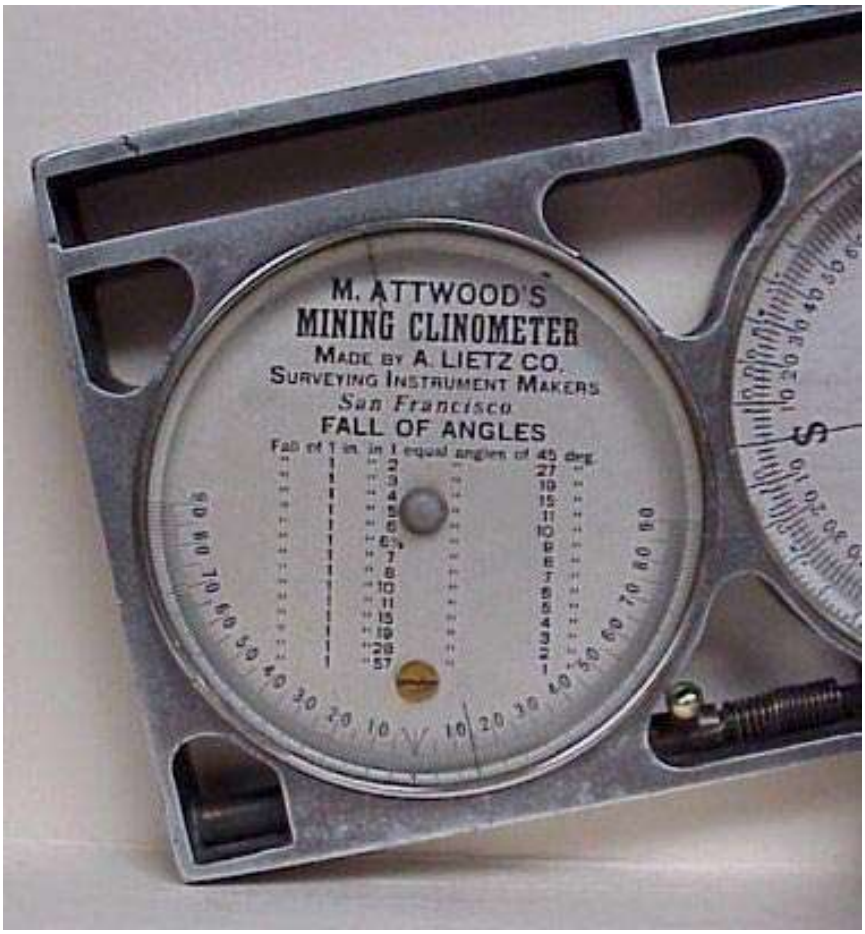
by Dave Johnson



A clinometer is a device used to measure the line of sight above or below horizontal (height, slope, and vertical angle). They are used in the construction, timber and mining industries. They were used by miners to measure angles; the angle of a sloped mine passage, angle of an inclined shaft, angle or dip of an ore vein. They work using principles of angles and geometry.



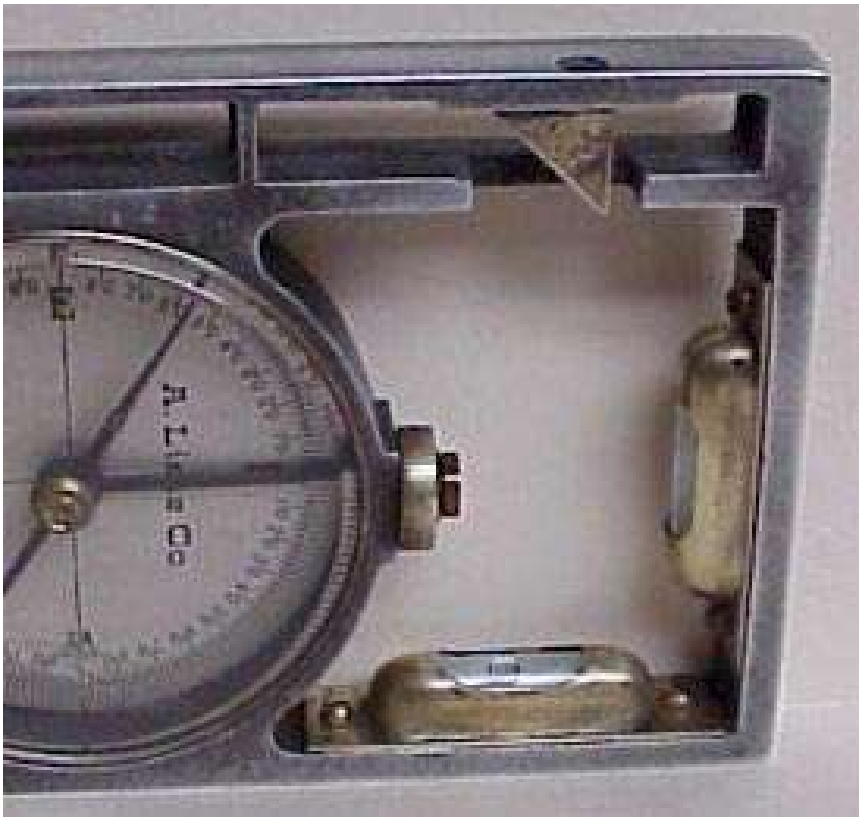
Sighting holes viewed from end.



Clinometer tipped showing 14 degree upward angle

Shown here is a clinometer/compass labeled "M.Attwood's Mining Clinometer Made by A. Lietz Co. San Francisco". I have had no luck finding any information on M. Attwood. However, Adolph Lietz was born in Leubeck Germany in 1860. He immigrated to the United States, arriving in San Francisco in 1879. Lietz worked for a year in more than one scientific instrument shop before he purchased the business of Carl Rahsskopff, in 1880. In 1882 Lietz changed the firm's name to A. Lietz & Co. Initially his firm produced surveying instruments and related tools. Lietz incorporated in 1892 under the name A. Lietz Co.and in 1910 added a complete line of drafting materials and engineering equipment was added. In 1947, rather than re-tool to manufacture more modern surveying instruments, the firm stopped manufacturing instruments and became an importer and distributor . In 1965 the firm name was changed to The Lietz Company.

This instrument measures 6 1/2" long x 2 7/8" high x just 7/16" thick. The frame is aluminum with all other parts being brass. There are vertical and horizontal bubble levels on the right side. The compass is released and locked in place with a brass knurled cam knob. The clinometer is locked in place and released by a spring loaded lever located at the lower right of the dial. The instrument sight is at the top of the dials. Unlike most instruments used in mining this one is actually marked MINING.



Bubble Levels