

Antique Surveying Equipment - "Jacob Staff"

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When you hear the term Jacob (or Jacob's) staff, you probably have a mental image of a single pole used to support a compass. However, the original Jacob staff was actually a surveying instrument developed in the 1300's that was used in making nautical and astronomical measurements.

The original Jacob staff, or cross-staff, was a single pole device credited to Levi ben Gerson (1288-1344), who was one of the leading Jewish mathematicians of the 14th century.

The pole was marked in degrees, and the altitude of stars could be determined by using a sliding wooden panel on the rod.

The American version of the Jacob staff seems to have only borrowed the name. Its function, as we know it, was to provide support for a compass.

In an manufacturer's catalog from the 1880's, the surveyor's compass is described as being fitted to a slightly conical spindle with a spheri-

cal ball on its lower end. The ball is confined in a socket by pressure so slight that the ball can be moved in any direction in the operation of levelling the compass.

The spindle and the ball-and-socket are part of the brass head of the Jacob staff. The brass head and a shoe, pointed with steel, were the mountings that we sold to make up the Jacob staff.

The catalog suggests that the staff itself, to which the mountings securely fasten, could be procured from a wheelwright or selected from a sapling in the forest.

The 1880's catalog had the following listing:

Staff mounting, brass head (without spindle)
\$2.50 plus \$0.18 postage

Staff mounting, steel point \$0.60 plus \$0.18 postage

To estimate today's value of a Jacob staff, I refer to Bud Uzes's book, Illustrated Price Guide to Antique Surveying Instruments and Books. It lists an 1870 W. & L.E. Gurley Jacob staff at \$100. and an 1887 K & E without a ball-and-socket arrangement is listed at \$60.

While the tripod was in existence during the same period, the Jacob Staff was often preferred because it was lightweight and less bulky than the tripod. However, there was a compromise in accuracy with the Jacob staff, and there were areas where soil conditions limited or prohibited its use.

There are probably fewer Jacob staffs to be found today than compasses or chains. This is because there were only a limited number originally sold, and some were no doubt discarded when the surveyor acquired a tripod. Also, if the Jacob staff was separated from the brass head and shoe, it may not have been recognized as part of a surveyor's outfit.

The Veterans Luncheon

