

Tick Tock, Who Needs a Clock When You Have a Sundial?

By Patricia Kelleher Bartram

We are especially conscious of time during the autumn and spring seasons when we engage in Daylight Savings Time. We turn our clocks back to gain an extra hour of light in autumn to combat the growing winter darkness (“fall back”), while we turn them forward to gain an additional hour of light each spring (“spring forward”).

Earliest Instances of Marking Time

When did humans begin to mark time, especially related to sunlight? While no one knows for sure, archeological evidence has shown that ancient cultures, such as Babylonians and Egyptians, began to measure time at least 5,000 years ago. Not unlike today, it helped them organize communal activities, public events, in trading practices, and perhaps most importantly, to regulate planting and harvesting cycles.

They used three natural cycles: the solar day, marked by the periods of light and darkness as the earth rotates; the lunar month, following the phases of the moon as it orbits the earth; and the solar year, the changing seasons that accompany earth's revolution around the sun. But the basic unit of time was measured by daylight. Other early civilizations, such as the Greeks and Mayans, also understood that time could be calculated by the position of the sun and the shadows it cast.

Sundials Come into Being

Although there is no record of the first sundial or its inventor, it is the Egyptians who are generally credited for its creation. By 1500 BC, they had had perfected a “shadow clock,” a more portable device that measured time throughout the day. In fact, personal sundials were popular with the Romans, as evidenced by the some 500 that have been discovered, including 36 in Pompeii.



How Sundials Work

When the earth rotates on its axis, the sun moves across the sky casting shadows. As the sun changes positions over the course of a day, the shadow cast by the perpendicular gnomon changes to align with the different times marked around the outside of the circular plate on which the gnomon sits. The gnomon is the triangular-shaped piece that stands on the base plate that casts the shadow, which in the northern hemisphere points south.

Boylston's Sundial

Among the special collections of the Boylston Historical Society and Museum (BHSM) is an interesting personal timekeeper, that of a hand-held sundial that dates to about 1770. It is metal, with a 3-inch circumference and a gnomon that stands 1½ inches tall. This sundial was owned by Boylstonian Silas Hastings Jr. (1779-1833). Although it is said he carried and used it as a personal timepiece, much like a pocket watch, the three holes in its base are evidence that it was at some time bolted or screwed down.

Hastings was the first proprietor of the brick-built historic Hastings Tavern at 701 Main Street at the corner of Scar Hill Road. He was the son of Silas Hastings and Esther Perry, born in Shrewsbury North Precinct, Massachusetts (now Boylston) in 1779. He married Polly Andrews in Boylston in 1800. Just over a decade later, in 1811, he acquired a taverner's license and built the brick Federal-



style inn and tavern in Boylston Center, which was a local hub of commercial and civic activity. Over the course of his adult life, Hastings held a number of town offices including Selectman and Town Treasurer. He died in 1833 of apoplexy, which we today define as unconsciousness or incapacity resulting from a cerebral hemorrhage or stroke, at the age of 54 years.

Hastings' sundial was donated to the Sawyer Memorial Library in September 1906 by his grandson, Silas Hastings Loring (1833-1911), and was given to the BHSM collections in 1976.

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