Once on a Wednesday excursion when I was a little girl, my father bought me a beaded wire ball that I loved. At a touch, I could collapse the toy into a flat coil between my palms, or pop it open to make a hollow sphere. Rounded out, it resembled a tiny Earth, because its hinged wires traced the same pattern of intersecting circles that I had seen on the globe in my schoolroom—the thin black lines of latitude and longitude. The few colored beads slid along the wire paths haphazardly, like ships on the high seas.

My father strode up Fifth Avenue to Rockefeller
the prime meridian to the Azores and to the Cape of good hope, which is the true north-west coast of Africa, later named the Madeira Islands (now called the Canary Islands after the Portuguese explorer). He chose to run it through the Pernambuco Island, the zero-degree longitude line. Whenever he

Problems were free, however, to lay this prime mer-

cine. When the prime meridian is crossed, the earth

ends of the Earth.

circles of the same size, so they all converge at the

North Pole. They both go on to the other way: they log on

degrees in a series of shrinking concentric circles. The mer-

times, the parallels, really do stay parallel to each

other. At the equator and along the equator, the lat-

itude line, the parallels, really do stay parallel to each

other, the latitude and longitude lines govern

planet.

cirl symbol of all the real lands and waters on the

circle, the prime meridian. Even then I could recognize,

des of the Americas, the Atlantic Ocean, the

meridian lines. The Equator: the divide, the

in my hands, was a see-through world, defined by

the bronze orb that always held aloft, like the wire

Center with me on his shoulders, and we stopped to

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was entirely unnecessary up to and including the era
cosible today from any port of cheap instruments—
places at once—a longitude parallactic so easily ac-
knowledge of the hour in two different
for to virtually nothing at the poles.
one degree strikingly different at the equator.
ues of time the world over, but in terms of distance,
that the longest day at each degree
stretch fully one thousand miles. North or South of
the earth the earth is greatest, through degrees
spend to a distance traveled. At the equator, where
those same higher degrees of longitude also cor-

These higher degrees of longitude are

discrepancy between them translates into another hf.
and then consult the home-port clock, every hour's
noon when the noon reaches his highest point in the sky,
se, when the navigator enters this ship's clock to local
waves of longitude to the east or west. Where day at
degrees of longitude to the earth or west. Every day at
ship and the starting point marks a progress of fifteen
and so each hour's time difference between the
hours, and so each hour's time difference between the
hours. And so twenty-fourth of a spin, or difference de-
will revolution of the hundred sixty degrees, one
the earth takes twenty-four hours to complete one
hour difference into a geographically separation. Since
the two clocks enable the navigator to convert the
of known longitude—at that very same moment. The
and also the time at the home port or another place
at sea, one needs to know what time it is aboard ship

The measurement of longitude meridians, in com-

veden
need him to the Indies, and not the Americas Inter-
journey, and the technique would doubtless have cer-
Atlantic when we sailed the parallel on his 1492
Columbus followed a straight path across the
the sun of known guide steps above the horizon. How-
oughly the earth was circle, by the height of
Any sailor worth his salt can gauge his latitude well

world for the better part of human history.

Leaven—once that stretched the wisest minds of the
ion of longitude, especially at sea, into an adult de-
the measurement of longitude, child's play, and wins the determin-
shakes like the sands of time. This difference makes

Here lies the real hard-core difference between

Jan is a party political decision.

Line of reference. The placement of the prime meri-
the same, especially for any other for a staring
London. As the world turns, any line drawn from pole
some other places, before it settled down at last in
Vereen Islands, as well as Rome, Copenhagen, Jenu-

sighted to move their clocks. The clocks could

Jan 30 02 08:24 a
In the course of their struggle to find longitude, scores of ships were lost or severely damaged. On the open ocean, ships were often stranded at sea, and the brave crews of the ships had to navigate by the stars. Meanwhile, in Europe, the quest for longitude led to the development of more accurate and practical methods. In the 17th century, Robert Hooke, Christiaan Huygens, Jean-Dominique Cassini, and others were among the astronomers who approached the longitude problem to test their accuracy and practicality.

As more and more sailing vessels set out to explore the world, forces attributed to good luck or the grace of God were often invoked. For instance, Francis Drake and Ferdinand Magellan, two of the great captains in the Age of Exploration, both encountered favorable winds on their voyages.

The active quest for a solution to the problem of longitude led to the development of the pendulum clock. On the deck of a rolling ship, such clocks would slow down, or speed up, or stop altogether. Normal changes in temperature and humidity would affect the internal mechanisms of the clock, making it unreliable for navigation.
of determining longitude.

His work earned him the title of 'Father of Clocks' and led to significant advancements in navigation and timekeeping.

Despite the challenges, Harrison refused to give up on his quest for accuracy and continued to refine his designs. His contributions to the field of navigation were recognized, and his name became synonymous with precision timekeeping.

Harrison's legacy is not just in the clocks themselves but in the philosophy that underpinned his work: the belief that accuracy and attention to detail could be achieved through rigorous experimentation and relentless pursuit of perfection. His contributions to the field of science and technology continue to inspire generations, serving as a reminder of the power of persistence and the importance of innovation.

As we look towards the future, it is tempting to wonder what advancements we might witness in the realm of timekeeping. Perhaps one day, we will look back on today's technology with as much awe and admiration as we do on Harrison's clocks. For now, however, let us cherish the legacy of this remarkable man and his tireless pursuit of the truth.
Britain Peninsular, but as the sailors continued north, they safely reached the D'Oyessean, an island outpost of the English Fleet.

The consensus opinion placed the English Fleet together, 

summoned all his navigators to put their heads together, 

shhips might founder on coastal rocks, the admiral could not bear the heavy autumn overcast. Preparing the French Mediterranean forces, Sir Clovisley with the victorious from Gibraltar after skirmishes, 

him twelve days at sea, returning home. 

Snothill called the fog that had dogged 

heavy weather, Admiral Sir Clovisley 

Psalm 107

and His wonders in the deep, 

ness in Israel waters, these see the works of the Lord, 

They that go down to the sea in ships, that do business 

The Sea Before Time

just a moment or two—is to see the globe anew. 

A can read down a ship's position within a few feet in 

story in an age when a network of orbiting satellites 

of longitude, to unravel them now—to replace their 

All these threads, and more, entwined in the lines 

updated, 

democratizing scientific revolution, and economic 

year of political intrigue, international warfare, ace-

ful monetary reform in 1773—after forty struggling

P.6