

first mentioned in Europe in 1190.

The compass was further developed in the 8th Century AD when magnetised needles replaced loadstone, and between 850 and 1050 they became common as navigational devices on ships. The first person recorded as using a compass for navigation was Zheng He (1371-1435) from Yunnan Province, who made seven ocean voyages between 1405 and 1433. The compass was introduced to the Arab world and Europe between 960 and 1127. In the days before the compass navigation had to be done using the pole star, the moon and the sun. The compass gave a constant bearing, and made navigation safer. This opened up the oceans for exploration and led to the discovery of the New World.

It is not an exaggeration to say, as Francis Bacon said in his book 'The New Instruments', that paper, gunpowder and the compass reshaped the world.

## Others

These were the Four Great Inventions. For interest other Chinese inventions include:

Spaghetti; Fans; Kites; Iron casting; First to harness animals for agriculture; Blast furnace; Abacus, the first calculator; The ship's rudder; The first to make things from silk; Planetarium; Books; Ink; Paper money; Ice cream; Wheelbarrow; Medicine; Acupuncture; Brain surgery; ... and so the list goes on.

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