

Abstract Submitted  
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**On the Late Invention of the Gyroscope**<sup>1</sup> KENNETH BRECHER, Boston University — The invention of the gyroscope is usually attributed to the French physicist Jean-Bernard-Leon Foucault in 1852. He certainly invented the word and also used his gyroscope to demonstrate the rotation of the Earth. However, the gyroscope was actually invented around 1812 by German physicist Johann Bohnenberger who called his device simply the “machine”. Several others, including American physicist Walter R. Johnson (who called his apparatus the “rotascope”), independently invented the gyroscope in the 1830’s. Each of these devices employed a central object (sphere or disc) that could spin freely on a shaft. This was placed between three independent gimbals, which could also move freely. Bohnenberger’s “machine” has much the same appearance as an armillary sphere. Such devices had been produced for at least the preceding three centuries. They were used to display the movements of various celestial bodies. However, armillary spheres are only simulations of celestial appearances, not actual demonstrations of physical phenomena. Gimbal systems similar to those found in gyroscopes were used on ships to level oil lamps from at least the sixteenth century and the ideas behind armillary spheres date back at least a millennium before that. So why was the gyroscope invented so late? Some possible reasons will be presented for the long delay between the development of the individual underlying components and the eventual appearance of the gyroscope in its modern form.

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