CENTRAL FORCES.

An inanimate body in motion, no matter by what means the motion have been communicated to it, if all external influences be withheld, will continue to move uniformly in a straight line, until its motion be changed or interrupted by some external force. This is in virtue of inertia, a property common to all bodies, which causes them to resist, with degrees of energy proportional to their respective weights, any external effort tending to change their existing states of rest, or uniform motion in right lines.

Hence, a body cannot be maintained in a curvilinear motion without the continued action of at least one positive or active force.

Suppose, then, a body moving uniformly by the force of inertia in a straight line, to come to the nearest point in the line of its direction, to a given point situated without that line. It is manifest the tendency of the body will then be to recede from the given point, by the same degrees, in a reversed order, by which it approached said point before arriving at its minimum distance; and that it will resist, with a certain degree of energy, any force that may tend to prevent its receding from the said point. If, however, it be prevented from receding by a force tending to draw it toward said point with an energy exactly equal to that which urges it to recede, it will describe a circle