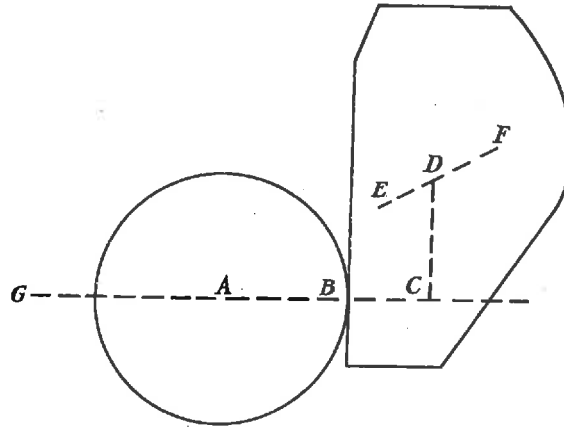


Newton's "Laws of Motion" Fundamentals



Motion \propto Bulk \times Velocity

Force $\propto \Delta$ (Bulk \times Velocity)

Center of motion: the point in a rotating body at which
“endeavours of its parts every way from the center
are exactly counterpoised by opposite endeavours.”

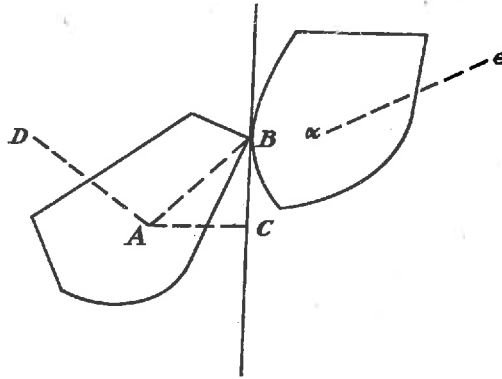
Real quantity of circular motion about any axis \propto *radius of
circulation \times angular velocity \times bulk*

Radius of circulation about any axis determined from
experiment in which the entire quantity of circular
motion is transferred as translational motion to a body
of the same bulk (as in the diagram above)

**Both translational and rotational motion can be resolved into
components and composed from components in accord
with parallelogram rule**

**“Every body keeps the same real quantity of circular motion
and velocity so long as it is not opposed by other bodies”**

Newton's "Laws of Motion" Principles and Consequences



1. The points of impact of the two bodies are reflected from one another with the same relative velocity of separation as they had of approach.
2. The changes in the velocities are distributed among the four velocities proportionally to the "easiness" of their change – i.e. as $1/A$, $1/\alpha$, F/AG , and $\phi/\alpha\gamma$.

("Only those bodies which are absolutely hard are exactly reflected in accordance with these principles.")

In all reflections of any bodies, the common center of gravity of the bodies does not change its state of motion or rest by the reflection of the bodies one amongst another.

Motion may be lost by reflection; motion may be gained by reflection. (E.g. via oblique impact)