

Inertia

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Abstract: This article is about three theories of inertia

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According to my opinion,

“When there is difference in inertias of the bodies to one another when handling or carrying an object with push or pull of the object in the same direction in the horizontal line and same mass concentration on both ends of the object, then the object will experience unstable motion.”

According to my opinion,

We can take an example while carrying an object by men when push or pull and push or pull of the object are in the same direction and in the opposite direction respectively and when individual inertias of the bodies are equal and unequal.

Assuming inertia of a body = A, inertia of the other body = B, and so on while carrying an object in the horizontal line with same mass concentration on both ends.

Let us consider in these values of inertia of the body when handling the above object in the horizontal line being the object having same mass concentration on both ends of the object, we can obtain some observable conditions just as mentioned below:

i) When push or pull of an object in the horizontal line in the same direction when individual inertias of those bodies are equal to each other with same mass concentration on both ends of the object,

Then,

$$\begin{aligned} A + B &= A + B \\ &= A + A \text{ [since } A = B \text{]} \\ &= 2A \end{aligned}$$

Or,

$$\begin{aligned} &= B + B \text{ [since } A = B \text{]} \\ &= 2B \text{ [Where ‘+’ symbolises that the push or pull is in the same direction]} \end{aligned}$$

Differentiating,

$$\begin{aligned} \frac{dA}{dt} + \frac{dB}{dt} &= \frac{dA}{dt} + \frac{dB}{dt} \\ &= \frac{dA}{dt} + \frac{dA}{dt} \text{ [since } A = B \text{]} \\ &= 2\frac{dA}{dt} \end{aligned}$$

Or,

$$\begin{aligned} &= \frac{dA}{dt} + \frac{dB}{dt} \\ &= \frac{dA}{dt} + \frac{dA}{dt} \text{ [since } A = B \text{]} \\ &= 2\frac{dA}{dt} \end{aligned}$$

Thus, my theory-I says that when the sum of the same inertias of the bodies is equal to no. of times on one of the

individual inertia of the body when push or pull of an object in the same direction with equal individual inertias of the bodies while handling the object in the horizontal line with same mass concentration on both ends of the object, then the object will experience stable motion.

ii) But, when push or pull of an object is in opposite direction in the horizontal line with same mass concentration on both ends of an object when inertias of the two bodies are equal to each other.

Then,

$$\begin{aligned} A - B &= A - B \\ &= A - A \text{ [since } A = B \text{]} \\ &= 0 \end{aligned}$$

Or,

$$\begin{aligned} &= A - B \\ &= B - B \text{ [since } A = B \text{]} \\ &= 0 \text{ [Where ‘-’ symbolises the push or pull is in the opposite direction]} \end{aligned}$$

Differentiating,

$$\begin{aligned} \frac{dA}{dt} - \frac{dB}{dt} &= \frac{dA}{dt} - \frac{dB}{dt} \\ &= \frac{dA}{dt} - \frac{dA}{dt} \text{ [since } A = B \text{]} \\ &= 0 \end{aligned}$$

Or,

$$\begin{aligned} &= \frac{dA}{dt} - \frac{dB}{dt} \\ &= \frac{dA}{dt} - \frac{dA}{dt} \text{ [since } A = B \text{]} \\ &= 0 \end{aligned}$$

So, my theory – II states that when the difference of the individual inertias of the bodies is zero when push or pull of an object is in the opposite direction with equal individual inertias of the bodies while carrying an object in the horizontal line with same mass concentration on both ends of the object. Then, the object will be at the rest.

iii) Nevertheless, when the inertias of those two bodies are different to each other while handling an object in the same direction in the horizontal line with same mass concentration on both ends of the object, then the object will experience unstable motion caused by different individual inertias of the bodies. The individual inertias of the bodies are equal at first to each other. The individual inertias come to be different from before because our bodies are exhausted to some extent due to gravitational pull, friction, etc.

Then,

$A + B = A + B$ ['+' symbolises the push or pull is in the same direction]

Differentiating,

$$\frac{dA}{dt} + \frac{dB}{dt} = \frac{dA}{dt} + \frac{dB}{dt}$$

Therefore, my theory – III states that when the sum of unequal individual inertias of the bodies can't be expressed as the no. of times on one of the individual inertia of one of the included body while carrying an object in the horizontal line with same mass concentration on both ends of the object, then the object will experience unstable motion.

Regarding these three theories given by me, it is applicable when carrying an object like table, desk, etc. with same mass concentration on both ends of the said objects. When push or pull and push or pull of the above objects are happened while handling those objects in the horizontal line in the same direction and in the opposite direction respectively, these above three theories proposed by me can be applied.

