

☉ **The invention- status-patent granted in India ,USA and UK**

About the current invention: It is a device to reduce the impact of collision in automobiles. The same can be used in crash barriers, pillars of bridges and railway lines, culverts of bridges, beginning points of road medians, Ships, Boats, Boat-jetties, sea-ports etc and most other scenarios where there is high probability of collision. It reduces the impact of collision in stages so that ultimately the impact of collision will be drastically reduced.

☉ **Category/Sector of the Device:** Mechanical

☉ **Advantages;**

- a). **To the End-user:** Can save precious life and can save valuable properties.
- b). **To the Insurance Companies;** Can save huge insurance claims.
- c). **To the State Authorities:** Damages due to accidents can be reduced, can save/reduce huge expense on medical care due to accidents and can maintain a healthy generation.
- d). **To the Investor/Manufacturer:** Can get good returns due to its multi-dimensional market potential/demand that it can create. Sky is the limit.

☉ **Cost effectiveness**

- ❖ Less costlier and more reliable and more stable compared to other sensor based devices in automobiles. So more consumers will buy this product
- ❖ All these sensor based devices cannot be used in scenarios other than in automobile like the present invention.

☉ **Market scenario:** The market scenario can be changed in many ways:

- ❖ Through quality conscious automobile manufacturers.
- ❖ Assessing the over-all damages happening due to the non-performing bumper systems in the present day vehicles to the Property, Health of human lives and Insurance damages.
- ❖ Apart from the above, huge potential for crash barriers, pillars of bridges and railway lines, culverts of bridges, beginning points of road medians, Ships, Boats, Boat-jetties, sea-ports etc also to reduce the impact of collision. So, sky is the limit for its market potential.

❖ **Highlights of the invention**

- 1 Can reduce the impact in stages so that there will be considerable reduction in impact
- 2 Can be used in light , medium and heavy vehicles
- 3 Has got a system which can completely arrest the recoil of the device unlike in other inventions
- 4 Provides many times reduction in impact of collision compared to external air bags
- 5 Can be used in rains, fog and other adverse condition unlike many sensor based devices
- 6 Can be used in slopes , turns and curves where many other preventive devices utilizing sensors fail

- 7 Can be used in chicane /serpentine curve in a road unlike many other devices based on sensors implemented for collision prevention/reduction
- 8 Can be used in snow, slippery surfaces unlike many other devices based on sensors based on autonomous braking implemented for collision prevention/reduction (because in slippery surfaces, braking will not be much effective with these devices).
- 9 Can be used also when the vehicles speed is high , where other prevention devices based on sensors and autonomous braking fail(meaning they may not be able to intervene and control the car.)
- 10 As it is a mechanical device, more reliable
- 11 A minimum guarantee in any situations
- 12 Failure less common
- 13 Relatively Less costlier
- 14 Will not hamper the functioning of air bag
- 15 . In many prevention devices/ devices for reducing the impact of collision based on autonomous braking while preventing the front end collision, the possibility of rear end collision is high.in such situations , the present invention can be used.
- 16 Technologies preventing/ reducing rear end collision are less. In such situations we can use this present device for reducing the impact of collision in the rear end
- 17 Can be used in crash barriers, pillars of bridges and railway lines, culverts of bridges, beginning points of road medians, Ships, Boats, Boat-jetties, sea-ports etc and most other scenarios where collision happens which makes the market potential endless.