



Construction

Key global statistics



US\$1.37T estimated cost of annual workplace injuries



9.6 deaths per 100,000 workers



2.4 non-fatal injuries per 100 workers



Falls, electrocution and striking by an object

are the greatest risk factors.



Agriculture

Key global statistics



US\$0.68T estimated cost of annual workplace injuries



23.5 deaths per 100,000 workers



3.5 non-fatal injuries per 100 workers

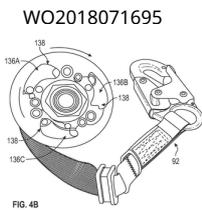


Machinery accidents and dust/animal confinement

are the greatest risk factors.

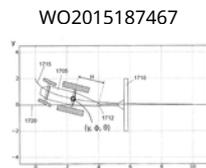
Illustrative patents

Prediction



Problem: Fall-protection gear lacks real-time hazard detection.
Solution: Sensor-equipped self-retracting lifelines feed predictive analytics for instant alerts.

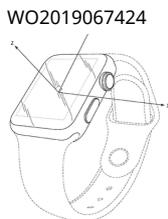
Effect: Early warnings cut fall risks



Problem: Agricultural autopilots misalign implements on paths.
Solution: Guide vehicles to an offset path before returning to the desired path

Effect: Enhances implement alignment and efficiency.

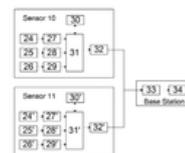
Detection



Problem: Mobile device fall detection is often inaccurate.
Solution: A mobile device uses falling data to accurately detect a fall and alert others.

Effect: Fewer false alarms and faster

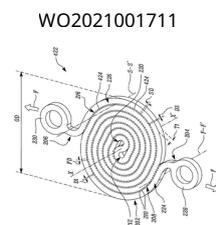
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Problem: Injury rehabilitation monitoring is limited to labs.
Solution: A wearable sensor system creates a "dynamic signature" to track a body's status.

Effect: Faster, data-driven decisions

Protection

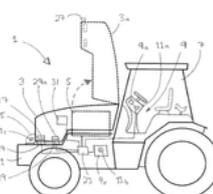


Problem: Manufacturing complex fall-protection energy absorbers is costly and inefficient.

Solution: A single-piece energy absorber with spiral tear paths is designed to absorb fall energy.

Effect: Simpler manufacturing, lower cost

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Problem: Hazard shields can be accessed while machinery is active, risking safety

Solution: An electromagnetic lock secures the shield during operation.

Effect: Enhances safety by preventing access to dangerous components.