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(57) Abstract :

A system for detecting obstacle on a rail track is comprising, a cuboidal-shaped bot 101 that moves alongside the rail track to detect surrounding defects and obstacles, an AI-enabled camera 104 on a collapsible rod 102 via a motorized ball-and-socket joint 103, detects obstacles from a predefined distance, a speaker 105 emits pre-recorded deterrent sounds, an obstacle removal module 106 includes a two-axis slider 106a and a rectangular-shaped barrier 106b with extendable sliding rails 106d gently push animals away, an automated restrain module uses a winch, a looped rope 107b, and a slingshot 107c with a spring-loaded carriage to secure animals mid-air, a track condition detection and repair module 108 features a motorized slider 108a, an obstacle collection module 201 uses a lifting assembly 202 with a U-shaped frame 202a, a motorized wheel 202c, and electromagnet spring 204 to retrieve and place rocks inside the bot 101.

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