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(71) Applicant *(for all designated States except US)*: **DYNAMIC ANIMATION SYSTEMS, INC.** [US/US]; 12015 Lee Jackson Highway, Suite 200, Fairfax, Virginia 22033 (US).

(72) Inventors: **SLAYTON, DAVID, A**; 9844 Natick Road, Burke, Virginia 22015 (US). **NEWCOMB, DALE, E., Jr**; 216 Park Gate Drive SE, Leesburg, Virginia 20175 (US). **PREISZ, ERIC, A**; 4178 Lower Park Drive, Fairfax, Virginia 22030 (US). **WALKER, CARL, DOUGLAS**; 125 W. Stonewall Drive, Front Royal, Virginia 22630 (US). **LUTZ, CHARLES, W., Jr.**; 14276 Anastasia Lane, Orlando, Florida 32828 (US). **KOBES, ROBERT, J.**; 6114 Taverneer Lane, Spotsylvania, Virginia 22553 (US). **LEDWITH, CHRISTOPHER, M**; 4263 Jefferson Oaks Circle, Apartment H, Fairfax, Virginia 22033 (US). **COPE, DELBERT**; 2080 Cascades Cove Drive, Orlando, Florida 32820 (US). **YOUNG, ROBERT, E.**; 117 Garfield Street, Waynesboro, Pennsylvania 17268 (US). **MESDAGHI, SYRUS**; 5124 Brittney Elyse Circle, Apartment K, Centreville, Virginia 20120 (US).

(74) Agents: **MCQUADE, Paul, F.** et al.; Greenberg Traurig, LLP, 1750 Tysons Boulevard, Suite 1200, Mclean, Virginia 22102 (US).

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(54) Title: INSTRUCTOR-LEAD TRAINING ENVIRONMENT AND INTERFACES THEREWITH

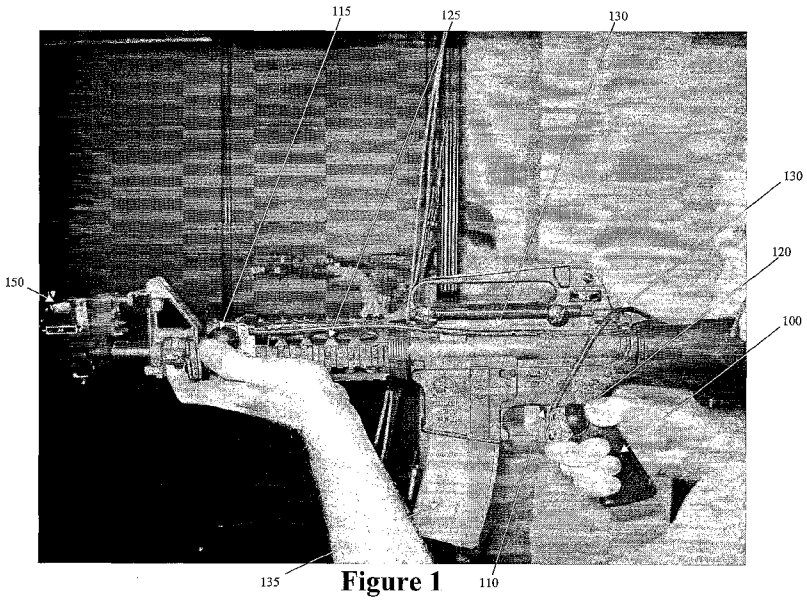

Figure 1

(57) Abstract: An infantry training simulation system comprising at least one firing lane, with at least one display arranged substantially near the end of the firing lane. A trainee experiencing the simulation can carry at least one physical or virtual weapon, which is typically similar to a traditional infantry weapon. To facilitate navigation and other interaction with the simulation, the weapon is preferably outfitted with at least one controller. At least one computer is communicatively coupled to the display and the weapon. The computer can monitor input from the at least one controller, and modifies the training simulation displayed on the display based on the input.

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AMENDED CLAIMS
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We Claim:

1. (Amended) A training simulation system, comprising:

at least one firing area, wherein the firing area has a first end and a second end;

at least one display, arranged substantially near the second end of the firing area, to display a computer generated training simulation;

at least one weapon, wherein the weapon is substantially similar to an infantry weapon;

at least one controller, wherein the at least one controller is mounted on the at least one weapon;

at least one computer, wherein the at least one computer is communicatively coupled to the at least one display and communicatively coupled to the at least one controller, and wherein the at least one computer monitors inputs from the at least one controller and modifies the training simulation displayed on the display based on the inputs.

2. (Original) The system of Claim 1, wherein the at least one controller is comprised of a plurality of controllers.

3. (Original) The system of Claim 2, wherein at least one of the plurality of controllers is positioned substantially near a trigger of the weapon.

4. (Original) The system of Claim 2, wherein at least one of the plurality of controllers is positioned along the barrel of the weapon.

5. (Original) The system of Claim 1, wherein the at least one computer is communicatively coupled to the at least one controller via a wireless communication link.

6. (Original) The system of Claim 1, further comprising at least one instructor station.

7. (Original) The system of Claim 6, wherein the instructor station permits an instructor to view the simulation without interacting with the simulation.

8. (Original) The system of Claim 6, wherein the instructor station permits an instructor to take control of at least one entity in the simulation.

9. (Original) The system of Claim 8, wherein the entity is a trainee.

10. (Original) The system of Claim 1, wherein the weapon is traditional weapon.

11. (Original) The system of Claim 1, wherein the weapon is configured to fire at least one simulated projectile.

12. (Original) The system of Claim 11, wherein the at least one simulated projectile is stored in at lest one clip.

13. (Original) The system of Claim 12, wherein each of the at least one clips is configured with an identifier.

14. (Original) The system of Claim 13, wherein the weapon is capable of determining the type of simulated projectile stored in the clip currently in the weapon based on the identifier.

15. (Original) The system of Claim 14, wherein the at least one weapon is capable of determining whether a clip has been previously used based on the identifier.

16. (Original) The system of Claim 15, wherein the at least one weapon tracks the number of projectiles fired from the weapon.

17. (Original) The system of Claim 13, wherein the at least one computer is capable of determining the type of projectile stored in the clip currently in the weapon based on the identifier.

18. (Original) The system of Claim 17, wherein the at least one computer determines the type of projectile stored in the clip currently in the weapon by inventorying the clips associated with the trainee and identifying the clip missing from the inventory.

19. (Original) The system of Claim 17, wherein the at least one computer is capable of determining whether a clip has been used based on the identifier.

20. (Original) The system of Claim 1, wherein the weapon is capable of simulating a weapon jam.

21. (Original) The system of Claim 20, wherein the weapon is capable of monitoring trainee interactions with the weapon to determine when prescribed steps for clearing the simulated weapon jam have been performed.

22. (Original) The system of Claim 20, wherein the computer is capable of monitoring trainee interactions with the weapon to determine when prescribed steps for clearing the simulated weapon jam have been performed.

23. (Original) The system of Claim 1, wherein the computer is capable of simulating a weapon jam.

24. (Original) The system of Claim 23, wherein the computer is capable of monitoring trainee interactions with the weapon to determine when prescribed steps for clearing the simulated weapon jam have been performed.

25. (Amended) A training simulation system, comprising:

a plurality of firing areas, wherein each firing area has associated therewith at least one display;

at least one computer, wherein the at least one computer is communicatively coupled to at least one of the plurality of displays, and wherein the at least one computer generates a training simulation for display by the at least one display to which it is attached;

at least one instructor station, wherein the instructor station is communicatively coupled to the at least one computer, and wherein the at least one instructor station allows an instructor to take control of at least one entity in the simulation;

at least one weapon, wherein each of the at least one weapons is associated with a firing area, and wherein each of the at least one weapons is communicatively coupled to the at least one computer such that the at least one computer can monitor an interaction of the at least one weapon in the simulation.

26. (Amended) The system of Claim 25, wherein each weapon has at least one controller associated therewith, the at least one controller at least allowing a trainee to navigate within the simulation.

27. (Amended) The system of Claim 26, wherein the at least one controller is located substantially near the trigger of the weapon.

28. (Amended) The system of Claim 26, wherein the at least one controller is located along the barrel of the weapon.

29. (Amended) The system of Claim 25, wherein a plurality of controllers are associated with each weapon, the controllers at least allowing a trainee to navigate within the simulation, and wherein at least one of the plurality of controllers is located substantially near the trigger of the weapon.

30. (Amended) The system of Claim 25, wherein a plurality of controllers are associated with each weapon, the controllers at least allowing a trainee to navigate within the simulation, and wherein at least one of the plurality of controllers is located substantially along the barrel of the weapon.

31. (Amended) A method of interacting with a simulated scenario, comprising:

displaying a computer generated simulation on a display;

equipping a physical weapon with at least one controller;

navigating the simulation with the at least one controller;

monitoring the simulation for at least one hostile target; and

engaging the hostile target using the physical weapon.

32. (Original) The method of Claim 31, wherein the controller allows a trainee holding the weapon to navigate through the simulation.

33. (Original) The method of Claim 32, wherein the weapon is a projectile weapon.

34. (Original) The method of Claim 33, further comprising firing a projectile at the hostile target as part of the engaging step.

35. (Original) The method of Claim 34, further comprising calculating the projectile path through the simulated environment.

36. (Original) The method of Claim 34, wherein the projectile firing is simulated by the weapon.

37. (Original) The method of Claim 34, further comprising monitoring the number of projectiles fired by the weapon and simulating a weapon jam.

38. (Original) The method of Claim 37, wherein the weapon jam is simulated at a frequency substantially similar to that associated with the use of the physical weapon in the real world.

39. (Original) The method of Claim 37, further comprising simulating the depletion of projectiles from a clip associated with the weapon for each weapon firing.

40. (Original) The method of Claim 31, further comprising allowing an instructor to observe the simulation via an instructor terminal.

41. (Original) The method of Claim 40, further comprising permitting the instructor to interact with the simulation.

42. (Original) The method of Claim 41, wherein the interaction is comprised of altering environmental characteristics.

43. (Original) The method of Claim 42, wherein the environmental characteristics are comprised of wind, time of day, and lighting.

44. (Original) The method of Claim 41, wherein the interaction is comprised of allowing the instructor to take control of at least one entity within the simulation.

45. (Original) The method of Claim 44, wherein the at least one entity over whom the instructor can take control is comprised of at least one trainee.

46. (New) The system of Claim 25, wherein the computer modifies the training simulation according to the monitored interaction of the at least one weapon.

47. (New) The system of Claim 1, wherein the display comprises a projector.

48. (New) The system of Claim 1, wherein the at least one computer monitors inputs from more than one controller and modifies the training simulation such that the more than one controllers simultaneously interoperate in the training simulation.

49. (New) The system of Claim 25, wherein more than one display displays the simulation, and the computer monitors the interaction of more than one weapon such that more than one weapon simultaneously interoperate in the simulation.