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Rowland

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[54] **SYSTEM AND METHOD FOR LOCATING A TRAJECTORY AND A SOURCE OF A PROJECTILE**

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[52] **U.S. Cl.** **367/127**; 367/124; 367/906

[58] **Field of Search** 367/118, 124, 367/127, 906

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[57] **ABSTRACT**

A projectile trajectory and source location system and method identifies, localizes, and displays a projectile trajectory relative to one or more stationary objects, such as buildings in an urban environment. The system includes a sensor array and trajectory location calculator that sense conditions generated by the projectile, such as an acoustic signature, and calculate a set of ranges to the trajectory. A ranging system and range comparison calculator measure ranges to one or more stationary objects and compare those ranges to the set of ranges to the trajectory. A display displays the trajectory relative to the stationary objects including unobstructed portions of the trajectory, obstructed portions of the trajectory and the located source of the projectile. A tracking system and dynamic reprocessor track the movement of an observer, dynamically reprocess the relative trajectory location, and update the display of the relative trajectory location in response to the observer's movement.

20 Claims, 5 Drawing Sheets