

Steve Hollinger

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## U.S. INVENTOR GRANTED 2<sup>ND</sup> PATENT FOR THROWABLE PANORAMIC CAMERA

*Capabilities include stabilized video and full-spherical panoramic photography*

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(Boston, MA — July 08, 2013) Boston-based inventor Steve Hollinger has been granted a second U.S. patent, #8,477,184, “Ball with camera and trajectory control for reconnaissance or recreation.” Hollinger’s patent, filed in 2012 with priority to U.S. Patent 8,237,787 filed in 2010 (issued), describes a throwable ball-shaped camera that utilizes position and orientation sensors to capture and process images over the course of its airborne trajectory.

“Throwable camera innovations are accelerating with advancements in sensor and imaging microelectronics,” stated Hollinger. “And with the advent of low-cost, high-speed cameras for outdoor recreation, an affordable throwable camera is finally within reach.”

Hollinger’s patent describes a ball-shaped camera with position and orientation sensors determining the relationship between a spiraling or spinning aperture and a subject of image capture. Such a relationship allows, for example, images to be captured, re-oriented and stitched into a panorama. The technology further allows for the stabilization of video, making a camera capable of registering frames captured in sequence. Images and video are transmitted wirelessly to the user’s phone, tablet or desktop.

Consumer and industrial applications for ball camera technology include recreation, professional sports, architecture, reconnaissance, search-and-rescue, first responder scene assessment, landscape photography, projectile point-of-

view, full spherical capture for simultaneous localization and mapping (SLAM), and 3D mapping applications.

Anticipating licensing and manufacturing opportunities, Hollinger has been developing “Squito,” a first-generation prototype ball camera. At the size of a tennis ball, Squito employs three cameras, an inertial measurement unit (IMU), a microcontroller and image processor. In operation, Squito will provide stabilized, panoramic video and images of subjects viewable along its trajectory.

U.S. Patent 8,477,184 benefits from priority dates of four parent U.S. patent applications filed by Hollinger in 2009 and 2010. Multiple continuation applications remain pending, describing ball camera improvements, a wireless throwable camera network and alternate aerodynamic shapes for handheld throwable cameras. Squito's distinctive multi-camera housing is disclosed in a design patent, also pending.

#### *Image Description*

Prototype of “Squito,” a first-generation throwable ball camera. Squito is being developed to capture slow-motion, full-spherical video of subjects visible from a bird’s-eye view along the trajectory.

#### *Background*

Steve Hollinger is a Boston-based artist and inventor. His company, S. H. Pierce & Co., licenses technology and manufactures products including PosterWorks® large-format production software, FlipBook® video software, Kayalite® kayak lights and Mildont® drain valves. Prior to founding S. H. Pierce & Co. in 1989, Hollinger developed imaging applications for Wang Laboratories (Lowell, MA), Telex Computer Products (Raleigh, NC) and Avalon Development Group (Cambridge, MA) and contributed industrial image processing software reviews for Electronic Systems Design Magazine. A profile of Hollinger by author Susan Orlean was published in New Yorker magazine in 2008.

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