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(54) Title: METHODS FOR ASSIGNING A THREAT OR SAFE CONDITION TO AN OBJECT IN AN IMAGE

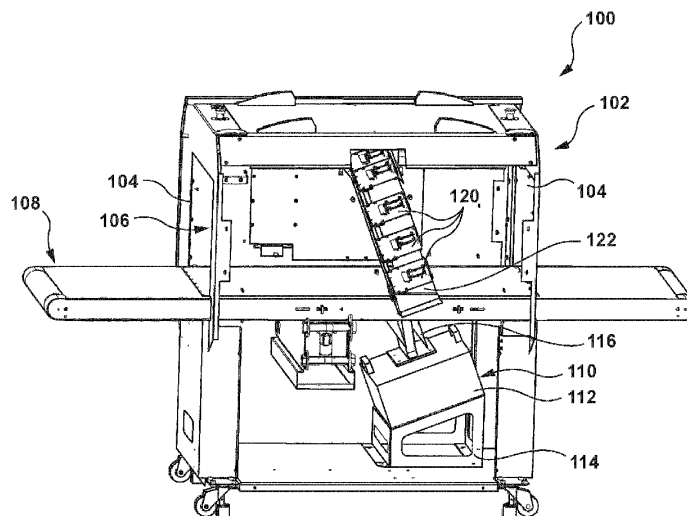


FIG. 1

(57) Abstract: A method for assigning one of a safe and threat condition to an object includes determining density and effective atomic number values for a plurality of predetermined safe and threat objects, plotting the values in a probability map to correlate corresponding density and effective atomic number values with each of the safe and threat objects, scanning an object to provide dual-energy attenuation images representing the object, decomposing the attenuation images into dual-reference material equivalent path length images to provide reference material equivalent path lengths representing the object, converting the reference path lengths into object path lengths, determining the effective atomic number for each pixel representing the object, and, imposing the effective atomic number and the mass density of the unknown object onto the probability map to determine a probability that the object is correlated with one of the predetermined safe and threat objects.

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