[96] In other embodiments, the first determination result may be jointly generated based on information other than the first composition information.

[97] In some embodiments of the present disclosure, the first determination device is further configured to determine an image of the item based on the first detection result, and generate a first determination result based on both the first composition information and the image.

[98] In the embodiments of the present disclosure, since some substances in life have similar atomic numbers and electron densities, in the process of analyzing the composition of an item based on the X-ray transmission data in the first detection result, components with similar atomic numbers may be unable to be effectively distinguished, or misidentification of composition may occur, which may cause the generated first determination result to be the suspected dangerous result or the undetermined result. That is, there may be dangerous components in the item, or it is unable to determine whether there is dangerous components in the item.

[99] In this embodiment, the image of the item that is determined based on the first detection result, and the first determination result is generated jointly based on the first composition information and the image of the item, so that the influence brought by other similar components may be eliminated, thereby improving the accuracy of the generated first determination result.

[100] In some embodiments of the present disclosure, the second determination device is configured to determine a second composition information indicating the composition of the item based on the second detection result, and generate a second determination result based on at least the second composition information.

[101] In the present embodiment, the second detection result includes X-ray diffraction data. A diffraction pattern of the item composition is generated based on the X-ray diffraction data, and the second composition information indicating the item composition may be determined based on the diffraction pattern. When the specific content of the second composition information of the item can be determined, the second determination result may be generated based on the second composition information. When the specific content of the second composition information of the item can not be determined, the second determination result may be generated jointly based on the second composition information and other information, so as to improve the accuracy of the generated second determination result.

[102] In some embodiments of the present disclosure, the second determination device is configured to generate a second determination result based on a comparison result between the first composition information determined based on the first detection result and the second

inspection method according to tan embodiment of the present disclosure.

[132] As shown in FIG. 7, operation S422 includes operation S4221 to operation S4222.

[133] In operation S4221, an image of the item is determined based on the first detection result.

[134] In operation S4222, the first determination result is generated based on both the first composition information and the image.

[135] In some exemplary embodiments of the present disclosure, generating the second determination result based on at least the second detection result includes: generating the second determination result based on the first detection result and the second detection result. Exemplarily, the second determination result is generated based on the first composition information in the first detection result and the second composition information in the second detection result.

[136] FIG. 8 schematically shows a flowchart of operation S440 in an item security inspection method according to an embodiment of the present disclosure.

[137] As shown in FIG. 8, in some embodiments of the present disclosure, operation S440 of generating the second determination result based on at least the second detection result includes operation S441 to operation S442.

[138] In operation S441, a second composition information indicating the composition of the item is determined based on the second detection result.

[139] In operation S442, the second determination result is generated based on at least the second composition information.

[140] FIG. 9 schematically shows a flowchart of operation S442 in an item security inspection method according to an embodiment of the present disclosure.

[141] As shown in FIG. 9, operation S442 includes operation S4421.

[142] In operation S4421, the second determination result is generated based on a comparison result between the first composition information that is determined based on the first detection result and the second composition information.

[143] FIG. 10 schematically shows a flowchart of operation S4421 in an item security inspection method according to an embodiment of the present disclosure.

[144] Operation S4421 includes operation S4422 to operation S4424.

[145] In operation S4422, the dangerous result is generated if the comparison result shows that the first composition information is identical to the second composition information

and the second composition information indicates a presence of dangerous components.

[146] In operation S4423, the suspected dangerous result or an undetermined result is generated if the comparison result shows that the first composition information is different from the second composition information and the second composition information indicates a presence of dangerous components.

[147] In operation S4424, the second safe result is generated if the comparison result shows that the first composition information is different from the second composition information and the second composition information indicates a presence of a safe composition.

[148] Operation S4422 to operation S4424 exclude each other and only one of them is performed.

[149] In some exemplary embodiments of the present disclosure, the item security inspection method further includes: conveying the item to the baggage retrieval region when the first detection result and the second detection result are safe results.

[150] In some exemplary embodiments of the present disclosure, the item security inspection method further includes: selectively diverting the item to the second detection device, a manual security inspection section for performing the manual security inspection or the baggage retrieval region based on the first determination result; and selectively diverting the item to the manual security inspection section or the baggage retrieval region based on the second determination result.

[151] Exemplarily, when the first determination result is the non-safe result, the item is selectively diverted to the manual security inspection section or the second detection device. When the first determination result is the safe result, the item is selectively diverted to the baggage retrieval region.

[152] Exemplarily, when the second determination result is the non-safe result, the item is selectively diverted to the manual security inspection section. When the second determination result is the safe result, the item is selectively diverted to the baggage retrieval region.

[153] In some exemplary embodiments of the present disclosure, the item security inspection method further includes: at least selectively conveying the item through the first detection device and the second detection device by the conveying device, so as to generate the first detection result and the second detection result.

[154] FIG. 11 schematically shows a block diagram of an electronic device applicable for realizing part of operations of an item security inspection method according to an embodiment of