direction of the inspection channel 4 is, for example, a direction from an inside to an outside of a paper surface in FIG. 1. Spanning the inspection channel 4 refers to spanning the inspection channel 4 along the lateral direction of the paper surface, such as an arrangement of an arc-shaped track 5 spanning the inspection channel 4, as shown in FIG. 1.

[0048] In another embodiment, the radiation source 2 may be arranged at the bottom of the bracket 1, while the transmission radiation detector 10 and the diffraction radiation detector 9 (together with the track 5) are arranged at the top of the bracket 1, opposite to the radiation source 2 to receive radiation.

[0049] In this embodiment, the radiation source 2 is shared by the transmission imaging apparatus and the diffraction detection apparatus. However, in another embodiment, each of the transmission imaging apparatus and the diffraction detection apparatus is equipped with a radiation source. The transmission imaging apparatus and the diffraction detection apparatus are arranged at intervals in the extension direction of the inspection channel 4. The inspected object may move on the inspection channel 4 to be scanned by the transmission imaging apparatus, and then move to the diffraction detection apparatus to complete diffraction detection. The above description of moving the diffraction radiation detector 9 to the specific position corresponding to the suspicious item of the inspected object refers to a lateral movement spanning the inspection channel 4. At this time, for one scanning cross-section of the suspicious item of the inspected object, when diffraction inspection needs to be performed on another cross-section of the inspected object, the inspected object may be moved along the extension direction (outward or inward from the paper surface) of the inspection channel 4, and then the diffraction radiation detector 9 may be moved to the specific position corresponding to the suspicious item on the another cross-section for detection.

[0050] The detector translation bracket 15 may further include a rear collimator 8 for collimating the diffracted radiation, and the collimated radiation is received by the diffraction radiation detector 9. The bracket 1 may further include a front collimator 3 for collimating the radiation emitted from the radiation source 2. The front collimator 3 may have an adjustment function that may change an angle of radiation beams emitted from the front collimator 3, which will not be described in detail.