[Designation of Document] CLAIMS

[Claim 1]

An information output apparatus for a medium, on which dot patterns based on predetermined rules are printed in concurrence with printing, the information output apparatus comprising:

an imaging unit that reads the dot patterns on a surface of the medium;

a converting unit that converts a captured image obtained by the imaging unit into code values or coordinate values indicated by the dot patterns; and

an output unit that outputs information corresponding to the code values or the coordinate values,

wherein the apparatus has, on at least one surface thereof, the medium on which the dot pattern obtained by patterning coordinate value is printed, and a multi-information region where a dot pattern that combines a dot pattern obtained by patterning coordinate value and a dot pattern obtained by patterning code value is printed on the surface of the medium,

when the imaging unit reads the coordinate value and the code value from the multi-information region on the surface of the medium, the converting unit reads information associated with each of the coordinate value and the code value from a storage unit, and the output unit outputs the information, and

when a grid tilt operation of the imaging unit, that is, an inclination of an imaging optical axis with respect to a vertical line of the surface of the medium is recognized, the output information

like the image information, the sound information, the motion picture information and the like is switched.

[Claim 2]

An information output apparatus for a medium, on which dot patterns based on predetermined rules are printed in concurrence with printing, the information output apparatus comprising:

an imaging unit that reads the dot patterns on a surface of the medium;

a converting unit that converts a captured image obtained by the imaging unit into code values or coordinate values indicated by the dot patterns; and

an output unit that outputs information corresponding to the code values or the coordinate values,

wherein the apparatus has, on at least one surface thereof, the medium on which the dot pattern obtained by patterning coordinate value is printed, and a multi-information region where a dot pattern that combines a dot pattern obtained by patterning coordinate value and a dot pattern obtained by patterning code value is printed on the surface of the medium,

when the imaging unit reads the coordinate value and the code value from the multi-information region on the surface of the medium, the converting unit reads information associated with each of the coordinate value and the code value from a storage unit, and the output unit outputs the information, and

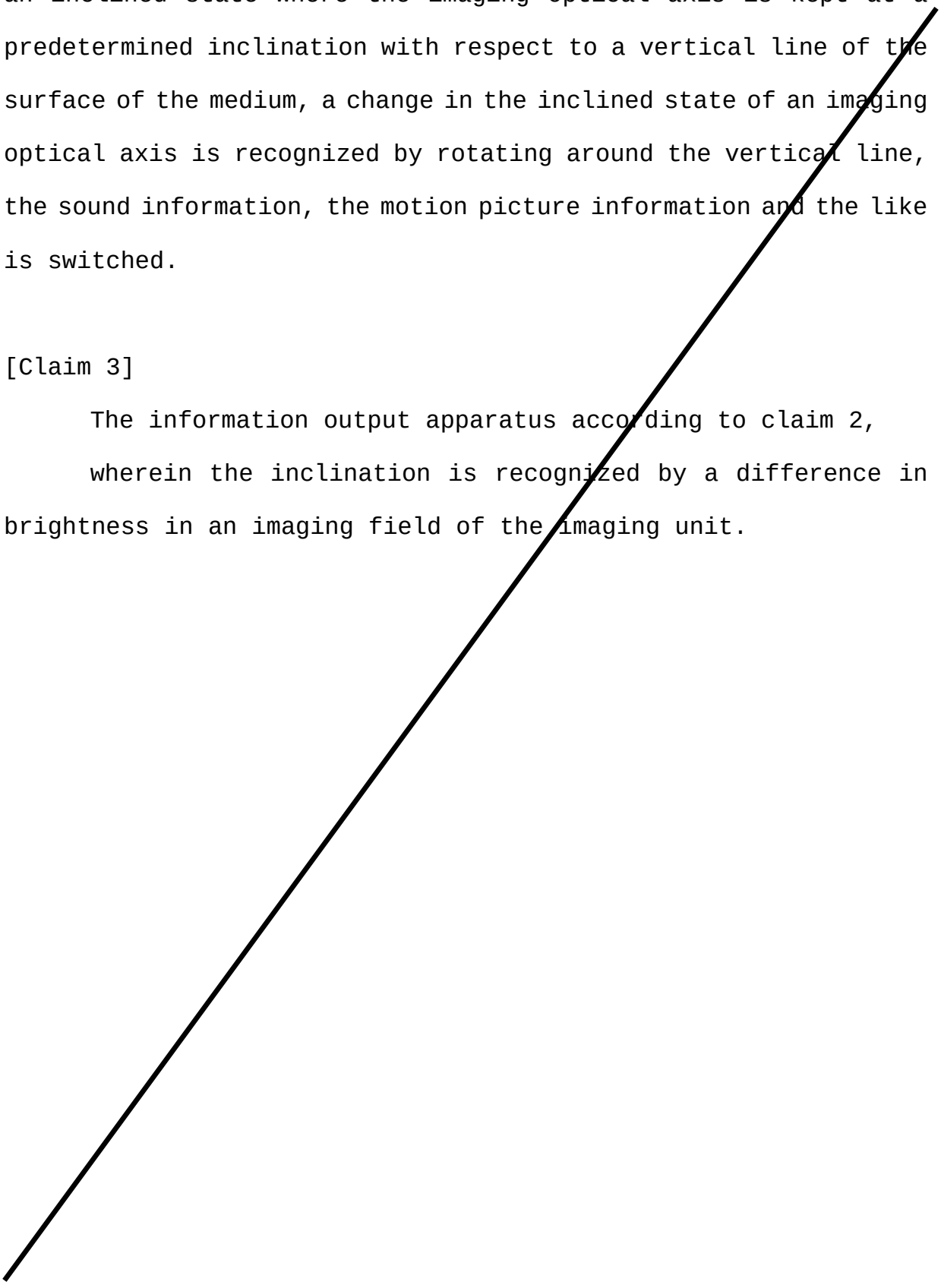
when a grid grind operation of the imaging unit, that is, in

an inclined state where the imaging optical axis is kept at a predetermined inclination with respect to a vertical line of the surface of the medium, a change in the inclined state of an imaging optical axis is recognized by rotating around the vertical line, the sound information, the motion picture information and the like is switched.

[Claim 3]

The information output apparatus according to claim 2,

wherein the inclination is recognized by a difference in brightness in an imaging field of the imaging unit.



[Designation of Document] CLAIMS

[Claim 1]

An information output apparatus for a medium, on which dot patterns based on predetermined rules are printed in concurrence with printing, wherein the information output apparatus comprises: an imaging unit that reads the dot patterns on a surface of the medium; a converting unit that converts a captured image obtained by the imaging unit into code values or coordinate values indicated by the dot patterns; and an output unit that outputs information corresponding to the code values or the coordinate values, the information output apparatus including:

the medium, on at least one surface of which dot patterns obtained by patterning the coordinate values are printed;

a multi-information region on which are printed a combination dot pattern of, at least, the dot patterns obtained by patterning the coordinate values and the dot patterns obtained by patterning the code values,

wherein

the converting unit switches output information among image information, sound information, motion picture information, and the like, when the imaging unit reads the coordinate values and the code values from the dot pattern in the multi-information region on the surface of the medium; the converting unit reads information associated with the coordinate values and information associated with the code values from a storage unit; and the output

unit outputs the information; as well as, upon recognition of a grid tilt operation, that is, an inclination of an imaging optical axis of the imaging unit with respect to a vertical line of the medium surface.

[Claim 2]

An information output apparatus for a medium, on which dot patterns based on predetermined rules are printed in concurrence with printing, wherein the information output apparatus comprises: an imaging unit that reads the dot patterns on a surface of the medium; a converting unit that converts a captured image obtained by the imaging unit into code values or coordinate values indicated by the dot patterns; and an output unit that outputs information corresponding to the code values or the coordinate values, the information output apparatus including:

the medium, on at least one surface of which the dot patterns obtained by patterning the coordinate values are printed;

a multi-information region on which are printed a combination dot pattern of, at least, the dot patterns obtained by patterning the coordinate values and the dot patterns obtained by patterning the code values,

wherein

the converting unit switches output information among image information, sound information, motion picture information, and the like, when the imaging unit reads the coordinate values and the code values from the dot patterns in the multi-information

region on the surface of the medium; the converting unit reads information associated with the coordinate values and information associated with the code values from a storage unit; and the output unit outputs the information; as well as, upon recognition of a grid grind operation of the imaging unit, that is, in an inclined state where the imaging optical axis is kept at a predetermined inclination with respect to a vertical line of the surface of the medium, a change in the inclined state of an imaging optical axis by rotating around the vertical line.

[Claim 3]

The information output apparatus according to claim 2,

wherein the inclination is recognized by a difference in brightness in an imaging field of the imaging unit.