

Claims

1. A computerized method for identifying an identification tag after treatment thereof, the method comprising:
 - 5 obtaining a post-treatment image of the identification tag;
finding, in the post-treatment image, a number of serrated edges of the identification tag, each serrated edge comprising a plurality of serrations formed thereon;
determining characters from the respective serrations of each serrated edge, each serration representing a set of characters; and
10 deriving, for each serrated edge, a tag identifier from the respective characters of the serrated edge,
wherein the identification tag is identifiable by the tag identifier.
- 15 2. The method according to claim 1, further comprising retrieving, from an image database, a pre-treatment image of the identification tag using the tag identifier.
3. The method according to claim 1 or 2, further comprising performing corrective actions on the post-treatment image before finding the serrated edges.
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4. The method according to claim 3, wherein the corrective actions comprise aligning and/or cropping the post-treatment image.
5. The method according to any one of claims 1 to 4, further comprising
25 performing refinement actions on the post-treatment image before finding the serrated edges.
6. The method according to claim 5, wherein the refinement actions improve brightness, contrast, and/or resolution of the post-treatment image.
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7. The method according to any one of claims 1 to 6, further comprising determining a shape identifier based on a body shape of the identification tag, wherein the shape identifier complements the tag identifier for identifying the identification tag.

8. A computerized method for registering an identification tag before treatment thereof, the method comprising:

obtaining a pre-treatment image of the identification tag;

5 finding, in the pre-treatment image, a number of serrated edges of the identification tag, each serrated edge comprising a plurality of serrations formed thereon;

determining characters from the respective serrations of each serrated edge, each serration representing a set of characters;

10 deriving, for each serrated edge, a tag identifier from the respective characters of the serrated edge; and

storing the pre-treatment image on an image database,

wherein the pre-treatment image is identifiable by the tag identifier.

15 9. The method according to claim 8, further comprising performing corrective actions on the pre-treatment image before finding the serrated edges.

10. The method according to claim 9, wherein the corrective actions comprise aligning and/or cropping the pre-treatment image.

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11. The method according to any one of claims 8 to 10, further comprising performing refinement actions on the pre-treatment image before finding the serrated edges.

25 12. The method according to claim 11, wherein the refinement actions improve brightness, contrast, and/or resolution of the pre-treatment image.

13. The method according to any one of claims 8 to 12, further comprising determining a shape identifier based on a body shape of the identification tag, wherein
30 the shape identifier complements the tag identifier for identifying the pre-treatment image.

14. An identification tag comprising:
a body comprising a number of serrated edges; and
each serrated edge comprising a plurality of serrations formed thereon,
each serration representing a set of characters,
5 wherein each serrated edge represents a tag identifier derived from the
respective characters of the serrated edge; and
wherein the identification tag is identifiable by the tag identifier.
15. The identification tag according to claim 14, wherein the characters comprise
10 binary numbers.
16. The identification tag according to claim 14 or 15, wherein a shape of the body
represents a shape identifier complementing the tag identifier for identifying the
identification tag.
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17. The identification tag according to any one of claims 14 to 16, wherein the
serrated edges comprise an outer serrated edge and an inner serrated edge.
18. The identification tag according to any one of claims 14 to 17, further comprising
20 identification markings formed on the body.
19. A computer program comprising computer executable instructions that, when
executed by a processor, cause the processor to control an additive manufacturing
apparatus to manufacture a product comprising the identification tag according to any
25 one of claims 14 to 18.
20. A method of manufacturing a product via additive manufacturing, the method
comprising:
obtaining an electronic file representing a geometry of the product
30 wherein the product comprises the identification tag according to any one of
claims 14 to 18; and

controlling an additive manufacturing apparatus to manufacture, over one or more additive manufacturing steps, the product according to the geometry specified in the electronic file.