

WHAT IS CLAIMED IS:

1. A locking mechanism for locking gears or sprockets, comprising:
a gear or sprocket wheel having a series of substantially identical teeth;
a locking tongue having a tooth, the tooth configured in a locked position to engage the gear or sprocket wheel in a groove between any two adjacent teeth of the series of substantially identical teeth of the gear or sprocket wheel;
an anchoring structure configured to control a degree of rotation of at least a portion of the locking tongue, the portion containing the tooth, the anchoring structure deployed such that in a locked position of the locking mechanism there is a restriction on freedom of rotation of the at least the portion and in an unlocked position of the locking mechanism the restriction is released.
2. The locking mechanism of claim 1, wherein the locking mechanism includes a spring biased to maintain the restriction on the at least the portion of the locking tongue and maintain the locking mechanism in the locked position as a default position.
3. The locking mechanism of claim 1, wherein the locking tongue rotates on a pin that divides the locking tongue into a proximal portion connected to the anchoring structure and a distal portion that engages the gear, the tooth situated on the distal portion.
4. The locking mechanism of claim 3, wherein the anchoring structure exerts a force against the proximal portion of the locking tongue to hold it in the locked position of the locking mechanism.
5. The locking mechanism of claim 3, wherein the tooth is situated at a distal end of the distal portion.
6. The locking mechanism of claim 1, wherein the anchoring structure holds a proximal portion of the locking tongue in the locked position of the locking mechanism.
7. The locking mechanism of claim 1, wherein the tooth divides the locking tongue into a proximal portion connected to the anchoring structure and a distal portion that includes a pin that the locking tongue rotates on.

8. The locking mechanism of claim 7, wherein the anchoring structure acts on the proximal portion of the locking tongue to urge the proximal portion and the tooth toward the gear or sprocket wheel in the locked position.

9. The locking portion of claim 7, wherein the anchoring structure comprises a linear actuator configured to exert a force substantially perpendicular to the locked tongue in the locked position of the locking mechanism.

10. The locking mechanism of claim 1, wherein the locking tongue is configured to engage the gear or sprocket wheel at a first portion of a circumference of a gear wheel or sprocket wheel different from a second portion of the circumference at which the gear wheel or sprocket wheel is configured to engage a second gear wheel or a chain.

11. The locking mechanism of claim 1, wherein the locking tongue is configured to engage the gear at an extra thick portion of the gear or sprocket wheel.

12. The locking mechanism of claim 11, wherein the extra thick portion is at a same portion of a circumference of the gear wheel or sprocket wheel at which a second gear or chain engages the gear wheel or sprocket wheel.

13. The locking mechanism of claim 12, wherein the locking tongue has a second tooth that engages a second groove of the gear.

14. The locking mechanism of claim 12, further comprising a second locking tongue having a tooth configured in a locked position to engage the second gear in a groove between any two adjacent teeth of a series of substantially identical teeth of the second gear or of the chain.

15. The locking mechanism of claim 1, wherein the locking tongue is engaged to the gear such that release of the restriction while the locking mechanism is under a load does not damage the gear or locking mechanism.

16. The locking mechanism of claim 1, wherein a pivotal mounting of the locking tongue defines a pivot axis and a vector from the locking tooth toward the pivot axis makes an angle of between 15 and 25 degrees from a tangent to the gear or sprocket wheel.

17. The locking mechanism of claim 1, wherein the locking tongue has at least one additional tooth, the at least one additional tooth configured in the locked position to engage the gear or sprocket wheel in at least one additional groove between any two or more adjacent teeth of the series of substantially identical teeth of

the gear or sprocket wheel other than the tooth and wherein the at least the portion of the locking tongue contains the at least one additional tooth.

18. A locking mechanism configured for locking and unlocking a gear, comprising:

a locking tongue having a tooth, the locking tongue configured in a locked position to engage a gear or sprocket wheel having a series of substantially identical teeth by the tooth engaging the gear or sprocket wheel in a groove between any two adjacent teeth of the series of substantially identical teeth of the gear or sprocket wheel, the gear or sprocket wheel external to the locking mechanism, a pivotal mounting of the locking tongue defining a pivot axis such that a vector from the locking tooth toward the pivot axis is substantially tangential to the gear or sprocket wheel;

an anchoring structure configured to control a degree of rotation of at least a portion of the locking tongue, the portion containing the tooth, the anchoring structure deployed such that in a locked position of the locking mechanism there is a restriction on freedom of rotation of the at least the portion and in an unlocked position of the locking mechanism the restriction is released.

19. The locking mechanism of claim 18, wherein the locking mechanism includes a spring biased to maintain the restriction on the at least the portion of the locking tongue and maintain the locking mechanism in the locked position as a default position.

20. The locking mechanism of claim 18, wherein the locking tongue rotates on a pin that divides the locking tongue into a proximal portion connected to the anchoring structure and a distal portion that engages the gear, the tooth situated on the distal portion.

21. The locking mechanism of claim 20, wherein the anchoring structure exerts a force against the proximal portion of the locking tongue.

22. The locking mechanism of claim 20, wherein the tooth is situated at a distal end of the distal portion.

23. The locking mechanism of claim 18, wherein the tooth divides the locking tongue into a proximal portion connected to the anchoring structure and a distal portion that includes a pin that the locking tongue rotates on.

24. The locking mechanism of claim 23, wherein the anchoring structure acts on the proximal portion of the locking tongue to urge the proximal portion and the tooth toward the gear or sprocket wheel in the locked position.

25. The locking portion of claim 23, wherein the anchoring structure comprises a linear actuator biased in the locked position substantially perpendicular to the locked tongue.

26. The locking mechanism of claim 18, wherein the anchoring structure holds a proximal portion of the locking tongue in the locked position of the locking mechanism.

27. The locking mechanism of claim 18, wherein the locking tongue has at least one additional tooth, the at least one additional tooth configured in the locked position to engage the gear or sprocket wheel in at least one additional groove between any two or more adjacent teeth of the series of substantially identical teeth of the gear or sprocket wheel other than the tooth and wherein the at least the portion of the locking tongue contains the at least one additional tooth.