CLAIMS

1. A flat key (1), having a key bow (11) and a key shaft (12) extending along a key axis (10) from the key bow (11) to a front key tip (23) with two parallel flat sides (21) and two opposing narrow sides (22), wherein an edge (25) parallel to the key axis (10) extends between the flat sides and the narrow sides, wherein a row of coding bores (31) parallel to the key axis is formed on at least one of the flat sides, and wherein the flat key includes at least one coding recess (35) in at least one of the edges (25), which forms a flank (43) which extends from the flat side to the narrow side and which has a monotonous gradient, characterized in that the coding recess (35) comprises a first surface section (206) which is flat or has the shape of a truncated cone section and which merges forward and backward into a second and third surface section (207, 208), each of which is designed in the manner of a truncated cone section.

2. The flat key according to claim 1, wherein a first transition (41) between the coding recess (35) and the flat side and/or a second transition (42) between the coding recess (35) and the narrow side has a section (201; 202) extending substantially parallel to the key axis (10).

3. The flat key according to claim 1 or 2, wherein at least one first and one second parallel straight line (203, 204) extend in the flank (43) of the coding recess (35).

4. The flat key according to claim 3 with reference to claim 2, wherein the first and second parallel straight lines (203, 204) join at the ends of said section (201, 202), in particular at right angles in a projection onto the flat side (21).

5. The flat key according to any one of the preceding claims, wherein the coding recess (35) comprises a first surface section (206) which is flat or has the shape of a truncated cone section up to the flat side (21).

6. The flat key according to claim 5 with reference to claim 3 or 4, wherein the first surface section (106) is delimited by the parallel straight lines (103, 104).

7. The flat key according to any one of the preceding claims, wherein the coding recess (35) comprises at least one concave, truncated cone-like surface section (207, 208) which merges via a flatter surface portion (209, 210) into a convexly curved closure (211, 212) of the coding recess (35).

8. The flat key according to any one of the preceding claims, wherein a first transition (41) between the coding recess (35) and the flat side merges into the edge (25) at a flat angle or in a continuous curve.

9. The flat key according to any one of the preceding claims, wherein a second transition (4) between the coding recess (35) and the flat side merges into the edge (25) at a flat angle or in a continuous curve.

10. The flat key according to any one of the preceding claims, wherein the coding recess can be produced by a removing tool (52) which rotates about a tool axis (53) perpendicular to the flat side (21).

11. The flat key according to claim 10, wherein the tool axis leads past the key shank.

12. The flat key according to any one of the preceding claims, wherein a closure of the coding recess towards the front and towards the rear is formed by a surface which is curved at least in some areas.

13. The flat key according to any one of the preceding claims, wherein there is a region which extends parallel to the key axis (10) in which the coding recess has a constant depth.

14. The flat key according to any one of the preceding claims, wherein a normal to at least one region of the flank (43) is in a plane that is perpendicular to the key axis.

15. The flat key according to any one of the preceding claims, having an inlet ramp (24) which slopes down towards the tip of the key and the depth of which

is greater than half the thickness of the key shank.

16. A locking system, having a flat key (1) according to any one of the preceding claims and a locking cylinder (100) having a locking cylinder stator (104) and a locking cylinder rotor (103) with a key channel into which the key shank (12) of the flat key can be inserted, wherein the lock cylinder has a pin (111) which scans the coding recess (35) and enables or does not enable the rotation of the locking cylinder rotor depending on its presence or absence.

17. The locking system according to claim 16, wherein the pin (111) is at an angle to the key (1) which is both different from a perpendicular to the flat side (21) and different from a normal to the flank (43).

18. A method for producing a flat key according to any one of claims 1-15, wherein a key blank having the key bow (11) and the key shank (12) is provided and the coding bores (31) are produced with a tool in a machining process, and wherein the at least one coding recess (35) is also produced in a machining process.

19. The method according to claim 18, wherein the coding recess (35) is produced with a tool (52) which rotates about a tool axis (53) perpendicular to the flat side (21).

20. The method according to claim 18 or 19, wherein the tool (52) is moved relative to the key shank at least in the direction (x) of the key axis (10) during the production of the coding recess (35) while it removes material from the key shank, and/or wherein the tool (52) is applied at different axial positions relative to the key shank (12) in order to produce one and the same coding recess (35).

21. The method according to any one of claims 18 to 20, wherein the tool axis (53) is not closer to the key axis (10) than the narrow side (22) at any time that material of the key shank is removed to create the coding recess (35).