CLAIMS

1. A flat key (1) for a locking cylinder (100), in particular for locking systems, having substantially flat and approximately parallel flat key sides (2', 3'), a key rear section (4), and a key front section (5) opposite thereto, toothed on the end face, for positioning tumbler pins divided into core pins (112) and housing pins (111), which are spring-loaded in corresponding key channels (103) of cylinder cores (101) against the key front section (5) in the direction of the key rear section (4), wherein grooves (11', 12', 13', 14', 20' - 25') in the form of profiled variation elements and profiled guiding elements are provided in the flat sides (2', 3') of the flat key (1), wherein at least two grooves (11', 12') of one flat side (3') of the flat key (1) overlap and are undercut in opposite directions, **characterized in that** a depression (15', 16') is provided in the outer flank (11a', 12a') of at least one of the two grooves (11', 12'), and in that at least one region (15b, 16b) of said depression (15', 16') is not visible from the side.

2. A key blank (1b) for a flat key (1) for a locking cylinder (100), in particular for locking systems, having substantially flat and approximately parallel flat key sides (2', 3'), a key rear section (4), and a key front section (5), wherein grooves (11', 12', 13', 14') in the form of profiled guiding elements are provided in the flat sides (2', 3') of the key blank (1b), wherein at least two grooves (11', 12') of one side (3') of the key blank (1b) overlap and are undercut in opposite directions, **characterized in that** a depression (15', 16') is provided in the outer flank (11a', 12a') of at least one of the two grooves (11', 12'), and in that at least one region (15b, 16b) of said depression (15', 16') is not visible from the outside.

3. The flat key or key blank according to claim 1 or 2, **characterized in that** in addition to the two oppositely undercut grooves (11', 12'), a further groove (13') is provided on the opposite flat side, which overlaps with at least one of the two oppositely undercut grooves (11', 12').

4. The flat key or key blank according to claim 3, **characterized in that** the two undercut grooves (11', 12') and the further groove (13') are arranged in the central region of the two flat sides.

5. The flat key or key blank according to any one of claims 1 to 4, **characterized in that** the two undercut angles (α, β) of the undercut grooves (11', 12') are different sizes.

6. The flat key or key blank according to any one of claims 1 to 5, **characterized in that** a depression (15', 16') is provided in the outer flank (11a', 12a') of both grooves (11', 12').

7. The flat key or key blank according to claim 6, **characterized in that** the two recesses (15', 16') are symmetrical, wherein the axis of symmetry (19) lies in the open area of the two overlapping grooves (11', 12'), in particular in such a way that they can be produced with a T-slot milling cutter (60).

8. The flat key or key blank according to claim 7, **characterized in that** the axis of symmetry (62) of the two recesses (15', 16') is at an oblique angle to the longitudinal center plane (6') of the flat key (1) or the blank (1b).

9. The flat key or key blank according to any one of claims 1 to 8, **characterized in that** the recess(es) (15', 16') are designed like a groove with a round base.

10. A method for producing a key blank according to any one of claims 2 to 9, **characterized in that** the two undercut grooves (11', 12') are first produced and then a recess (15', 16') is milled into at least one of the two undercut grooves (11', 12') using a T-slot milling cutter (60).

11. The method according to claim 10 for a flat key according to claim 6 or 7 and optionally 8, **characterized in that** a recess (15', 16') is milled simultaneously in each of the two undercut grooves (11', 12') using the T-slot milling cutter (60).

12. The method according to claim 10 or 11, **characterized in that** the T-slot milling cutter (60) is guided at an acute or obtuse angle to the longitudinal center plane (6') of the blank.

13. A locking cylinder (100) having a housing (101) and a cylinder core (102) which can be rotated in the housing (101), wherein a key channel (103) with two flat sides (2, 3) for inserting a suitable flat key (1) according to claim 1 is provided in the cylinder core (102); wherein bores are provided in the housing (101) which, in the initial position of the cylinder core (102), continue in alignment in the cylinder core (102) into the key channel (103), wherein tumbler pins subdivided into core pins (112) and housing pins (111) are provided in these bores, which are positioned by the serration cutouts (41, 42, 43, 44, 45, 46) of the matching flat key (1) such that the pitch plane between the core pin (112) and the housing pin (111) of each tumbler pin

lies at the edge of the cylinder core (102), so that the cylinder core (102) can be rotated with the matching flat key (1); wherein ribs (11, 12, 13, 14) are provided in the flat sides (2, 3) as profiled variation elements and as profiled guiding elements, wherein at least two ribs (11, 12) overlap on a flat side (3) and are undercut in opposite directions, **characterized in that** an elevation (15, 16) is provided in the outer flank (11a, 12a) of at least one of the two ribs (11, 12).

14. The locking cylinder according to claim 13 for a flat key according to claim 3, **characterized in that** in addition to the two oppositely undercut ribs (11, 12), a further rib (13) is provided on the opposite flat side (2), which overlaps with at least one of the two oppositely undercut ribs (11, 12).

15. The locking cylinder according to claim 14 for a flat key according to claim 4, **characterized in that** the two undercut ribs (11, 12) and the further rib (13) are arranged in the central region of the two flat sides (2, 3), where the head ends of the core pins (112) lie.

16. The locking cylinder according to any one of claims 13 to 15 for a flat key according to claim 5, **characterized in that** the two undercut angles (α, β) are different sizes.

17. The locking cylinder according to any one of claims 13 to 16 for a flat key according to claim 6, **characterized in that** an elevation (15, 16) is provided on the outer flanks (11a, 12a) of both ribs (11, 12).

18. The locking cylinder according to claim 17 for a flat key according to claim 7, **characterized in that** the two elevations (15, 16) are symmetrical.

19. The locking cylinder according to claim 18 for a flat key according to claim 8, **characterized in that** the axis of symmetry is at an oblique angle to the longitudinal center plane (6) of the key channel (103).

20. The locking cylinder according to any one of claims 13 to 19 for a flat key according to claim 9, **characterized in that** the elevation(s) (15, 16) are rounded on the outside.