

CLAIMS

1. An alignment system for approaching a vehicle to a target object spatially spaced therefrom, comprising an object detection means attached to the vehicle and a coupling element, which in an end position detachably holds the target object, the object detection means being aligned in the direction of the target object and the data from the object detection means being used to generate an image in which the target object together with a guide marker can be seen during the approach of the vehicle,
wherein,
the guide marker is applied to at least one component of the vehicle arranged in an entry area of the coupling element.
2. The alignment system according to claim 1, wherein the guide marker exists physically permanent.
3. The alignment system according to claim 1 or claim 2, wherein the guide marker on the component is painted, glued, embossed, milled and/or is formed on the component as a protruding relief.
4. The alignment system according to claim 1 or claim 2, wherein the guide marker comprises at least one directional element mounted rigidly or movably on the component.
5. The alignment system according to claim 1, wherein the guide marker is projected onto the component by means of a light source.

6. The alignment system according to any one of claims 1 to 5, wherein the guide marker is formed from at least one boundary line running towards the end position of the target object and/or towards the object detection means.
7. The alignment system according to claim 6, wherein the boundary line(s) is/are formed conically widened or tapered in the distal direction.
8. The alignment system according to any one of claims 1 to 5, wherein the guide marker is formed in accordance with a contour of the target object or is obtained taking into account a perspective distortion.
9. The alignment system according to any one of claims 1 to 8, wherein the guide marker extends in an x-y plane (horizontal), y-z plane (vertical in the direction of movement) and/or x-z plane (transverse to the direction of movement) or at least has sections that extend over at least two of these planes.
10. The alignment system according to any one of claims 1 to 9, wherein there is an electronic control unit which determines a distance to the target object from the ratio of a known size of the guide marker and a known size of the target object.
11. The alignment system according to any one of claims 1 to 10, wherein the coupling element is a fifth wheel and the target object is a kingpin attached to a second vehicle.
12. The alignment system according to claim 11, wherein the component is formed from opposite flanks of coupling horns arranged to the side of the entry area.

13. The alignment system according to claim 11, wherein the component is formed from a cross bridge arranged under the entry area.
14. The alignment system according to claim 11, wherein the component is formed from a connector console of an automated plug-in coupling system for supply lines arranged under the entry area.
15. The alignment system according to any one of claims 1 to 10, wherein the coupling element is a container lock and the target object is a corner fitting formed on a container or a swap body.
16. The alignment system according to any one of claims 1 to 10, wherein the coupling element is a guiding roller and the target object is a guide frame formed on a swap body.
17. The alignment system according to claim 15 or claim 16, wherein the component is formed from a vehicle frame part or a chassis component of the vehicle.
18. The alignment system according to any one of claims 1 to 10, wherein the coupling element is a tool holder arranged on the distal end of a front loader and the target object is a pick-up implement of a working device which has to be attached on the front loader.
19. The alignment system according to claim 18, wherein the component is formed from a section of the distal end of the front loader which is aligned to the tool holder.