According to the invention, this object is achieved by a lifting device which has the features of Claim 1. Advantageous embodiments and further embodiments of the invention can be achieved by means of the measures mentioned in the subclaims.

According to a first aspect of the invention, a~~A~~ lifting device is described, the lifting device~~according to the invention is~~ configured so that it can autonomously position an unwieldy object in such a manner that said object can be mounted on a tall structure. In the present context, unwieldy means a large, heavy and possibly elongate object, such as for example a wind turbine blade. In the present context, a tall structure is a structure with a minimum installation height of the object of 60 metres above the water surface or the ground surface. In the present context, autonomously means that the lifting device does not require support from the tall structure in order to be able to position the unwieldy object. The lifting device comprises a boom structure with a longitudinal axis and is characterized by the fact that the lifting device is furthermore provided with a positioning device which is displaceably connected to the boom structure, wherein the boom structure is provided with guiding means for guiding the positioning device along the longitudinal axis and wherein the positioning device is provided with a displacement structure cooperating with the guiding means and a mounting structure for detachably mounting the unwieldy object on the positioning device wherein the boom structure and displacement structure of the positioning device form an assembly for the approximate positioning of the mounting structure with respect to the tall structure and wherein the positioning device is furthermore provided with additional means for accurately positioning the object with respect to the tall structure.

The invention is based on the insight that the positioning of an object suspended from cables at great height is affected by wind. The lifting device according to the invention provides a rigid, yet adjustable connection between the object and the boom structure. Positioning is now no longer affected by the swaying of the lifting cables.

In an embodiment, the additional means comprise a rotation part which is configured to rotate the mounting structure about a first rotation axis on the displacement structure. This embodiment has the advantage that the object can be turned about a rotation axis. In the case of a wind turbine blade, this feature makes it possible to mount the blade to the hub irrespective of the angle which the hub makes. Also, it is no longer necessary to turn the hub during mounting of the wind turbine blades.

An advantageous embodiment of the invention is characterized by the fact that the additional means are configured for three-dimensionally displacing the mounting