Assembly of shaft and hub by an interference fit is a classical connection with known advantages and disadvantages. The advantage being the level of possible torque transfer while the disadvantage is a possible fretting fatigue failure at the points of stress concentration. To improve the assembly, the present paper discusses different optimized designs that improve the contact pressure distribution. The pressure distribution in the contact is the source responsible for the fatigue failure. The distribution can be improved by design modification done directly on the contacting surfaces which however requires a very high production precision. Alternatively it is shown, how hub side shape optimization can improve the pressure distribution significantly. The latter design change has no influence on the remaining shaft-hub design i.e. the attachment of other parts. The analysis performed either by a traditional contact analysis, or by a super element contact analysis where no iterations are needed for the contact evaluation.