Methods of Reducing Local Wear of Contact Wires at Support Points

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In the vicinity of supporting points of overhead contact lines, local pulling-up of contact wires caused by pull-off arms can cause excessive contact force on pantographs, thus increasing the likelihood of occurrence of local wear of contact wires. Therefore, we have developed a new type of fitting that can reduce the pulling-up amount of contact wires down to the order of 60% of that of the conventional fitting. Tests in commercial lines have revealed that the maximum value of bending stress generated in contact wires when a pantograph passes can be reduced. According to the results, it can be predicted that it will be possible to reduce wear rates of contact wires because of the high correlation between bending stress and wear rate.