

Fig. 1

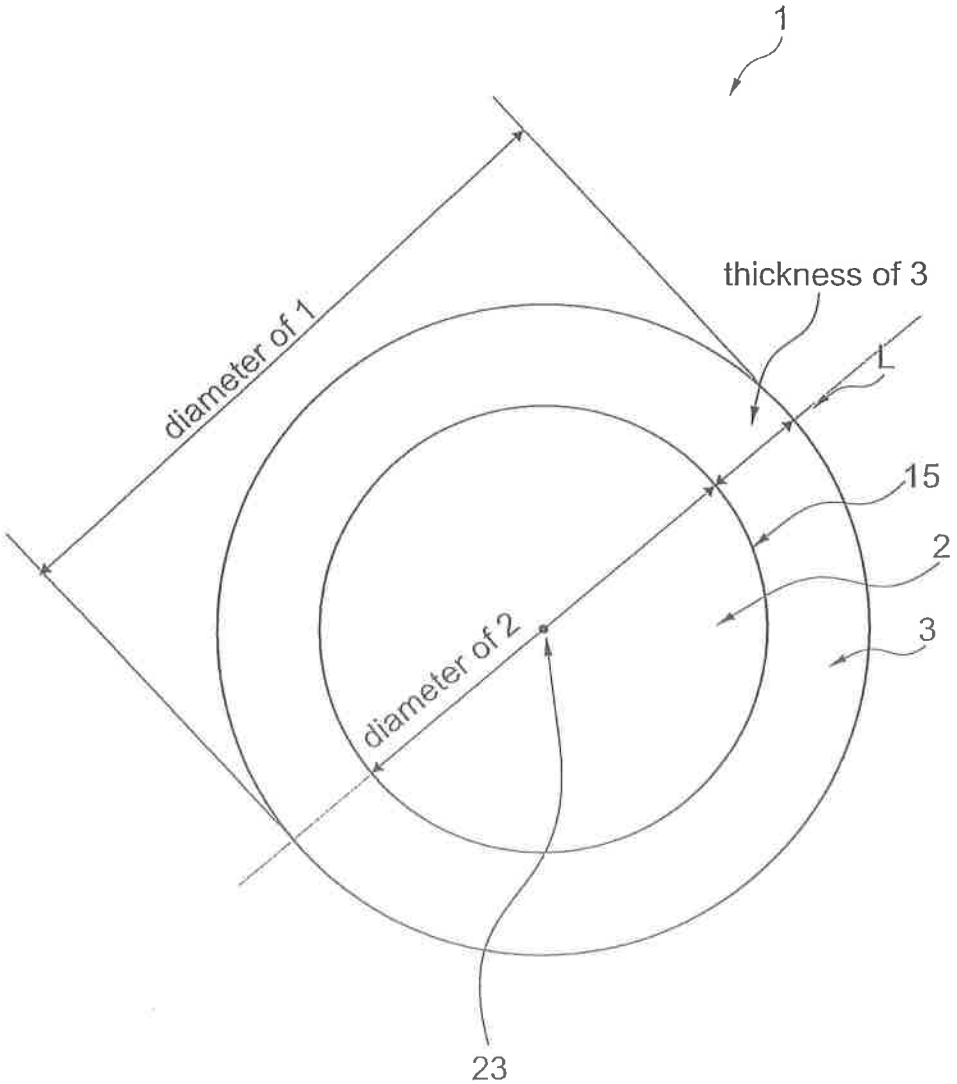


Fig. 2

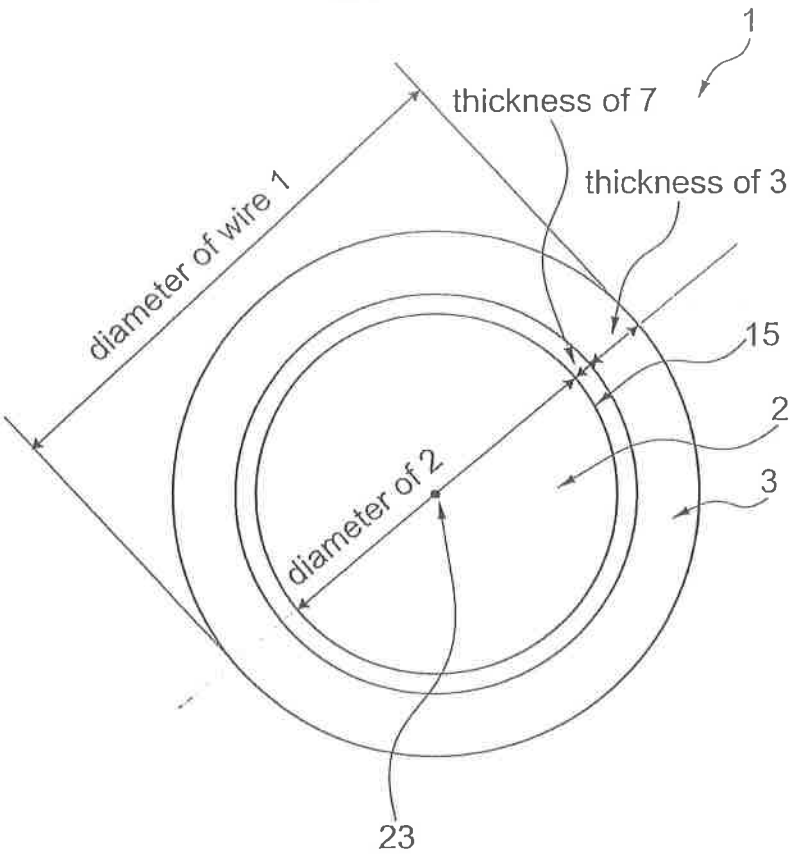

1
thickness of 7
thickness of 3
diameter of wire 1
15
2
3
diameter of 2
23

Fig. 3

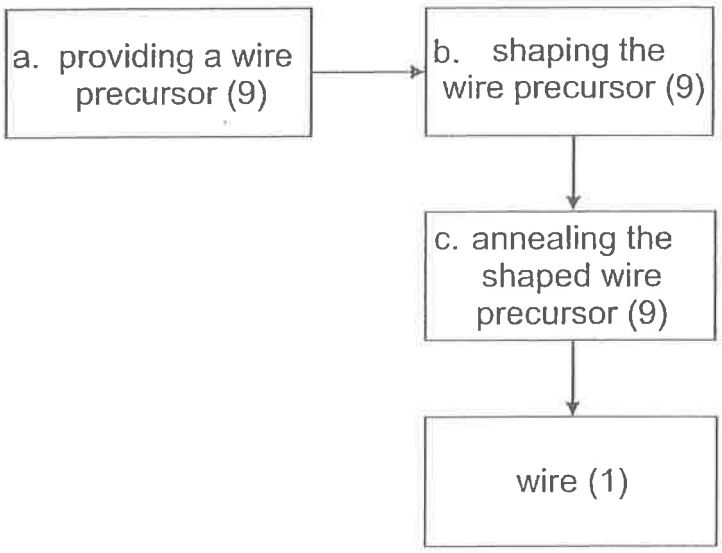

a. providing a wire precursor (9)
b. shaping the wire precursor (9)
c. annealing the shaped wire precursor (9)
wire (1)

Fig. 4

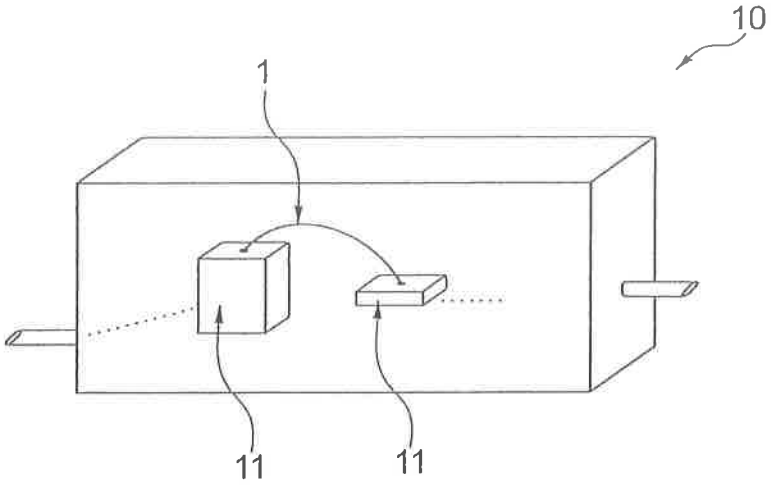


Fig. 5

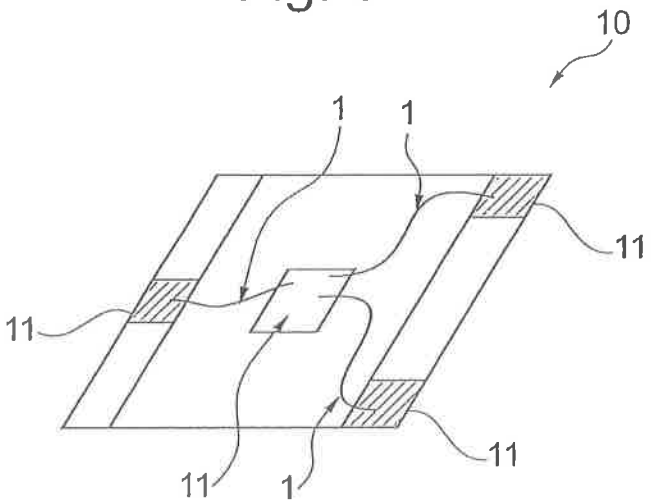


Fig. 6

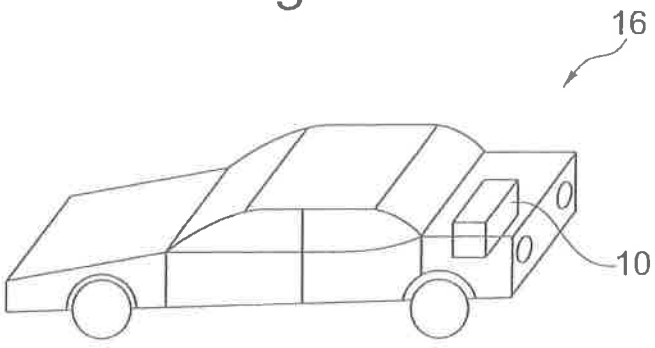


Fig. 7

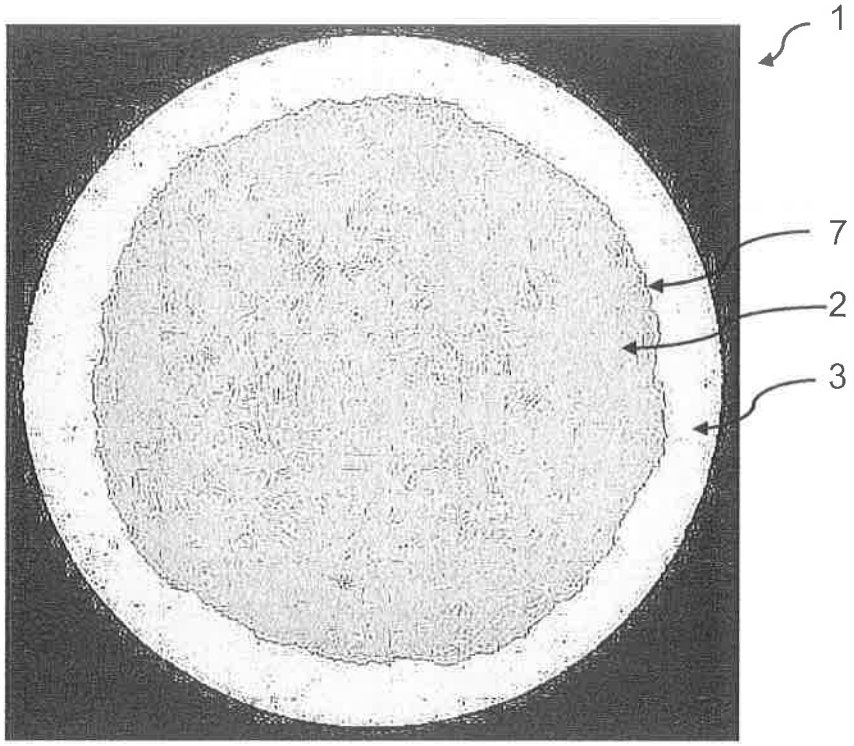


Fig. 8

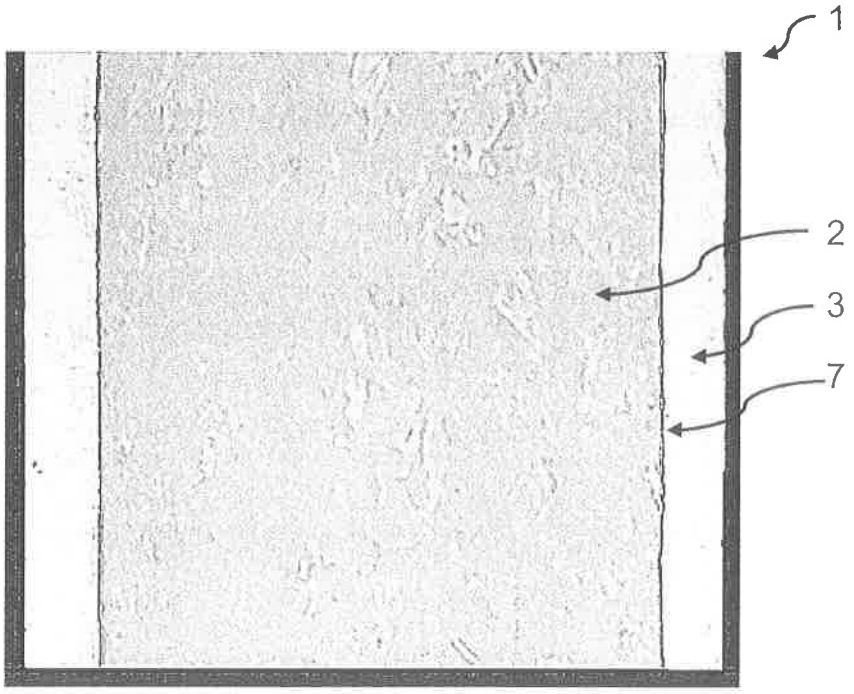


Fig. 9

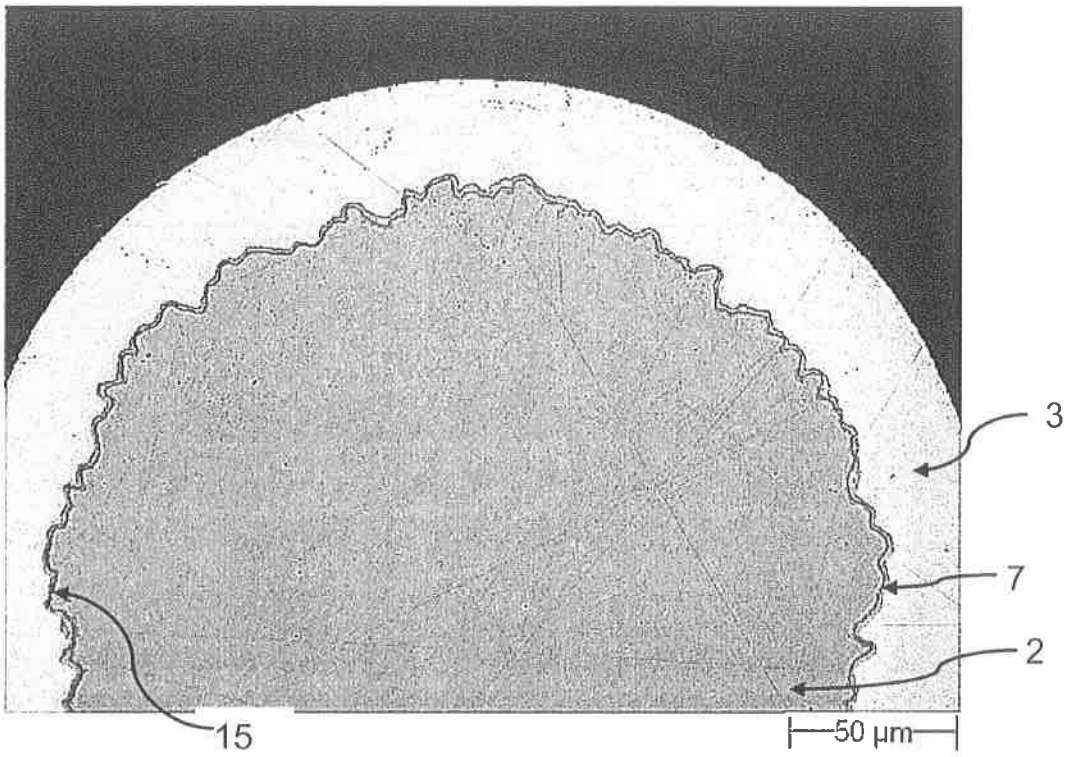


Fig. 10

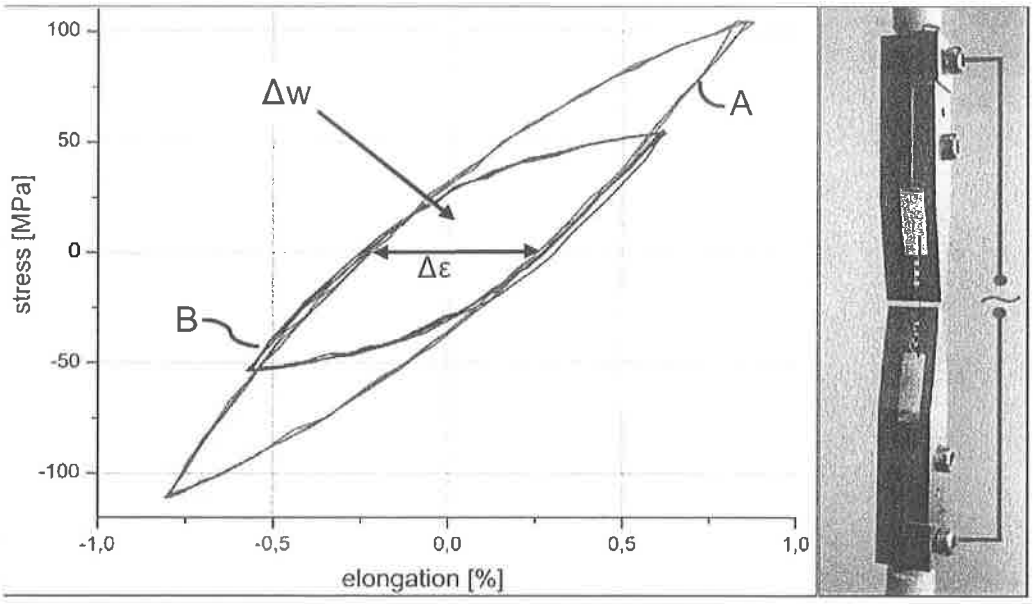


Fig. 11

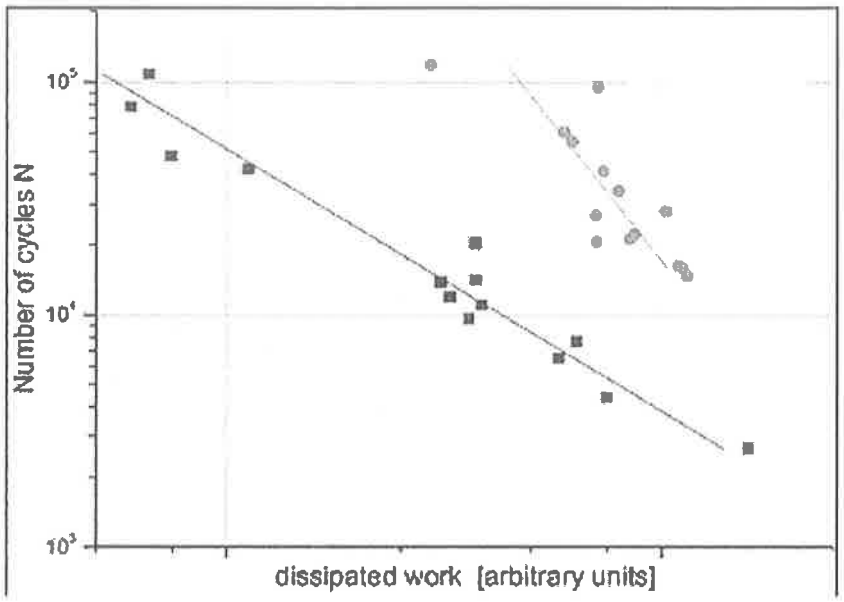

Number of cycles N
10^5
10^4
10^3
dissipated work [arbitrary units]

Fig. 12

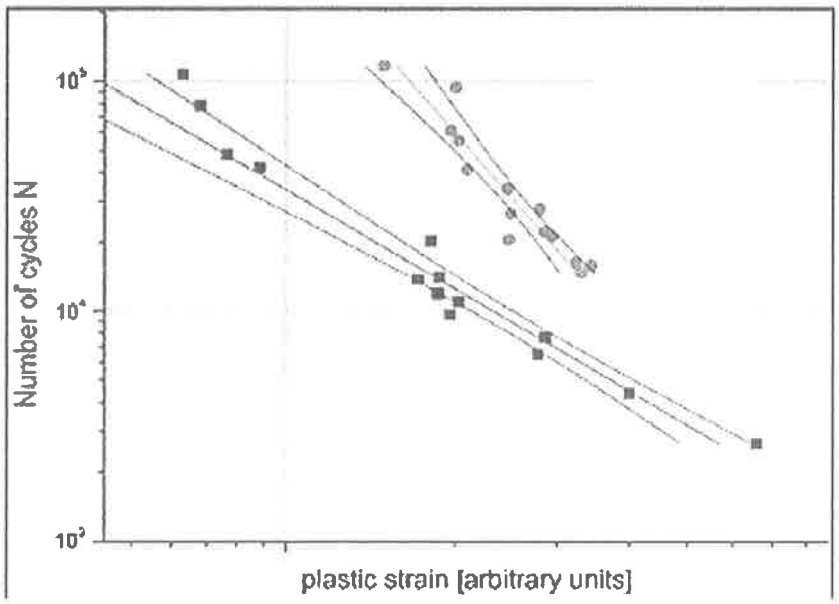

Number of cycles N
10^5
10^4
10^3
plastic strain [arbitrary units]

Fig. 13

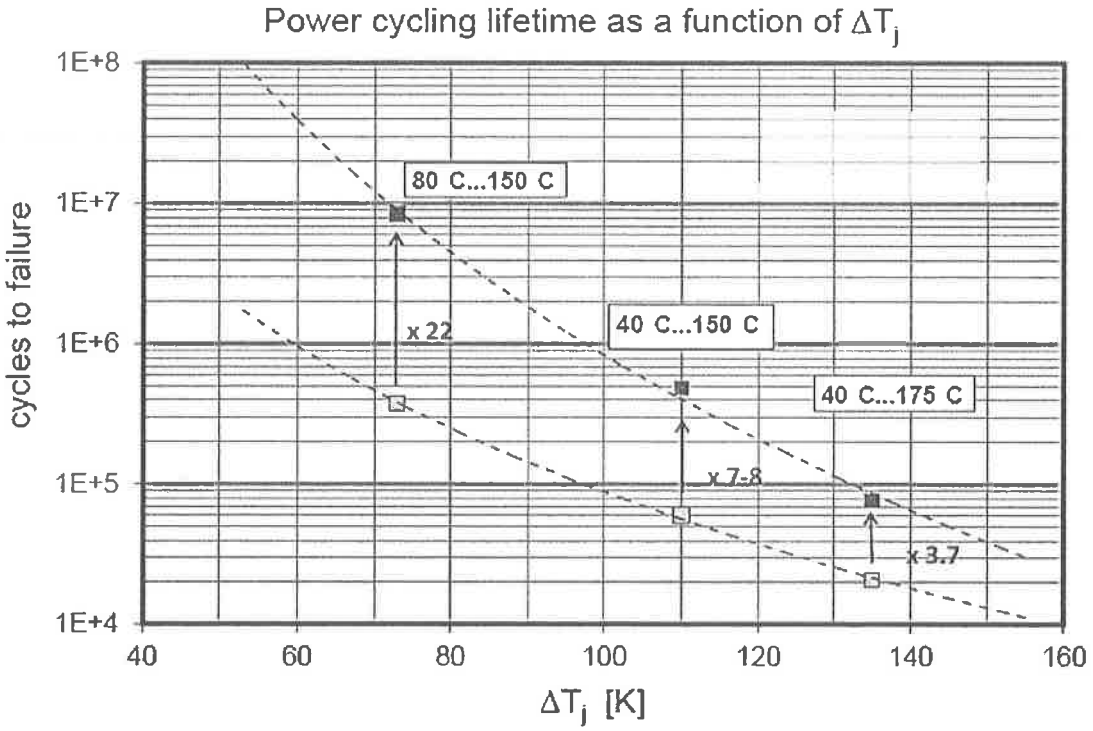

Power cycling lifetime as a function of ΔT_j
cycles to failure
1E+8
1E+7
1E+6
1E+5
1E+4
40
60
80
100
120
140
160
ΔT_j [K]
80 C...150 C
40 C...150 C
40 C...175 C
x 22
x 7-8
x 3.7

Fig. 14

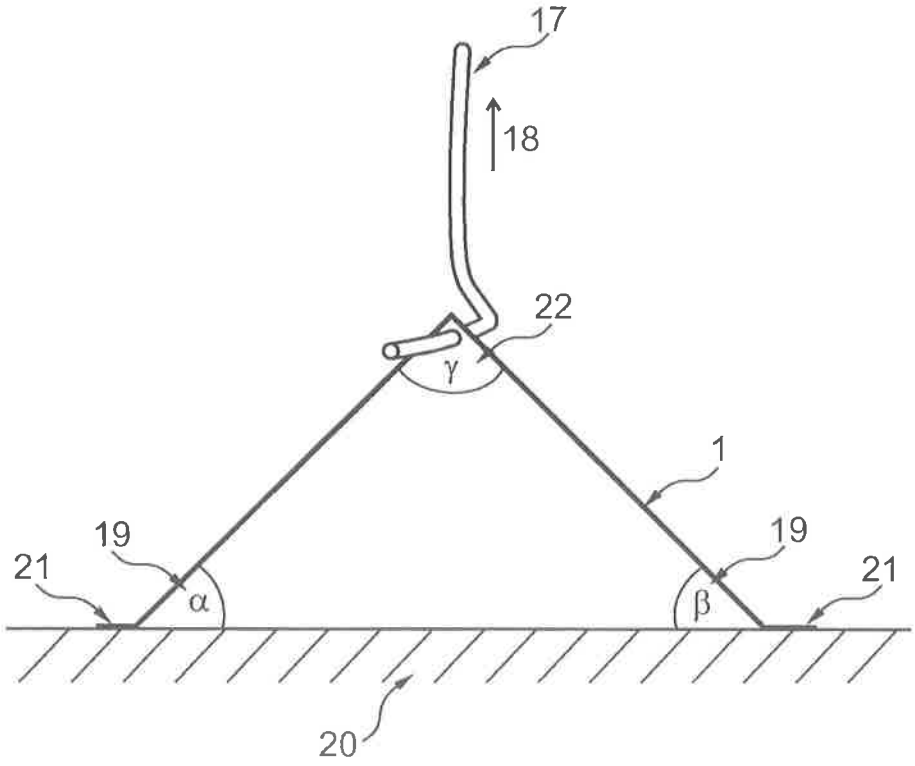


Fig. 15