FIG. 1

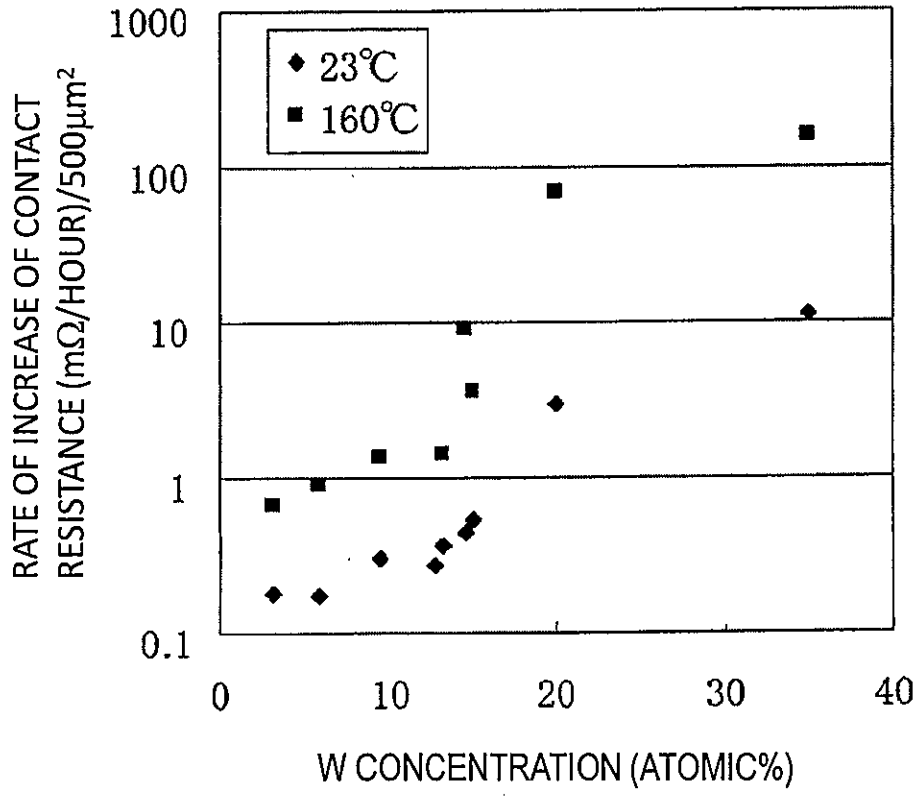

1000
100
10
1
0.1
23℃
160℃
RATE OF INCREASE OF CONTACT RESISTANCE (mΩ/HOUR)/500μm²
0
10
20
30
40
W CONCENTRATION (ATOMIC%)

FIG. 2

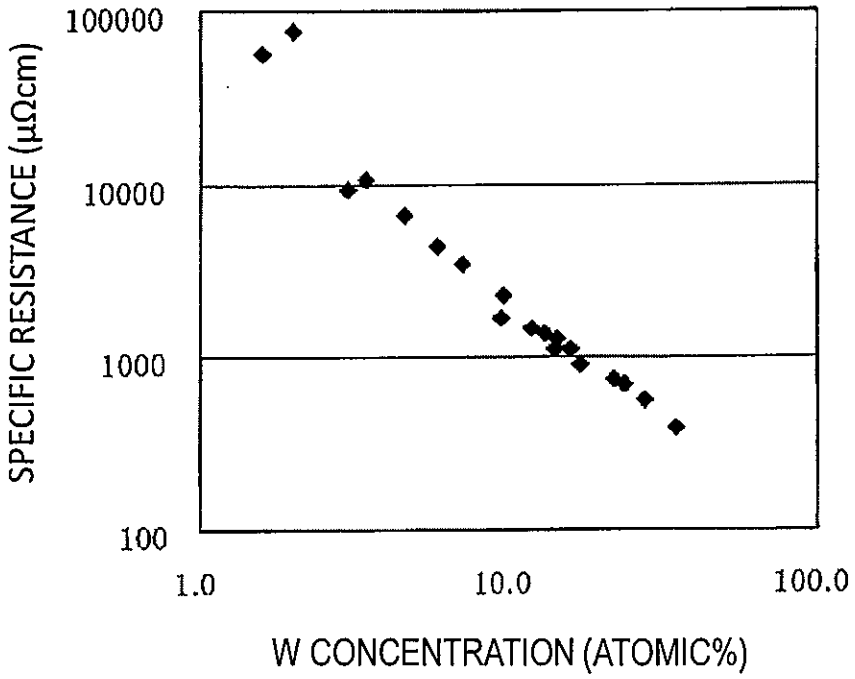

100000
10000
1000
100
SPECIFIC RESISTANCE (μΩcm)
1.0
10.0
100.0
W CONCENTRATION (ATOMIC%)

FIG. 3

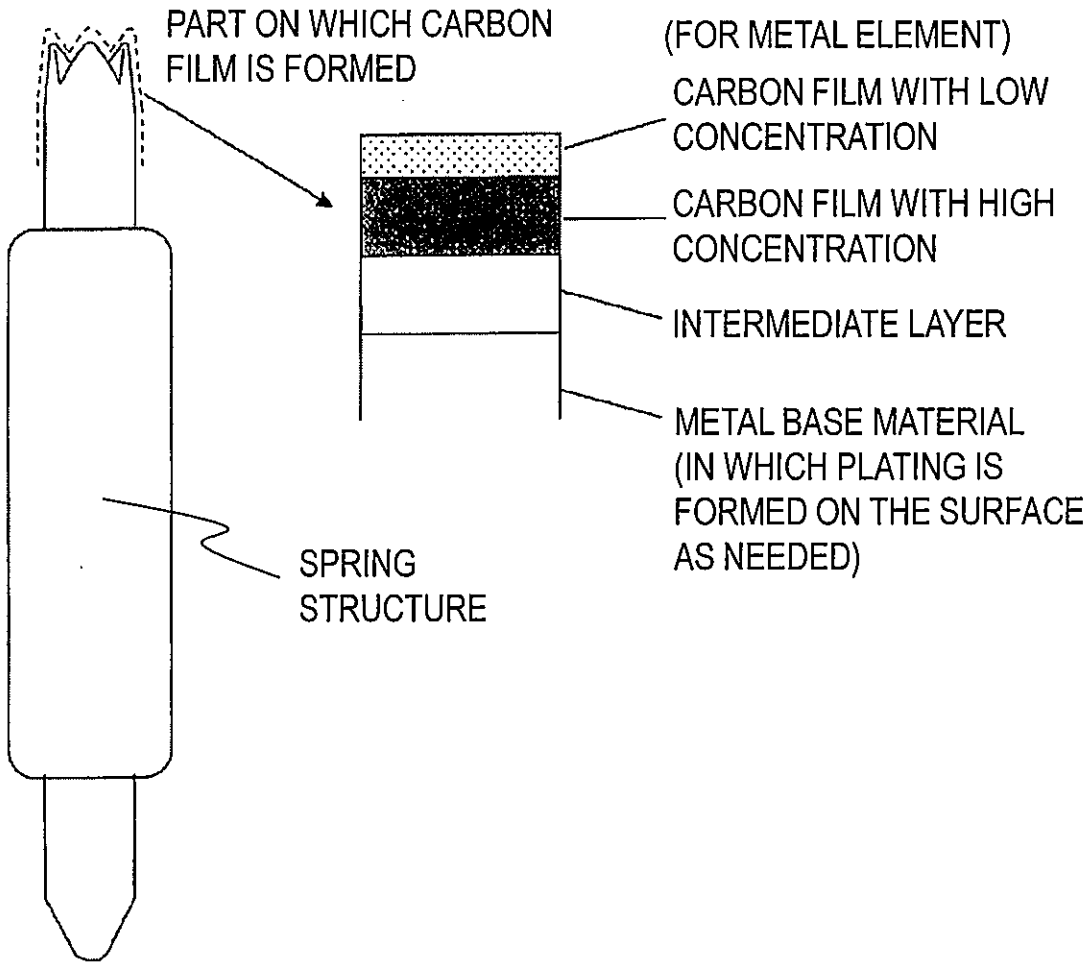
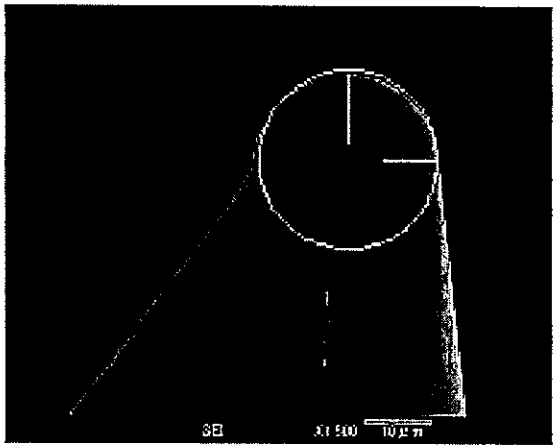

PART ON WHICH CARBON FILM IS FORMED
(FOR METAL ELEMENT)
CARBON FILM WITH LOW CONCENTRATION
CARBON FILM WITH HIGH CONCENTRATION
INTERMEDIATE LAYER
METAL BASE MATERIAL (IN WHICH PLATING IS FORMED ON THE SURFACE AS NEEDED)
SPRING STRUCTURE

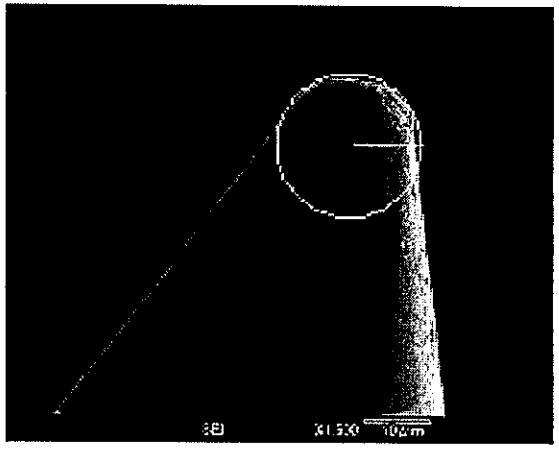
FIG. 4

(a)



CURVATURE RADIUS ～13μm

(b)



CURVATURE RADIUS ～9μm