Fig. 1

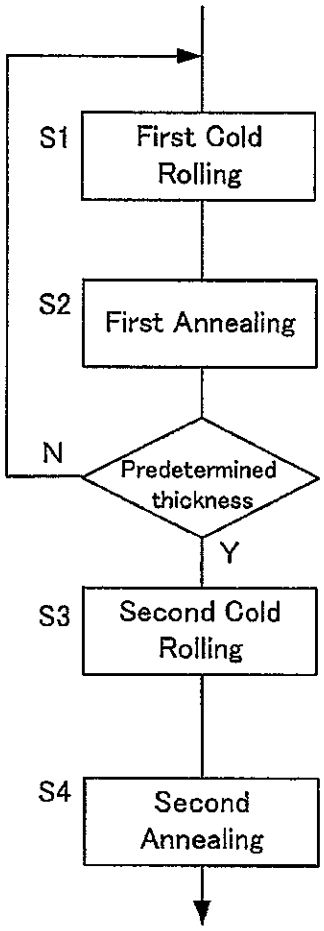

S1
First Cold Rolling
S2
First Annealing
N
Predetermined thickness
Y
S3
Second Cold Rolling
S4
Second Annealing

Fig. 2

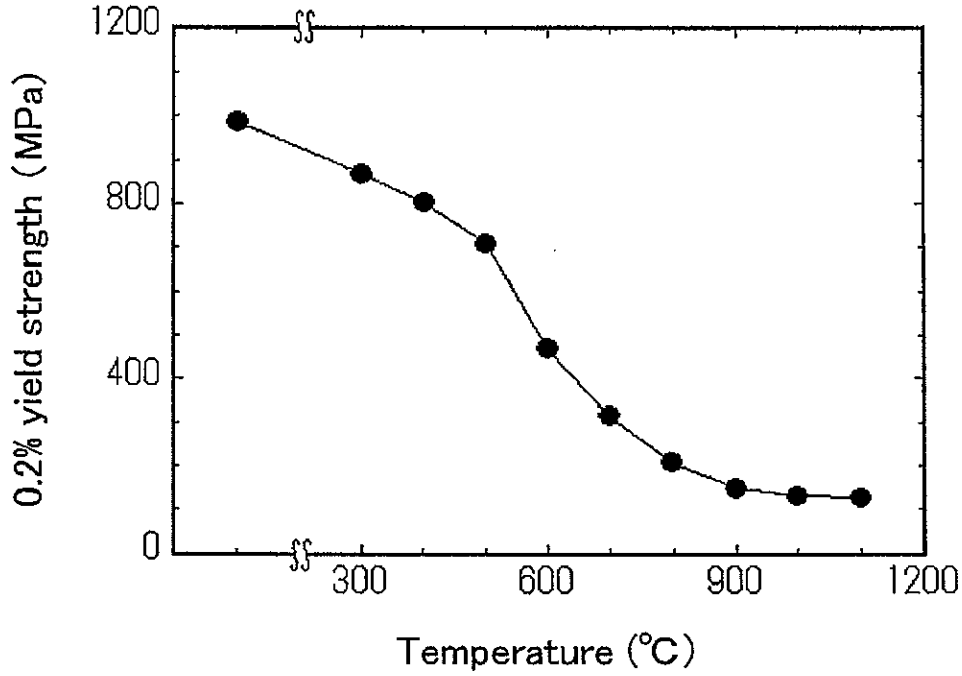

1200
800
400
0
0.2% yield strength (MPa)
300
600
900
1200
Temperature (°C)

Fig. 3

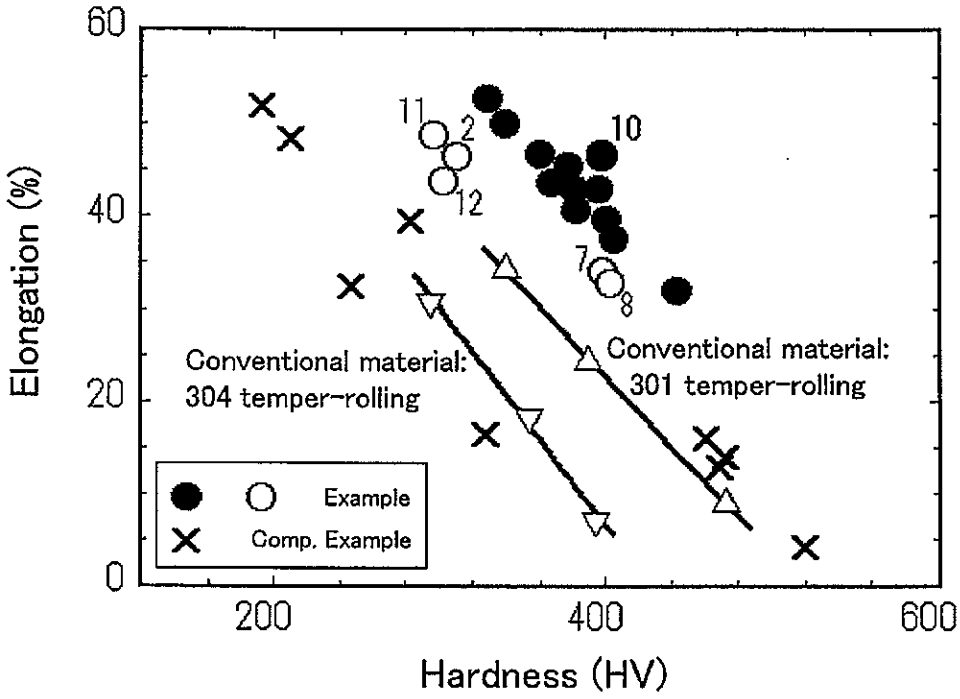

60
40
20
0
Elongation (%)
200
400
600
Hardness (HV)
11
2
12
10
7
8
Conventional material:
304 temper-rolling
Conventional material:
301 temper-rolling
Example
Comp. Example

Fig. 4

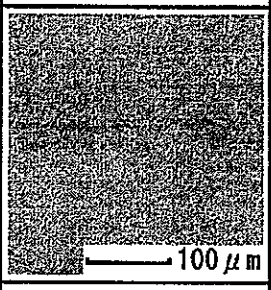
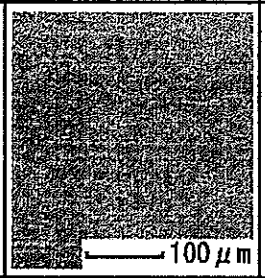
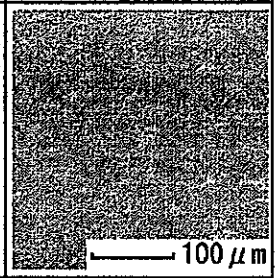
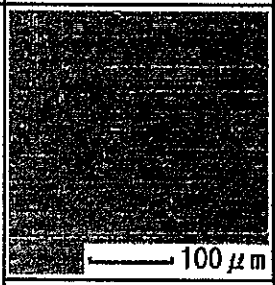
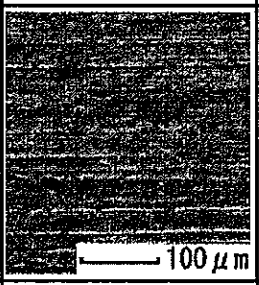
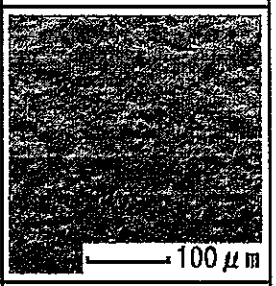
Bending radius	– (Flat plate)	2 mm	0.5 mm
Present invention (No. 4)			
	Ry: 11.2 μm	Ry: 15.7 μm	Ry: 29.3 μm
Comparative example (No. 28)			
	Ry: 11.0 μm	Ry: 37.9 μm	Ry: 72.8 μm

Fig. 5

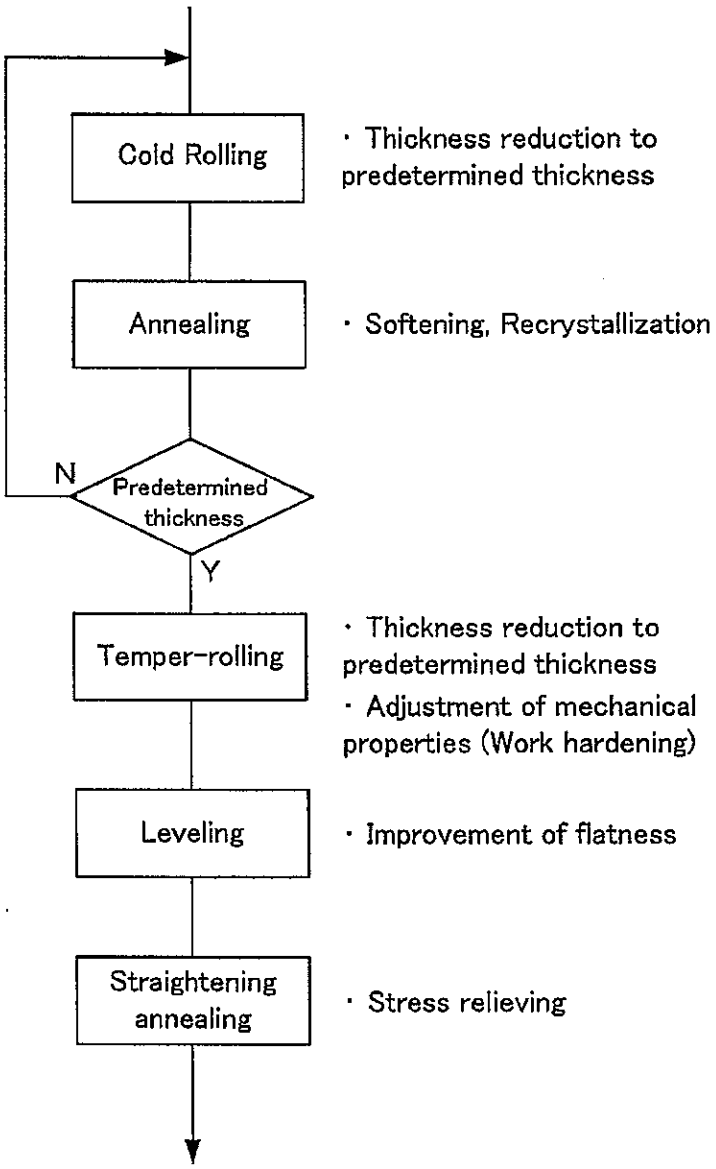
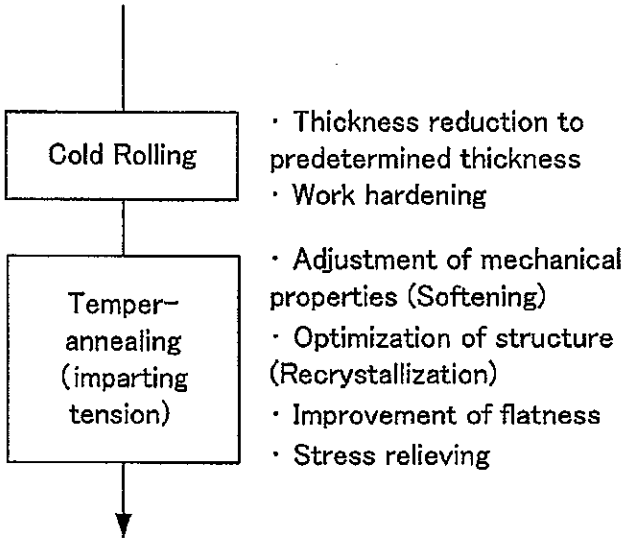

Cold Rolling
· Thickness reduction to predetermined thickness
Annealing
· Softening, Recrystallization
N
Predetermined thickness
Y
Temper-rolling
· Thickness reduction to predetermined thickness
· Adjustment of mechanical properties (Work hardening)
Leveling
· Improvement of flatness
Straightening annealing
· Stress relieving

Fig. 6


Cold Rolling
· Thickness reduction to predetermined thickness
· Work hardening
Temper-annealing (imparting tension)
· Adjustment of mechanical properties (Softening)
· Optimization of structure (Recrystallization)
· Improvement of flatness
· Stress relieving