FIG. 1

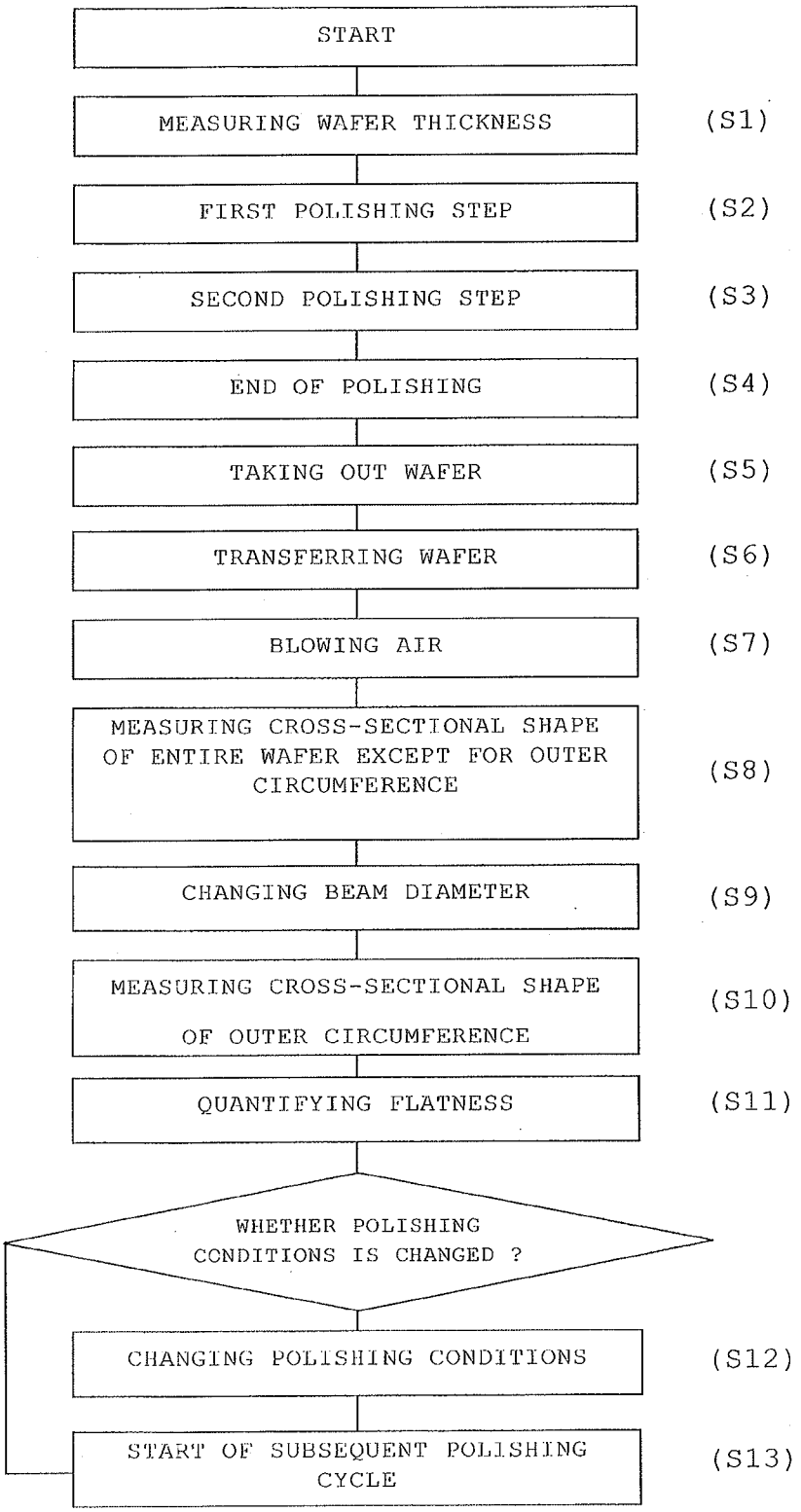

START
MEASURING WAFER THICKNESS
(S1)
FIRST POLISHING STEP
(S2)
SECOND POLISHING STEP
(S3)
END OF POLISHING
(S4)
TAKING OUT WAFER
(S5)
TRANSFERRING WAFER
(S6)
BLOWING AIR
(S7)
MEASURING CROSS-SECTIONAL SHAPE OF ENTIRE WAFER EXCEPT FOR OUTER CIRCUMFERENCE
(S8)
CHANGING BEAM DIAMETER
(S9)
MEASURING CROSS-SECTIONAL SHAPE OF OUTER CIRCUMFERENCE
(S10)
QUANTIFYING FLATNESS
(S11)
WHETHER POLISHING CONDITIONS IS CHANGED ?
CHANGING POLISHING CONDITIONS
(S12)
START OF SUBSEQUENT POLISHING CYCLE
(S13)

FIG. 2

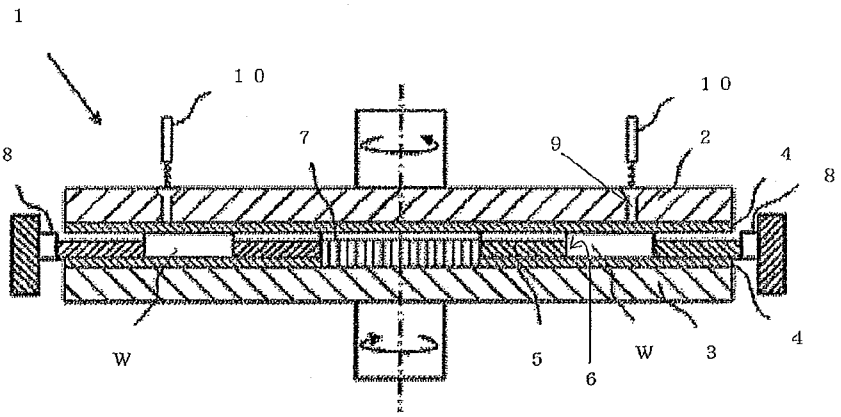


FIG. 3

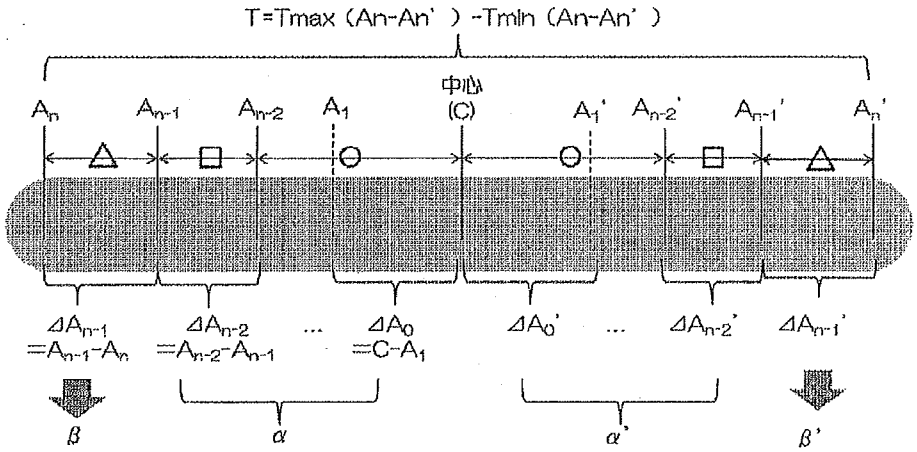


FIG. 4

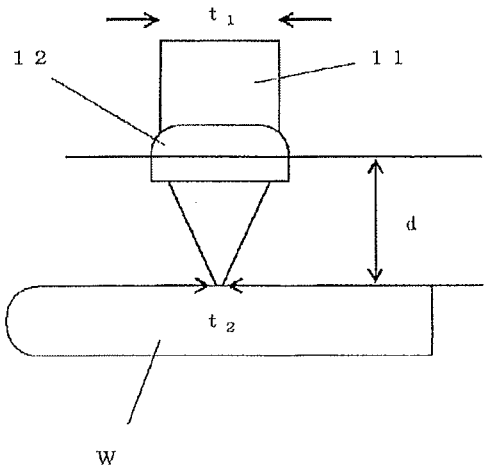


FIG. 5

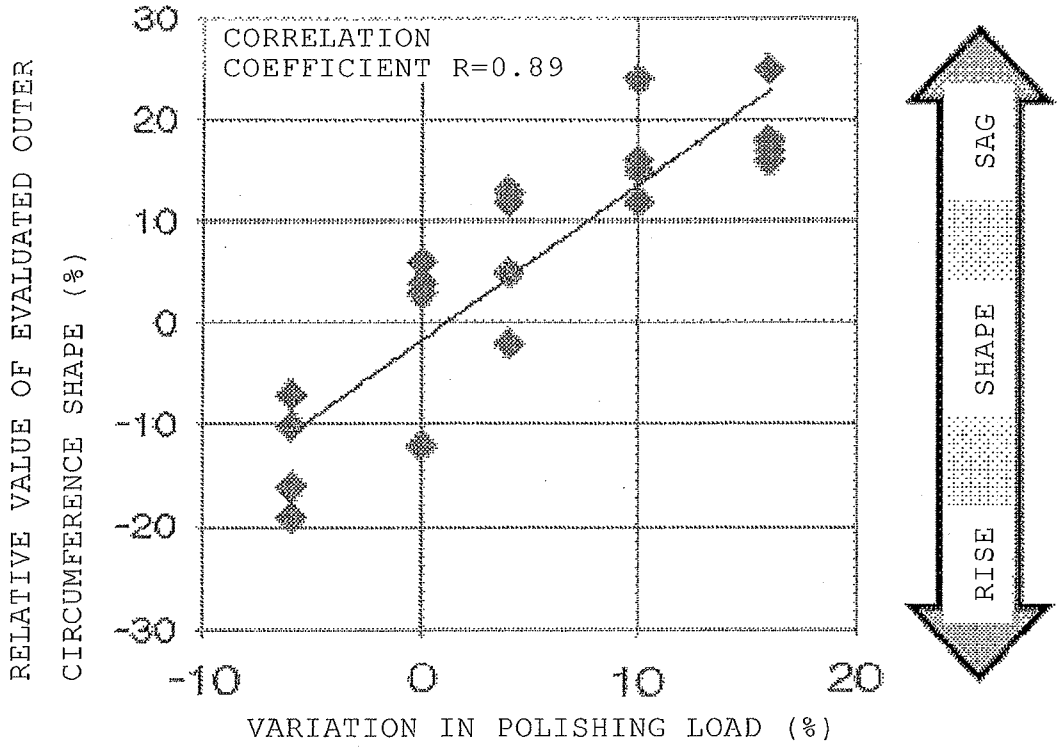
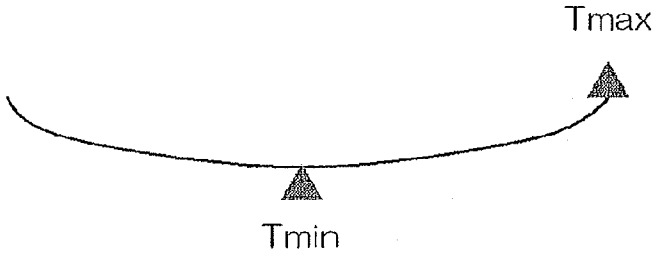

CORRELATION
COEFFICIENT R=0.89
RELATIVE VALUE OF EVALUATED OUTER CIRCUMFERENCE SHAPE (%)
VARIATION IN POLISHING LOAD (%)
30
20
10
0
-10
-20
-30
-10
0
10
20
SAG
SHAPE
RISE

FIG. 6

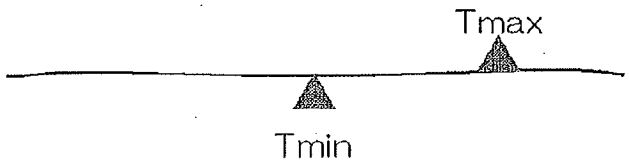
(A)



T=Tmax-Tmin=91 (nm)

SECTION	ΔA_{n-1}	ΔA_{n-2}	ΔA_0	$\Delta A_0'$	$\Delta A_{n-2}'$	$\Delta A_{n-1}'$
MEASURED VALUE	-20	-21	-43	-48	-18	-25
DECISION	FLAT	MINUS	MINUS	MINUS	FLAT	MINUS
VALUE	0	-0.5	-1	-1	0	-1
α, β	0	-1.5 (USED α)		-1		-1 (USED β)

(B)



T=Tmax-Tmin=10 (nm)

SECTION	ΔA_{n-1}	ΔA_{n-2}	ΔA_0	$\Delta A_0'$	$\Delta A_{n-2}'$	$\Delta A_{n-1}'$
MEASURED VALUE	8	6	-3	-10	8	7
DECISION	FLAT	FLAT	FLAT	FLAT	FLAT	FLAT
VALUE	0	0	0	0	0	0
α, β	0	0		0		0

FIG. 7

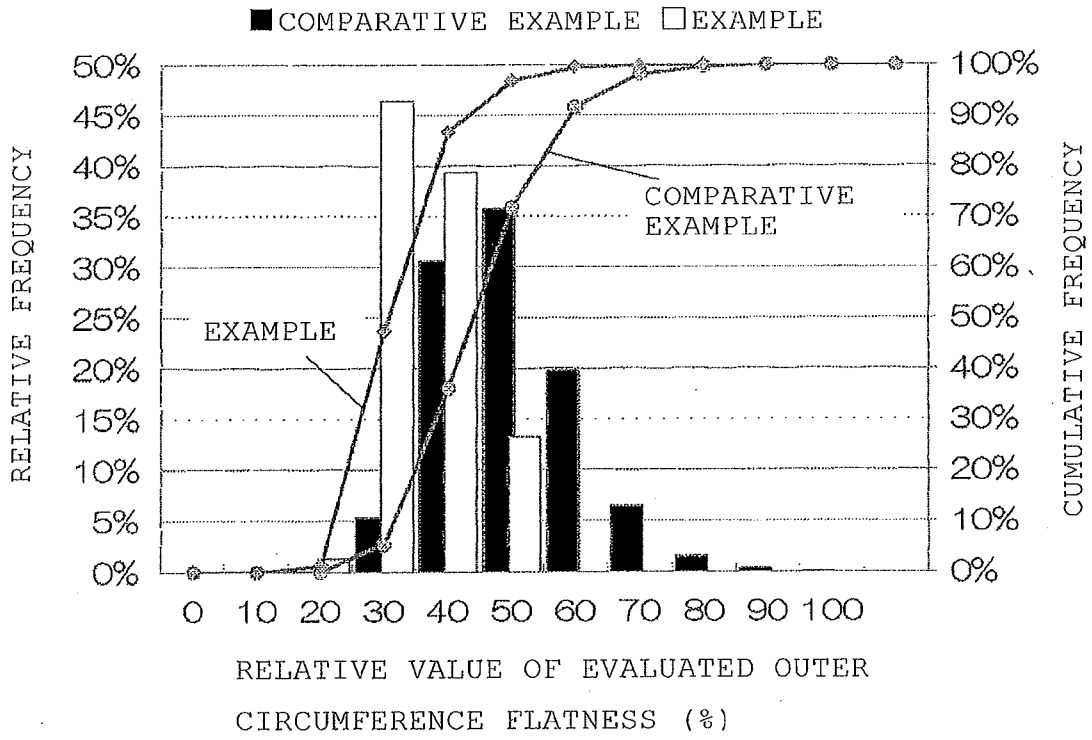
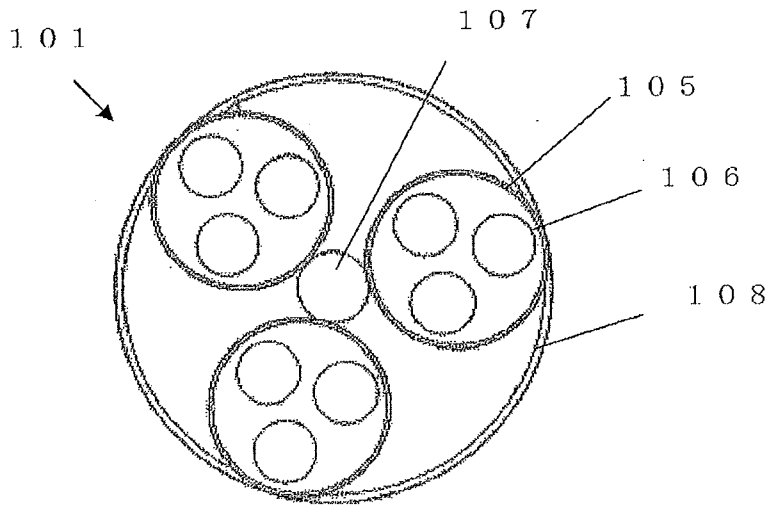

■COMPARATIVE EXAMPLE □EXAMPLE
RELATIVE FREQUENCY
CUMULATIVE FREQUENCY
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
COMPARATIVE EXAMPLE
EXAMPLE
0 10 20 30 40 50 60 70 80 90 100
RELATIVE VALUE OF EVALUATED OUTER CIRCUMFERENCE FLATNESS (%)

FIG. 8


101
107
105
106
108