Fig. 1

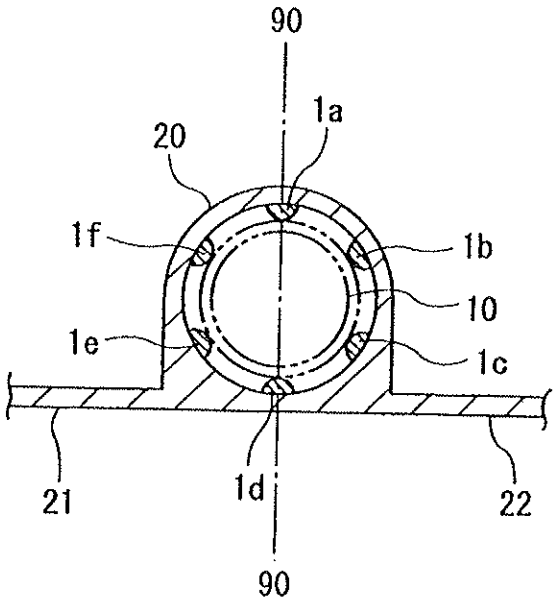


Fig. 2

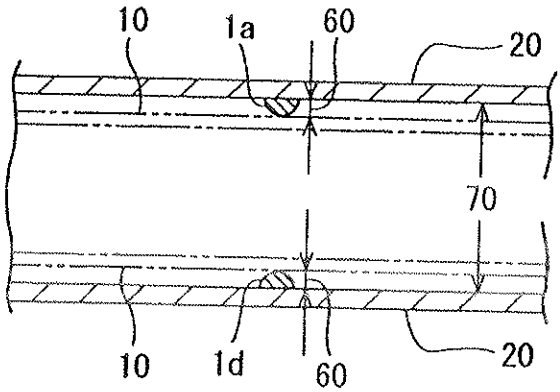


Fig. 3

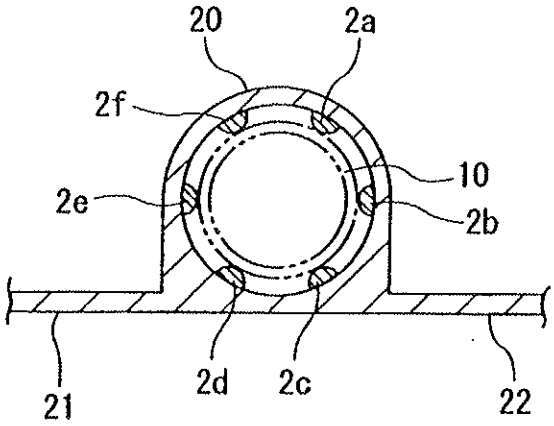


Fig. 4

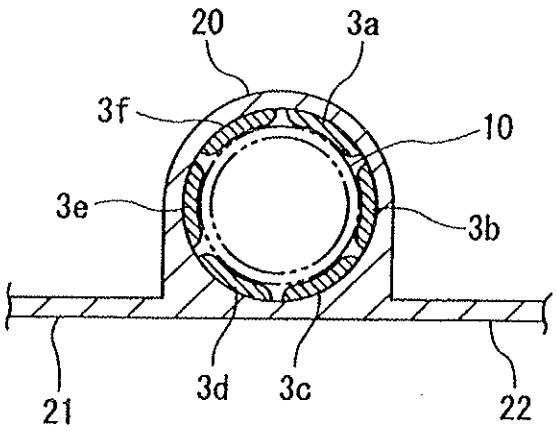


Fig. 5

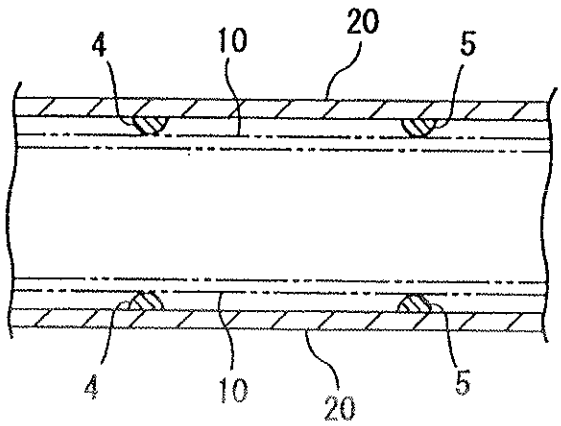


Fig. 6
PRIOR ART

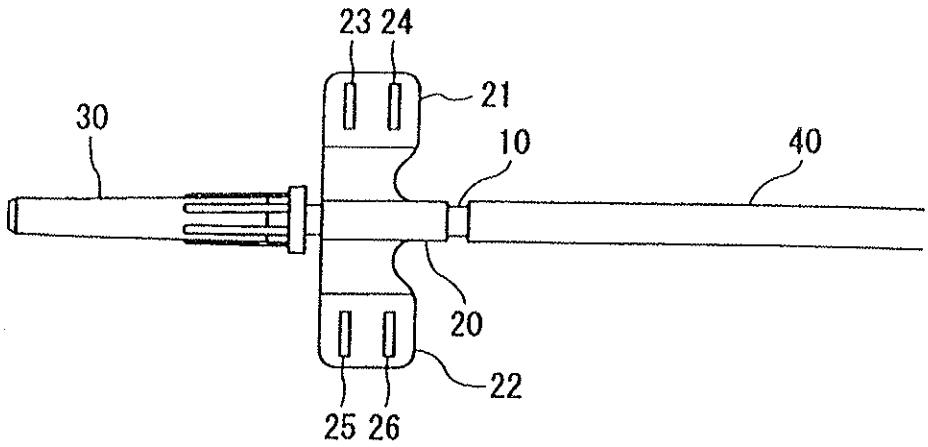


Fig. 7
PRIOR ART

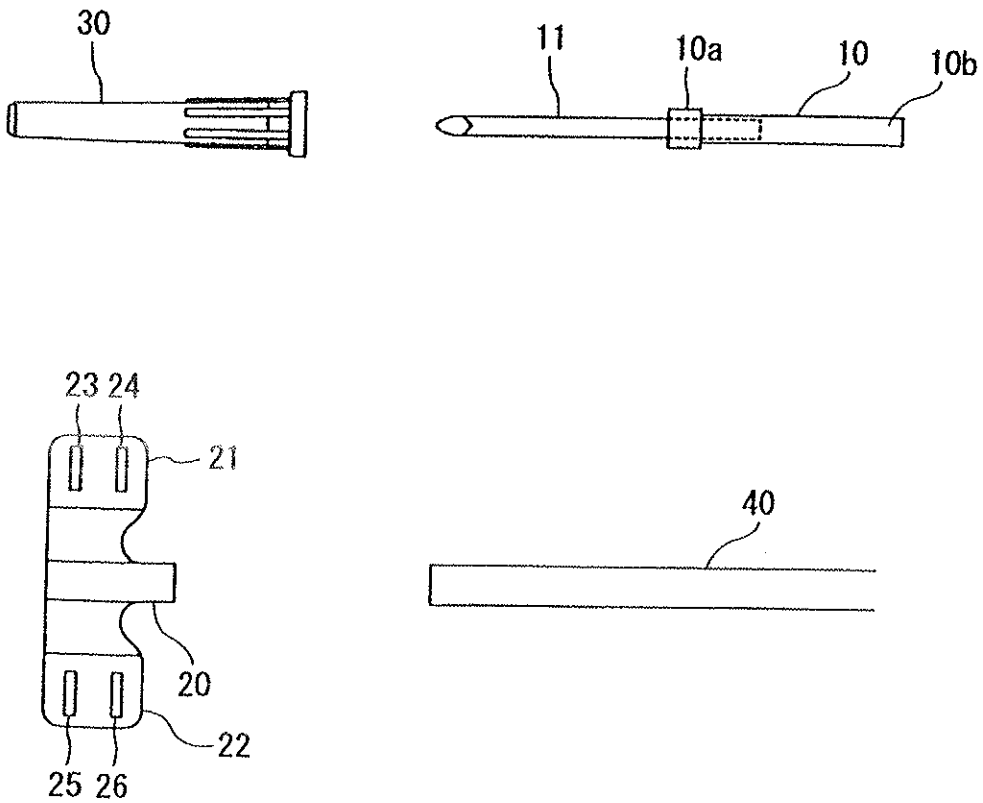


Fig. 8
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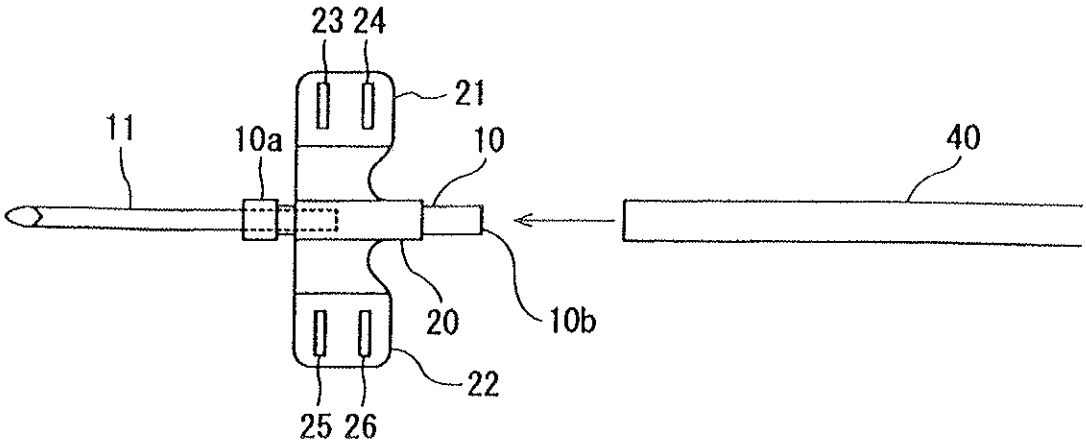


Fig. 9
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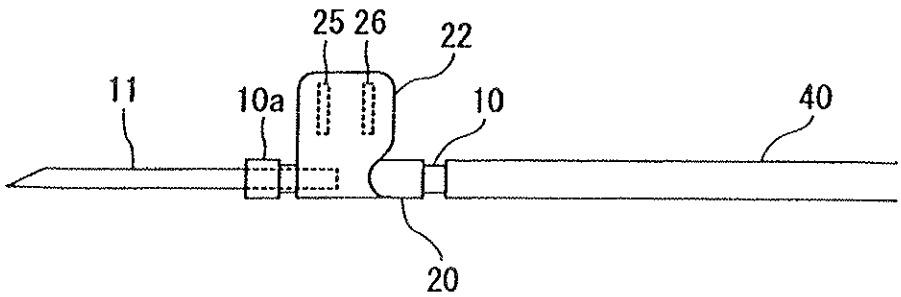


Fig. 10
PRIOR ART

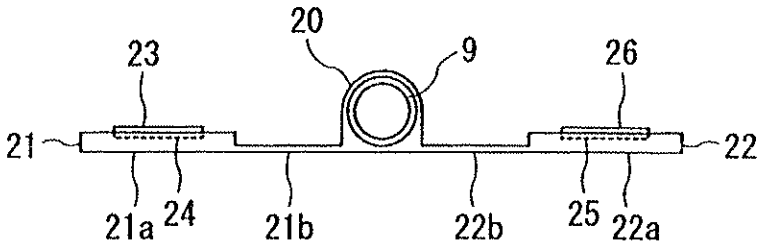


Fig. 11
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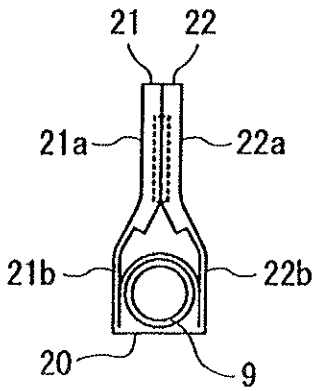


Fig. 12
PRIOR ART

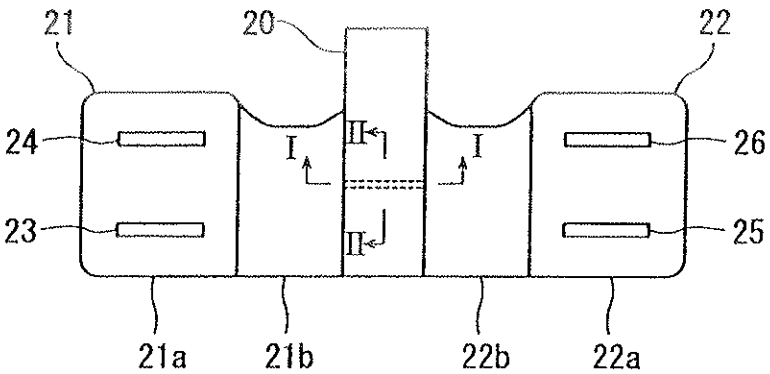


Fig. 13
PRIOR ART

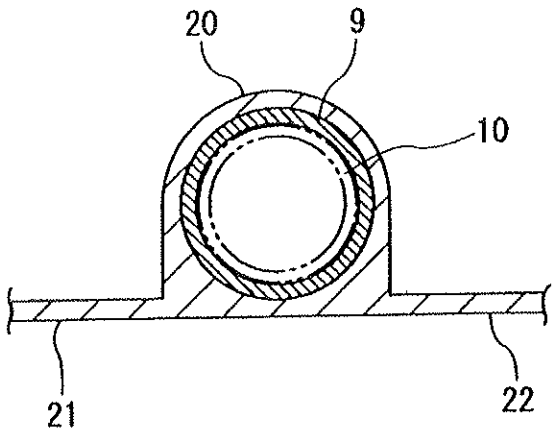


Fig. 14
PRIOR ART

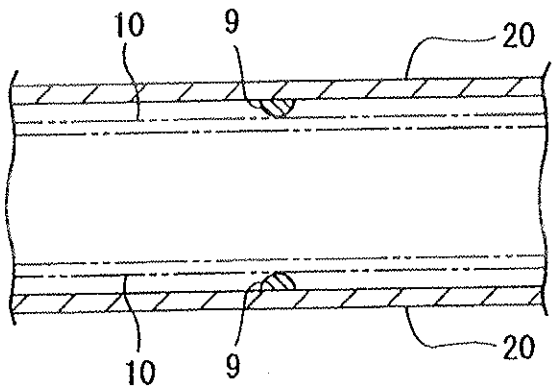


Fig. 15

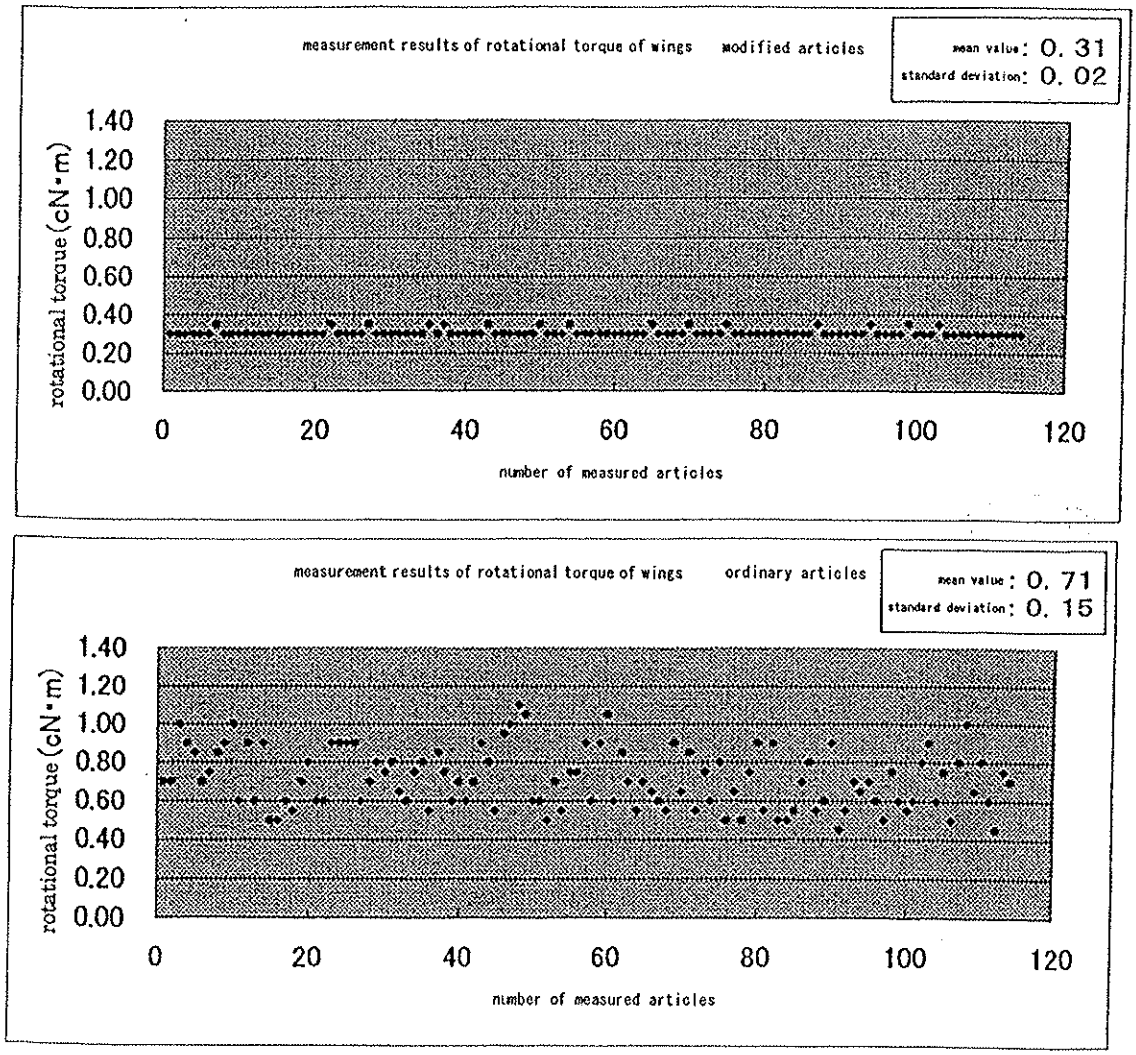

measurement results of rotational torque of wings modified articles
mean value: 0. 31
standard deviation: 0. 02
rotational torque (cN·m)
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0
20
40
60
80
100
120
number of measured articles
measurement results of rotational torque of wings ordinary articles
mean value: 0. 71
standard deviation: 0. 15
rotational torque (cN·m)
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0
20
40
60
80
100
120
number of measured articles

Fig. 16

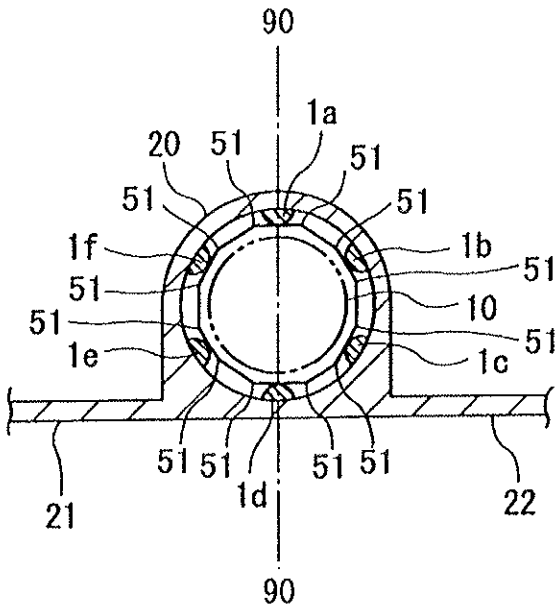

90
1a
20
51
51
51
51
1f
1b
51
51
10
51
51
1e
1c
51
51
51
51
51
1d
21
22
90

Fig. 17

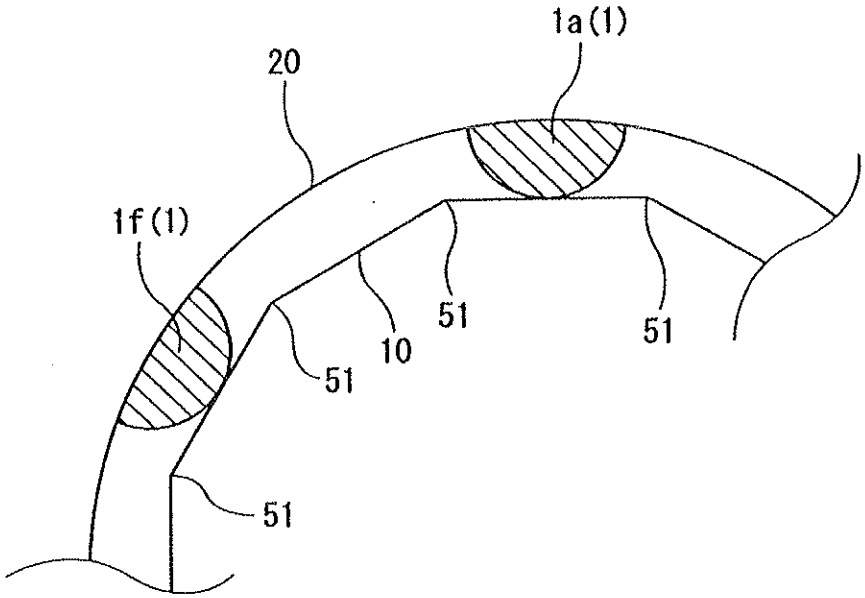


Fig. 18

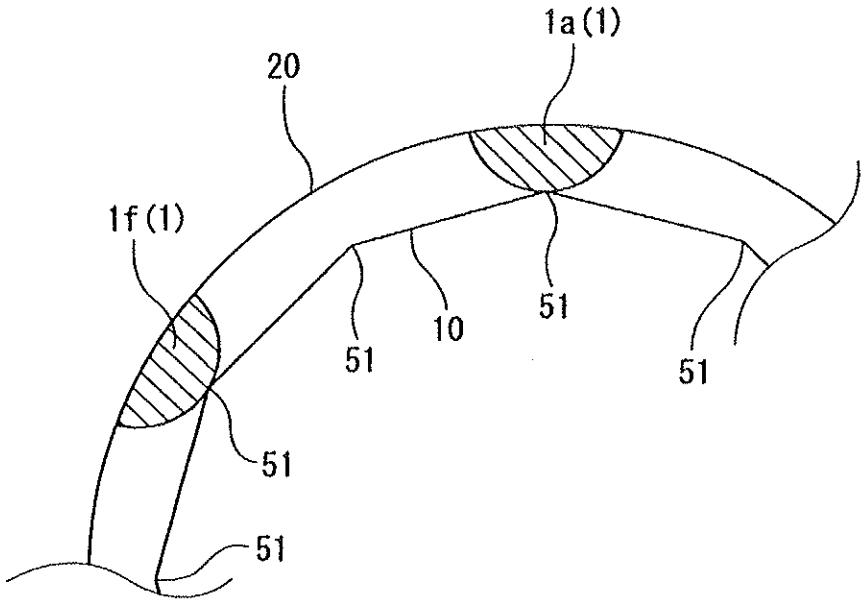


Fig. 19

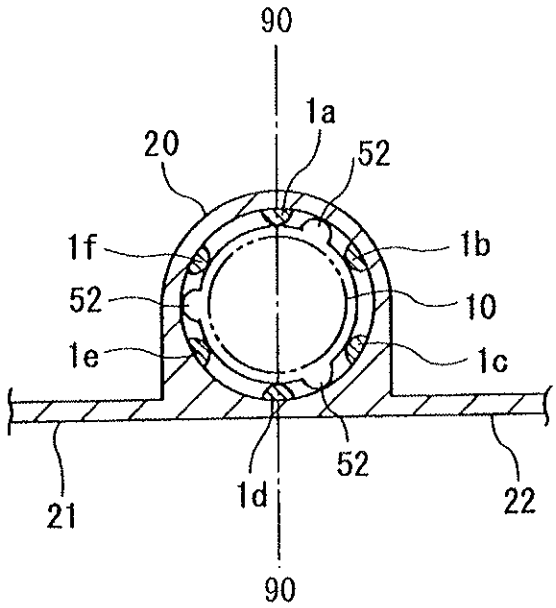


Fig. 20(a)

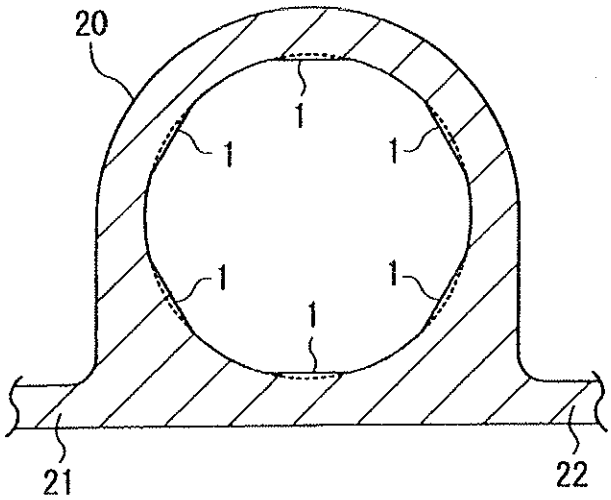


Fig. 20(b)

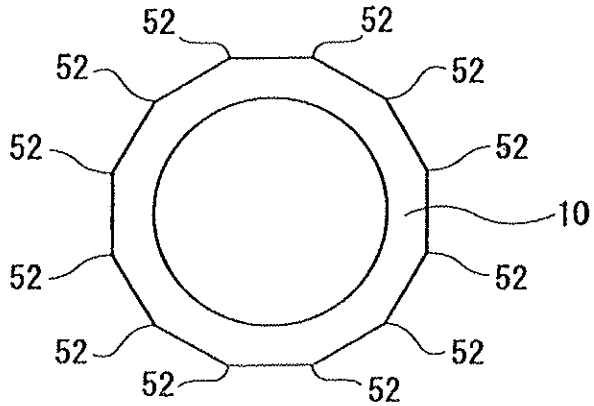


Fig. 20(c)

