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(12)

(KR)  
(B1)

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(45)  
(11)  
(24)

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| (21) | 10-2001-0060528 |
| (22) | 2001 09 28      |

(65)  
(43)

10-2002-0025817  
2002 04 04

(30) JP-P-2000-00300334 2000 09 29 (JP)

(73)                   가                 가

1                 1     1

(72) 28-15

(74)

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(54)

(1) (33, 36) (12, 13) (6) 가

(69) (12, 13) (6) 가

2

5

, , , , , , , ,

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 |   | 1 |   |   |   |   |
| 2 |   |   |   | . |   |   |
| 3 | 1 |   |   |   | . |   |
| 4 | 1 |   |   |   | . |   |
| 5 | 2 |   | 1 |   |   | . |
| 6 | 1 |   |   | . |   |   |

|    |   |   |   |
|----|---|---|---|
| 7  | 1 | 1 | . |
| 8  | 1 | . |   |
| 9  | 2 | . |   |
| 10 |   |   | . |
| 11 |   |   | . |
| 12 |   |   | . |

가

(window aperture)

(window)

가

(muffled or confined noise)

(low hysteresis torque)

가

FF(front-engine and Front-drive) , 가 . ,  
(가 ) ( ) ,  
(damping)  
( ) , ,  
,  
,  
가

2<sup>1</sup> 1<sup>1</sup> 1<sup>1</sup> , 2<sup>2</sup> , 1<sup>1</sup> 2<sup>2</sup> .  
가 1 2 , 가  
1 2 가

(가 ) ,  
 ( ) ,  
 2 , 1 , 가 2 가 ,  
 1 , 가 2 가 ,  
 3 , 2 , 1 2  
 1 2 가 1  
 4 , 2 , 1 가 1 가 2 , 2 가  
 1 2 가 1 가 2 가  
 2 가 가 가 ,  
 1 (1) ( FF ) (1) , 2  
 가 ( )  
 1 O-O (1) 1 ( ) R1 ( )  
 (1) ( ) " , " ( ) R2 ( ) " (1)  
 1 2 (1) 1 (2), 2  
 (3), (2, 3) (4)  
 ) 가 (2) (11) (2) (12)  
 (13) (11) (15) (18) (friction f  
 acing)(16, 17) (12) (13)  
 (13) (12) (13)  
 (22) (22) (23)가 (20)  
 (23) , (12) , (13) (23) (12)  
 (20) (15) (23) (12)  
 (12) (13)  
 (7)가 (12) (13) (51)  
 , 52)가 (51, 52)  
 4 가 (51, 52)  
 2 " 1 "(51) , 2  
 " 2 "(52) 1 (51) 2 (52)  
 (51, 52) (55) (56) (57)  
 (55) (57) (56) (51, 52)  
 (1) O  
 ( 1 (51, 52) )  
 , 1 (51, 52) (57) (55)  
 (56) 1 (3) (3) (6)  
 (6) (7) (8) (7) (12) (13)  
 (7) (8) (7) ( )

(8) (12) (13) 4 (8b) (53, 54) (53, 54) 2  
 8) (8a) (8) (8b) 1 (8a) 가 (8b) (53, 54)  
 2 , (8) (8b) 1 (51, 52) (53, 54) 2  
 , " 1 "(53) 4 , 2  
 " 2 "(54) 1 (53) 2 (54)  
 , (53, 54) (63), (64) (65) 가 5  
 (63) (64) (64)  
 (65) , (65)  
 (65) (53, 54) (1) O  
 , (53, 54)  
 ,  
 (1) ,  
 (2) 2 , [ 1 (53) 1 (51), 2  
 (54) 2 (52)] ,  
 2 (8) (13) (23)가 가 가  
 (8c)가 (8c) (53, 54)  
 (4) (30, 31) 4 (30, 31)  
 )가 (30, 31) 1 (53, 54) 1 (51, 52) (30) , 2 (54)  
 2 (52) 1 2 (31) 가  
 5 (30) 1 (33) (33)  
 4A, 34B) 1 (33) 가 (3  
 (end turn)  
 " " 1 (33) 1  
 (34A, 34B) 가 1 (53) R1 " 1 "(34A)  
 R2 " 2 "(34B) , 2 (34B)  
 1 (34A)  
 5 6 (34B) (40) 1 (33)  
 (40a) 가 (40) (44)가  
 (40a) (40a) 1 2 ( )  
 , 2 (40a) 1 ( ) 5 8  
 , (40a) 1 (33) (45)  
 , 1 (33) (34A, 34B) (45) 1 (33)  
 (44) (46)가 (46)  
 , (46a) 가 6 (40), (44)  
 (46) (44a) 8  
 (46) (46b)  
 (40) (40a) (41)가  
 (41) 1 (41a) (40)  
 2 (42) 1 (41a) (41) 2 (42)  
 (41a) (12, 13) 1 (51) (57) 2 9 , 1  
 5 1( 15 ) (42) (8) 1 (53) (65)  
 5 9 , (40) 1 (33)  
 (40b) , 1 (33)  
 (40c)가  
 2 6 (34B) (55) (63)  
 (arc) , 2 (34B) 1 (51) (55) (56)  
 )

2, 1 (34A) (34B) (34A) 2, 1 (34B) (34A) (41)  
 53) (65) (34A) 2 (42) (8) 1 (2)  
 1 (42a)가 (33) (卷數) 4 (33)  
 3, 1 가 1 (33)  
 (34A, 34B) (12, 13) (57)( 2 ) (34A, 34B) (8)  
 (65) (33)  
 )  
 2, 2 (31) 2 (31) 2 (2)  
 36) (36) 가 3 (37) (36) 2 (36) 2  
 (36) 2 (36) 1 " " 2 (36) 1  
 3, 가 (37) (34A, 34B) 3 (37) (8) 2 (54)  
 (65) (1) (4)  
 4 (69) 가 (69) 1 (70)  
 1 (70) (4)가 (71) 가  
 (74) 가 1 (72) 1 (70) 1 (72), 1 (73) 2 (13)  
 ) 가 1 (72) (73) (8) (8a) (8a)  
 (13) 가 가 1 (73) 1 (72) (54)  
 (7) 2 (74) (12)  
 (13) (6) 가 가 2 (74) (8)  
 (8a) (70) 1 가 1 가 (73)  
 (12) (13) 1 2 (72, 74)( 1 )가  
 (8) 가 (71) 3 (76), 2 (77), 4 (78)  
 3 4 (80) 2 (70) (80) (2) 2 (70)  
 (80) (8) 가 (8)  
 ) 가 (80) 1 (81), 2 (82) (83) 1 (81) 2  
 (82) (8) (8b) 가 1  
 (8a) (53, 54) 2 (82) (8)  
 (81) (83) (83a) (83a) (83a)  
 (83b) (83b) (81) 2 (82) (83b)가 (83a)  
 (83c)가 1 (81) 2 (82) (81) 2 (83c) 1  
 (81) 2 (82)가 (83a) (8) 1 (81) 2 (82)  
 (8) (8b) 1 (81) 2 (82) 3  
 (8) (8b) 1 (81)  
 (83) 2 (53) (64a) (6)  
 4a) 1 (53) (64) (64a)  
 가 (83) (64a) R1

(80) (64a) (6) 가 , (64a)가 (83)  
 4 5 , 1 (81) (83) (81a), (81a)  
 (81b) (81b) (81b) (81b) (81b)  
 (8) 1 (53) R1 (81b)  
 1 (34A) (41) R2 (81c)가 (81c) 1 (34A) 2 ( )  
 (42) (42a) (53) R1 (81c) 2 (42) ( )  
 (81c) 1 (53) R1 (81c) 2 (42) ( )  
 , 2 (76) 2 (77) 1 R2 가 ( )  
 3 (76) 1 (72) 1 (81) (81a) (13)  
 (81) 가 (73) 3 (76) 1 (76)  
 가 3 (76) (77) 3 (76) (13) 가  
 , 2 (76) (77) 3 (76) (13) (72) 3 (76)  
 가 (13) 가 (12) 2 가 ( )  
 3 4 , 4 (78) 2 (82) (12) , 2 가  
 (74) 4 (78) (78) 2 (82) (78a)가 ( )  
 78a) (12) 가 , 4 (78) (12)  
 가 , 2 (71) 2 가 2 (77)  
 (12) (13) 3 4 (76, 78) (2) 가  
 (80) 가 (70) , 10 20  
 , 5, 10 11 (1) , 12  
 , 10 (12) (13) (6) (3) R1 ,  
 가 2 2 (36) 1 (70) , 2  
 1 (33) (65) 1 (34A) (71) (48) 가 1 (8)  
 (33) R1 (6) 2 (71) (71) (12, 13) ,  
 가 2가 , 1 (53) R1 (65)가 1 (34A) 2  
 (42) (80) (81c) (80) (6) , 2 1 (33) 2 2  
 (36) , 2 (71)가 1 (70) 가 , 1 (3)  
 4A) 2 (34B)가 , 3 (37) ,  
 , 11 (12) (13) (6) (3) R2 ,  
 , 2 1 가 (33) , 2 2 (36) , 1 (70)  
 (8) R2 (65) 2 2 (34B) (48) 가  
 1 (33) (6) , 2 (71) (71) (12, 13)  
 ( ) 12 2° 10.5°  
 1/4 가 1 , 1 (53) R2 (65)가 1 (34A) 2  
 (42) , 2 1 (33) 2 2 (36) (6)  
 , (80) 2 (71) (12, 13)

(1)  
(2)  
(3)  
(4)

(12) 2 (71)

(12) 0° 15° (12) 2° 10.5°

(1) FF

(가 ) ( )

(69) 1 (70) 2 (71) 2

(76), 4 (78) 2 (77)

2 (74) 1 (70) (73)

(가 )

( )

(57)

1.

1 ,

1 가 2 , 1 2 가

1 2 (+) (-) 1 2 가

, 1 2 1 2 가

,

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2.

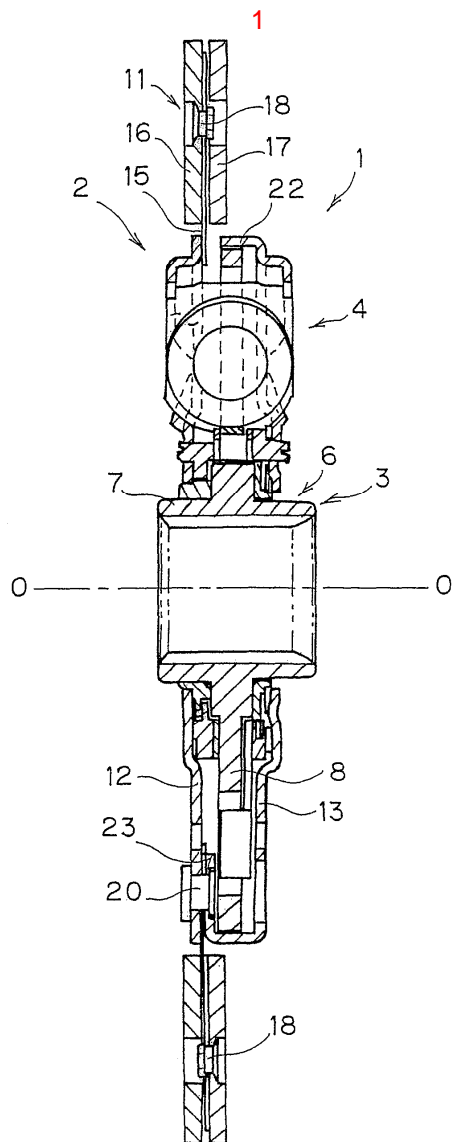
1 , 1

2 .

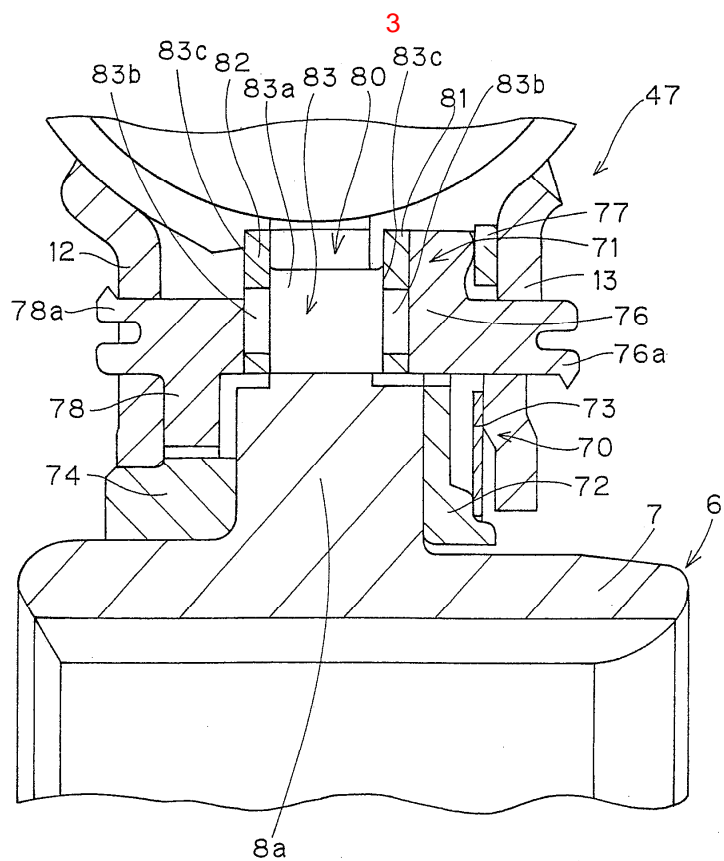
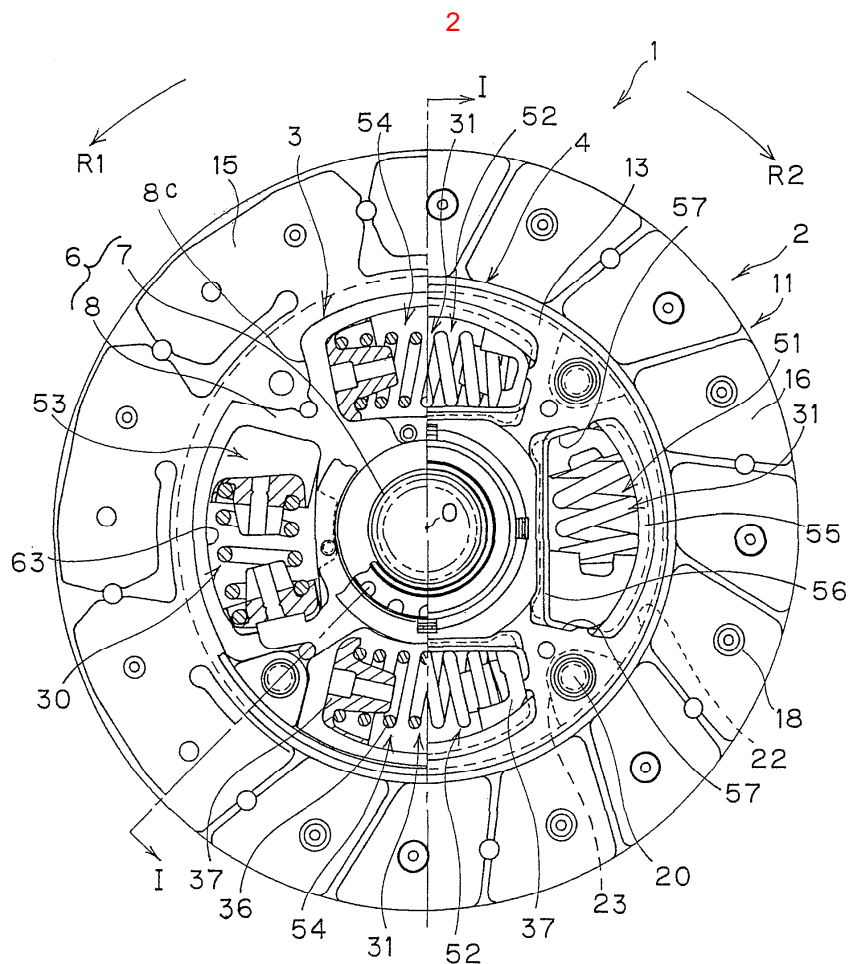
3.

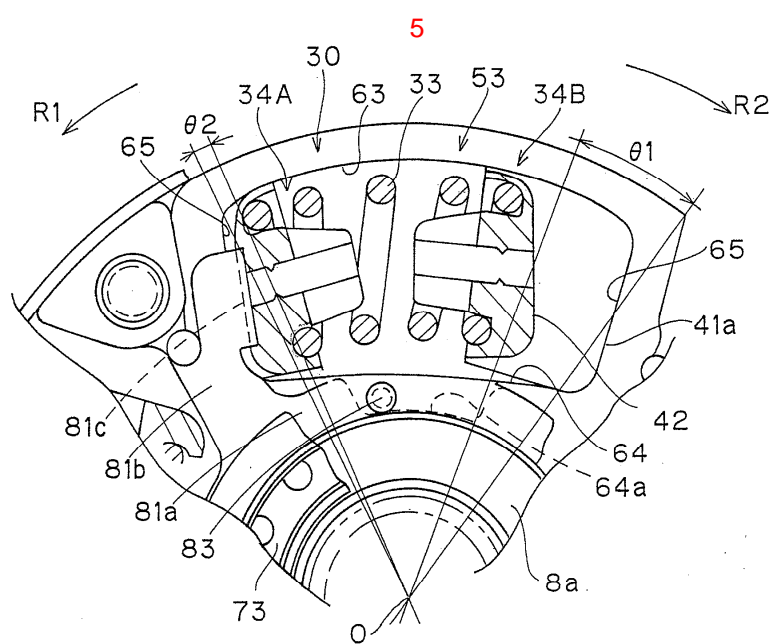
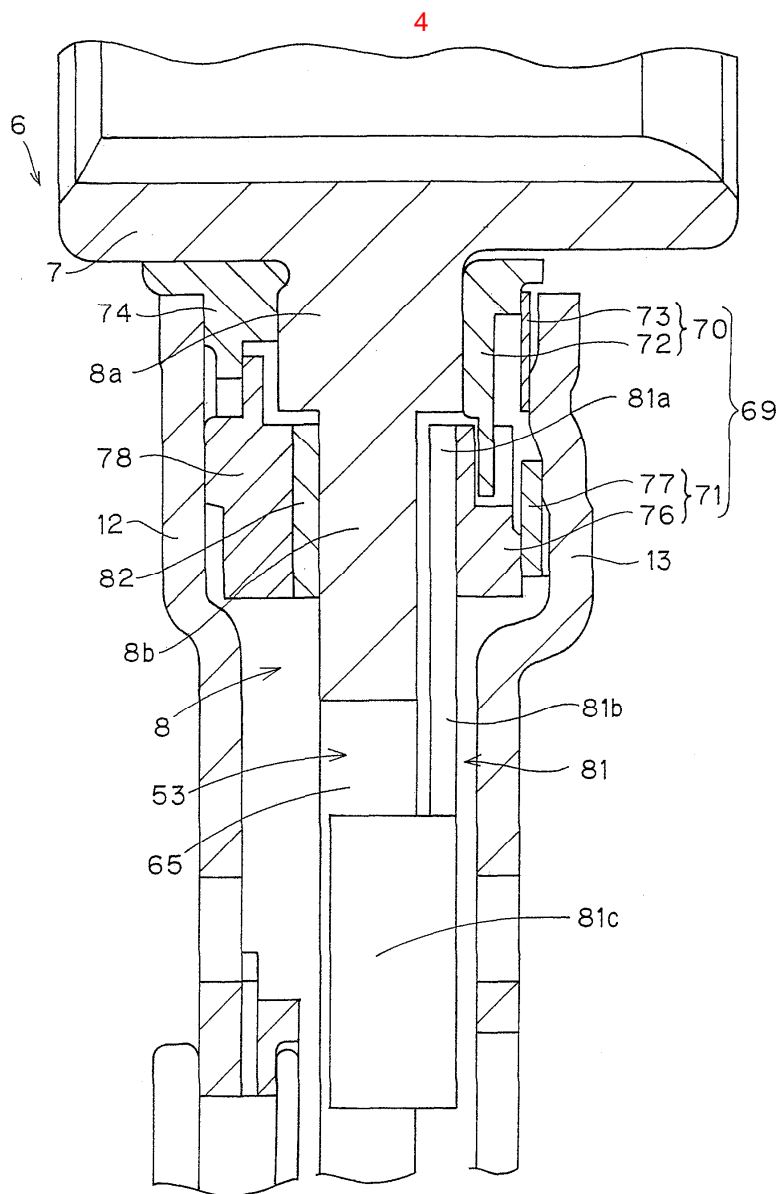
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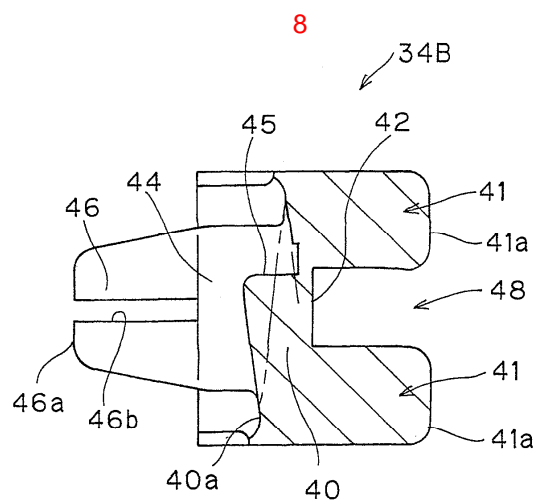
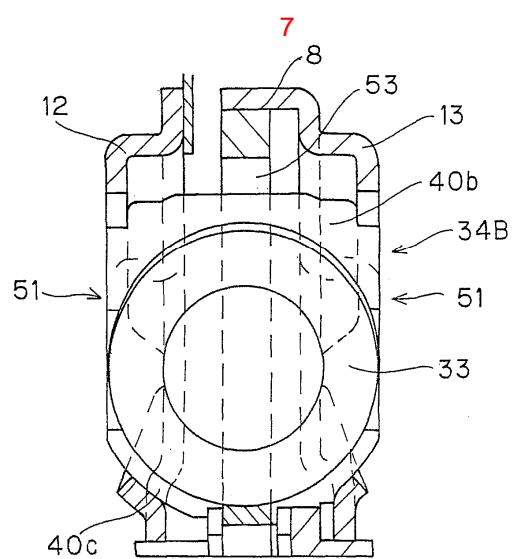
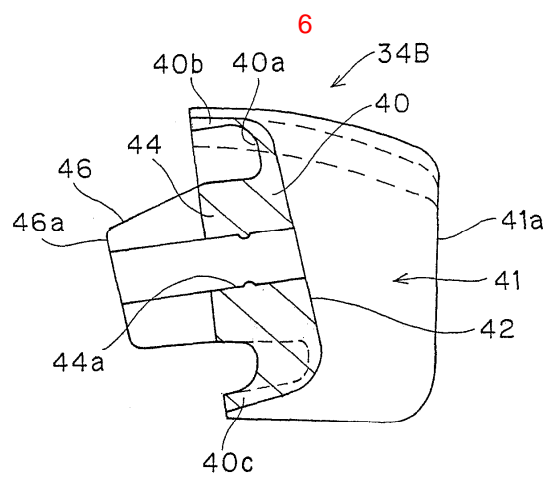
1  
4.  
2 1 , 2  
1 1 가 1 가 1  
2 2 가 2 가 2  
2 가 2 가 2

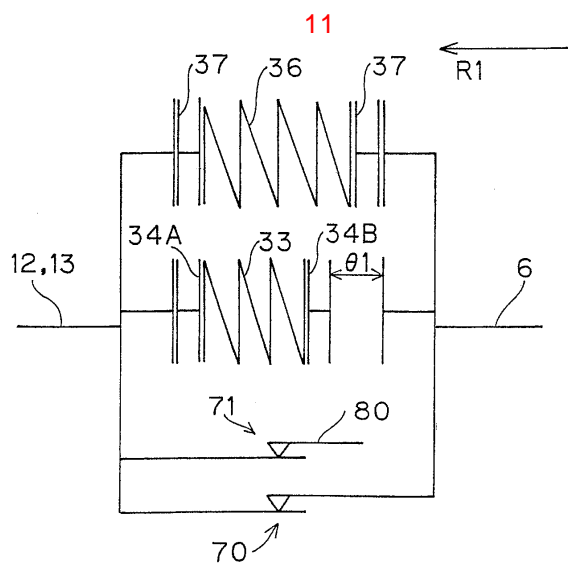
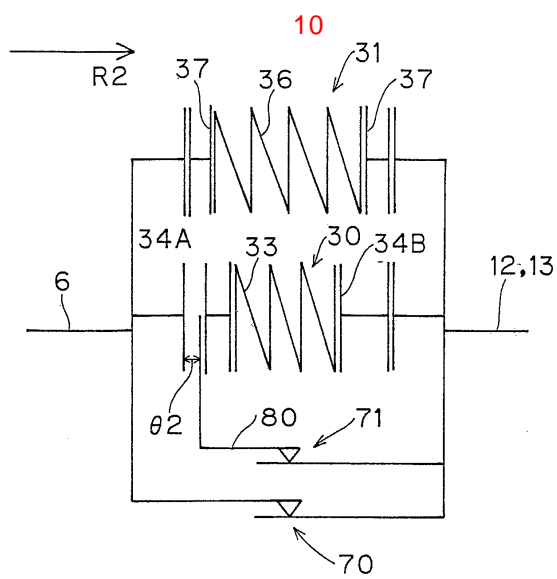
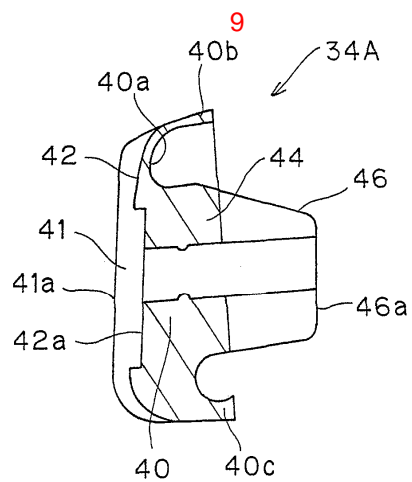












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