

(74)

:

(54)

(21) , (23) 1 ,
 1 (21) (20) , (24) 1 2 ,
 2 (20') , (21) 1 2 (22)
 (22)
 가 .

1

DC (rail vehicles)
 가 .

(hybrid)

DC 3 가 .

가

(dissipation)

가 .

가

(arc)

가

(Thomson)

가

가

:

1

2

3a 3b

1

4a 4d
2

2

5

6

7

MOV

MOV -

8

(locking)

9a 9b

1 (2) (1) (1) (3) (4) (5) (1) 가 (3)

(D1) (D4) 가 (3) IGCT(가 6kA (Integrated Gate Commutated Thyristor)) 2 IGCT(T1), (T2) (help circuits)

IGCT MOV((Metal Oxide Varistor)(6)가 IGCT MOV(6) MOV(6) MOV(6) (25) MOV (6') (withstand - voltage) 가 가 (7) MOV (1) 2 (7) (8) (1) (magnetic means)(9) (9) (1) (1)

(3) (1) (3) 가 ,가 (3) 가 (5) 가 (5) (4) , 2 (5)가 (spark gaps) , 2 . 2 x 20V (50) 가 (2) (4) (50)

IGCT가 , 가 ,
 (3kV)가 .
 (5) 가 (5) ()
 100) 가 . 가 가 ()
 (5) 가 , IGCT가
 (4), (5) 가

2 IGCT(T1), (T2) (bus bar)
 (D1), (D2), (D3), (D4) IGCT(T1), (T2)
 (P1), (P2) (P1) IGCT
 (P2) , 2 5
 (P3) , 6 가 5 6 ,
 () 2 IGCT .

가 , 가 가 , 가
 가 가 가

IGCT MOV(6)
 15 20 350
 2 ,

(1) , (distinct units) , (5), (9)
 (actuator)(7), (8), (10) 3 .

2 9 (5) (displaced mass)
 , (pivoting) .

9 (5) (12)
 (11) (9) (14)
 (13) .

(4), (5) , (4)
 8 (9) ,

(150) (16) . 가 DC (28)
 (16) (moving force) (17)
 가 .
 (17) 가 가 (18)
 (5) .
 (4), (5) 2 .
 (9) (9)
 (4), (5) .
 2, 9a 9b (13) 가 , ,
 , ,
 () , , (ch
 ock absorbing arrangements) .
 () , 15kA 가)
 (7) .
 (counter current)가 가 (8)
 , 80kA 2 (7)
 (8) (8) (10) ()
 1) (5) .
 (19) .
 가 가 (7) (8) (8) 가 (7) 2
 , (7) (8) 가 .
 가 1 가 3a 3b , 2 (20')
 (20) 1 (layout) (21) , 3b .
 가 3a , 3b .
 le)(22) (23) (through ho
 (22) (20') (24)

(23), (24), (22) 3c (isolation element) 2 가

(skin effect)

10

4a 4d 2 4a 4b 4c 4d 2
 4d 2 4a 4b 4c 4d 2
 4d 2 4c 4b 1
 4a 1 4d 2 4c 2 (鏡映)
 가 가 가

(26), (27)

(26'), (27')

(57)

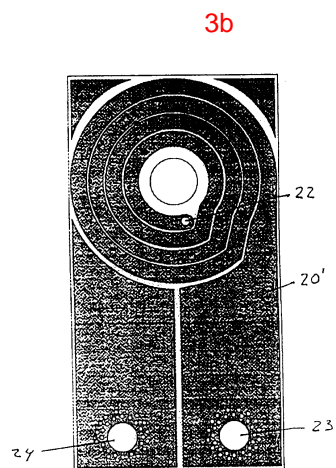
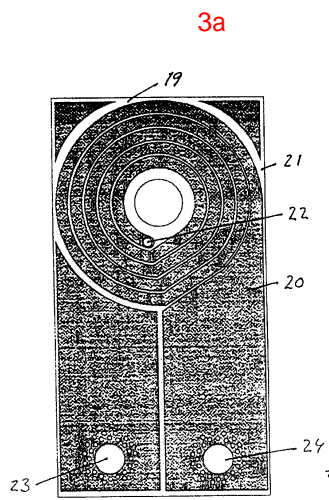
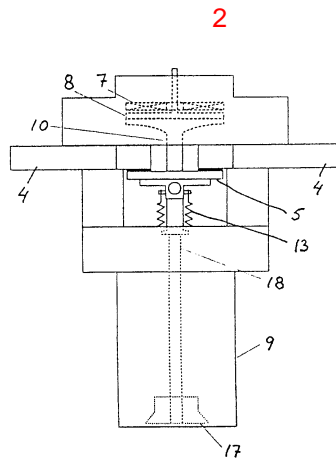
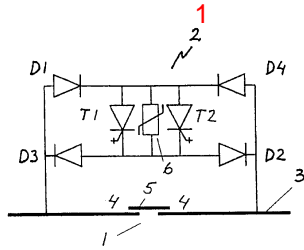
1.

(21)

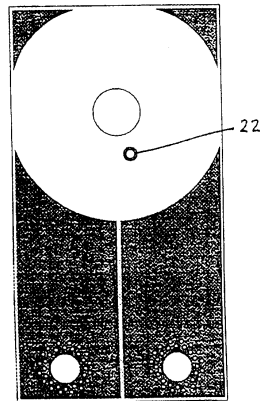
1 (21) (23) 1
 (20) , (24) 2
 2 (20') , (21) 1 2 (22)
 (22)

2.

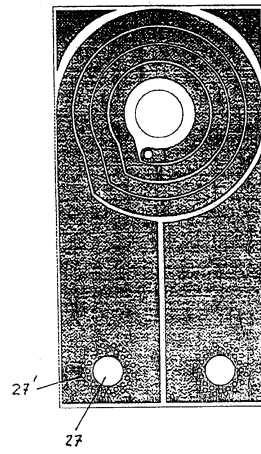
1 , 1 2
 , 1 1 2
 1 2



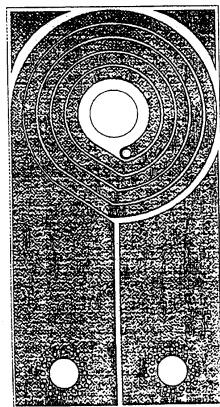
3c



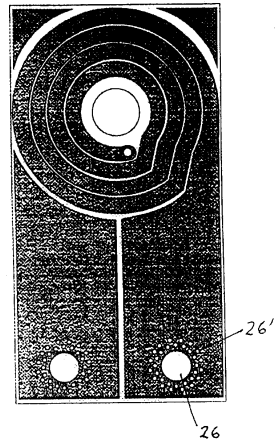
4a



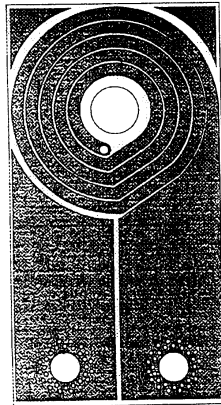
4b



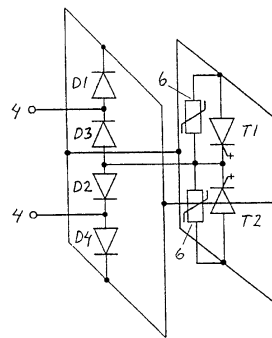
4c



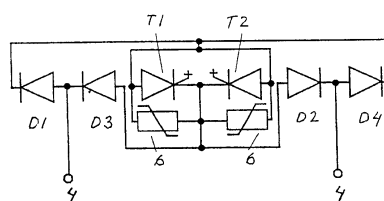
4d



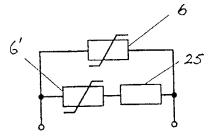
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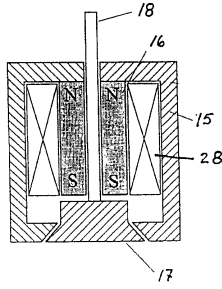
6



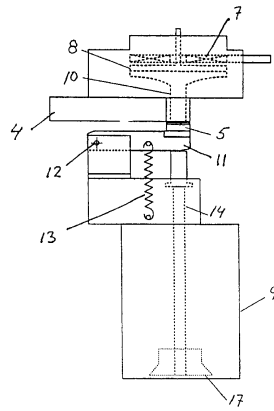
7



8



9a



9b

