

가 1

3

가

2

(PTH)
 (serum calcium levels)
 PTH[PTH(1-34)] N- 34 PTH(1-31 1-38), 84
 H/PTHrP (PTH1) PTHrP[PTH- . PT
 (peptide)/ (protein)],
 가 ,

PTH PTH - , PTH
 , PTH 가

PTH 1
 가 1
 PTH , PTH
 PTH , PTH
 가

PTH
 1 가 가 1
 가 (knob)

가 , PTH 가 가 1
 가

가 , , PTH PTH . PTH
 , , 가 PTH
 PTH가 가 PTH
 1 . , ,
 1 .
 2 1 .
 3 , 1 .
 4 , 1 .
 5 , 1 , .
 6 (leadscrew) (stop) (nut)
 , 1 .
 7 , 6 .
 8 (unit click finger) , ,
 .
 9 가 , 8 .
 10 가 (spline) , 8 .
 11 가 , , 1
 .
 12 , 1 .
 13 가 , 12
 .
 14 , 13 .
 15 180 , 11
 .
 16 , 15 .
 17 (pitch) , 15 .
 18 , 14 .
 .
 1 (10)
 , (16) (15) . 2 , (16) (23)
 , (22) (access) . 1 ,
 (hard stop) .

가 1 . PTH가 (11)가 , 80 μ l 1 1
(20, 14) (43) (20, 14) (43)
(11)가 1
(21) PTH
1 1 가 가 (11)
가 가
가 , PTH 1 80
(10) '0', '1' '2' 3 40
'1' '2' 가
PTH (11) (11)
(' ', 41), 가 (14) (12) '0' (11) PT
가 (11) () '0'
H 1 '0', '1' '2' (11) (11) (12) '1'
'0' 2 (11)
10-20 μ l PTH (17)
가
1) 가 (' ', 41)가 (12) '2' 3 (1)
'0' '1'
가 가 PTH
, 가 , 80 μ l 가 가 '2'
가 PTH
2 3 44 (20, 14) (43) (19)
(11) (19) (43) (11)가 '0' (19)
(14, 20) 가 (44) (19) (44)
가 가 '2'
'2' (23) (10)
, 27G (50) (23) 29G
31G (11) (21) (17) (17)가 (210)
(21) , 2 (22) , PTH (23)
(12-14). (21) , PTH (23)
(' ', 42) (12)
4, 20) (11) (bulkhead, 45) 2 (1)
가

PTH 가 가 '2'
가 3M
(11)가
(21)
PTH 가
PTH 40μℓ 가 80μℓ '1'
3 '2' PTH 20μℓ [40μℓ-20μℓ()].
PTH 가 가 '2'가
가 가
4 18
(22) (23) (10)
가
(polycarbonate) (14, 20) (42)
(polycarbonate) ABS
가
5 (17) (48) (48) (bead)
(52) (58) (54) (70) 가
(68) (60) (68) (72) (17) (48) (4) (51)
(76) (74) (4).
4 11 (11)가 (11)
(11) (78), (80) (82) 4 (78)
(84), (86) (78) (91) (91)
88) .가 (92) (89) (14). (91) (zero) ()
(96) (96, 98) (94) (56) (98)
(11) (78) 가 (leg; 102, 104) 1 U (100; 4) 2 U
() 11 (102, 104) (106, 108)
(118) (110, 112) (106) (114), (116)
가 (108) (120), (122) (124)
(110) (126), (128), (130), (132) (134)
(112) (136), (138), (140) (143)
4 (spline; 142) (78)가 (80) (11)
(143) (102, 104)
(18) (11) (143) 3 11
43) (80) (144) (80) 360 (144) (1)
(144) 20
8 10 가 (11) (82) (82)
(150) (146), (148) (1)

50) (144) (144)
 (150) 9 10 (150) (148)
 (152)

11 (14, 26) (156) (154) 11
 (14, 20) (helical spiral) (158) (160)
 (14) (ridge; 164) (20) (170)
 가 (168) (170) (174) (176) (ledge;
 (172) (14, 20) 가 (tang; 182, 184)

12 14 18 가 (10) (36) (21)
 (36) (188) (190) (186;
 2) (196) 가 (194) (192) (188;
 12). (36) (198) (198) (36) (200) (2)
 26, 228) (21) (21) (204) (200) (2)
 21) (plunger) (206) (208) (21), (226, 228)

12 15 (21) (206) (22) (210)
 (22) (14, 20) (42) (22)
 (212) (218) (216) (214)
 (220) (42) (23) (220) (222)
 (222) (224) (16) (46)
 (42)

11) 0 9 가 (20) 0 (20) (170) (11) (148)
 (148) (11) (11) (11)
 1 (11) (149) 가 2 (170) (176)
 20) (33, 35; 5) 가 (11) (91) (89) (14,
 (17) 가 (94)가 (154; 11)
 (152) (170) 8 (20) (11)
 가 (11) (zero) (152) (170)
 (170) (10) V (155) 1 (152)
 (88) (14) (153) (11)
 (12) (41)

(80) ('0', '1' '2') (11) (80) 3
 가 (14) (12) 1 (12) (162; 1
 1) (12)

13 (41)가 (11)
 3 5mm (11)가 (149)
 (170) (170) (150) 13
 (11) (144) (36) (192) 가 (11)가 (36)
 (144, 192) 가 (11) (key)
 (21) (182, 184) (21) (21)
 (keyway) 7 (182, 184) (21)

(11) , (110, 112) (11)
 (158) , (91) (89) (14, 20) (33, 35)
 가 (36)가
 (36) 10 (11) (198) (21) (208) (36)
 (150) (170) (11) (150) (170) 가 ,
 , (16) (222) (46)가
 (air shot) , (70) (17) (70)
 (17) (70) 15 17 15 (70)
 (17) (52) (141) (11)
 (11)가 (17) (134, 142) 16 가
 가 (110, 112)가 (110, 112) 15 (158) (17) 가
 (110, 112) (18) 11 18 (158) (17)가 가 ,
 (158) (157; 5) (154; 11) (94)
 (95; 4) (94) (89, 33, 35) 가
 (11)가 (36) (36) (36)
 144, 192) (11) (144) (36) (192) (11) (193;
 14)가 (194) (36) (21) (11) (11)
 (36)
 11 18 (11) (36) 15 (14, 20)
 (33, 35) (91) (89) 15 (194)
) (14, 20) (178, 180) 0.4mm
 (194) (178, 180)
 (21) (204) (182, 184)
 (21) (206)가 (210)
 가 가 (70) (70)
 가 (62, 64) (17) 12 (11)가
 PTH PTH PTH
 84 , hPTH(1-84) PTH
 PTH PTH PTH(1-28), PTH(1-31), PTH(1-34), PTH(1-37), PTH(1-38) PTH(1-
 41) 1 28 N- PTH (protease) 25-
 PTH (histidine) (trypsin)
 27 PTH (hydrophobic) PTH
 (leucine) (8 / 18) (methionine) PTH
 1 5 PTH1 (receptor)
 PTH PTHrP PTHrP, PTHrP(1-34), PTHrP(1-36) PTH

PTH (teriparatide) PTH(1-34) PTH(1-34)

(glycerin) (propylene glycol) (polyh
(mannitol), (sorbitol) (inositol) (sucrose)
(glucose), (trehalose) (raffinose) (polyol)
10wt-% 1 20wt-% 3

3 7, 3-6 pH
(tartrate) (citrate) (acetate),
가 2mM 500mM, 2mM 100mM

(cresol), (benzyl alcohol), (phenol), (benzalkonium chloride),
(benzethonium chloride), (chlorobutanol), (phenylethyl alcoho
(methyl paraben), (propyl paraben), (thimerosal), (p
henylmercuric nitrate) (acetate) 0.1 2wt-%, 0.3 1.0wt
-% 5 15 가

m- / 가
m- / 가

PTH 가 20 40 6 / 가 15 65 . hPTH(1-34)
가 가 가

PTH (,) (,)
(,) (,)
1 2 , 3 3 가

가

(57)

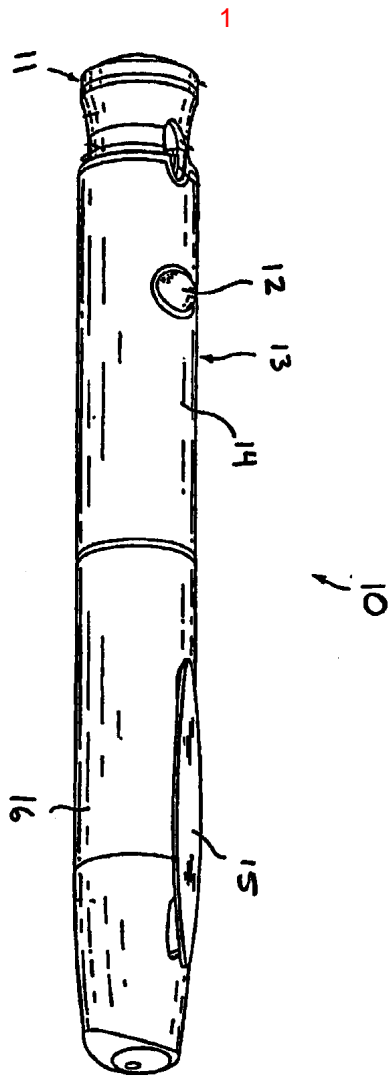
1.

, ,
,
가 ,
가 ,
1 가

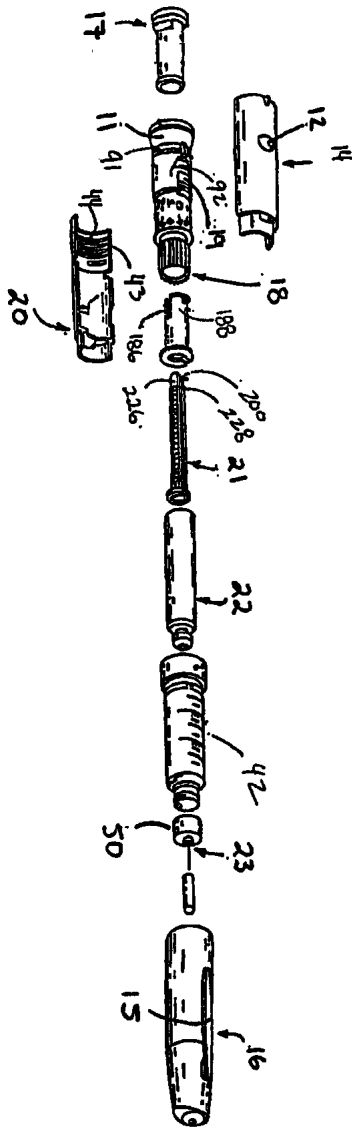
2.

1 ,

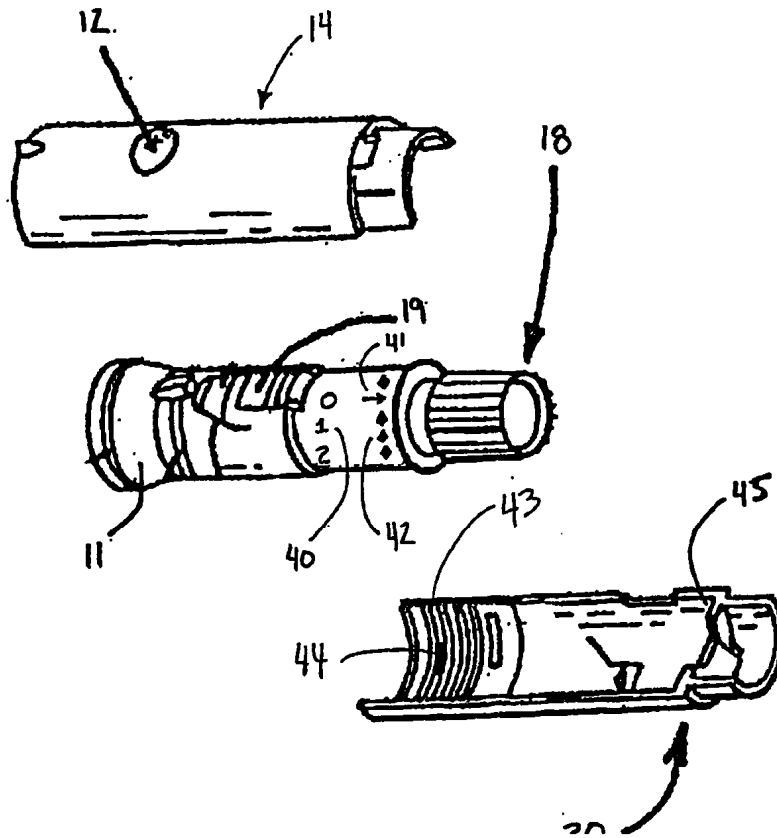
- 1 3. , 가 .
- 1 4. , .
- 4 5. , 가 .
- 4 6. , .
- 1 7. , .
- 1 8. , 1 가 .
- 1 9. , , 1 .
- 9 10. , 가 .
- 1 11. , 2 .
- 1 12. , 가 .
- 1 13. , PTH(1-34) .
- 14. 1 , , , , , 가 , 가 .
- 15. 1 13 1 .

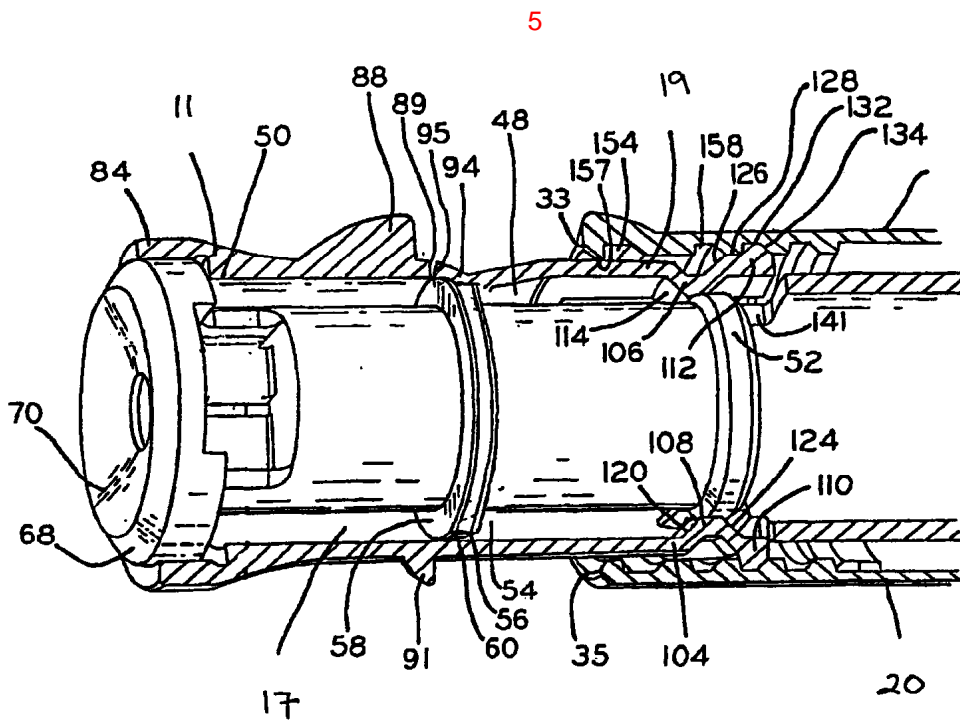
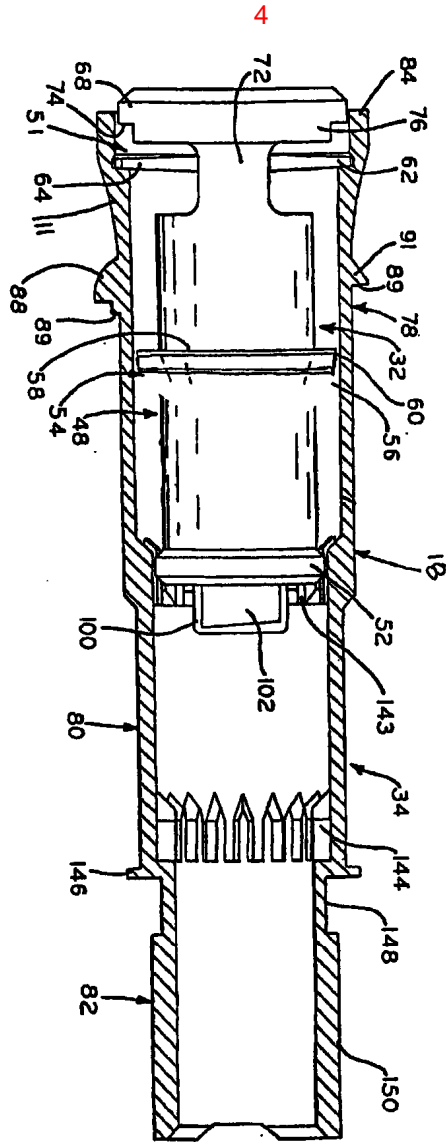


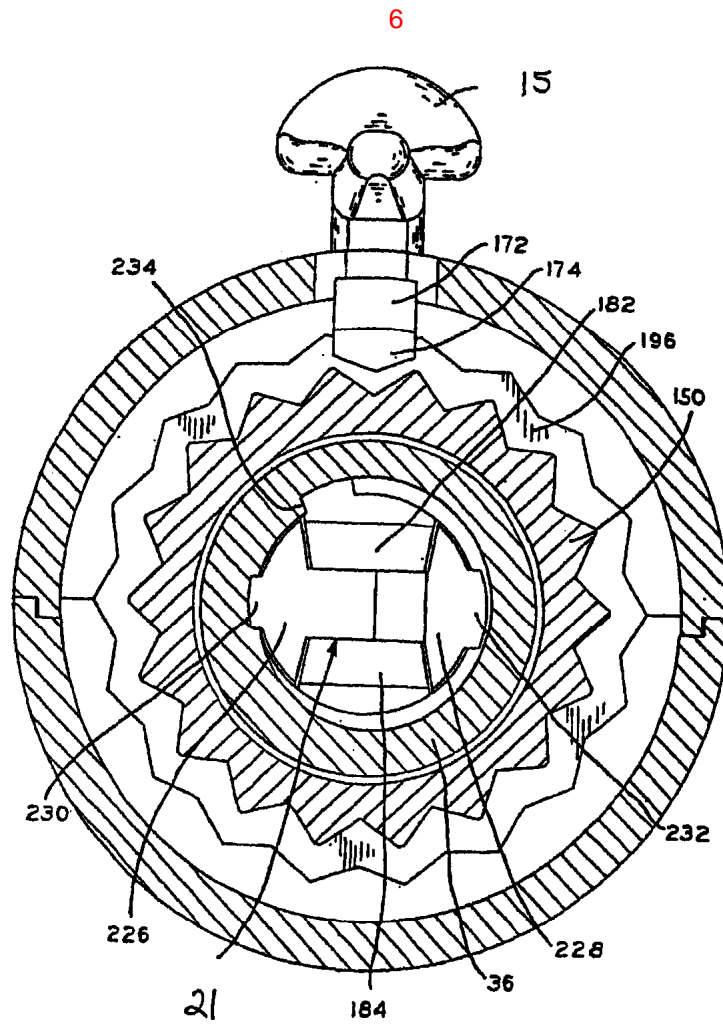
2

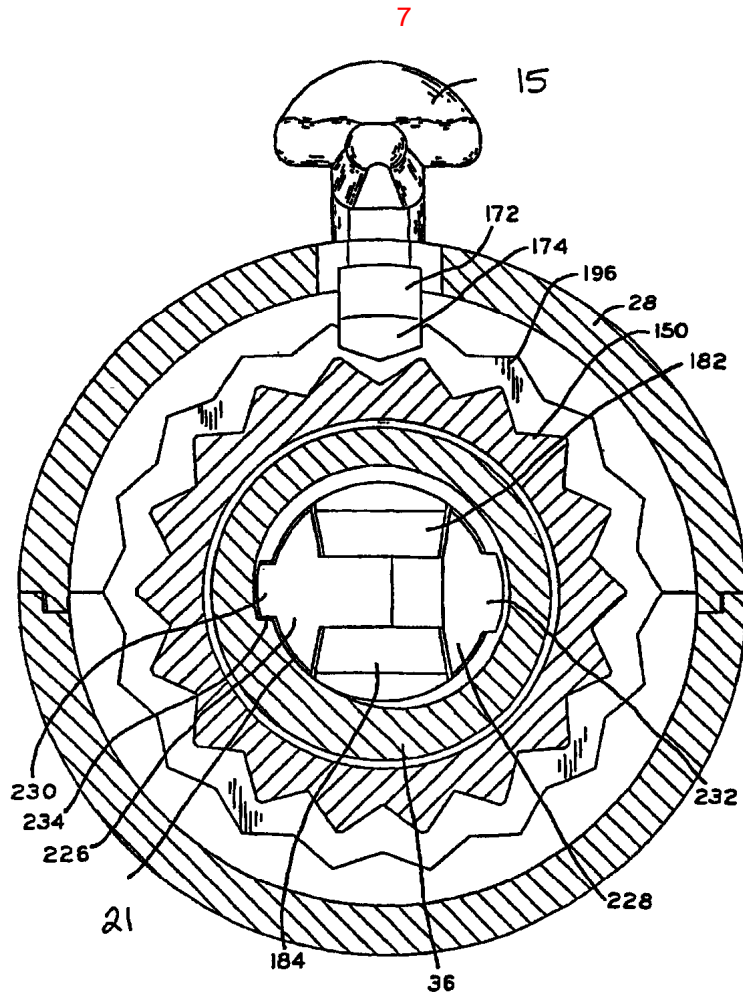


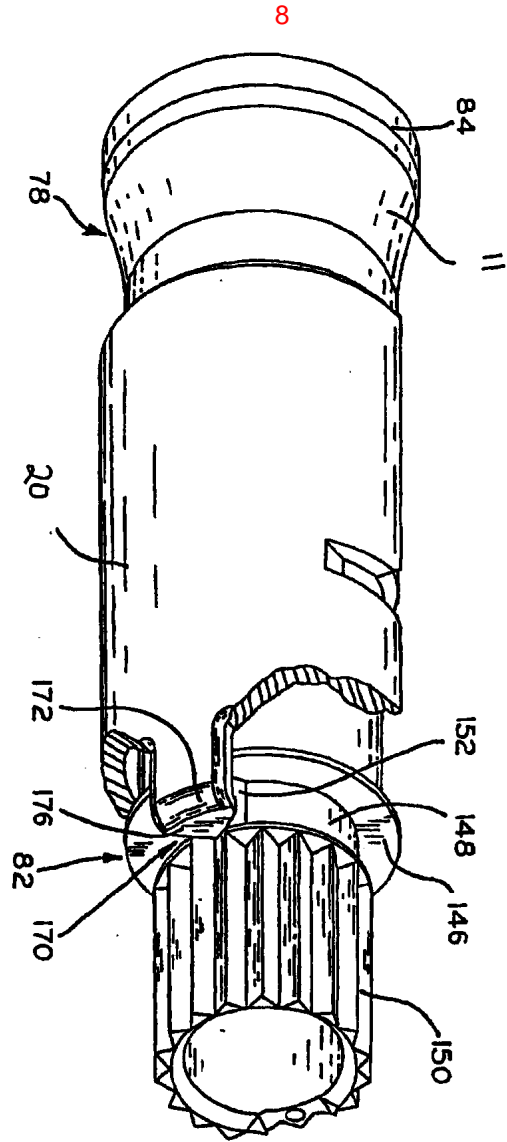
3

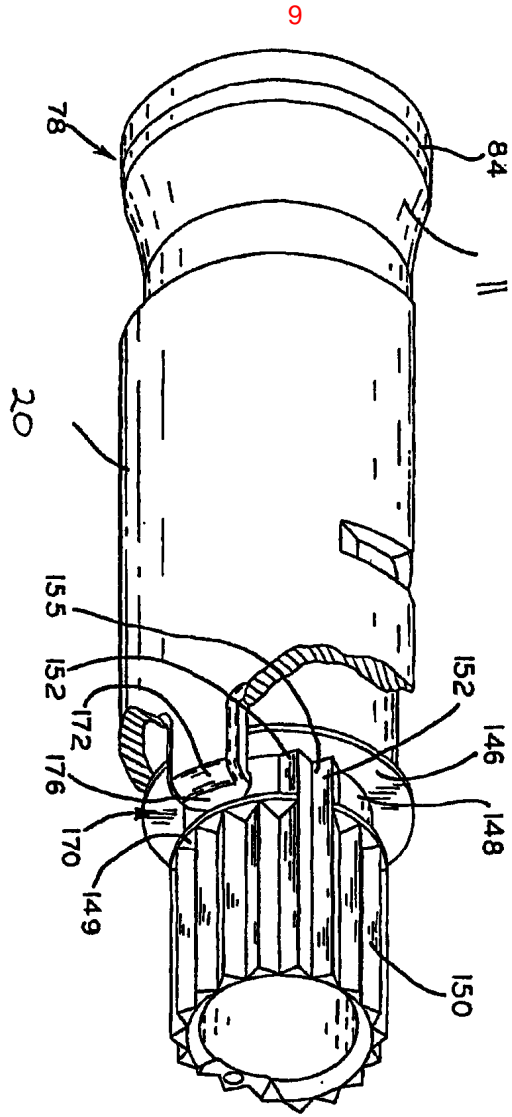


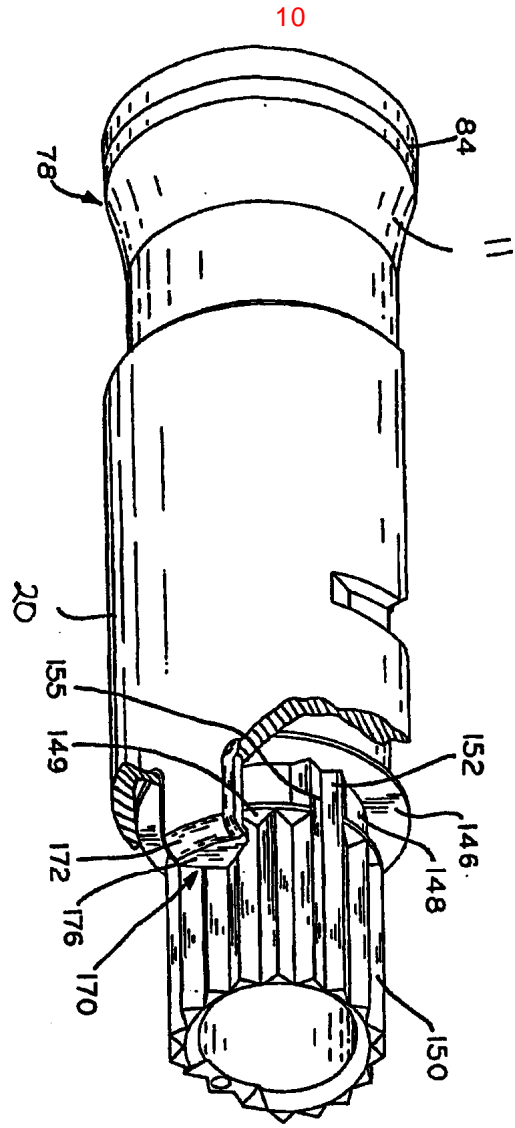




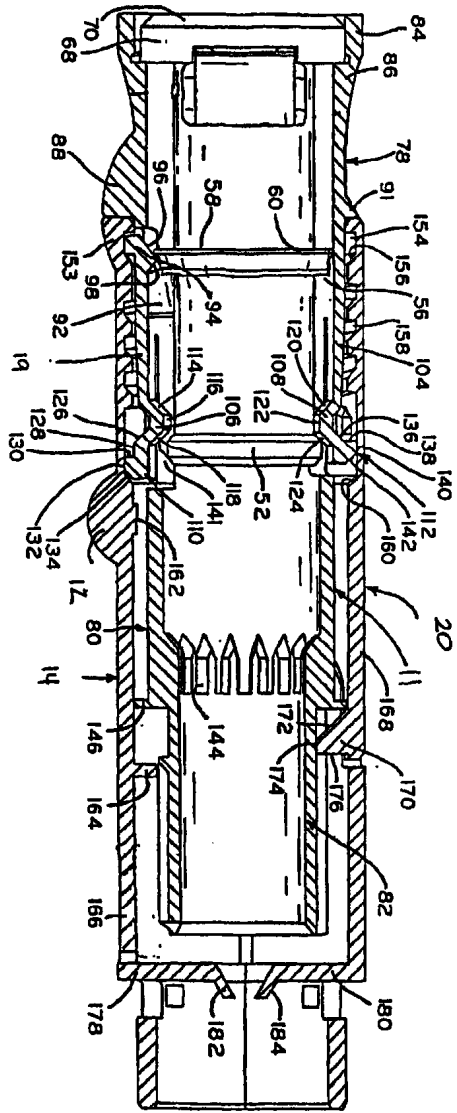


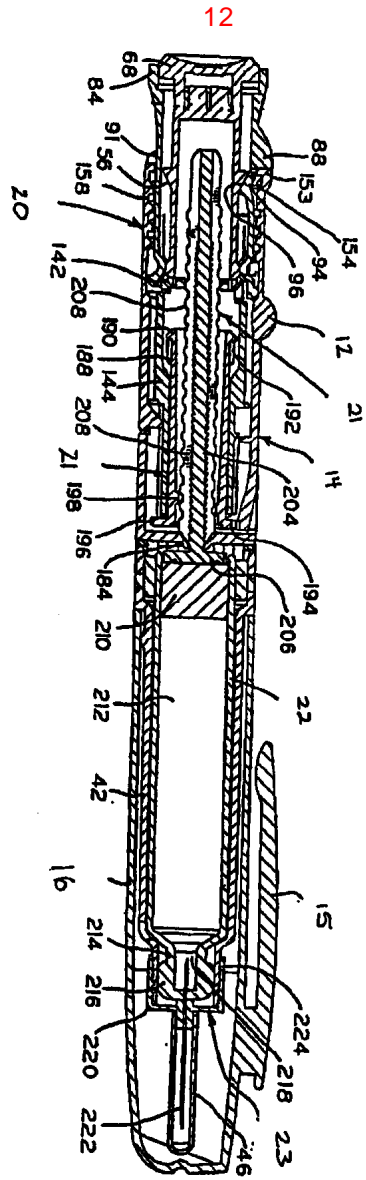




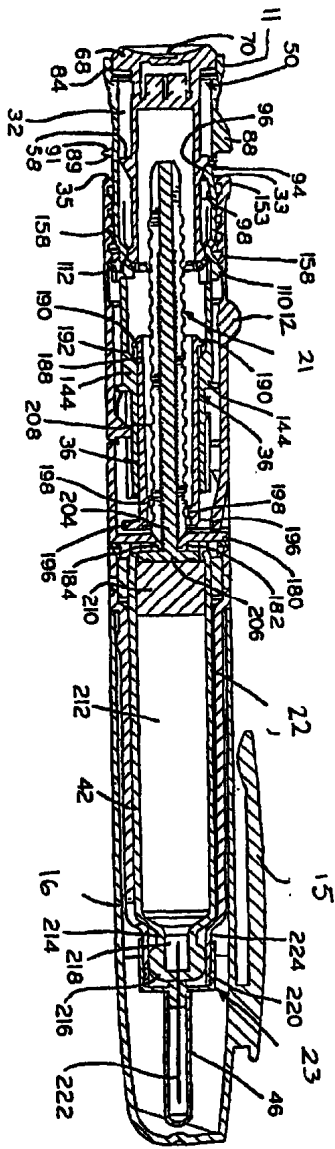


11

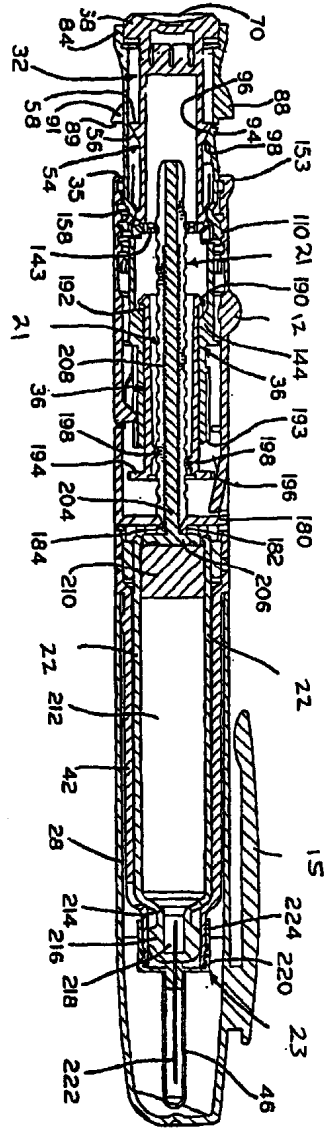




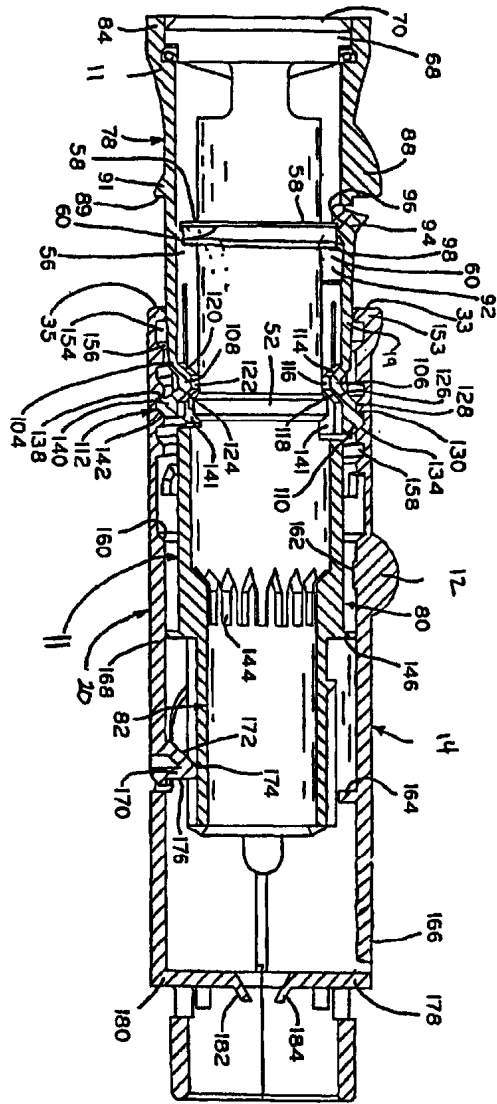
13



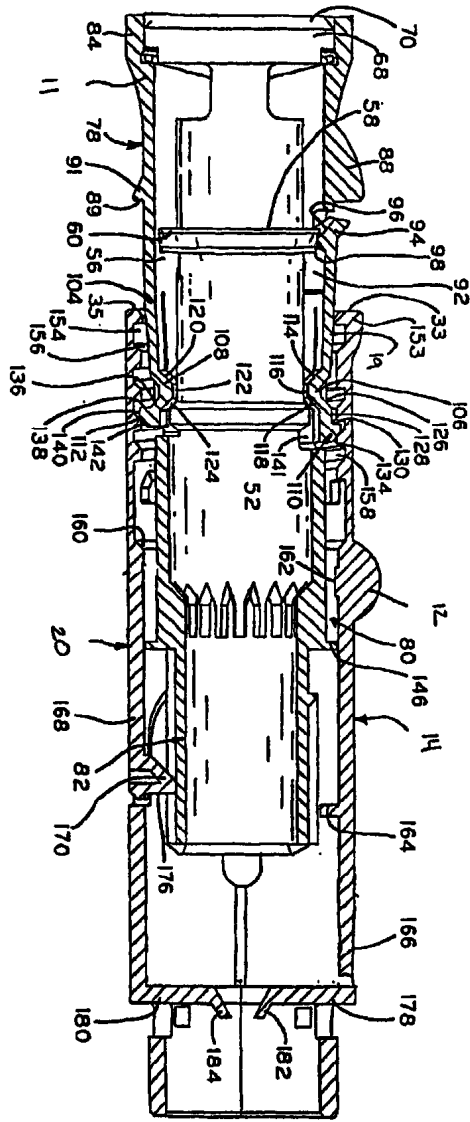
14



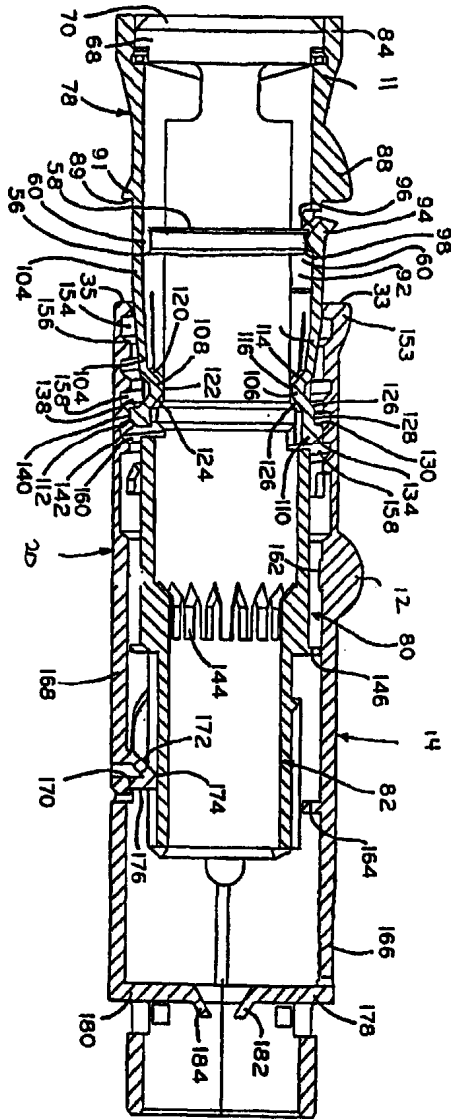
15



16



17



18

