WO 02/29661 PCT/KR01/01628

FIG. 1 (PRIOR ART)

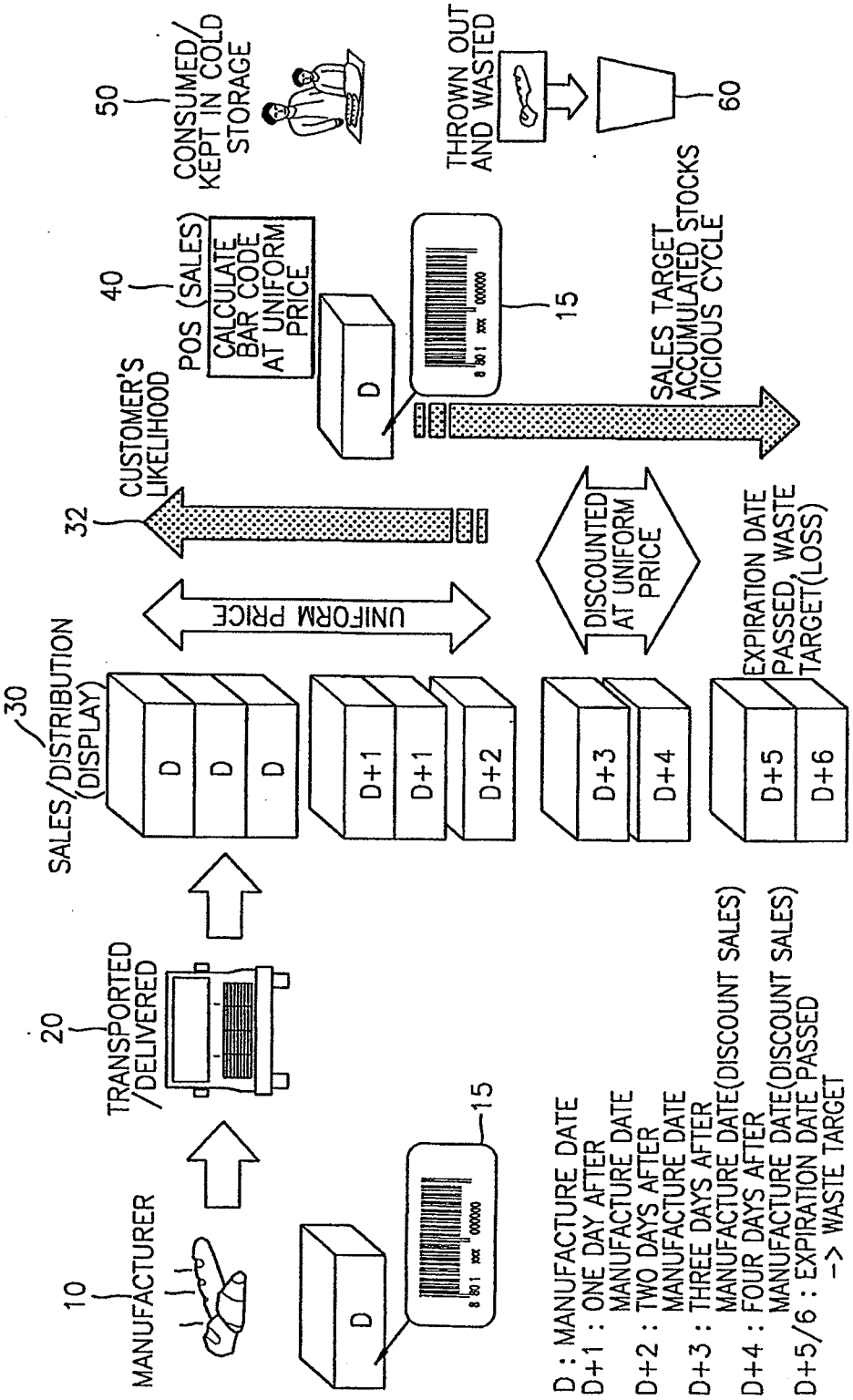


FIG. 2

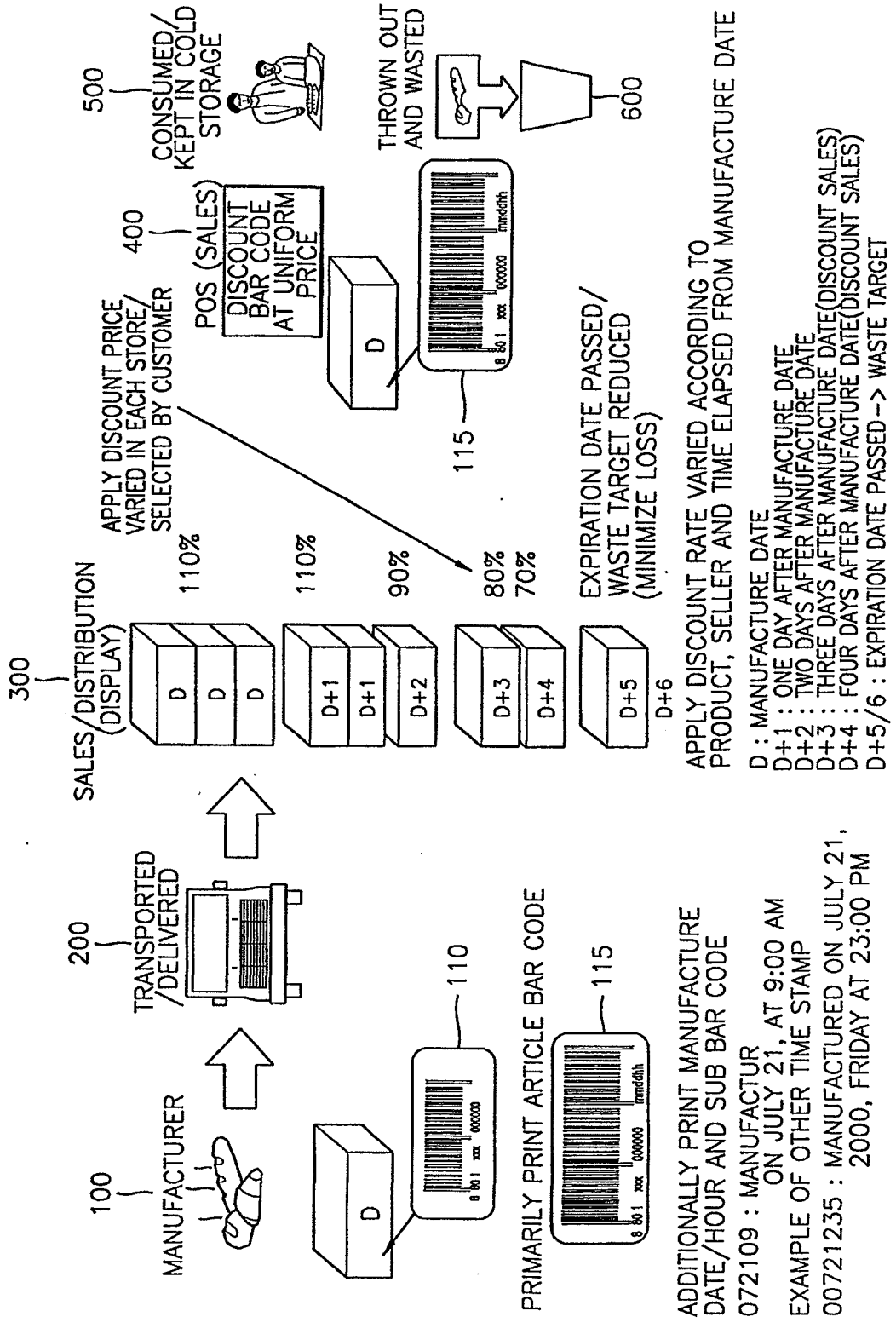

100
MANUFACTURER
200
TRANSPORTED /DELIVERED
300
SALES/DISTRIBUTION (DISPLAY)
APPLY DISCOUNT PRICE VARIED IN EACH STORE/ SELECTED BY CUSTOMER
400
POS (SALES)
DISCOUNT BAR CODE AT UNIFORM PRICE
500
CONSUMED/ KEPT IN COLD STORAGE
THROWN OUT AND WASTED
600
110%
110%
90%
80%
70%
D
D+1
D+2
D+3
D+4
D+5
D+6
110
115
EXPIRATION DATE PASSED/ WASTE TARGET REDUCED (MINIMIZE LOSS)
PRIMARILY PRINT ARTICLE BAR CODE
ADDITIONALLY PRINT MANUFACTURE DATE/HOUR AND SUB BAR CODE
072109 : MANUFACTUR ON JULY 21, AT 9:00 AM
EXAMPLE OF OTHER TIME STAMP
00721235 : MANUFACTURED ON JULY 21, 2000, FRIDAY AT 23:00 PM
APPLY DISCOUNT RATE VARIED ACCORDING TO PRODUCT, SELLER AND TIME ELAPSED FROM MANUFACTURE DATE
D : MANUFACTURE DATE
D+1 : ONE DAY AFTER MANUFACTURE DATE
D+2 : TWO DAYS AFTER MANUFACTURE DATE
D+3 : THREE DAYS AFTER MANUFACTURE DATE(DISCOUNT SALES)
D+4 : FOUR DAYS AFTER MANUFACTURE DATE(DISCOUNT SALES)
D+5/6 : EXPIRATION DATE PASSED--> WASTE TARGET

FIG. 3

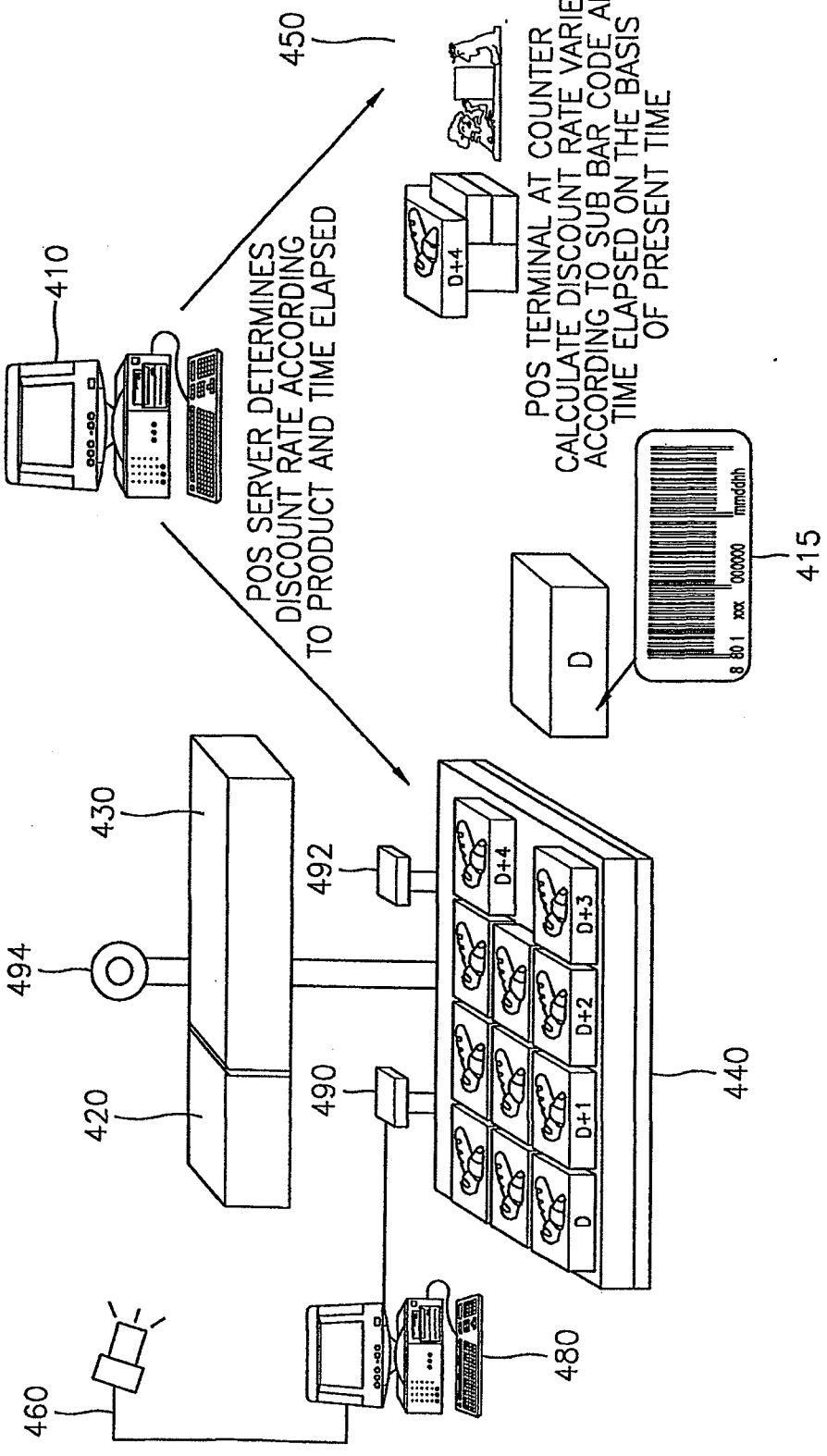

410
450
POS SERVER DETERMINES DISCOUNT RATE ACCORDING TO PRODUCT AND TIME ELAPSED
POS TERMINAL AT COUNTER CALCULATE DISCOUNT RATE VARIED ACCORDING TO SUB BAR CODE AND TIME ELAPSED ON THE BASIS OF PRESENT TIME
D+4
D
415
430
492
494
420
490
440
D+3
D+2
D+1
460
480

FIG. 4

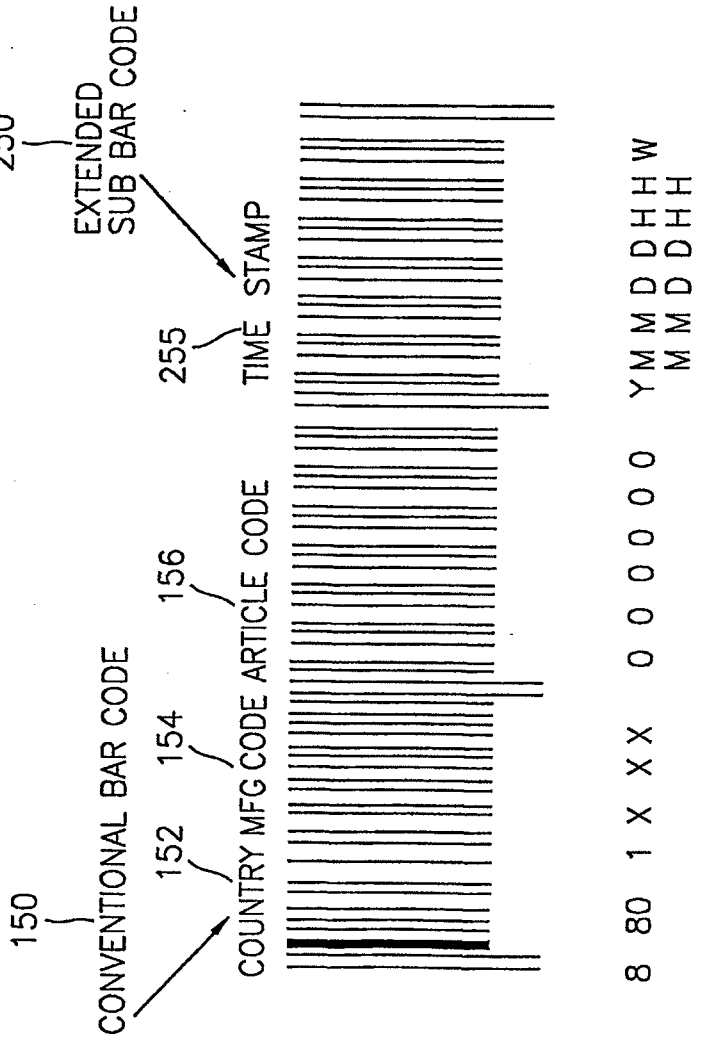

250
EXTENDED
SUB BAR CODE
255
TIME STAMP
156
ARTICLE CODE
154
COUNTRY MFG CODE
152
150
CONVENTIONAL BAR CODE
8 80 1 X X X 0 0 0 0 0 0 0 Y M M D D H H W
M M D D H H

FIG. 5

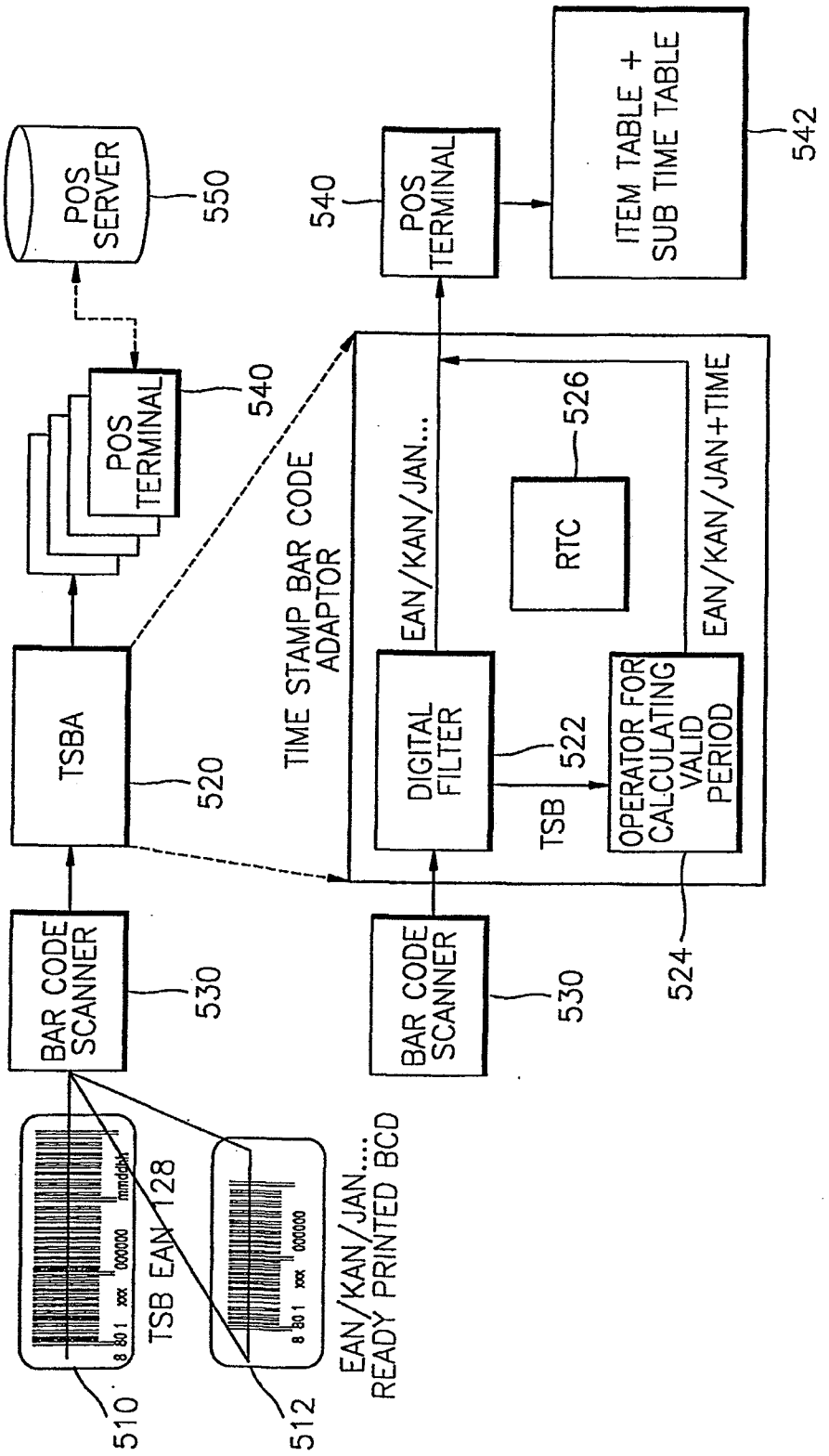

POS SERVER
550
540
POS TERMINAL
ITEM TABLE + SUB TIME TABLE
542
POS TERMINAL
540
TIME STAMP BAR CODE ADAPTOR
EAN/KAN/JAN...
RTC
526
EAN/KAN/JAN+TIME
TSBA
520
DIGITAL FILTER
522
TSB
OPERATOR FOR CALCULATING VALID PERIOD
524
BAR CODE SCANNER
530
BAR CODE SCANNER
530
TSB EAN 128
EAN/KAN/JAN.... READY PRINTED BCD
510
512

FIG. 6

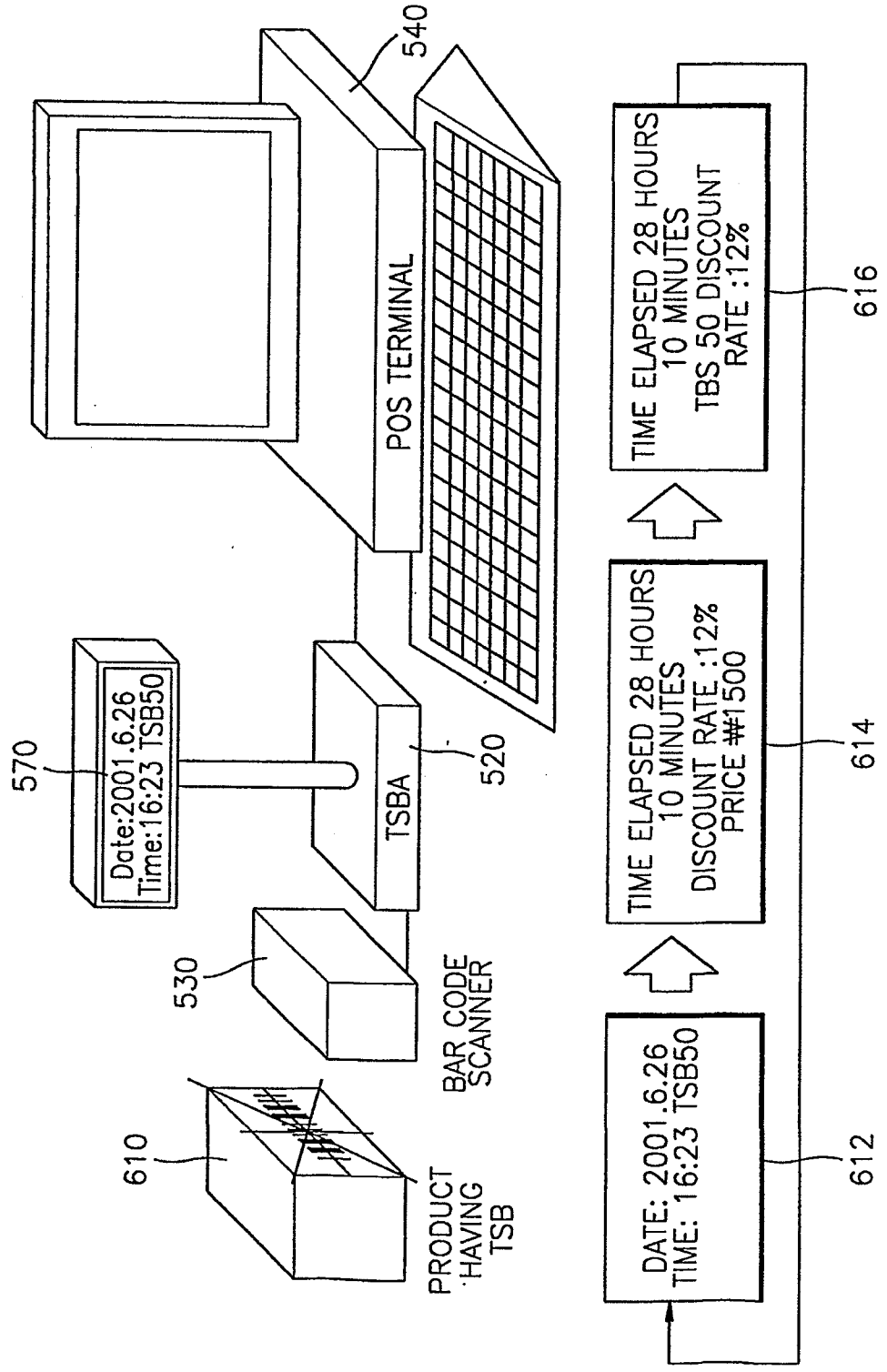

540
POS TERMINAL
520
TSBA
570
Date:2001.6.26
Time:16:23 TSB50
530
BAR CODE
SCANNER
610
PRODUCT
HAVING
TSB
DATE: 2001.6.26
TIME: 16:23 TSB50
612
TIME ELAPSED 28 HOURS
10 MINUTES
DISCOUNT RATE :12%
PRICE #1500
614
TIME ELAPSED 28 HOURS
10 MINUTES
TBS 50 DISCOUNT
RATE :12%
616

FIG. 7

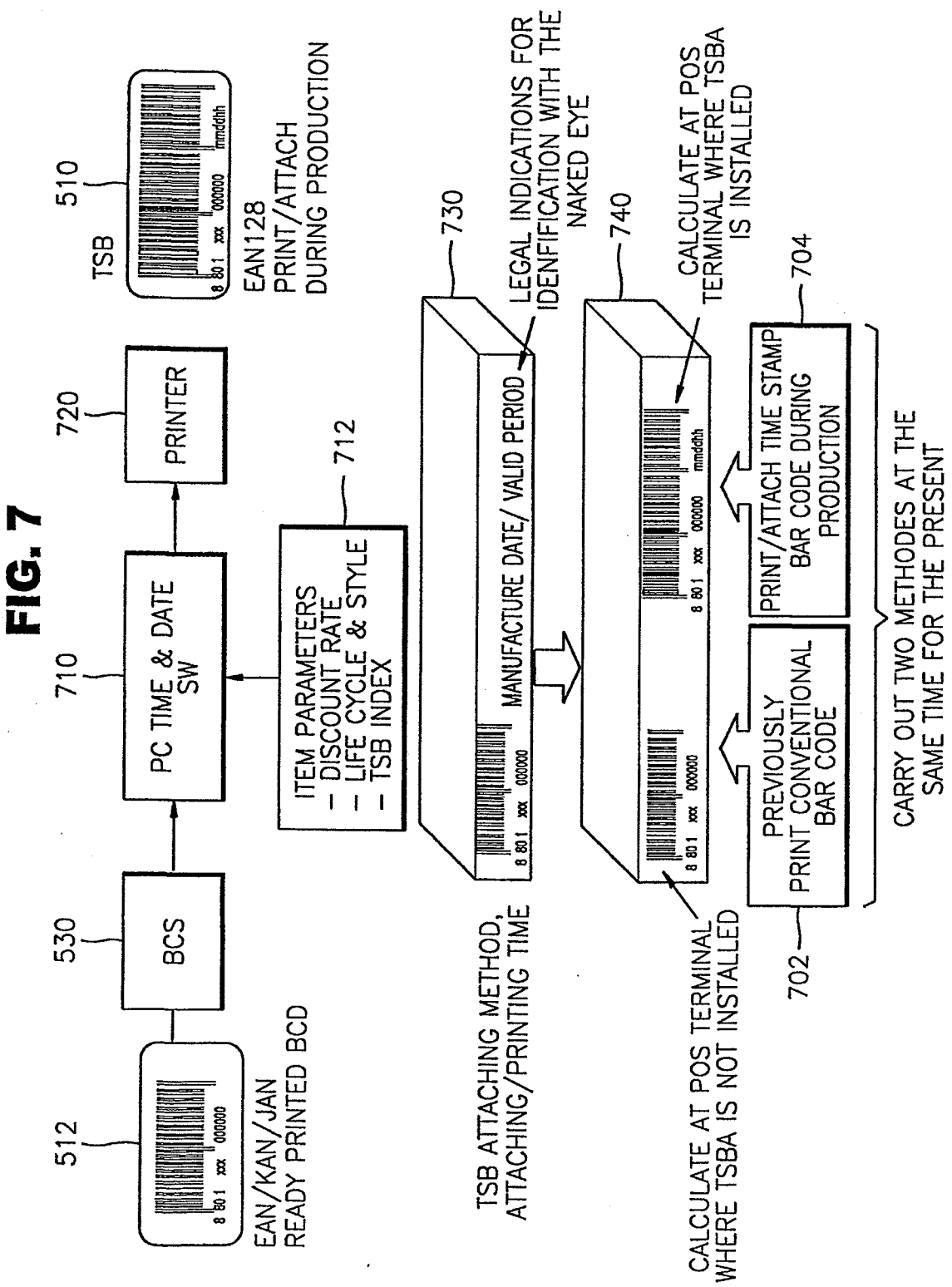

512
EAN/KAN/JAN
READY PRINTED BCD
530
BCS
710
PC TIME & DATE
SW
720
PRINTER
510
TSB
EAN128
PRINT/ATTACH
DURING PRODUCTION
712
ITEM PARAMETERS
- DISCOUNT RATE
- LIFE CYCLE & STYLE
- TSB INDEX
730
MANUFACTURE DATE/ VALID PERIOD
LEGAL INDICATIONS FOR
IDENFIFICATION WITH THE
NAKED EYE
TSB ATTACHING METHOD,
ATTACHING/PRINTING TIME
740
CALCULATE AT POS
TERMINAL WHERE TSBA
IS INSTALLED
704
PRINT/ATTACH TIME STAMP
BAR CODE DURING
PRODUCTION
PREVIOUSLY
PRINT CONVENTIONAL
BAR CODE
CALCULATE AT POS TERMINAL
WHERE TSBA IS NOT INSTALLED
702
CARRY OUT TWO METHODES AT THE
SAME TIME FOR THE PRESENT

FIG. 8

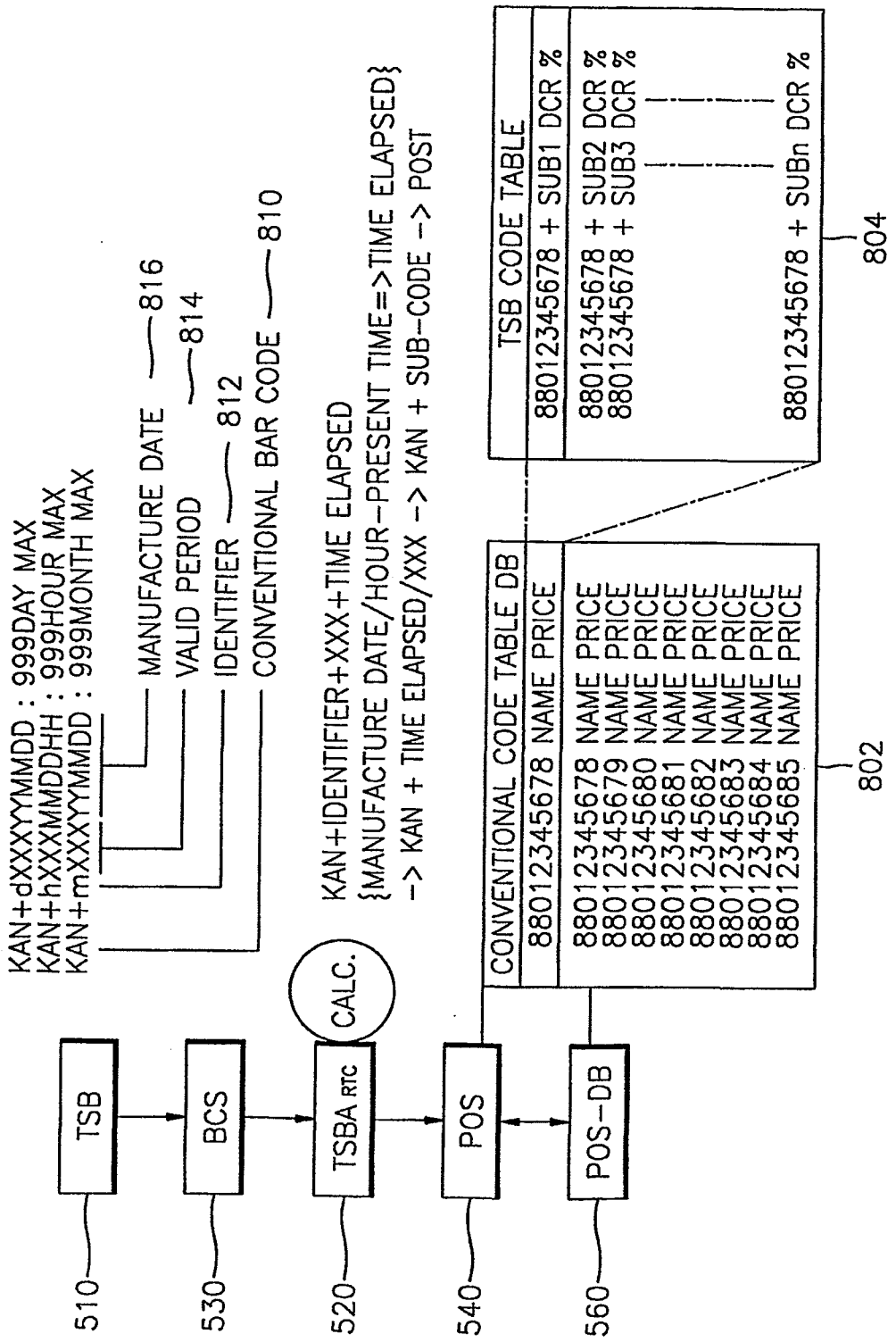

KAN+dXXXYYMMDD : 999DAY MAX
KAN+hXXXMMDDHH : 999HOUR MAX
KAN+mXXXYYMMDD : 999MONTH MAX
MANUFACTURE DATE
816
VALID PERIOD
814
IDENTIFIER
812
CONVENTIONAL BAR CODE
810
KAN+IDENTIFIER+XXX+TIME ELAPSED
{MANUFACTURE DATE/HOUR-PRESENT TIME=>TIME ELAPSED}
-> KAN + TIME ELAPSED/XXX -> KAN + SUB-CODE -> POST
TSB
BCS
CALC.
TSBA RTC
POS
POS-DB
510
530
520
540
560
CONVENTIONAL CODE TABLE DB
8801234567 8 NAME PRICE
8801234567 8 NAME PRICE
8801234567 9 NAME PRICE
8801234568 0 NAME PRICE
8801234568 1 NAME PRICE
8801234568 2 NAME PRICE
8801234568 3 NAME PRICE
8801234568 4 NAME PRICE
8801234568 5 NAME PRICE
802
TSB CODE TABLE
8801234567 8 + SUB1 DCR %
8801234567 8 + SUB2 DCR %
8801234567 8 + SUB3 DCR %
8801234567 8 + SUBn DCR %
804

FIG. 9

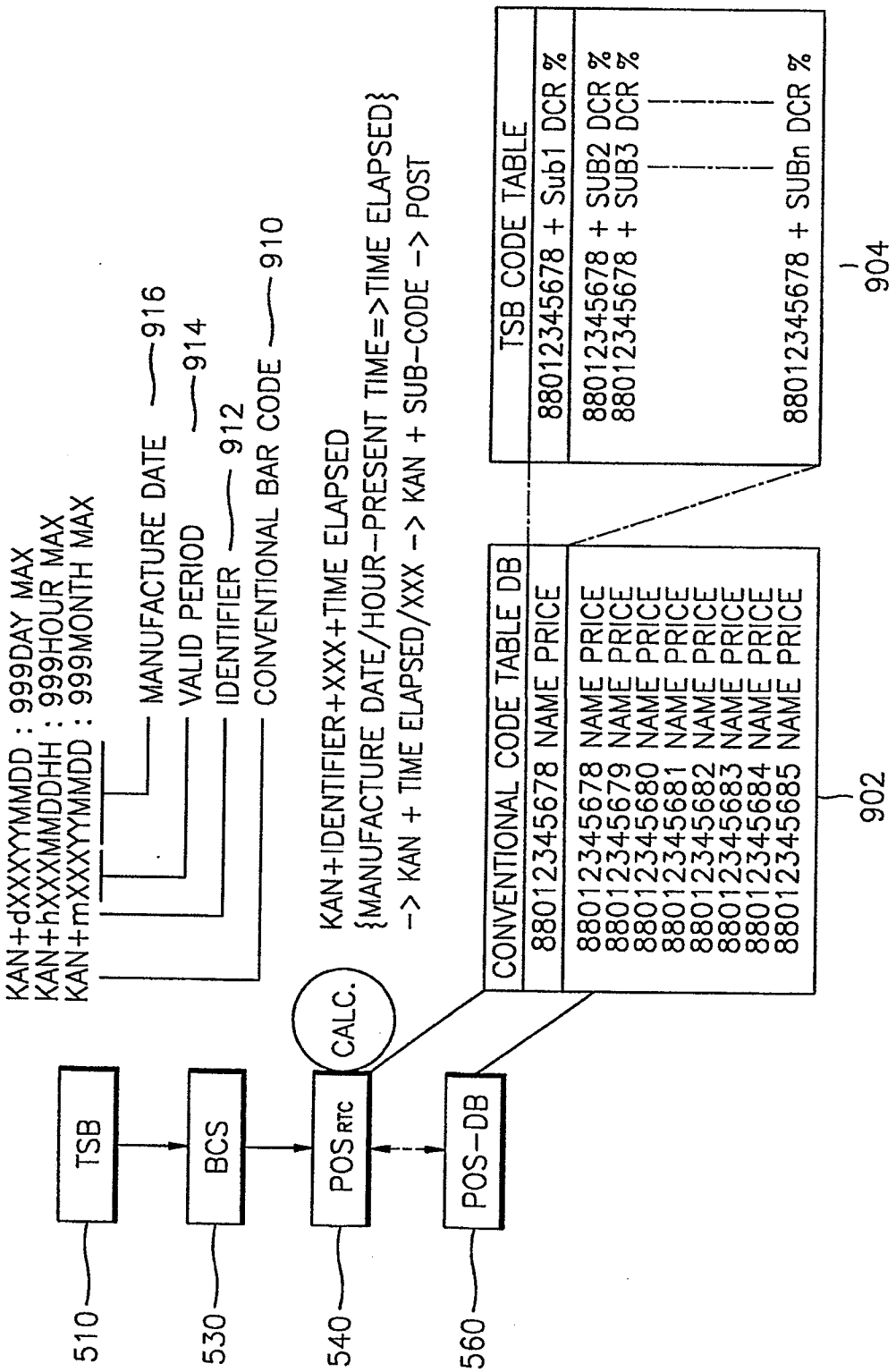

KAN+dXXXYYMMDD : 999DAY MAX
KAN+hXXXMMDDHH : 999HOUR MAX
KAN+mXXXYYMMDD : 999MONTH MAX
MANUFACTURE DATE
916
VALID PERIOD
914
IDENTIFIER
912
CONVENTIONAL BAR CODE
910
KAN+IDENTIFIER+XXX+TIME ELAPSED
{MANUFACTURE DATE/HOUR-PRESENT TIME=>TIME ELAPSED}
-> KAN + TIME ELAPSED/XXX -> KAN + SUB-CODE -> POST
TSB
BCS
CALC.
POS RTC
POS-DB
510
530
540
560
CONVENTIONAL CODE TABLE DB
880123456678 NAME PRICE
880123456679 NAME PRICE
880123456680 NAME PRICE
880123456681 NAME PRICE
880123456682 NAME PRICE
880123456683 NAME PRICE
880123456684 NAME PRICE
880123456685 NAME PRICE
902
TSB CODE TABLE
880123456678 + Sub1 DCR %
880123456678 + SUB2 DCR %
880123456678 + SUB3 DCR %
880123456678 + SUBn DCR %
904

FIG. 10

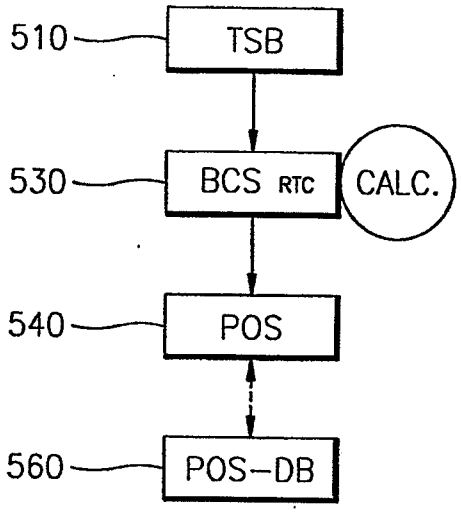

510
TSB
530
BCS RTC
CALC.
540
POS
560
POS-DB

FIG. 11

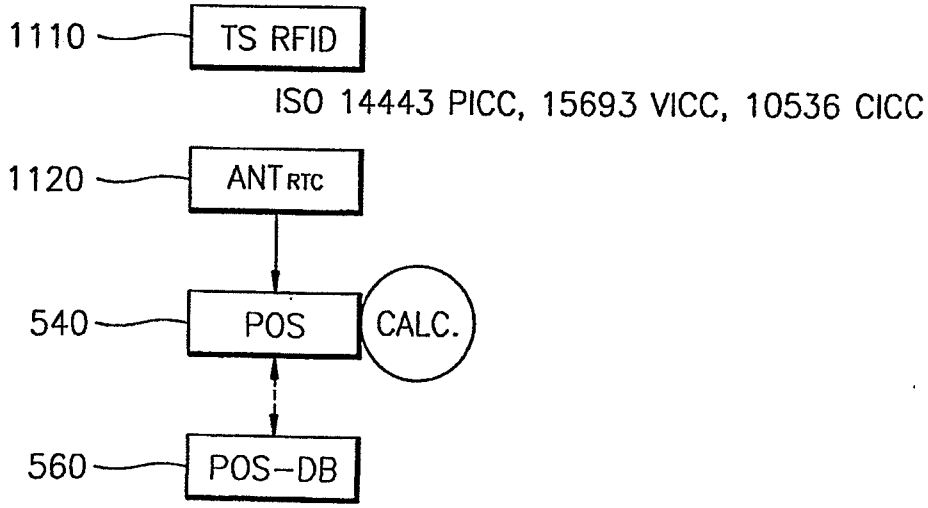

1110
TS RFID
ISO 14443 PICC, 15693 VICC, 10536 CICC
1120
ANT RTC
540
POS
CALC.
560
POS-DB

FIG. 12

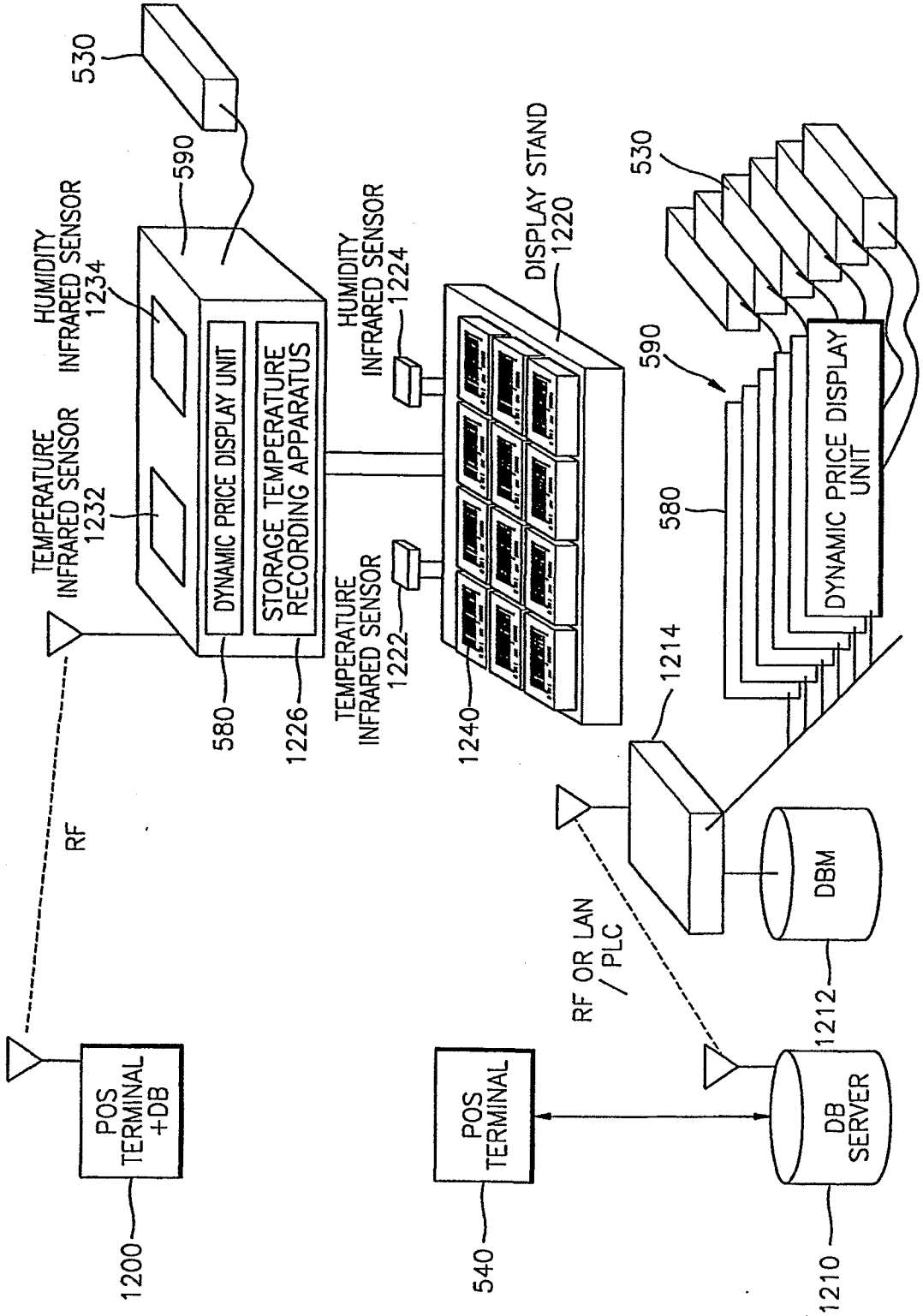

530
590
HUMIDITY INFRARED SENSOR 1234
TEMPERATURE INFRARED SENSOR 1232
DYNAMIC PRICE DISPLAY UNIT
STORAGE TEMPERATURE RECORDING APPARATUS
580
1226
RF
POS TERMINAL +DB
1200
HUMIDITY INFRARED SENSOR 1224
TEMPERATURE INFRARED SENSOR 1222
1240
DISPLAY STAND 1220
530
590
580
DYNAMIC PRICE DISPLAY UNIT
1214
RF OR LAN / PLC
DBM
1212
POS TERMINAL
540
DB SERVER
1210

FIG. 13

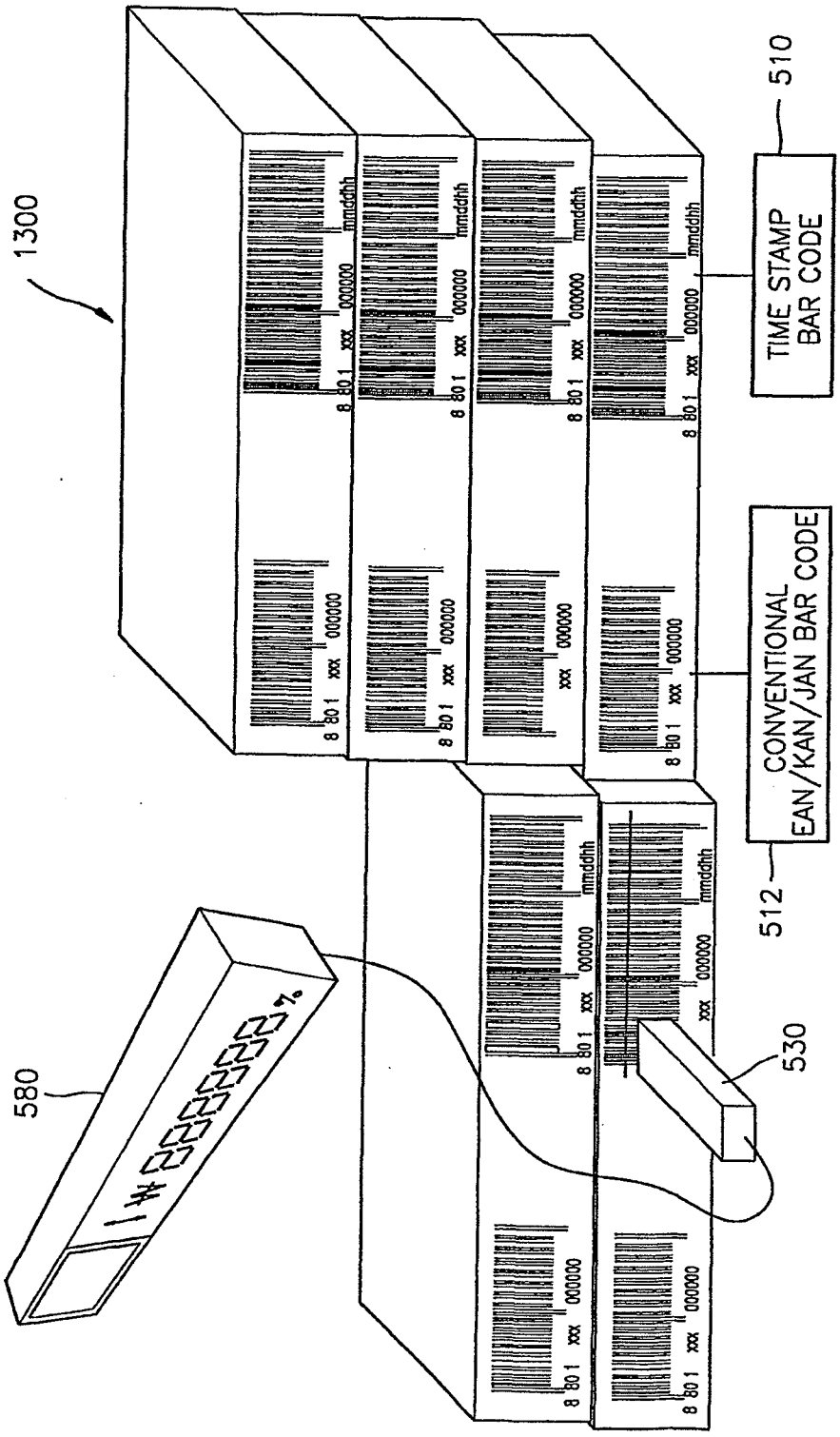

1300
510
TIME STAMP BAR CODE
CONVENTIONAL EAN/KAN/JAN BAR CODE
512
530
580

FIG. 14

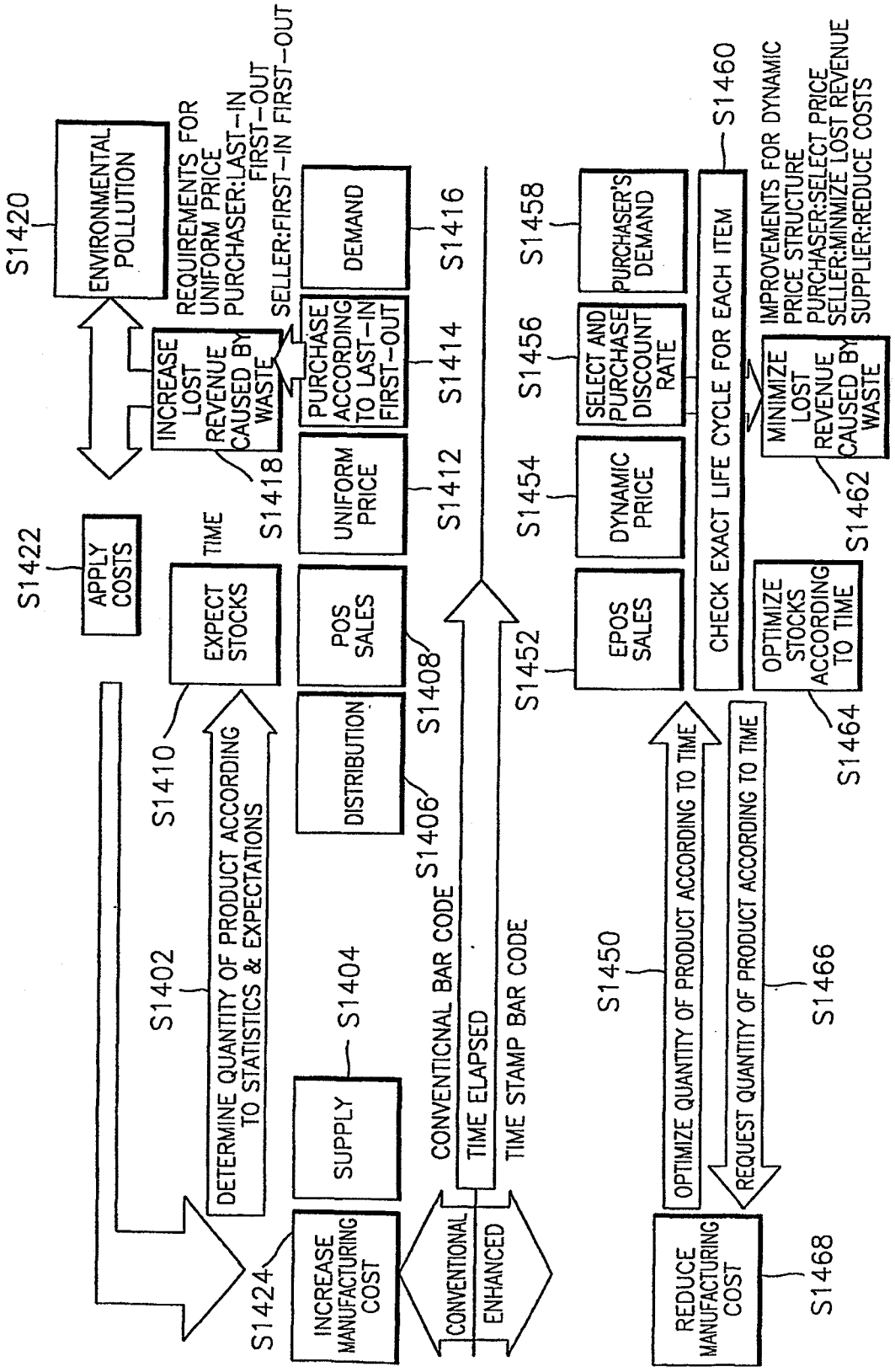

S1420
ENVIRONMENTAL POLLUTION
REQUIREMENTS FOR UNIFORM PRICE
PURCHASER:LAST-IN FIRST-OUT
SELLER:FIRST-IN FIRST-OUT
S1422
APPLY COSTS
INCREASE LOST REVENUE CAUSED BY WASTE
S1418
PURCHASE ACCORDING TO LAST-IN FIRST-OUT
DEMAND
S1416
S1414
UNIFORM PRICE
S1412
EXPECT STOCKS
TIME
S1410
POS SALES
S1408
DISTRIBUTION
S1406
S1402
DETERMINE QUANTITY OF PRODUCT ACCORDING TO STATISTICS & EXPECTATIONS
S1404
SUPPLY
CONVENTIONAL BAR CODE
TIME ELAPSED
TIME STAMP BAR CODE
S1424
INCREASE MANUFACTURING COST
CONVENTIONAL
ENHANCED
S1452
EPOS SALES
S1454
DYNAMIC PRICE
S1456
SELECT AND PURCHASE DISCOUNT RATE
S1458
PURCHASER'S DEMAND
S1460
CHECK EXACT LIFE CYCLE FOR EACH ITEM
IMPROVEMENTS FOR DYNAMIC PRICE STRUCTURE
PURCHASER:SELECT PRICE
SELLER:MINMIZE LOST REVENUE
SUPPLIER:REDUCE COSTS
MINIMIZE LOST REVENUE CAUSED BY WASTE
S1462
OPTIMIZE STOCKS ACCORDING TO TIME
S1464
S1450
OPTIMIZE QUANTITY OF PRODUCT ACCORDING TO TIME
REQUEST QUANTITY OF PRODUCT ACCORDING TO TIME
S1466
REDUCE MANUFACTURING COST
S1468

FIG. 15

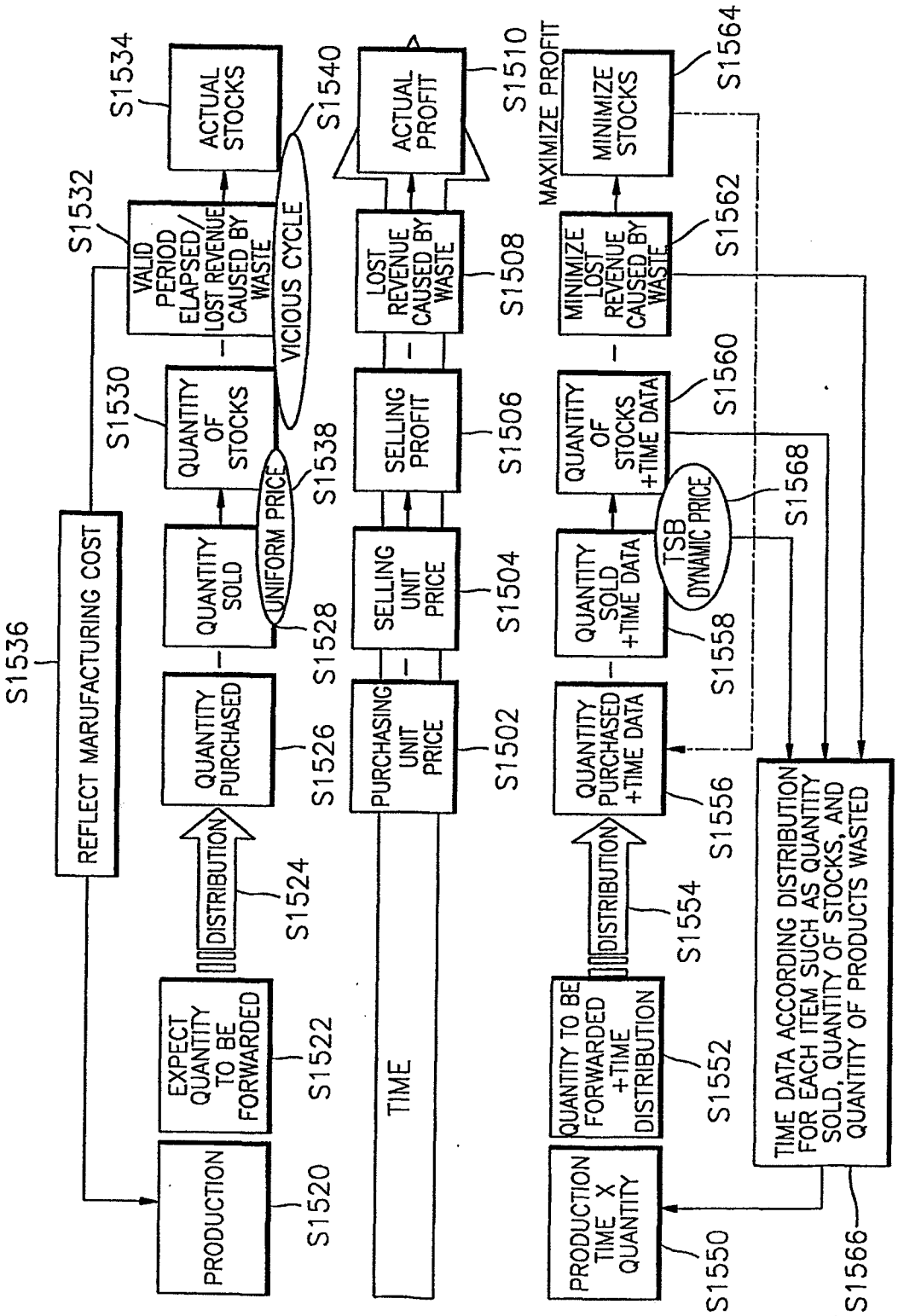

S1536
REFLECT MARUFACTURING COST
S1534
ACTUAL STOCKS
S1532
VALID PERIOD ELAPSED/ LOST REVENUE CAUSED BY WASTE
S1530
QUANTITY OF STOCKS
S1528
QUANTITY SOLD
S1526
QUANTITY PURCHASED
S1524
DISTRIBUTION
S1522
EXPECT QUANTITY TO BE FORWARDED
S1520
PRODUCTION
S1540
VICIOUS CYCLE
S1538
UNIFORM PRICE
S1510
ACTUAL PROFIT
S1508
LOST REVENUE CAUSED BY WASTE
S1506
SELLING PROFIT
S1504
SELLING UNIT PRICE
S1502
PURCHASING UNIT PRICE
TIME
MAXIMIZE PROFIT
S1564
MINIMIZE STOCKS
S1562
MINIMIZE LOST REVENUE CAUSED BY WASTE
S1560
QUANTITY OF STOCKS +TIME DATA
S1568
TSB DYNAMIC PRICE
S1558
QUANTITY SOLD +TIME DATA
S1556
QUANTITY PURCHASED +TIME DATA
S1554
DISTRIBUTION
S1552
QUANTITY TO BE FORWARDED +TIME DISTRIBUTION
S1550
PRODUCTION TIME X QUANTITY
TIME DATA ACCORDING DISTRIBUTION FOR EACH ITEM SUCH AS QUANTITY SOLD, QUANTITY OF STOCKS, AND QUANTITY OF PRODUCTS WASTED
S1566

FIG. 16

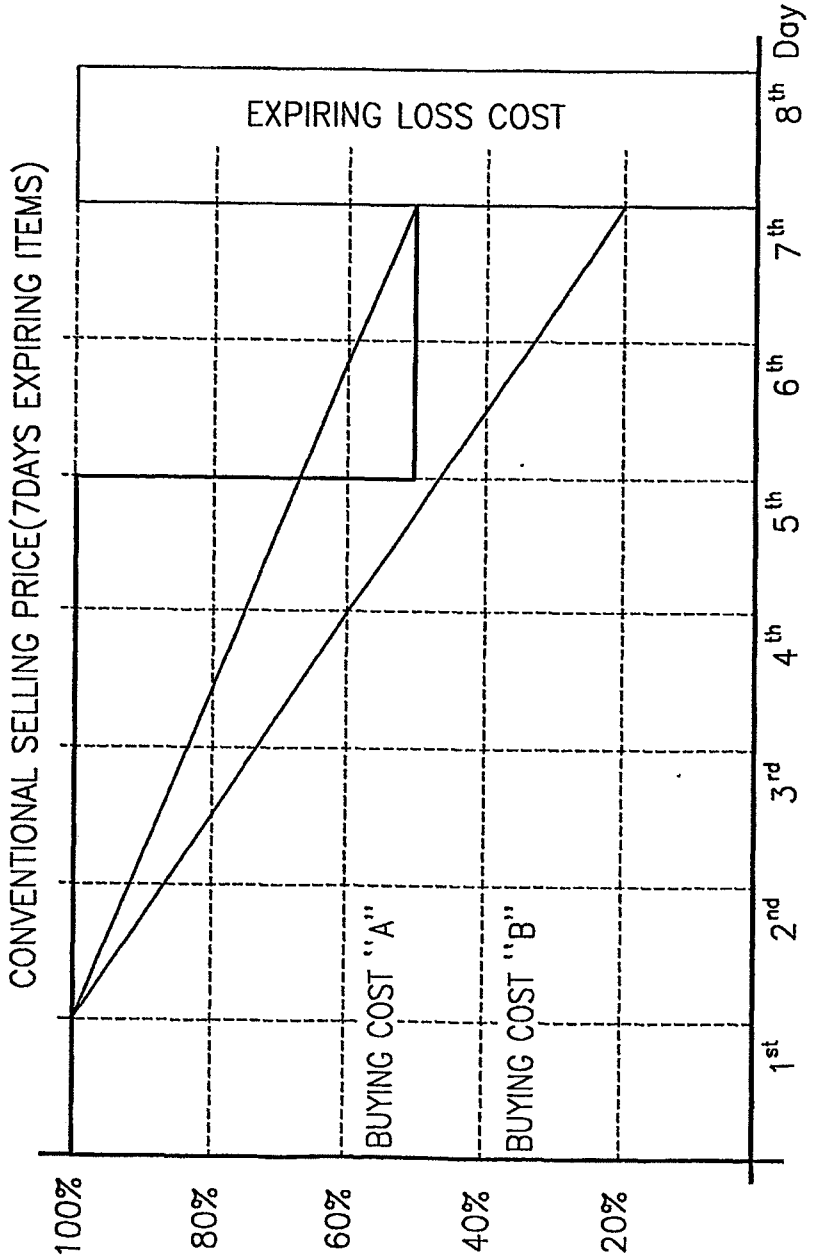

EXPIRING LOSS COST
CONVENTIONAL SELLING PRICE(7DAYS EXPIRING ITEMS)
BUYING COST "A"
BUYING COST "B"
100%
80%
60%
40%
20%
1st
2nd
3rd
4th
5th
6th
7th
8th Day

FIG. 17

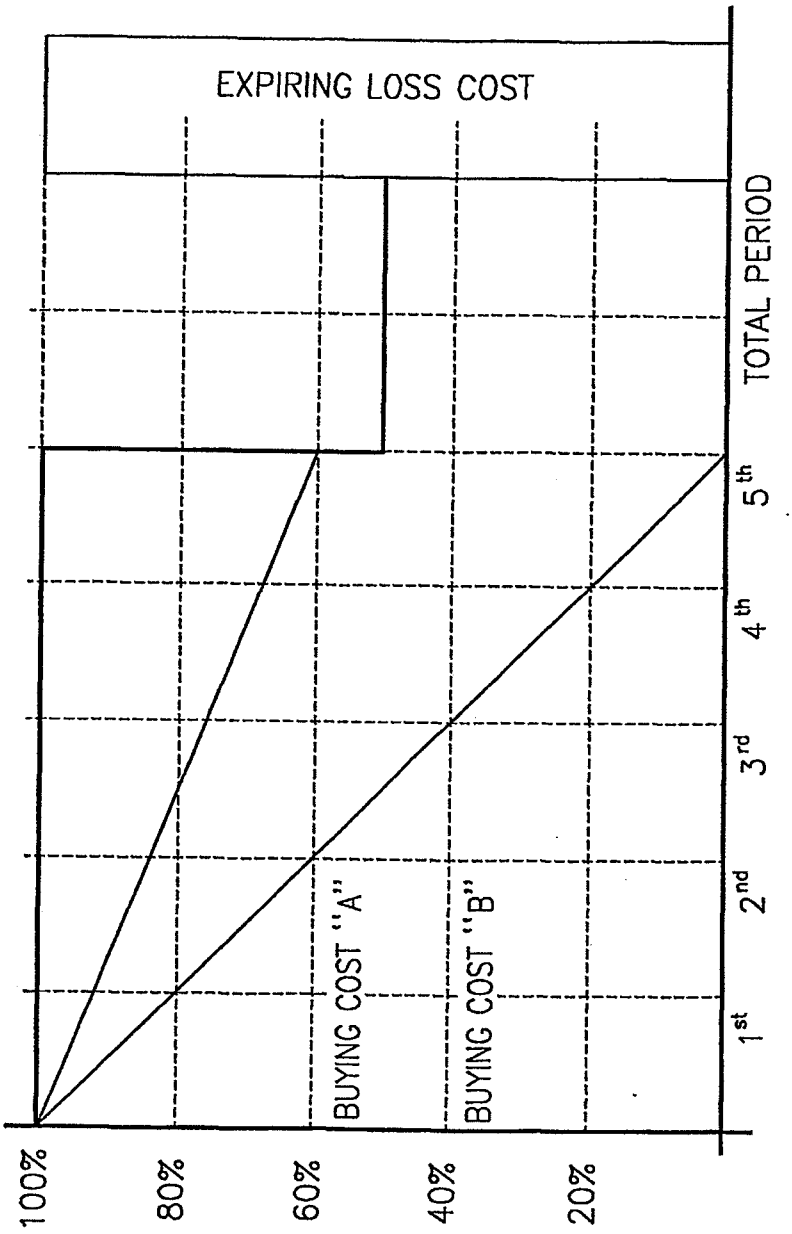
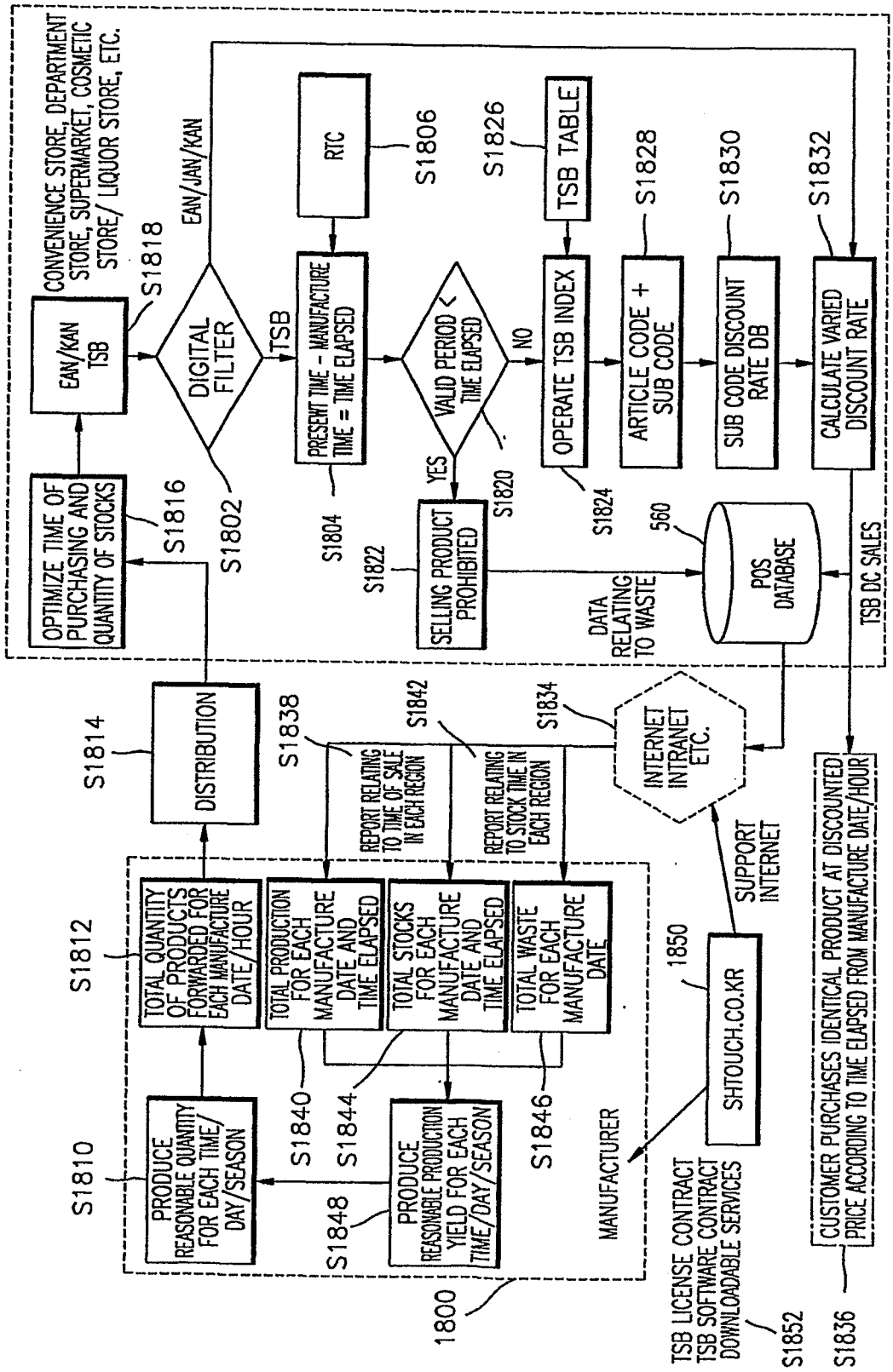

EXPIRING LOSS COST
TOTAL PERIOD
1st
2nd
3rd
4th
5th
BUYING COST "A"
BUYING COST "B"
100%
80%
60%
40%
20%

FIG. 18


CONVENIENCE STORE, DEPARTMENT STORE, SUPERMARKET, COSMETIC STORE/ LIQUOR STORE, ETC.
EAN/KAN TSB
S1818
EAN/JAN/KAN
DIGITAL FILTER
TSB
RTC
S1806
S1826
TSB TABLE
S1828
S1830
S1832
PRESENT TIME - MANUFACTURE TIME = TIME ELAPSED
VALID PERIOD < TIME ELAPSED
NO
OPERATE TSB INDEX
ARTICLE CODE + SUB CODE
SUB CODE DISCOUNT RATE DB
CALCULATE VARIED DISCOUNT RATE
OPTIMIZE TIME OF PURCHASING AND QUANTITY OF STOCKS
S1816
S1802
S1804
YES
S1820
S1824
S1822
SELLING PRODUCT PROHIBITED
560
POS DATABASE
DATA RELATING TO WASTE
TSB DC SALES
S1814
DISTRIBUTION
S1838
S1842
S1834
REPORT RELATING TO TIME OF SALE IN EACH REGION
REPORT RELATING TO STOCK TIME IN EACH REGION
INTERNET INTRANET ETC.
SUPPORT INTERNET
S1812
TOTAL QUANTITY OF PRODUCTS FORWARDED FOR EACH MANUFACTURE DATE/HOUR
TOTAL PRODUCTION FOR EACH MANUFACTURE DATE AND TIME ELAPSED
TOTAL STOCKS FOR EACH MANUFACTURE DATE AND TIME ELAPSED
TOTAL WASTE FOR EACH MANUFACTURE DATE
1850
SHTOUCH.CO.KR
S1810
PRODUCE REASONABLE QUANTITY FOR EACH TIME/ DAY/SEASON
S1840
S1844
S1846
S1848
PRODUCE REASONABLE PRODUCTION YIELD FOR EACH TIME/DAY/SEASON
MANUFACTURER
1800
TSB LICENSE CONTRACT
TSB SOFTWARE CONTRACT
DOWNLOADABLE SERVICES
S1852
S1836
CUSTOMER PURCHASES IDENTICAL PRODUCT AT DISCOUNTED PRICE ACCORDING TO TIME ELAPSED FROM MANUFACTURE DATE/HOUR