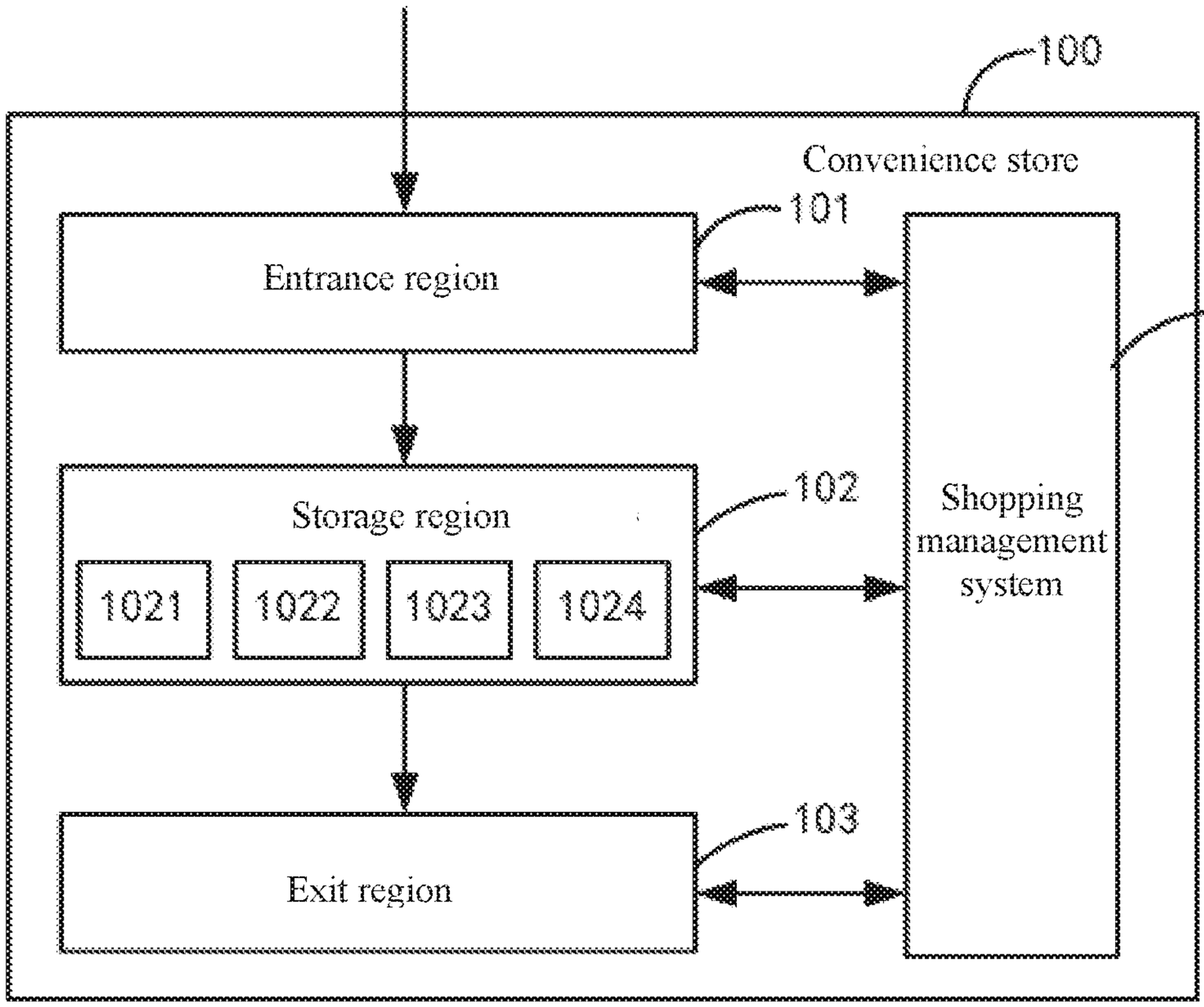
100
Convenience store
101
Entrance region
104
102
Storage region
1021
1022
1023
1024
Shopping management system
103
Exit region

FIG. 1

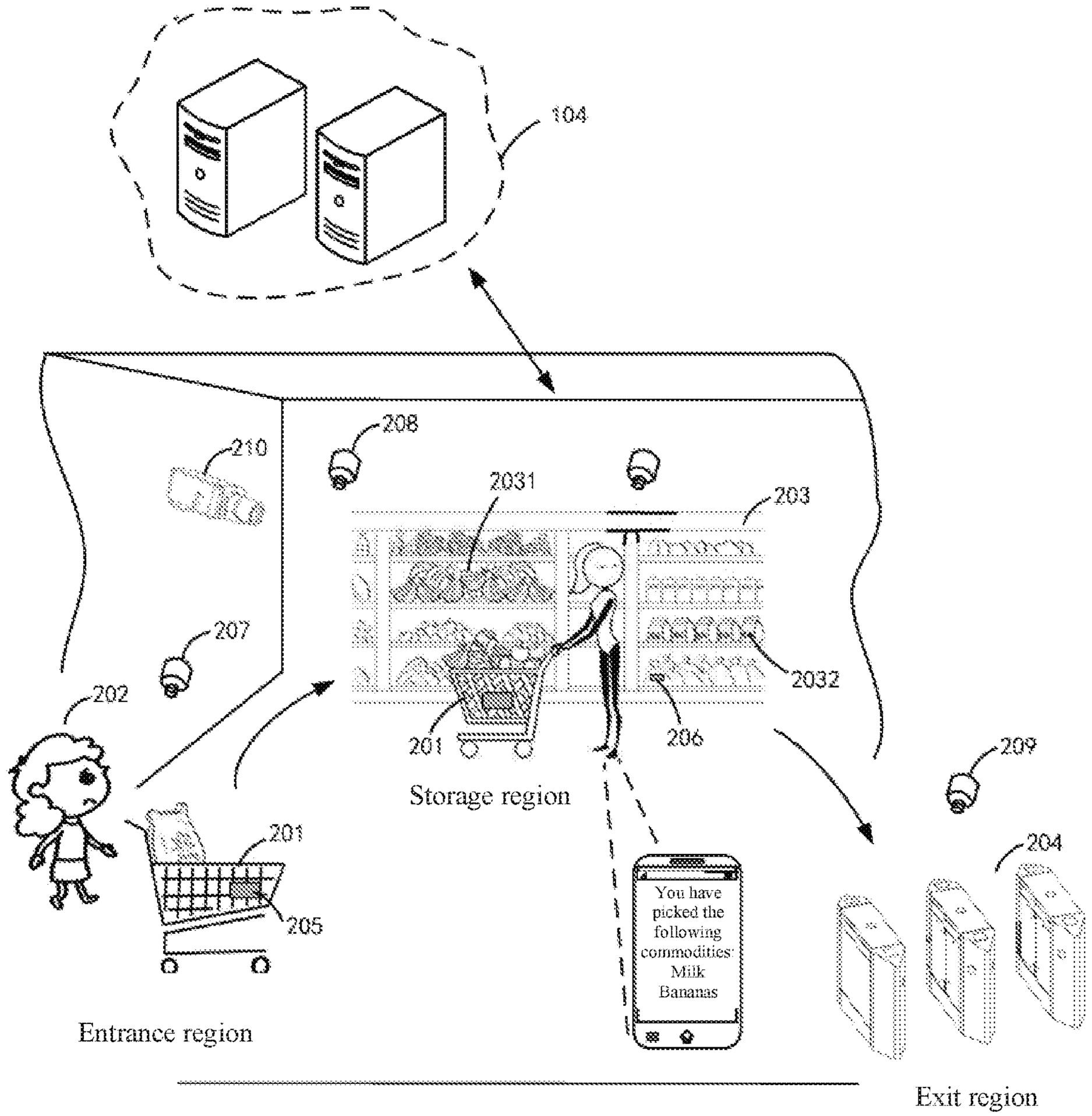
104
208
210
2031
203
207
2032
202
206
209
201
Storage region
201
205
You have picked the following commodities: Milk Bananas
204
Entrance region
Exit region

FIG. 2

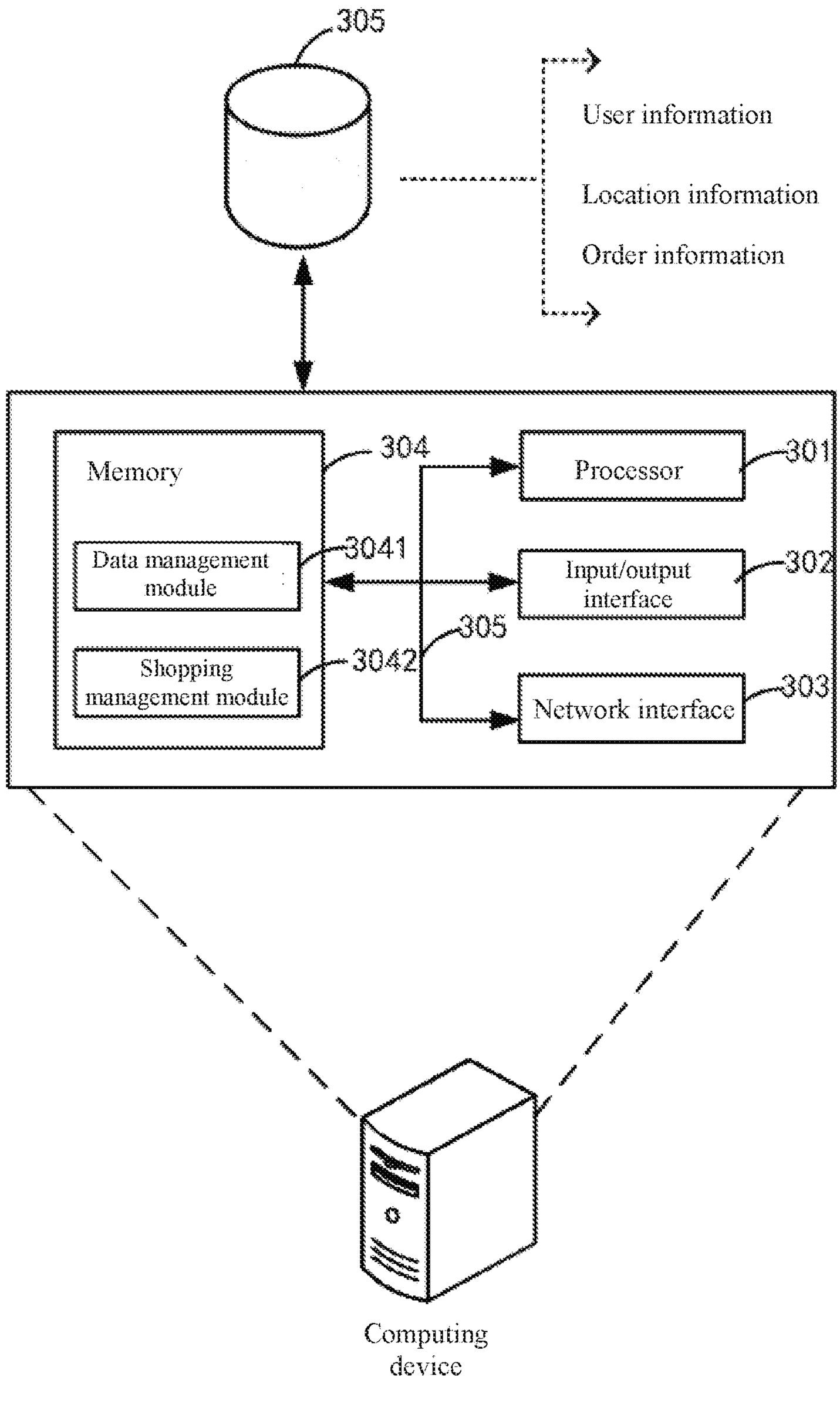
305
User information
Location information
Order information
Memory
304
Processor
301
Data management module
3041
Input/output interface
302
305
Shopping management module
3042
Network interface
303
Computing device

FIG. 3

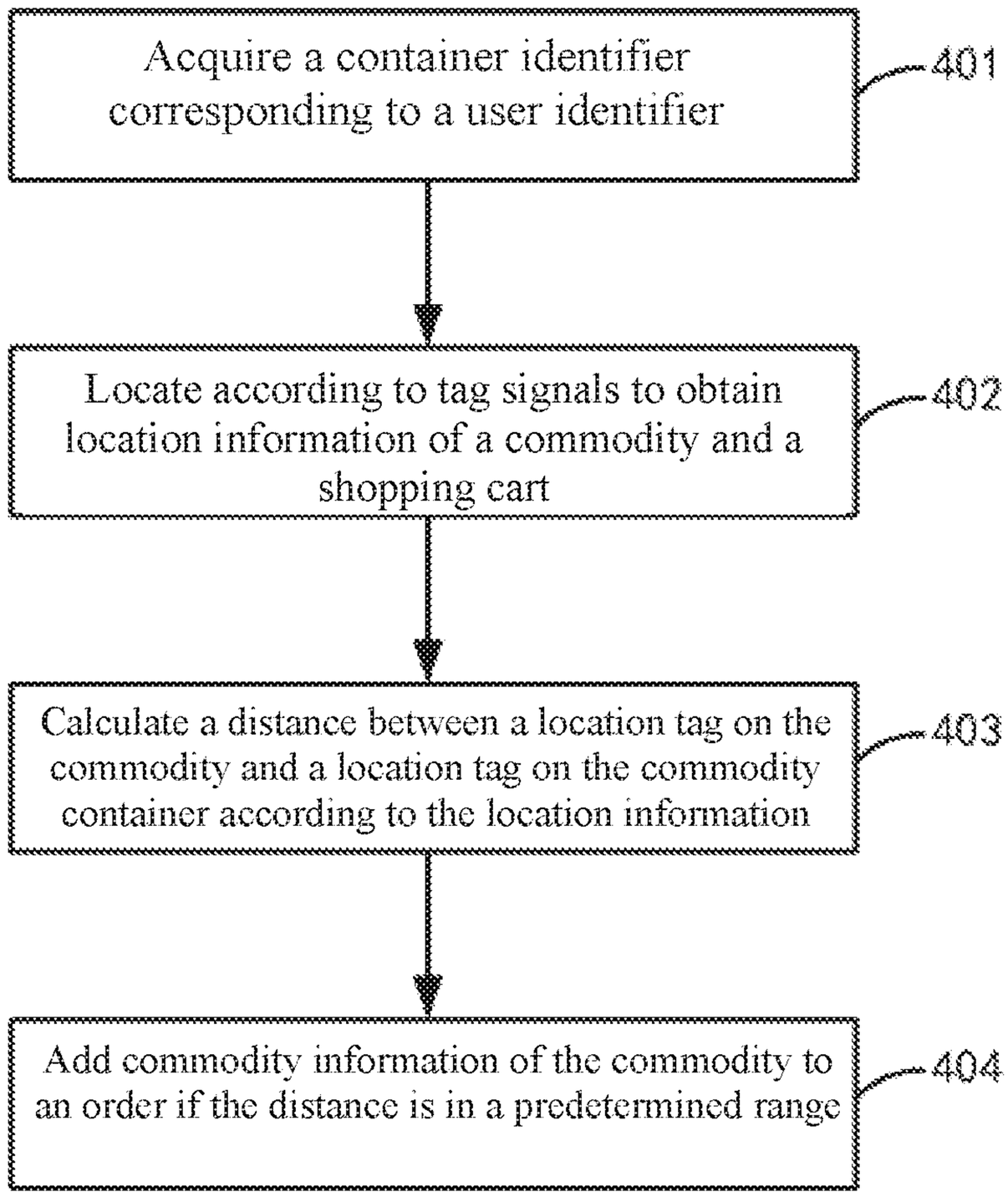
Acquire a container identifier corresponding to a user identifier
401
Locate according to tag signals to obtain location information of a commodity and a shopping cart
402
Calculate a distance between a location tag on the commodity and a location tag on the commodity container according to the location information
403
Add commodity information of the commodity to an order if the distance is in a predetermined range
404

FIG. 4

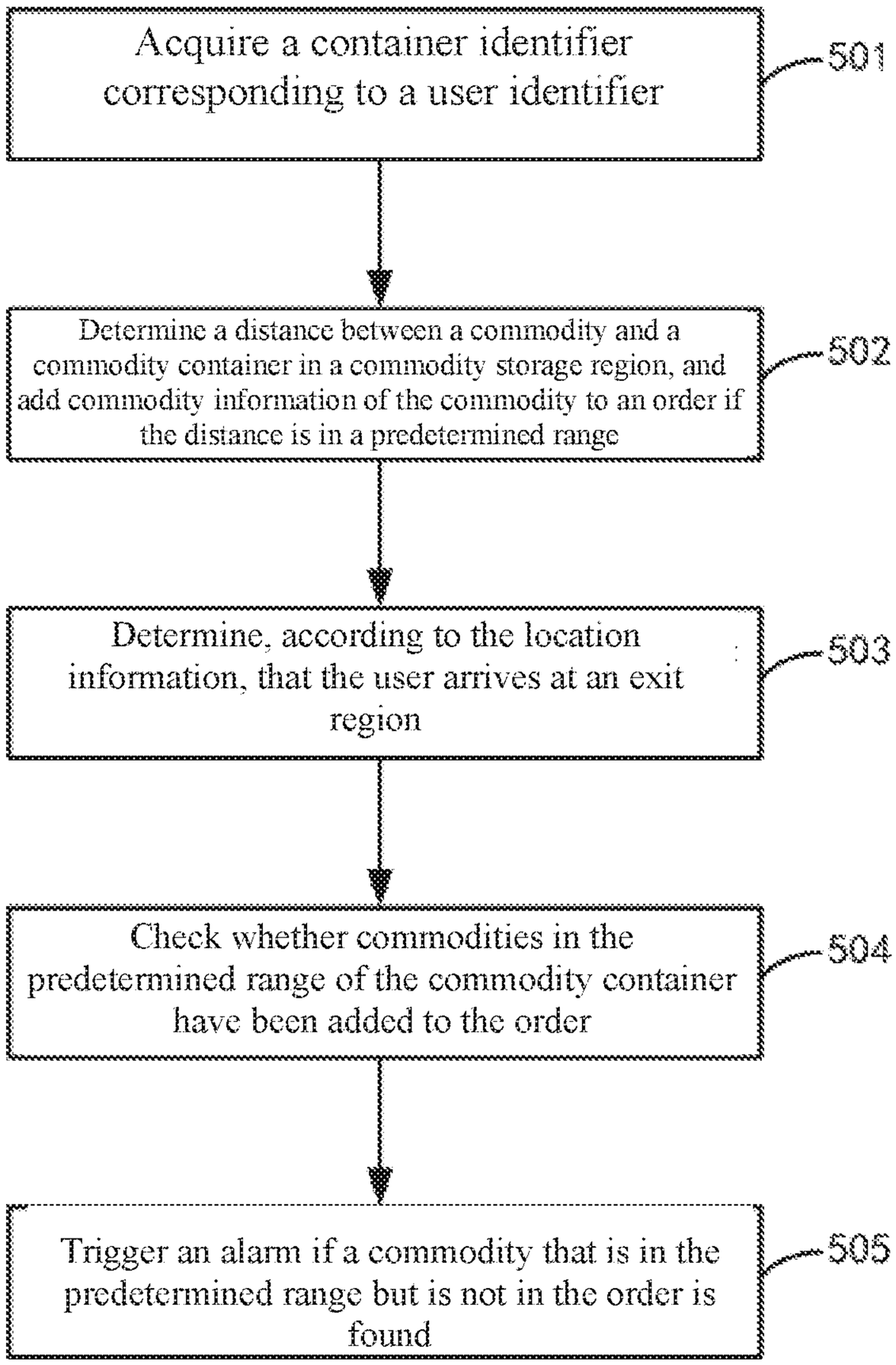
Acquire a container identifier corresponding to a user identifier
501
Determine a distance between a commodity and a commodity container in a commodity storage region, and add commodity information of the commodity to an order if the distance is in a predetermined range
502
Determine, according to the location information, that the user arrives at an exit region
503
Check whether commodities in the predetermined range of the commodity container have been added to the order
504
Trigger an alarm if a commodity that is in the predetermined range but is not in the order is found
505

FIG. 5

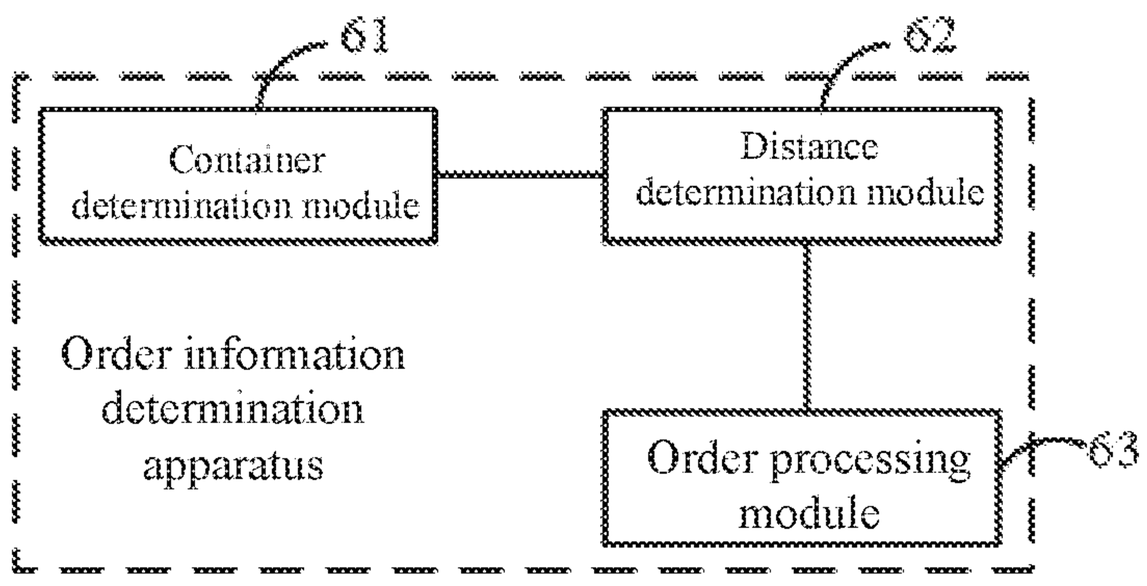
61
62
Container determination module
Distance determination module
Order information determination apparatus
Order processing module
63

FIG. 6

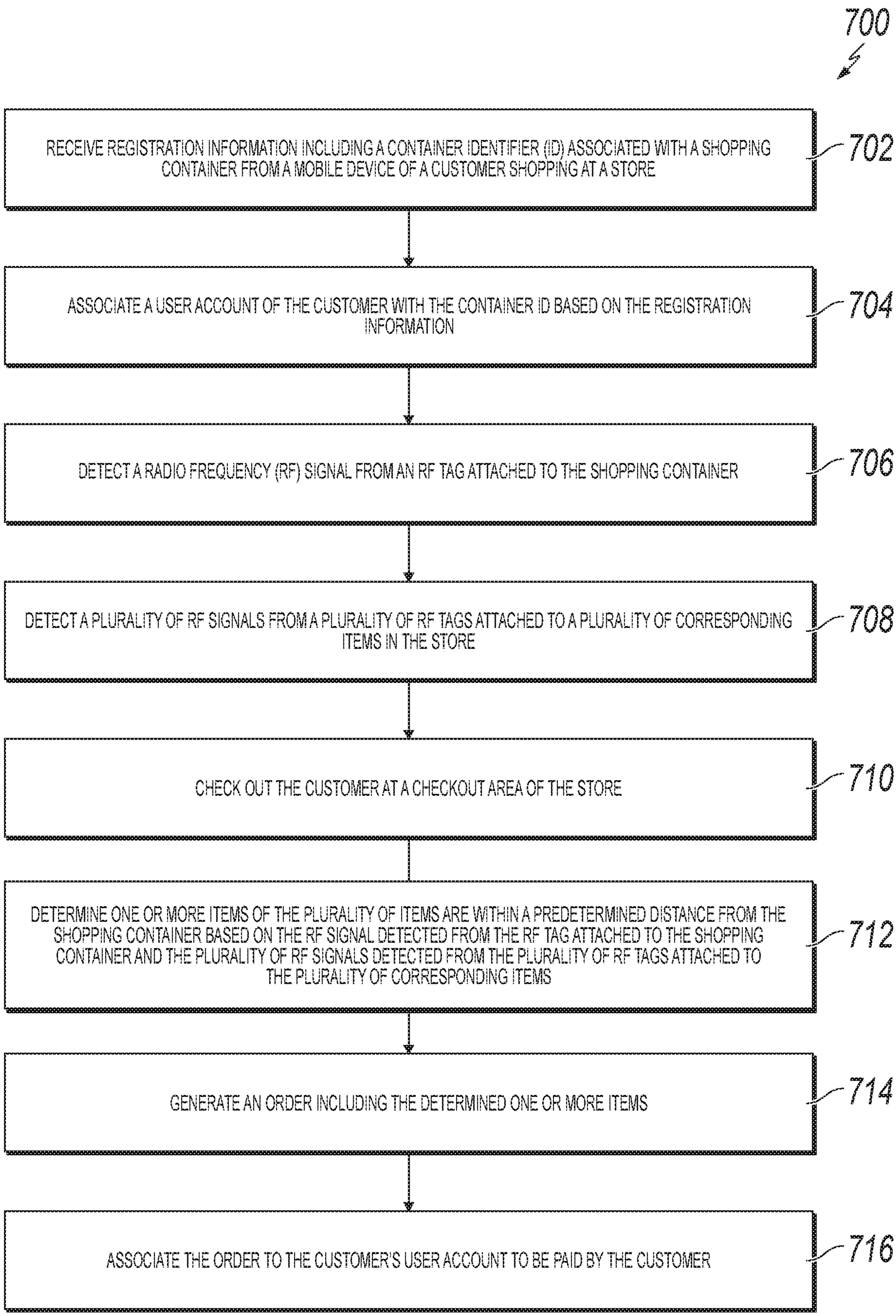
700
RECEIVE REGISTRATION INFORMATION INCLUDING A CONTAINER IDENTIFIER (ID) ASSOCIATED WITH A SHOPPING CONTAINER FROM A MOBILE DEVICE OF A CUSTOMER SHOPPING AT A STORE
702
ASSOCIATE A USER ACCOUNT OF THE CUSTOMER WITH THE CONTAINER ID BASED ON THE REGISTRATION INFORMATION
704
DETECT A RADIO FREQUENCY (RF) SIGNAL FROM AN RF TAG ATTACHED TO THE SHOPPING CONTAINER
706
DETECT A PLURALITY OF RF SIGNALS FROM A PLURALITY OF RF TAGS ATTACHED TO A PLURALITY OF CORRESPONDING ITEMS IN THE STORE
708
CHECK OUT THE CUSTOMER AT A CHECKOUT AREA OF THE STORE
710
DETERMINE ONE OR MORE ITEMS OF THE PLURALITY OF ITEMS ARE WITHIN A PREDETERMINED DISTANCE FROM THE SHOPPING CONTAINER BASED ON THE RF SIGNAL DETECTED FROM THE RF TAG ATTACHED TO THE SHOPPING CONTAINER AND THE PLURALITY OF RF SIGNALS DETECTED FROM THE PLURALITY OF RF TAGS ATTACHED TO THE PLURALITY OF CORRESPONDING ITEMS
712
GENERATE AN ORDER INCLUDING THE DETERMINED ONE OR MORE ITEMS
714
ASSOCIATE THE ORDER TO THE CUSTOMER'S USER ACCOUNT TO BE PAID BY THE CUSTOMER
716

FIG. 7