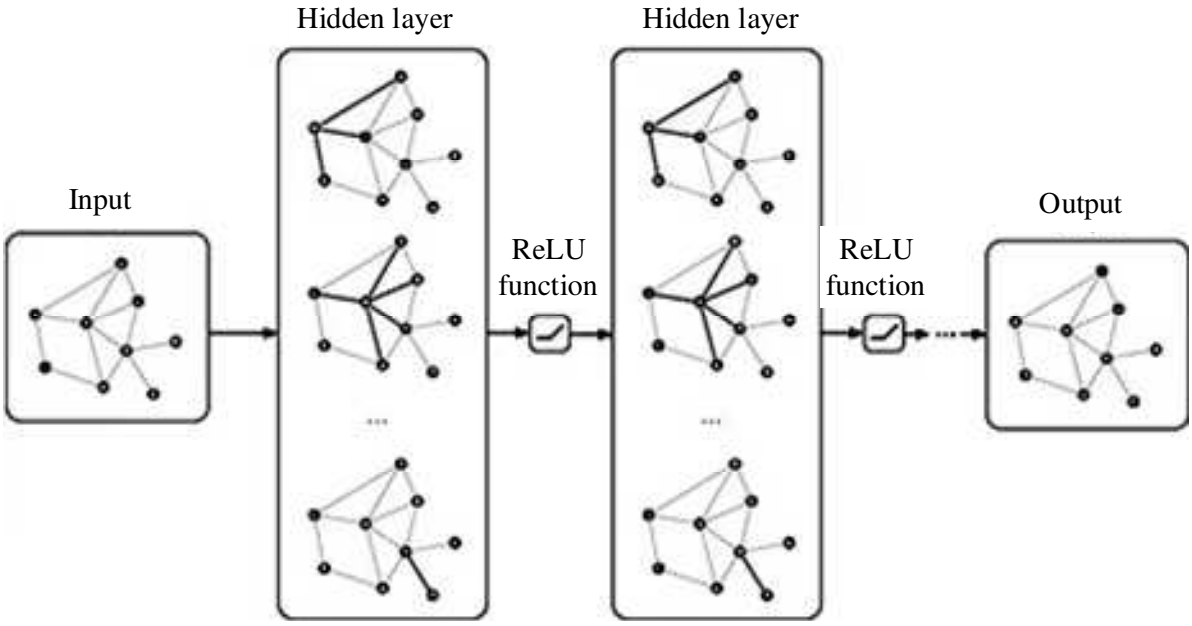

Hidden layer
Hidden layer
Input
Output
ReLU function
ReLU function

FIG. 1

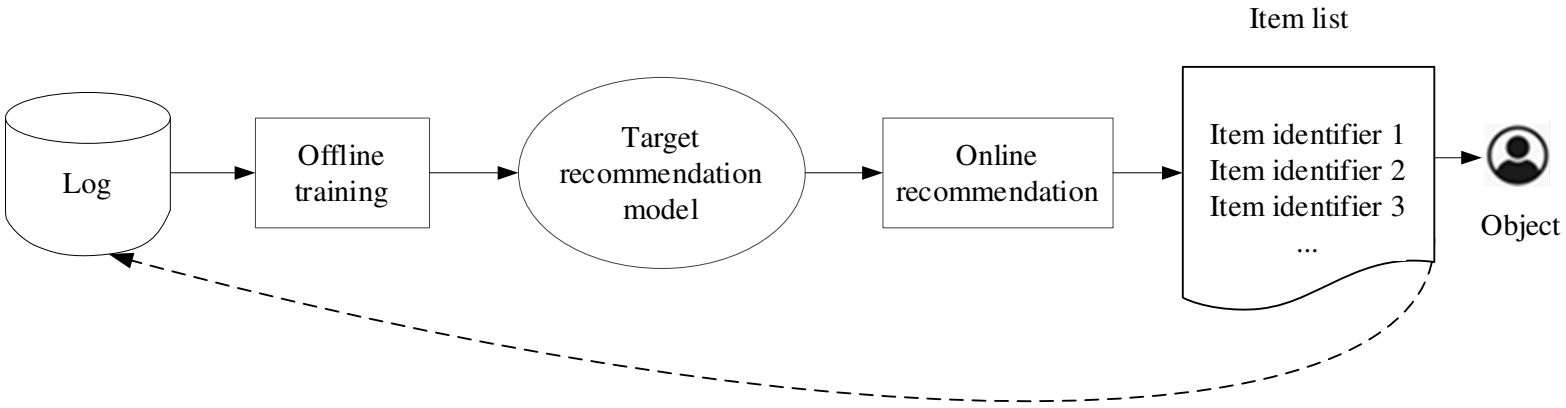

Item list
Log
Offline training
Target recommendation model
Online recommendation
Item identifier 1
Item identifier 2
Item identifier 3
...
Object

FIG. 2

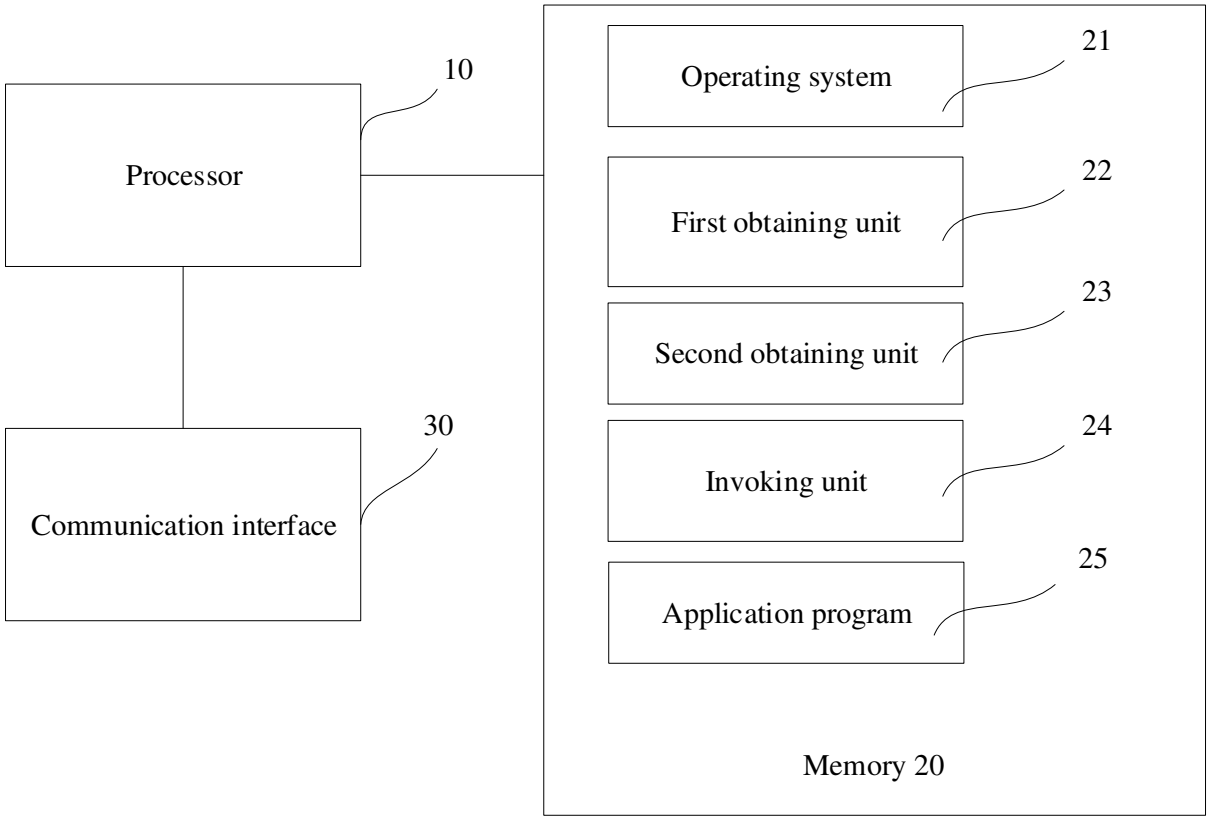

Processor
10
Communication interface
30
Operating system
21
First obtaining unit
22
Second obtaining unit
23
Invoking unit
24
Application program
25
Memory 20

FIG. 3

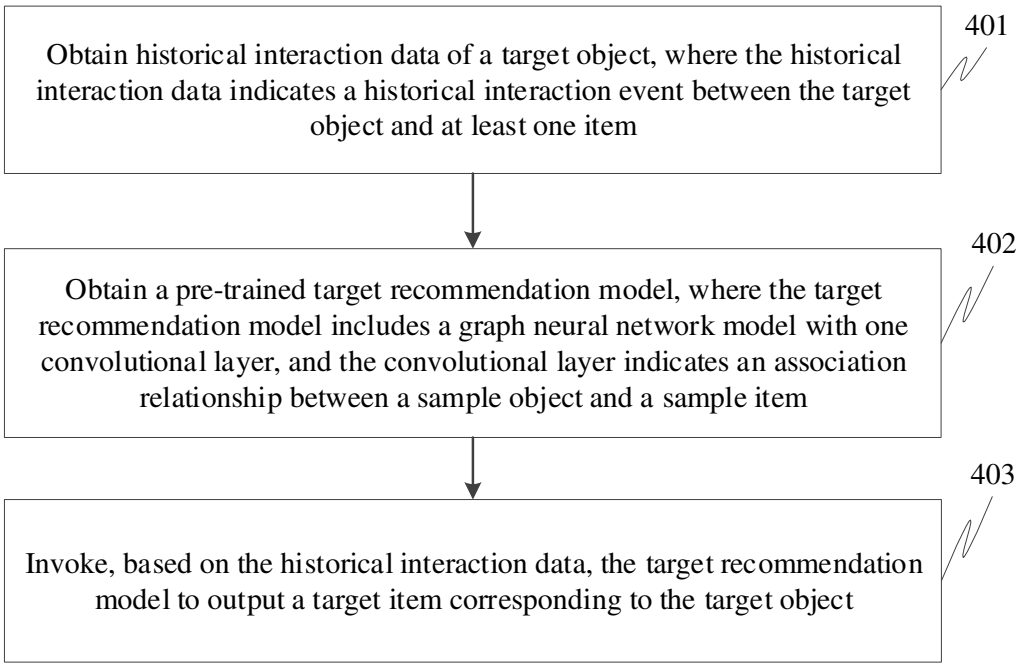

Obtain historical interaction data of a target object, where the historical interaction data indicates a historical interaction event between the target object and at least one item
401
Obtain a pre-trained target recommendation model, where the target recommendation model includes a graph neural network model with one convolutional layer, and the convolutional layer indicates an association relationship between a sample object and a sample item
402
Invoke, based on the historical interaction data, the target recommendation model to output a target item corresponding to the target object
403

FIG. 4

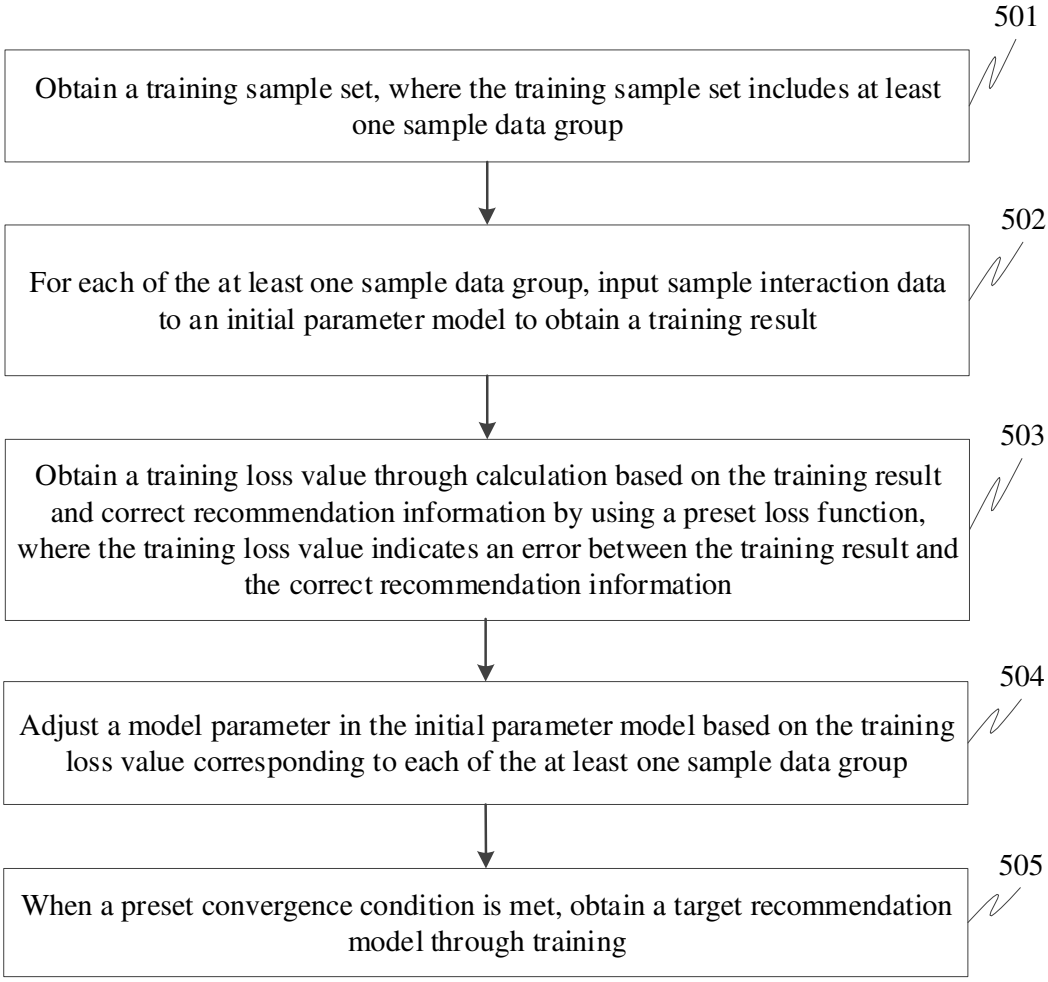

501
Obtain a training sample set, where the training sample set includes at least one sample data group
502
For each of the at least one sample data group, input sample interaction data to an initial parameter model to obtain a training result
503
Obtain a training loss value through calculation based on the training result and correct recommendation information by using a preset loss function, where the training loss value indicates an error between the training result and the correct recommendation information
504
Adjust a model parameter in the initial parameter model based on the training loss value corresponding to each of the at least one sample data group
505
When a preset convergence condition is met, obtain a target recommendation model through training

FIG. 5

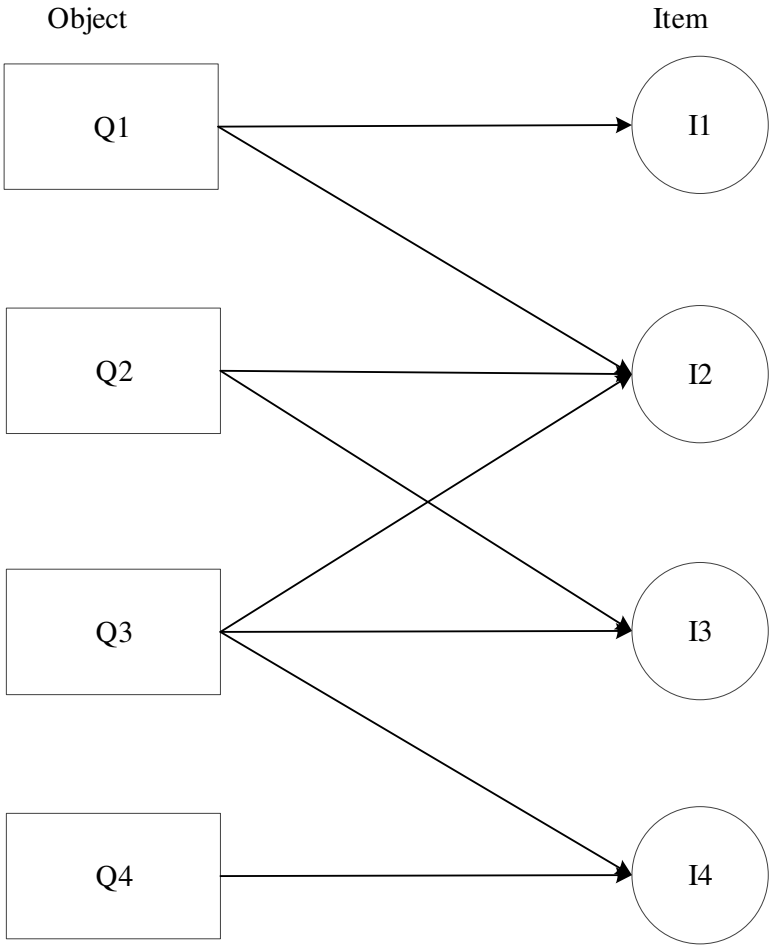



FIG. 6

| | I1 | I2 | I3 | I4 |
|---|---|---|---|---|
| I1 | 0 | 1 | 0 | 0 |
| I2 | 1 | 0 | 2 | 1 |
| I3 | 0 | 2 | 0 | 1 |
| I4 | 0 | 1 | 1 | 0 |

FIG. 7

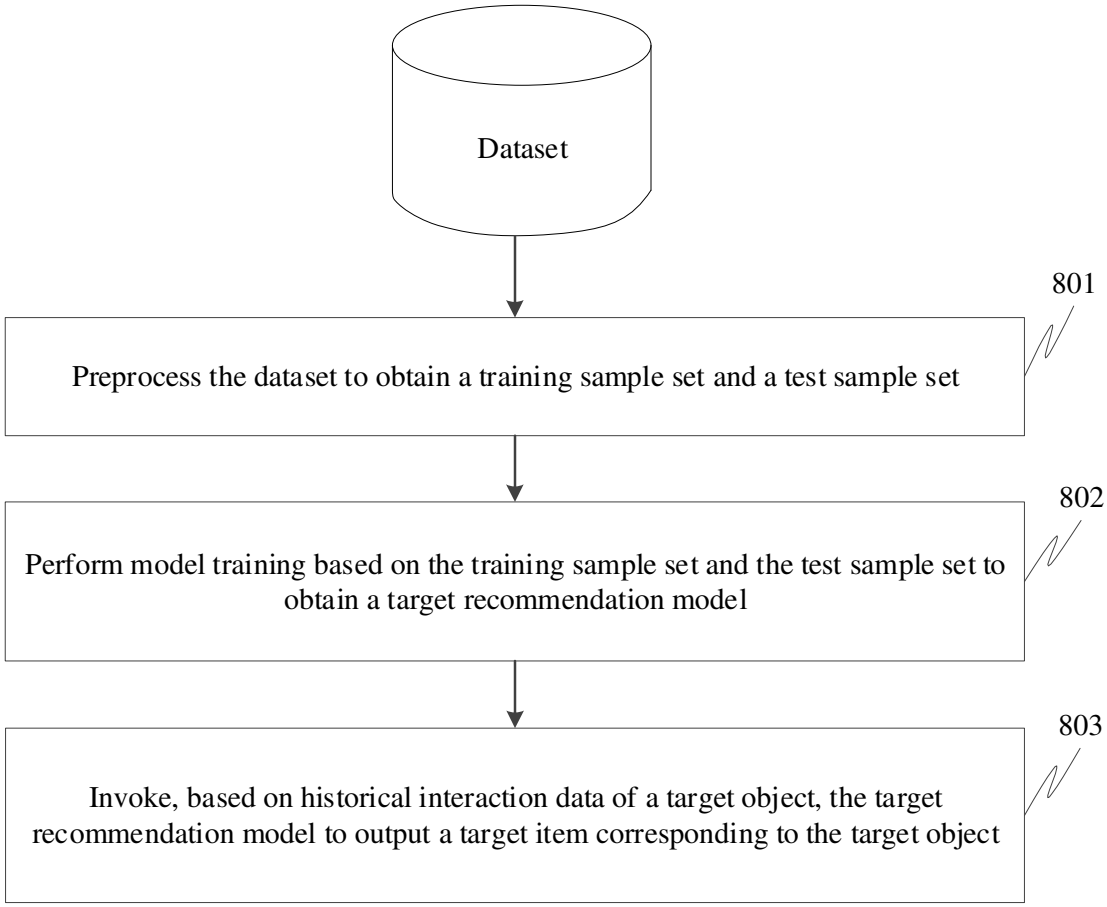

Dataset
801
Preprocess the dataset to obtain a training sample set and a test sample set
802
Perform model training based on the training sample set and the test sample set to obtain a target recommendation model
803
Invoke, based on historical interaction data of a target object, the target recommendation model to output a target item corresponding to the target object

FIG. 8

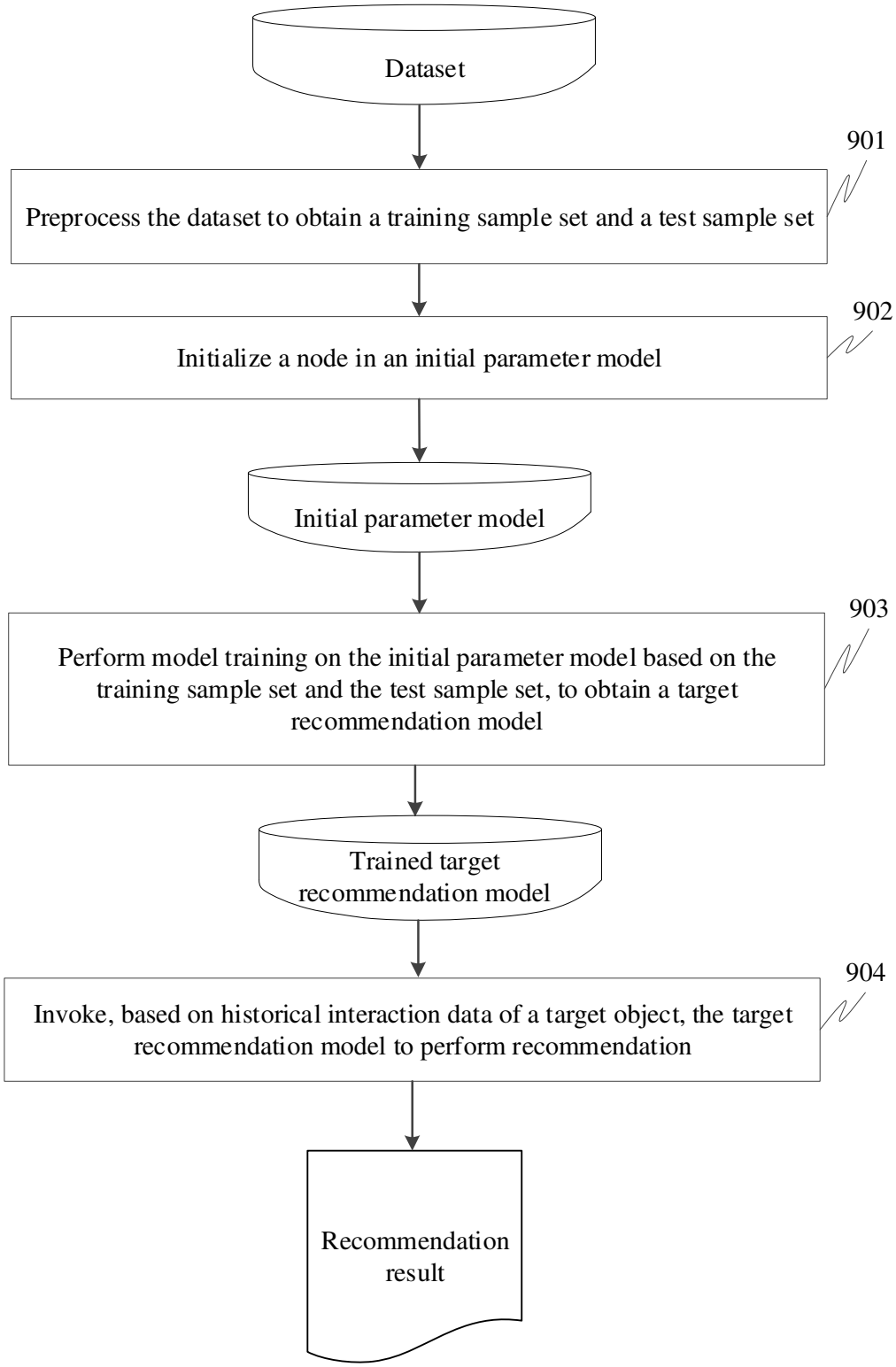

Dataset
901
Preprocess the dataset to obtain a training sample set and a test sample set
902
Initialize a node in an initial parameter model
Initial parameter model
903
Perform model training on the initial parameter model based on the training sample set and the test sample set, to obtain a target recommendation model
Trained target recommendation model
904
Invoke, based on historical interaction data of a target object, the target recommendation model to perform recommendation
Recommendation result

FIG. 9

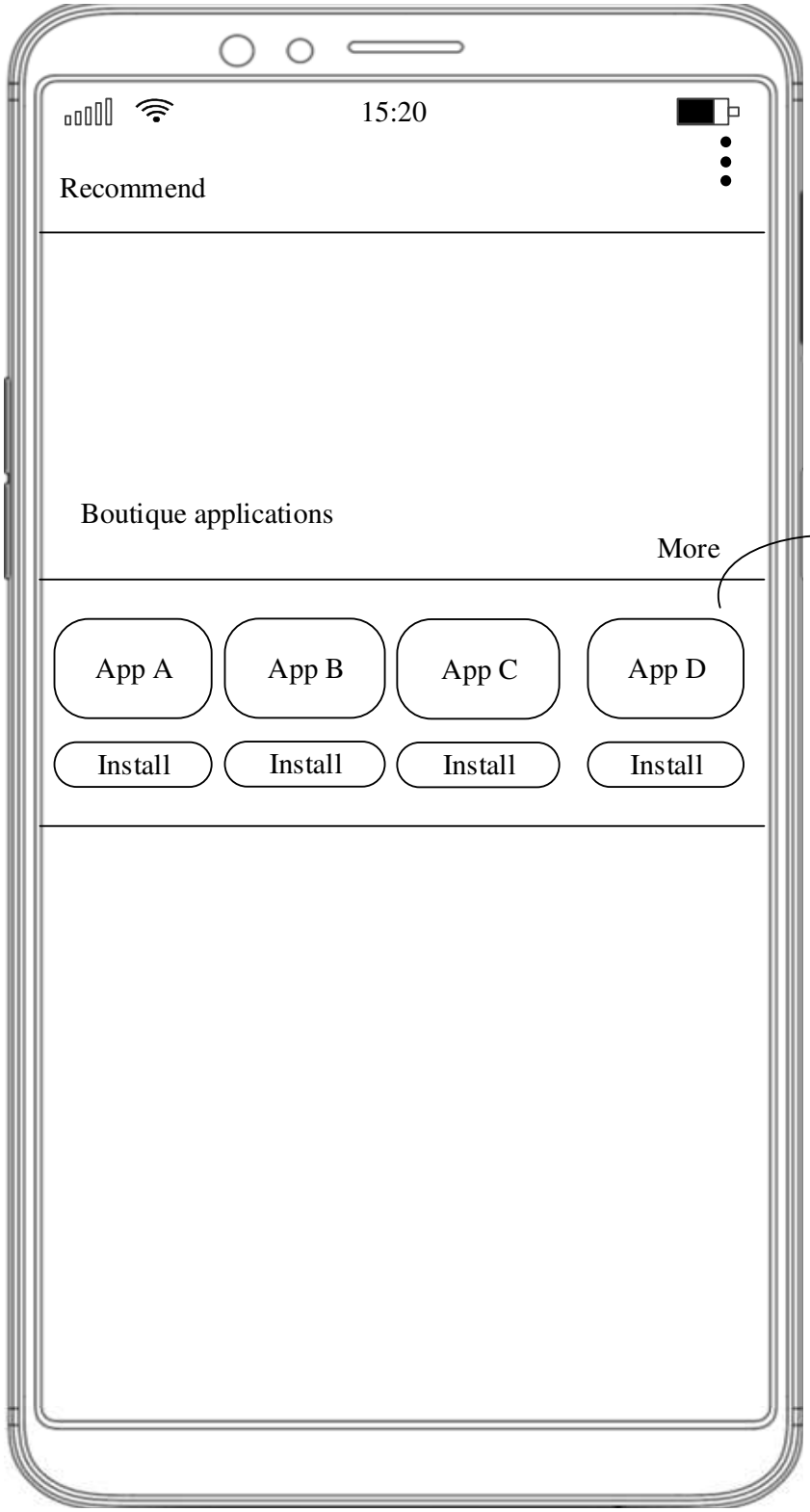
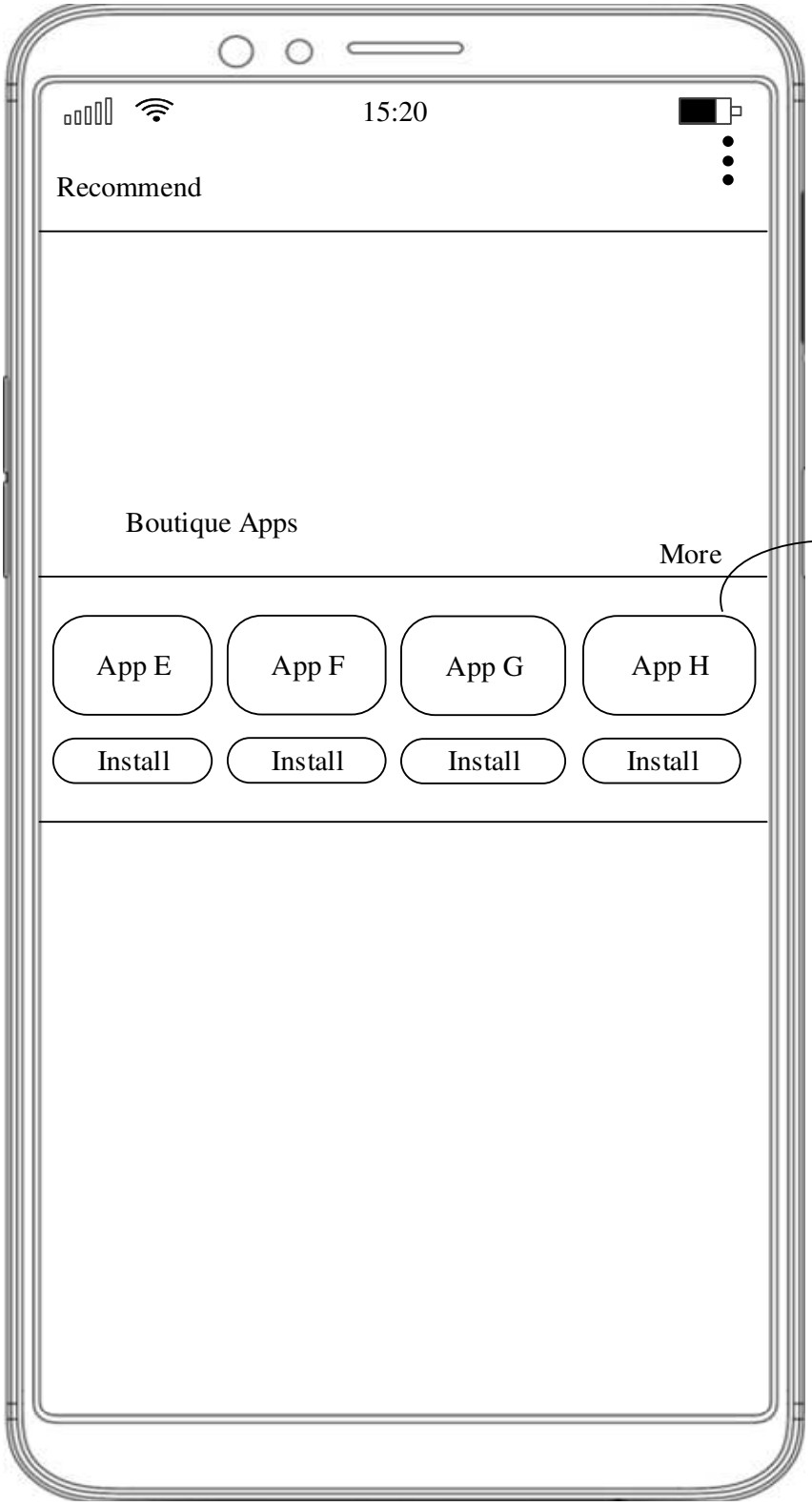

15:20
Recommend
Boutique applications
More
1010
App A
App B
App C
App D
Install
Install
Install
Install
TO FIG. 10B

FIG. 10A




CONT. FROM FIG. 10A

FIG. 10B

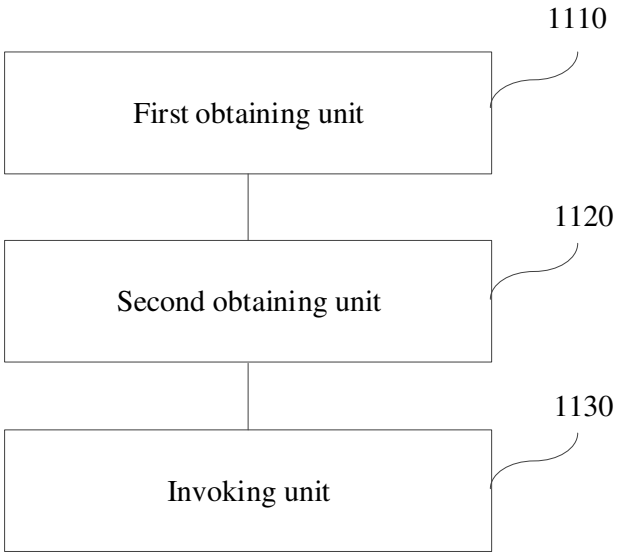

1110
First obtaining unit
1120
Second obtaining unit
1130
Invoking unit

FIG. 11