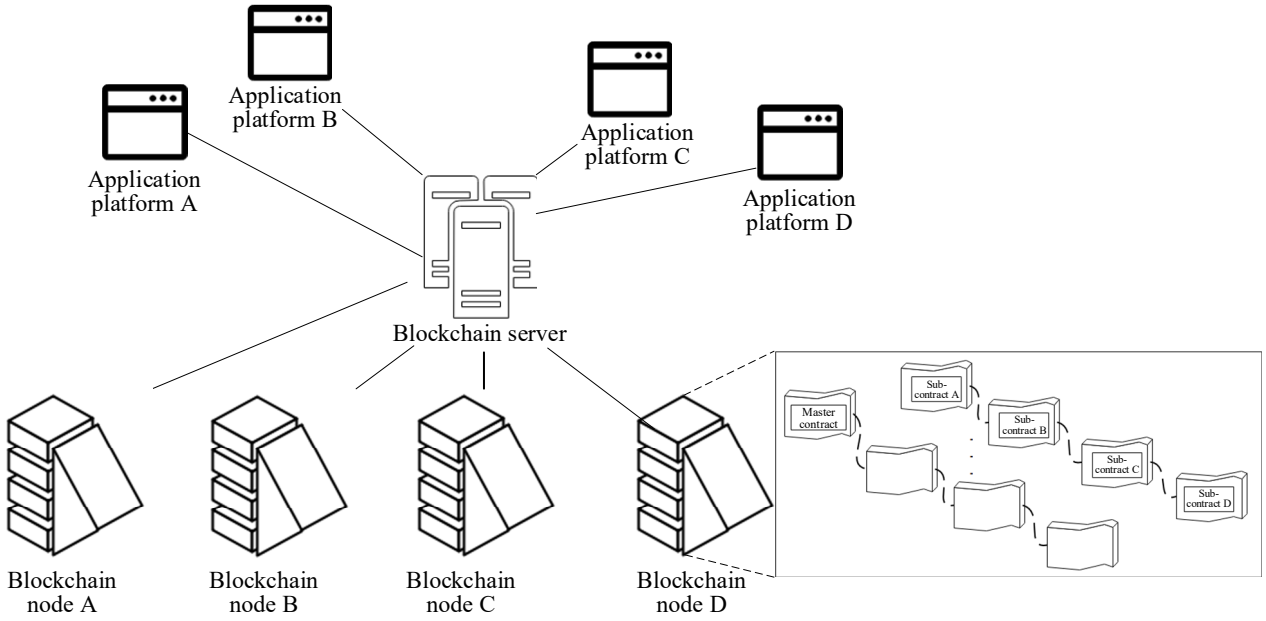

Application platform A
Application platform B
Application platform C
Application platform D
Blockchain server
Blockchain node A
Blockchain node B
Blockchain node C
Blockchain node D
Master contract
Sub-contract A
Sub-contract B
Sub-contract C
Sub-contract D

FIG. 1

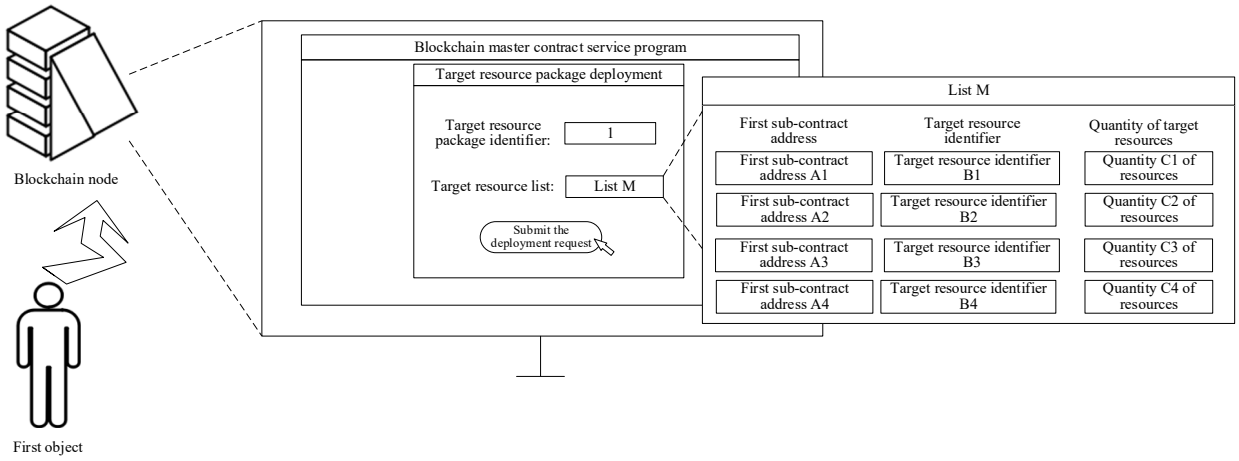

Blockchain node
First object
Blockchain master contract service program
Target resource package deployment
Target resource package identifier:
1
Target resource list:
List M
Submit the deployment request
List M
First sub-contract address
Target resource identifier
Quantity of target resources
First sub-contract address A1
Target resource identifier B1
Quantity C1 of resources
First sub-contract address A2
Target resource identifier B2
Quantity C2 of resources
First sub-contract address A3
Target resource identifier B3
Quantity C3 of resources
First sub-contract address A4
Target resource identifier B4
Quantity C4 of resources

FIG. 2A

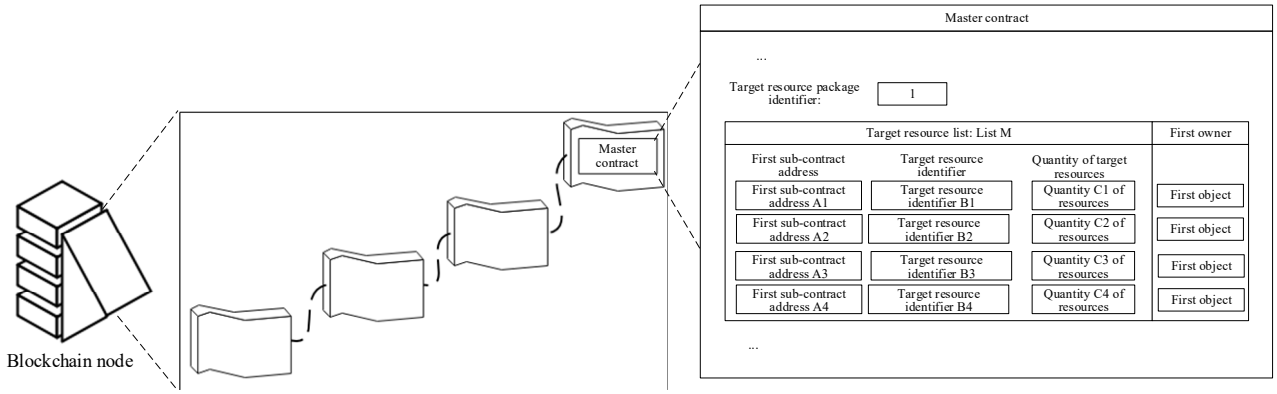

Master contract
...
Target resource package identifier:
1
Target resource list: List M
First owner
First sub-contract address
Target resource identifier
Quantity of target resources
First sub-contract address A1
Target resource identifier B1
Quantity C1 of resources
First object
First sub-contract address A2
Target resource identifier B2
Quantity C2 of resources
First object
First sub-contract address A3
Target resource identifier B3
Quantity C3 of resources
First object
First sub-contract address A4
Target resource identifier B4
Quantity C4 of resources
First object
...
Master contract
Blockchain node

FIG. 2B

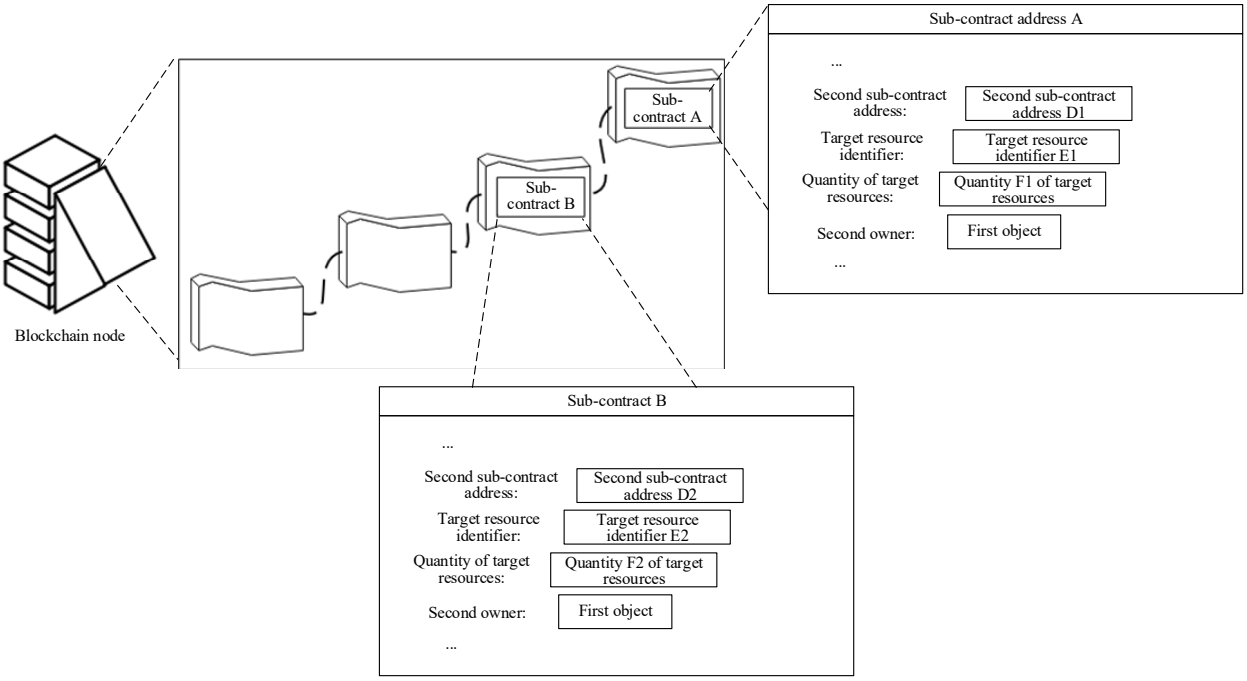

Sub-contract address A
...
Second sub-contract address:
Second sub-contract address D1
Target resource identifier:
Target resource identifier E1
Quantity of target resources:
Quantity F1 of target resources
Second owner:
First object
...
Sub-contract A
Sub-contract B
Blockchain node
Sub-contract B
...
Second sub-contract address:
Second sub-contract address D2
Target resource identifier:
Target resource identifier E2
Quantity of target resources:
Quantity F2 of target resources
Second owner:
First object
...

FIG. 2C

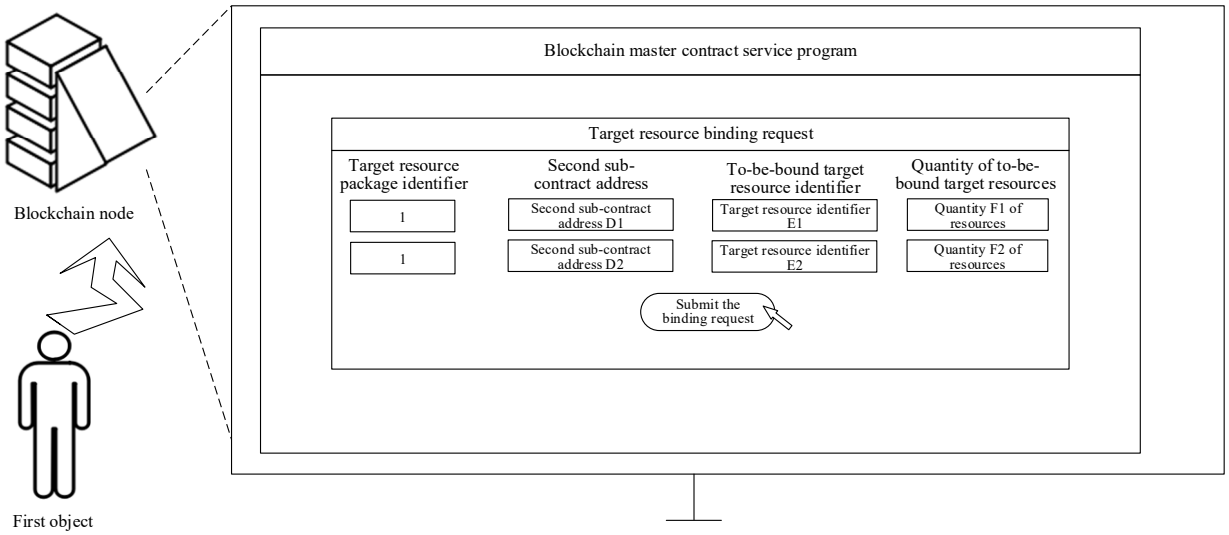

Blockchain node
First object
Blockchain master contract service program
Target resource binding request
Target resource package identifier
Second sub-contract address
To-be-bound target resource identifier
Quantity of to-be-bound target resources
1
Second sub-contract address D1
Target resource identifier E1
Quantity F1 of resources
1
Second sub-contract address D2
Target resource identifier E2
Quantity F2 of resources
Submit the binding request

FIG. 2D

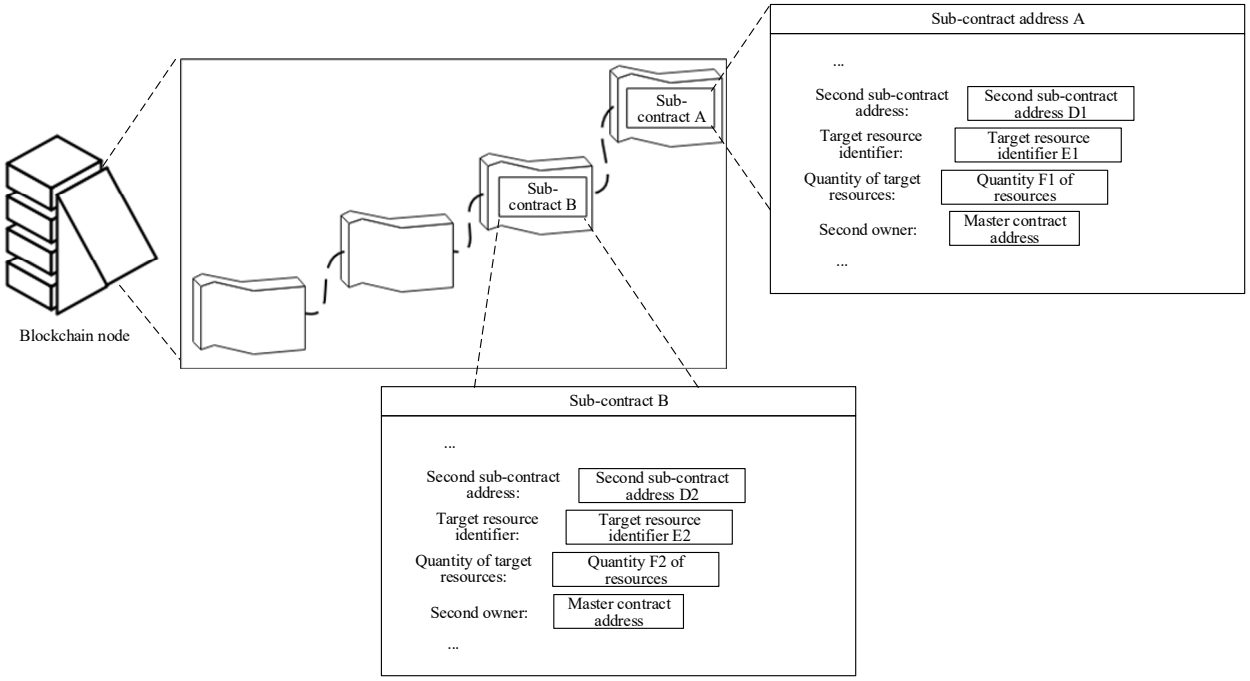

Blockchain node
Sub-contract A
Sub-contract B
Sub-contract address A
...
Second sub-contract address:
Second sub-contract address D1
Target resource identifier:
Target resource identifier E1
Quantity of target resources:
Quantity F1 of resources
Second owner:
Master contract address
...
Sub-contract B
...
Second sub-contract address:
Second sub-contract address D2
Target resource identifier:
Target resource identifier E2
Quantity of target resources:
Quantity F2 of resources
Second owner:
Master contract address
...

FIG. 2E

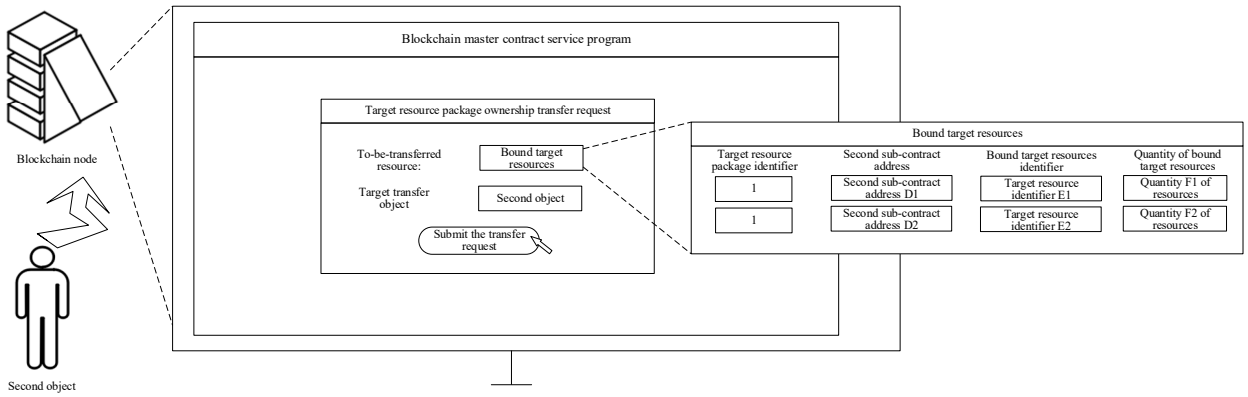

Blockchain node
Second object
Blockchain master contract service program
Target resource package ownership transfer request
To-be-transferred resource:
Bound target resources
Target transfer object
Second object
Submit the transfer request
Bound target resources
Target resource package identifier
Second sub-contract address
Bound target resources identifier
Quantity of bound target resources
1
Second sub-contract address D1
Target resource identifier E1
Quantity F1 of resources
1
Second sub-contract address D2
Target resource identifier E2
Quantity F2 of resources

FIG. 2F

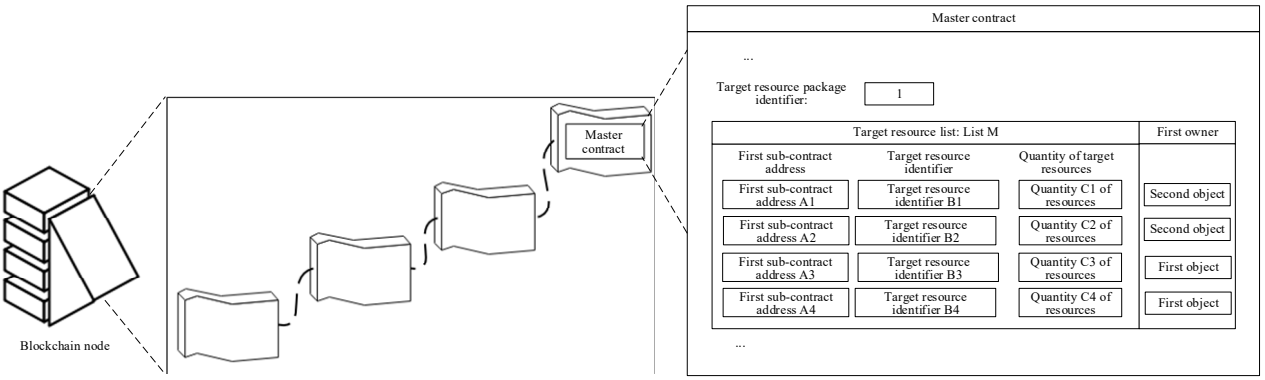

Blockchain node
Master contract
Master contract
...
Target resource package identifier:
1
Target resource list: List M
First owner
First sub-contract address
Target resource identifier
Quantity of target resources
First sub-contract address A1
Target resource identifier B1
Quantity C1 of resources
Second object
First sub-contract address A2
Target resource identifier B2
Quantity C2 of resources
Second object
First sub-contract address A3
Target resource identifier B3
Quantity C3 of resources
First object
First sub-contract address A4
Target resource identifier B4
Quantity C4 of resources
First object
...

FIG. 2G

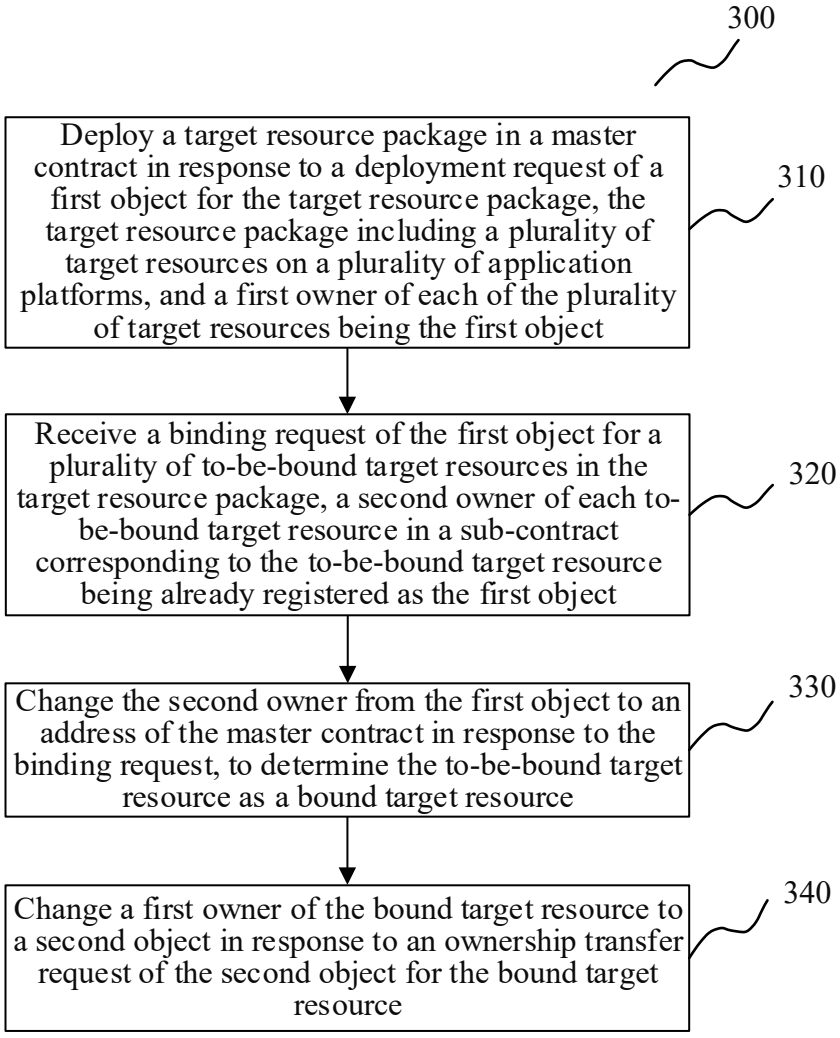

300
Deploy a target resource package in a master contract in response to a deployment request of a first object for the target resource package, the target resource package including a plurality of target resources on a plurality of application platforms, and a first owner of each of the plurality of target resources being the first object
310
Receive a binding request of the first object for a plurality of to-be-bound target resources in the target resource package, a second owner of each to-be-bound target resource in a sub-contract corresponding to the to-be-bound target resource being already registered as the first object
320
Change the second owner from the first object to an address of the master contract in response to the binding request, to determine the to-be-bound target resource as a bound target resource
330
Change a first owner of the bound target resource to a second object in response to an ownership transfer request of the second object for the bound target resource
340

FIG. 3

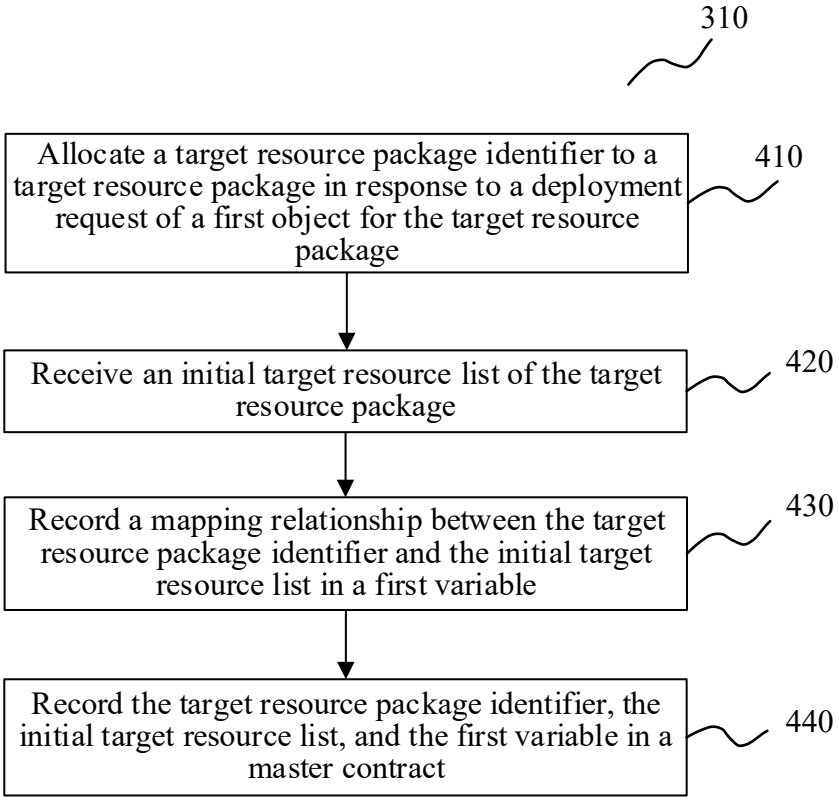

310
Allocate a target resource package identifier to a target resource package in response to a deployment request of a first object for the target resource package
410
Receive an initial target resource list of the target resource package
420
Record a mapping relationship between the target resource package identifier and the initial target resource list in a first variable
430
Record the target resource package identifier, the initial target resource list, and the first variable in a master contract
440

FIG. 4

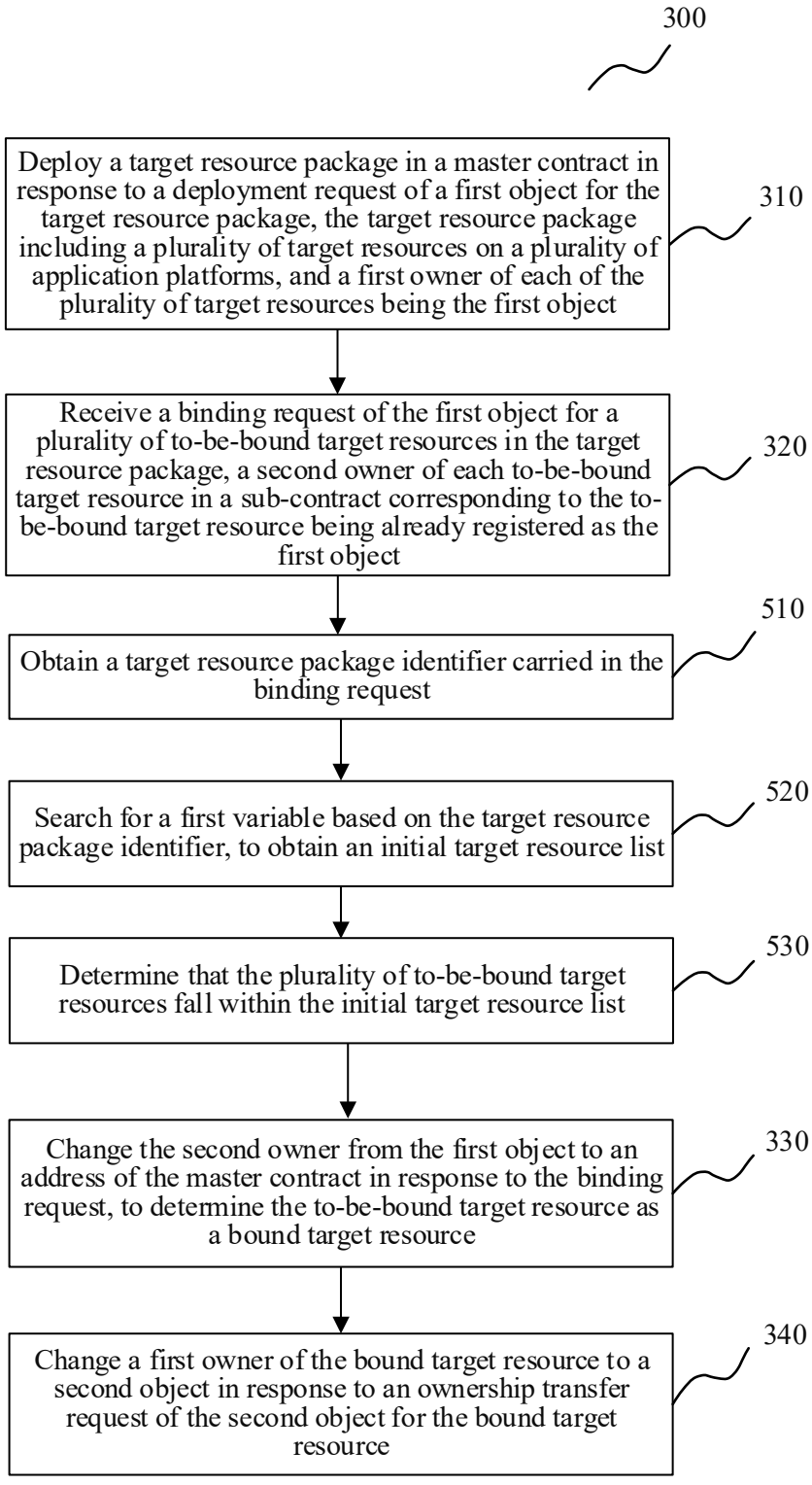

300
Deploy a target resource package in a master contract in response to a deployment request of a first object for the target resource package, the target resource package including a plurality of target resources on a plurality of application platforms, and a first owner of each of the plurality of target resources being the first object
310
Receive a binding request of the first object for a plurality of to-be-bound target resources in the target resource package, a second owner of each to-be-bound target resource in a sub-contract corresponding to the to-be-bound target resource being already registered as the first object
320
Obtain a target resource package identifier carried in the binding request
510
Search for a first variable based on the target resource package identifier, to obtain an initial target resource list
520
Determine that the plurality of to-be-bound target resources fall within the initial target resource list
530
Change the second owner from the first object to an address of the master contract in response to the binding request, to determine the to-be-bound target resource as a bound target resource
330
Change a first owner of the bound target resource to a second object in response to an ownership transfer request of the second object for the bound target resource
340

FIG. 5

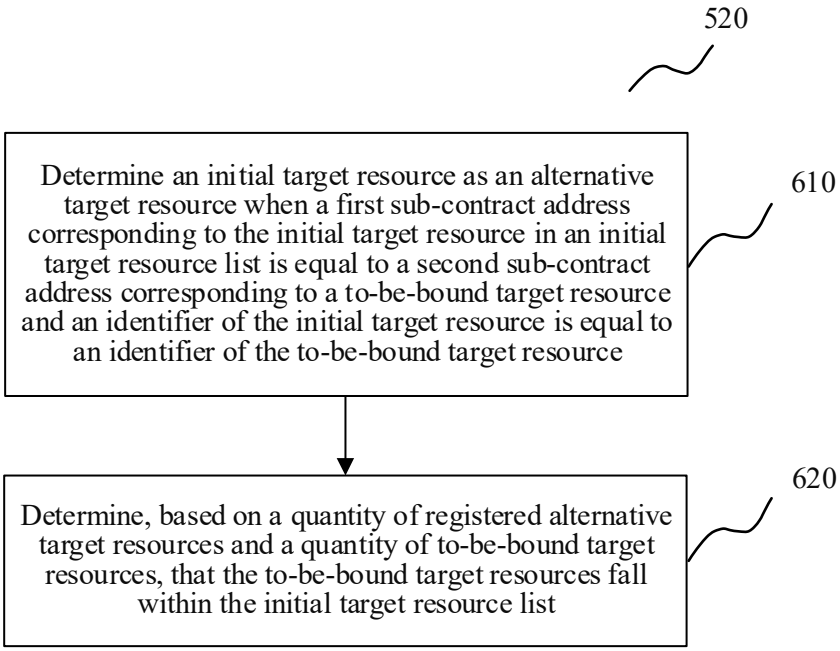

520
Determine an initial target resource as an alternative target resource when a first sub-contract address corresponding to the initial target resource in an initial target resource list is equal to a second sub-contract address corresponding to a to-be-bound target resource and an identifier of the initial target resource is equal to an identifier of the to-be-bound target resource
610
Determine, based on a quantity of registered alternative target resources and a quantity of to-be-bound target resources, that the to-be-bound target resources fall within the initial target resource list
620

FIG. 6

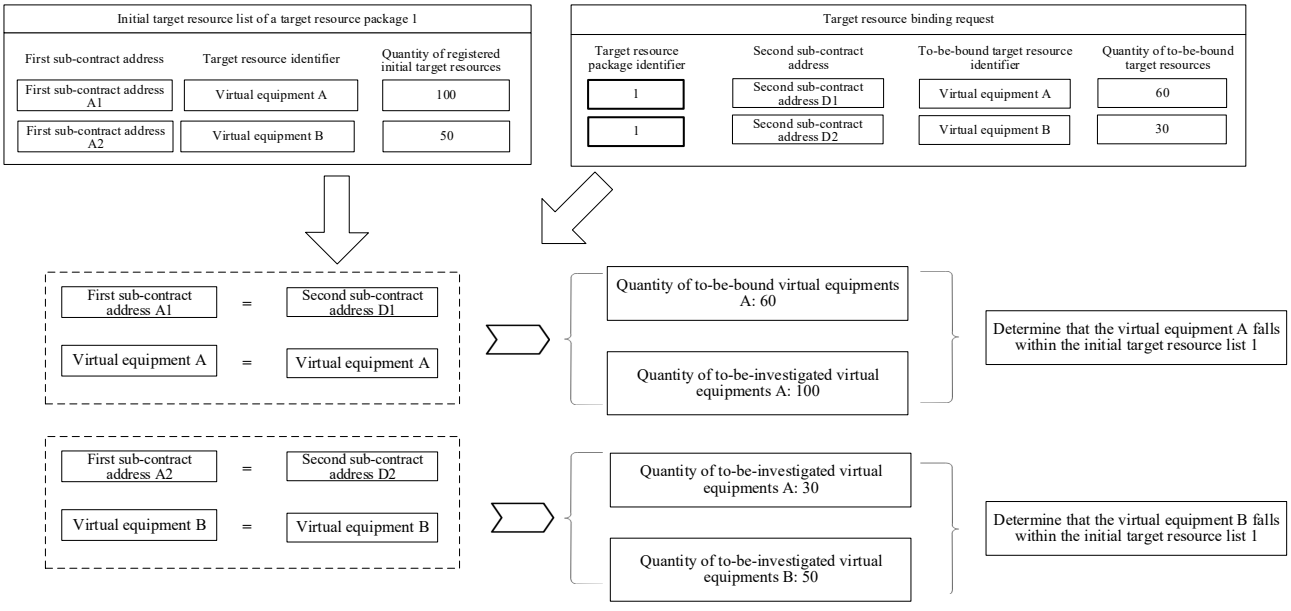

Initial target resource list of a target resource package 1
First sub-contract address
Target resource identifier
Quantity of registered initial target resources
First sub-contract address A1
Virtual equipment A
100
First sub-contract address A2
Virtual equipment B
50
Target resource binding request
Target resource package identifier
Second sub-contract address
To-be-bound target resource identifier
Quantity of to-be-bound target resources
1
Second sub-contract address D1
Virtual equipment A
60
1
Second sub-contract address D2
Virtual equipment B
30
First sub-contract address A1 = Second sub-contract address D1
Virtual equipment A = Virtual equipment A
Quantity of to-be-bound virtual equipments A: 60
Quantity of to-be-investigated virtual equipments A: 100
Determine that the virtual equipment A falls within the initial target resource list 1
First sub-contract address A2 = Second sub-contract address D2
Virtual equipment B = Virtual equipment B
Quantity of to-be-investigated virtual equipments A: 30
Quantity of to-be-investigated virtual equipments B: 50
Determine that the virtual equipment B falls within the initial target resource list 1

FIG. 7

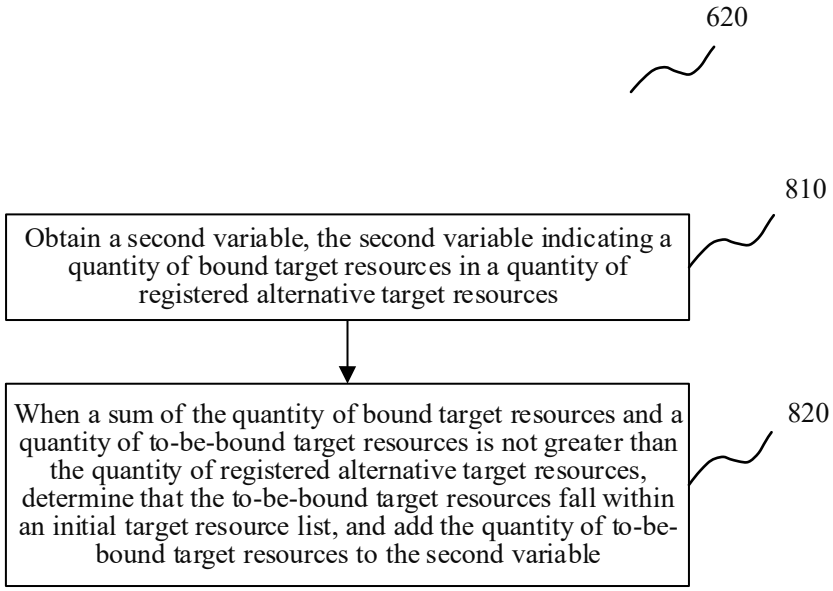

620
810
Obtain a second variable, the second variable indicating a quantity of bound target resources in a quantity of registered alternative target resources
820
When a sum of the quantity of bound target resources and a quantity of to-be-bound target resources is not greater than the quantity of registered alternative target resources, determine that the to-be-bound target resources fall within an initial target resource list, and add the quantity of to-be-bound target resources to the second variable

FIG. 8

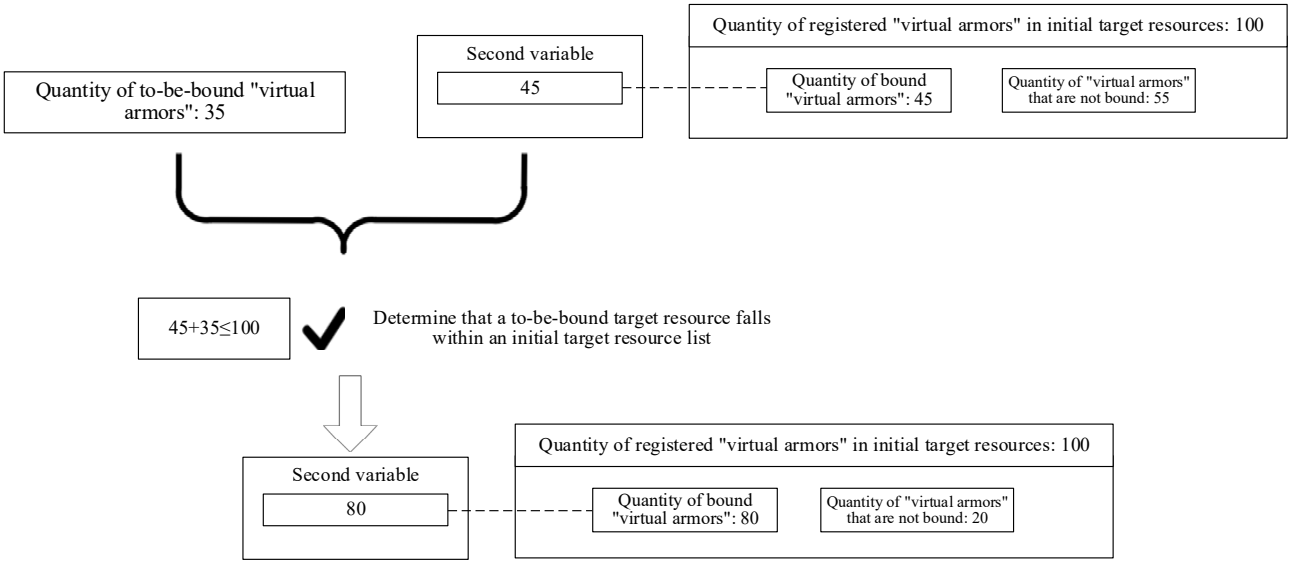

Quantity of to-be-bound "virtual armors": 35
Second variable
45
Quantity of registered "virtual armors" in initial target resources: 100
Quantity of bound "virtual armors": 45
Quantity of "virtual armors" that are not bound: 55
45+35≤100
Determine that a to-be-bound target resource falls within an initial target resource list
Second variable
80
Quantity of registered "virtual armors" in initial target resources: 100
Quantity of bound "virtual armors": 80
Quantity of "virtual armors" that are not bound: 20

FIG. 9

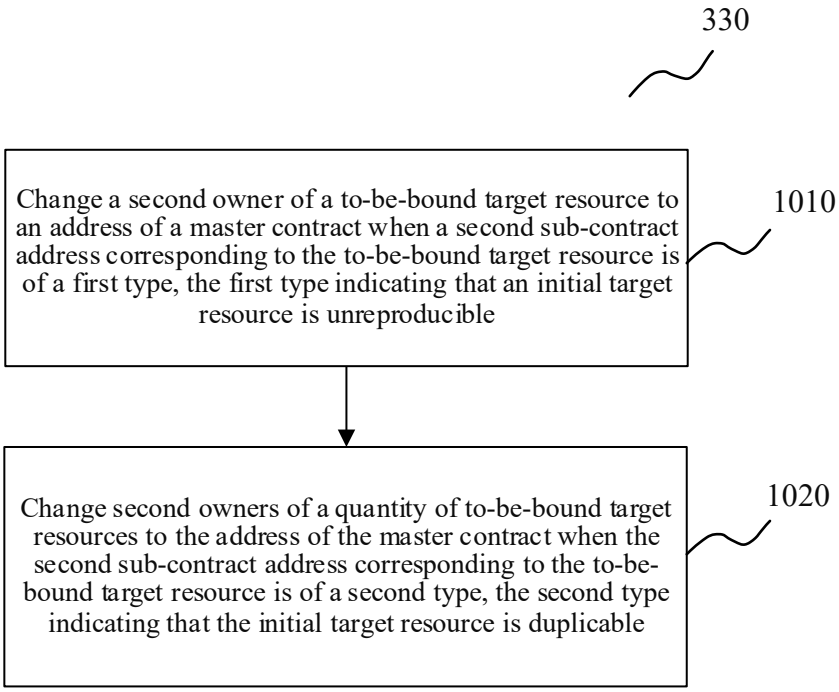


FIG. 10

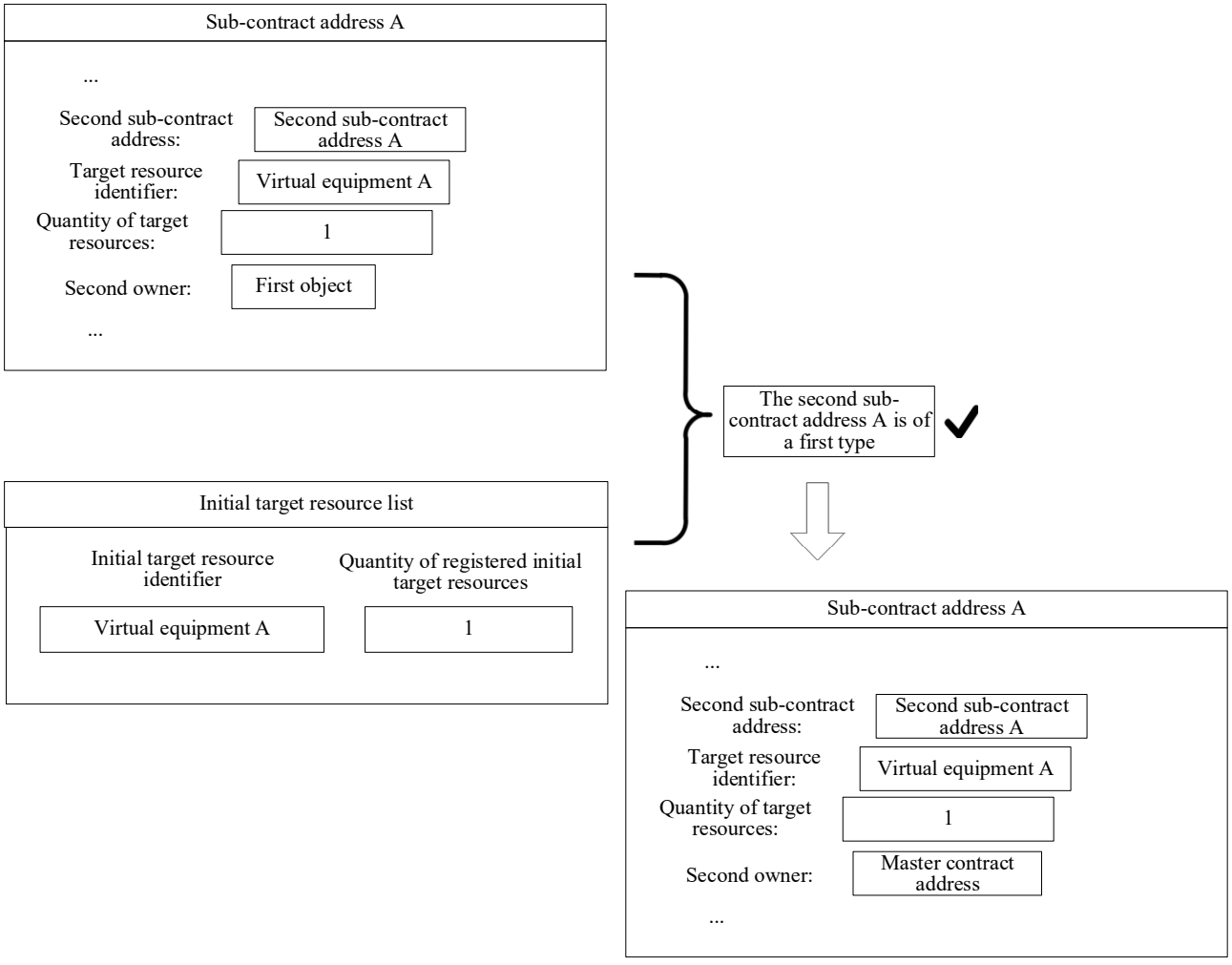


FIG. 11A

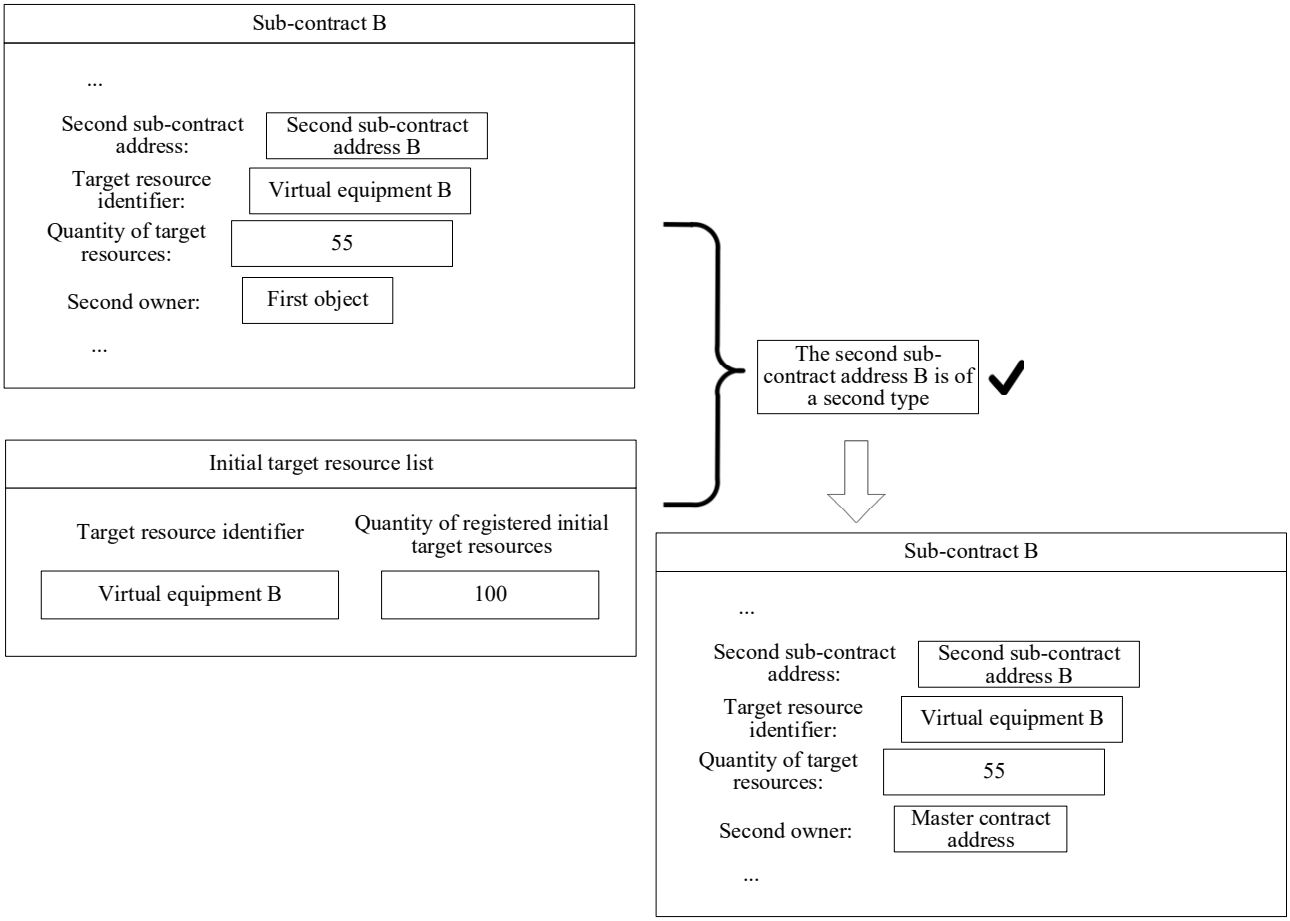


FIG. 11B

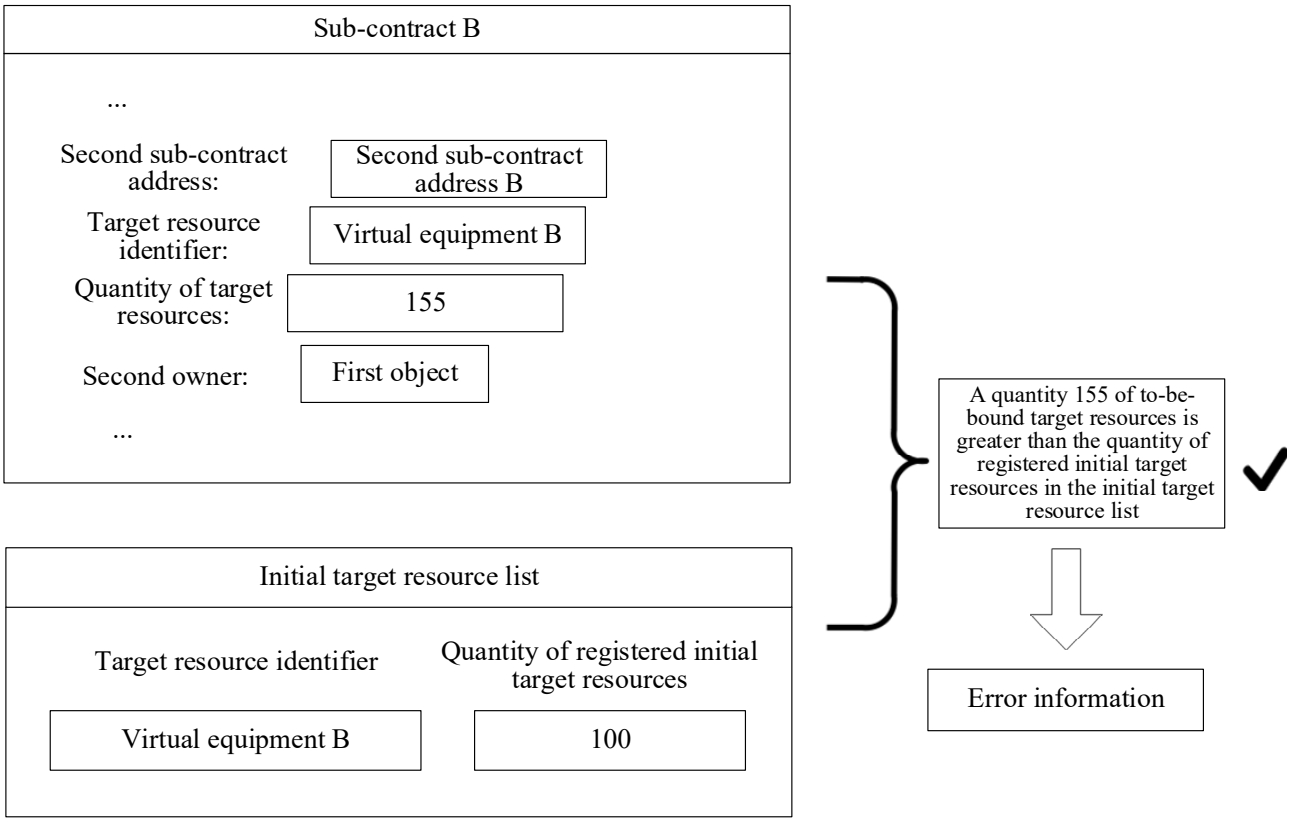


FIG. 11C

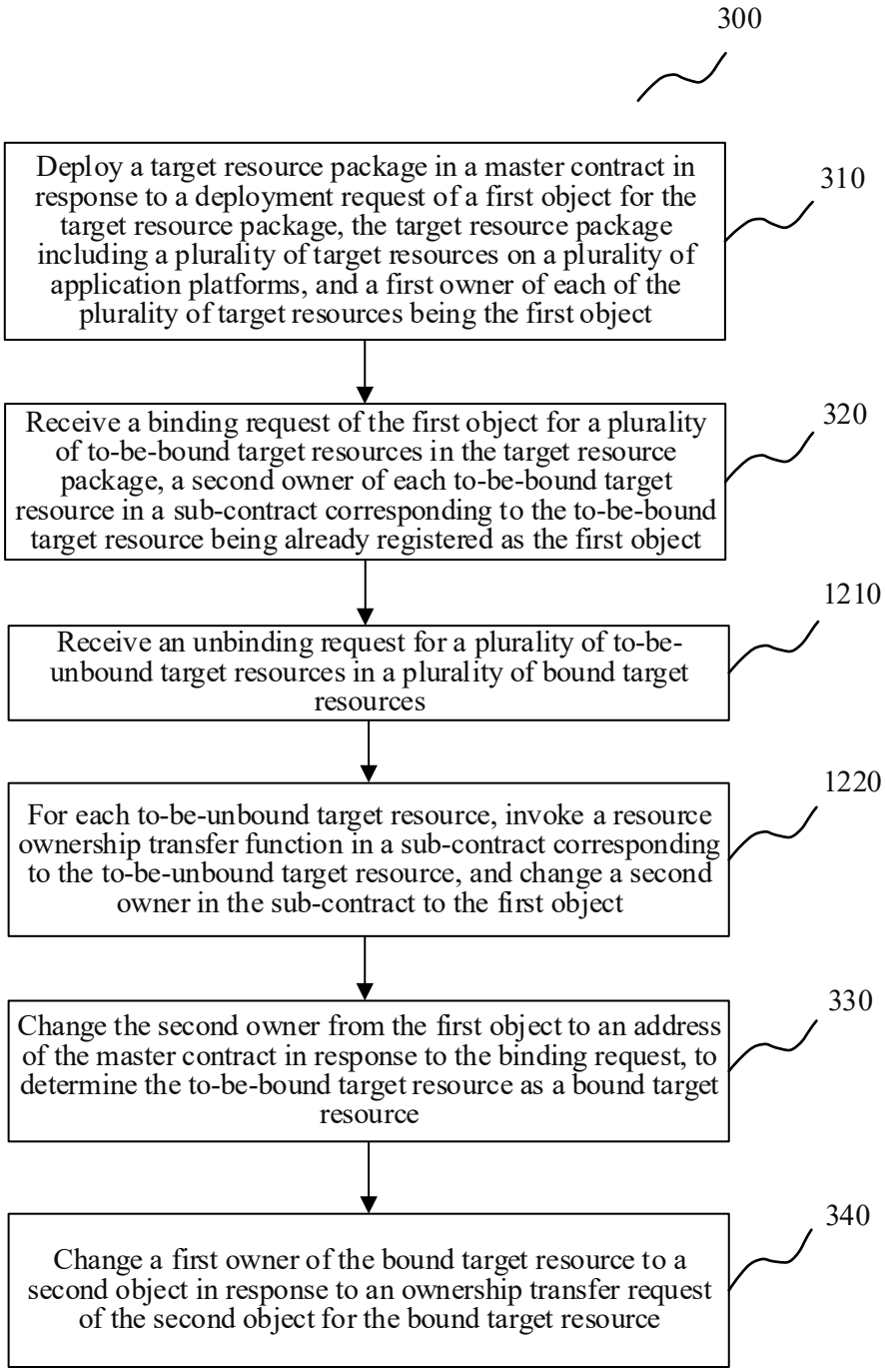

300
Deploy a target resource package in a master contract in response to a deployment request of a first object for the target resource package, the target resource package including a plurality of target resources on a plurality of application platforms, and a first owner of each of the plurality of target resources being the first object
310
Receive a binding request of the first object for a plurality of to-be-bound target resources in the target resource package, a second owner of each to-be-bound target resource in a sub-contract corresponding to the to-be-bound target resource being already registered as the first object
320
Receive an unbinding request for a plurality of to-be-unbound target resources in a plurality of bound target resources
1210
For each to-be-unbound target resource, invoke a resource ownership transfer function in a sub-contract corresponding to the to-be-unbound target resource, and change a second owner in the sub-contract to the first object
1220
Change the second owner from the first object to an address of the master contract in response to the binding request, to determine the to-be-bound target resource as a bound target resource
330
Change a first owner of the bound target resource to a second object in response to an ownership transfer request of the second object for the bound target resource
340

FIG. 12

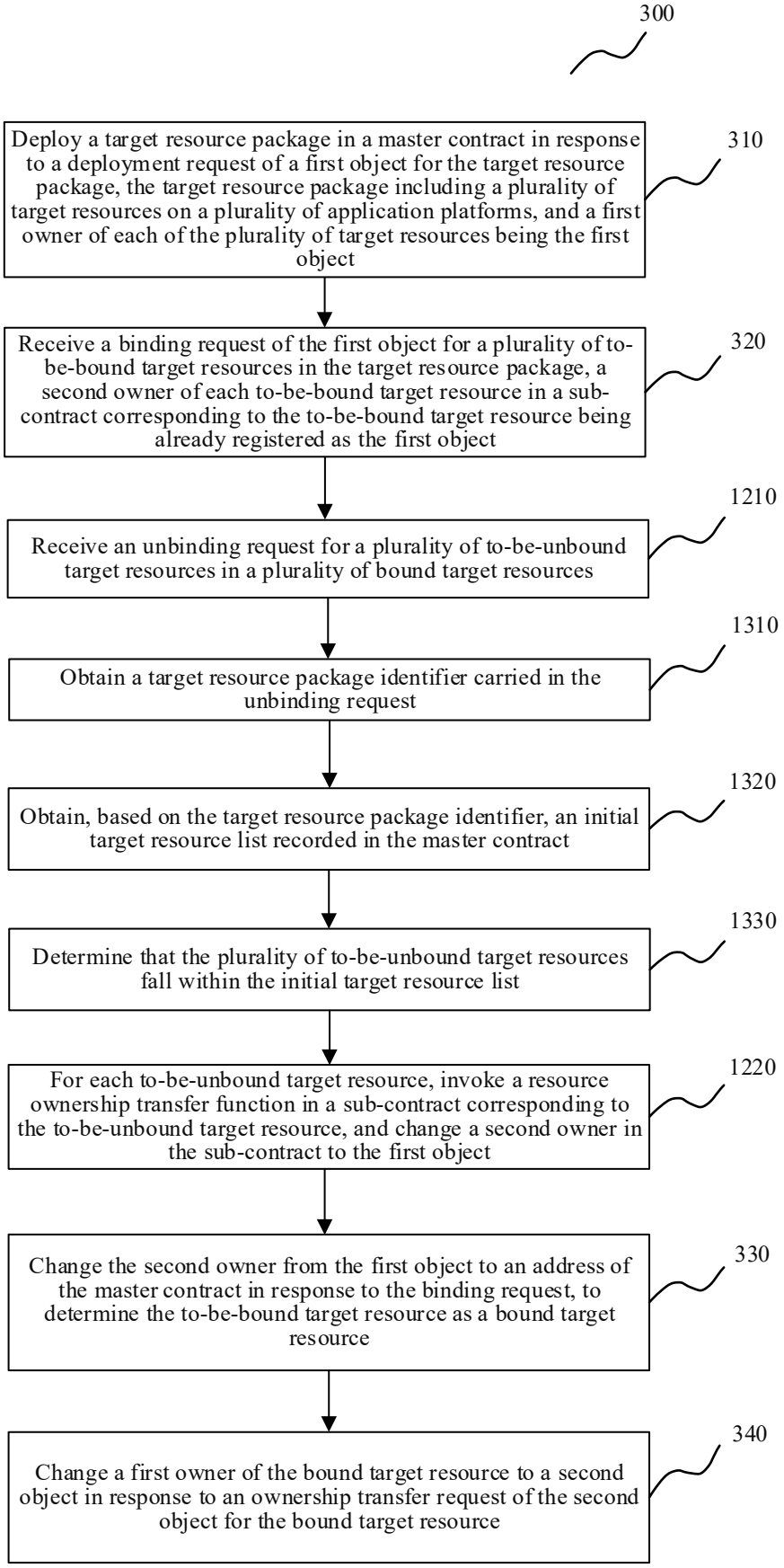

300
Deploy a target resource package in a master contract in response to a deployment request of a first object for the target resource package, the target resource package including a plurality of target resources on a plurality of application platforms, and a first owner of each of the plurality of target resources being the first object
310
Receive a binding request of the first object for a plurality of to-be-bound target resources in the target resource package, a second owner of each to-be-bound target resource in a sub-contract corresponding to the to-be-bound target resource being already registered as the first object
320
Receive an unbinding request for a plurality of to-be-unbound target resources in a plurality of bound target resources
1210
Obtain a target resource package identifier carried in the unbinding request
1310
Obtain, based on the target resource package identifier, an initial target resource list recorded in the master contract
1320
Determine that the plurality of to-be-unbound target resources fall within the initial target resource list
1330
For each to-be-unbound target resource, invoke a resource ownership transfer function in a sub-contract corresponding to the to-be-unbound target resource, and change a second owner in the sub-contract to the first object
1220
Change the second owner from the first object to an address of the master contract in response to the binding request, to determine the to-be-bound target resource as a bound target resource
330
Change a first owner of the bound target resource to a second object in response to an ownership transfer request of the second object for the bound target resource
340

FIG. 13

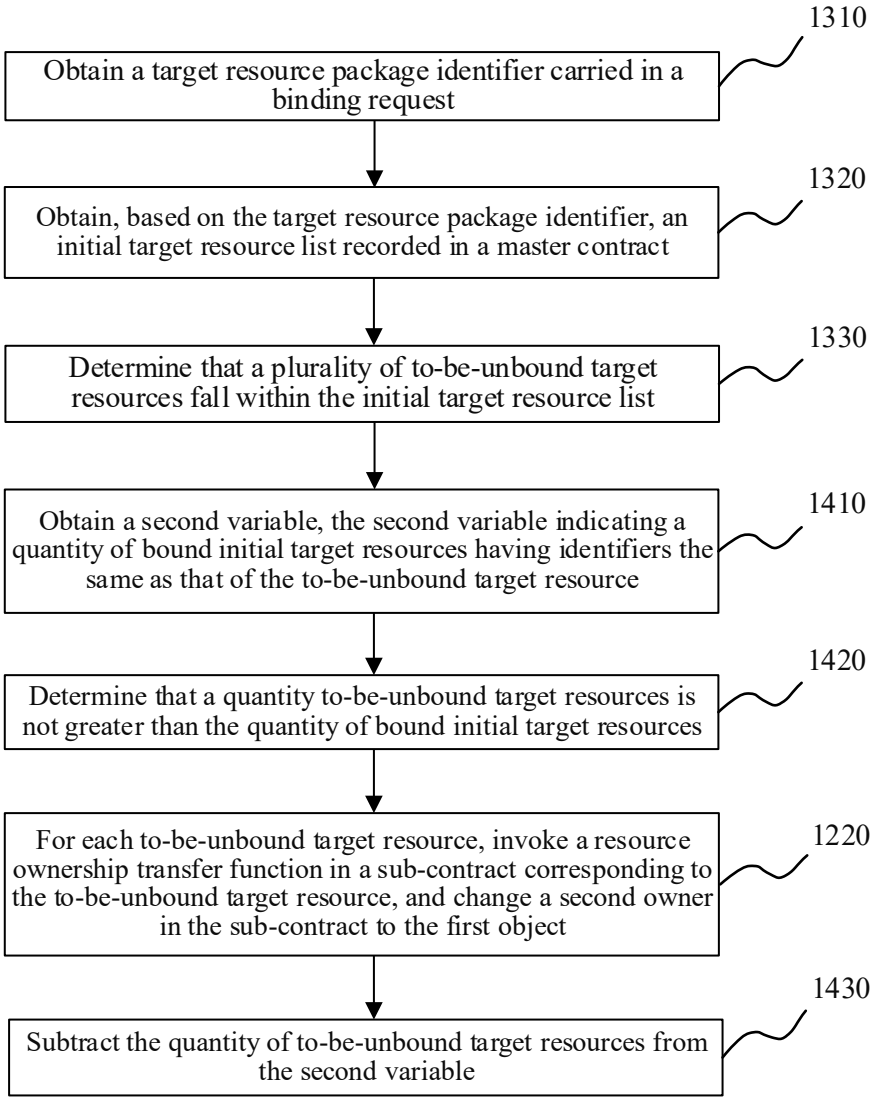

1310
Obtain a target resource package identifier carried in a binding request
1320
Obtain, based on the target resource package identifier, an initial target resource list recorded in a master contract
1330
Determine that a plurality of to-be-unbound target resources fall within the initial target resource list
1410
Obtain a second variable, the second variable indicating a quantity of bound initial target resources having identifiers the same as that of the to-be-unbound target resource
1420
Determine that a quantity to-be-unbound target resources is not greater than the quantity of bound initial target resources
1220
For each to-be-unbound target resource, invoke a resource ownership transfer function in a sub-contract corresponding to the to-be-unbound target resource, and change a second owner in the sub-contract to the first object
1430
Subtract the quantity of to-be-unbound target resources from the second variable

FIG. 14

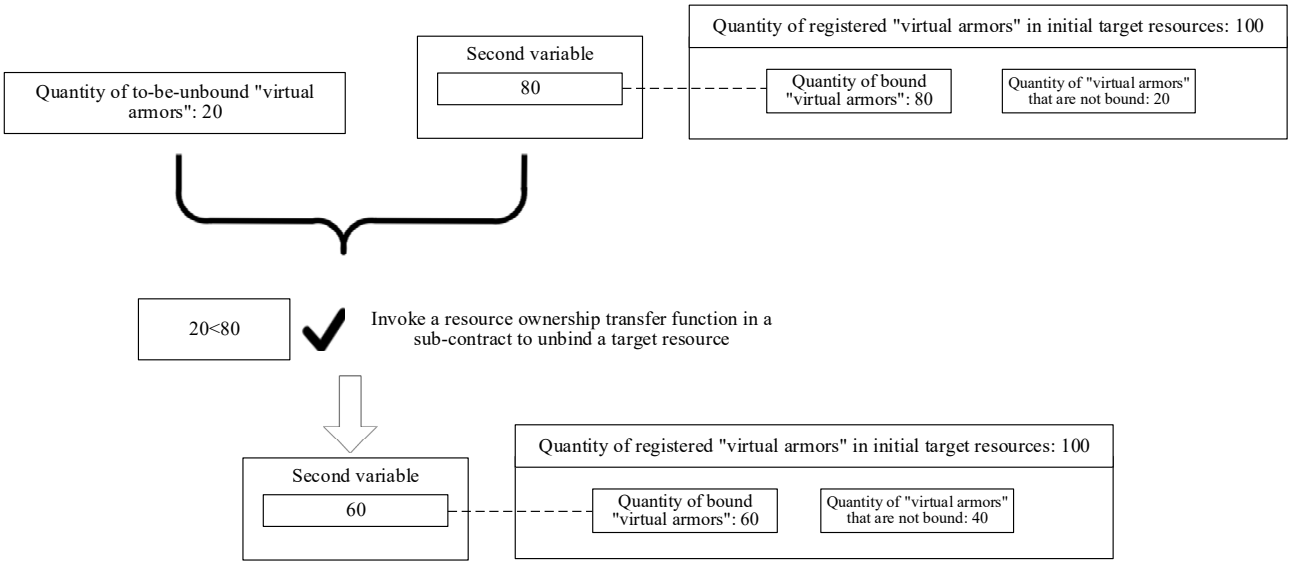

Quantity of to-be-unbound "virtual armors": 20
Second variable
80
Quantity of registered "virtual armors" in initial target resources: 100
Quantity of bound "virtual armors": 80
Quantity of "virtual armors" that are not bound: 20
20<80
Invoke a resource ownership transfer function in a sub-contract to unbind a target resource
Second variable
60
Quantity of registered "virtual armors" in initial target resources: 100
Quantity of bound "virtual armors": 60
Quantity of "virtual armors" that are not bound: 40

FIG. 15

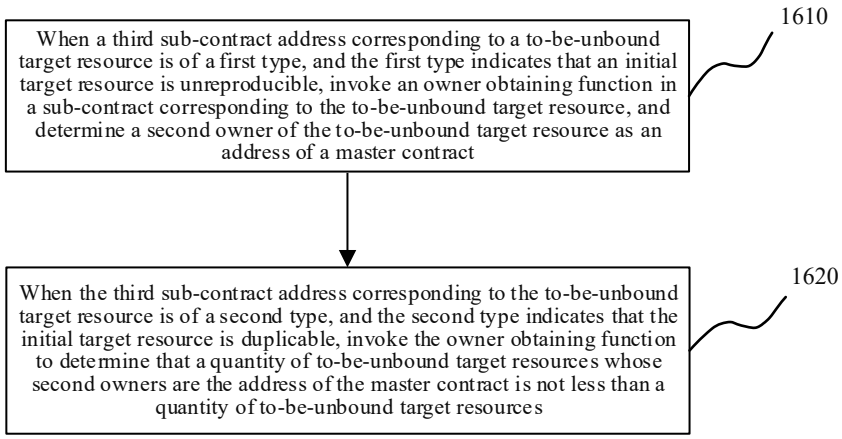

When a third sub-contract address corresponding to a to-be-unbound target resource is of a first type, and the first type indicates that an initial target resource is unreproducible, invoke an owner obtaining function in a sub-contract corresponding to the to-be-unbound target resource, and determine a second owner of the to-be-unbound target resource as an address of a master contract
1610
When the third sub-contract address corresponding to the to-be-unbound target resource is of a second type, and the second type indicates that the initial target resource is duplicable, invoke the owner obtaining function to determine that a quantity of to-be-unbound target resources whose second owners are the address of the master contract is not less than a quantity of to-be-unbound target resources
1620

FIG. 16

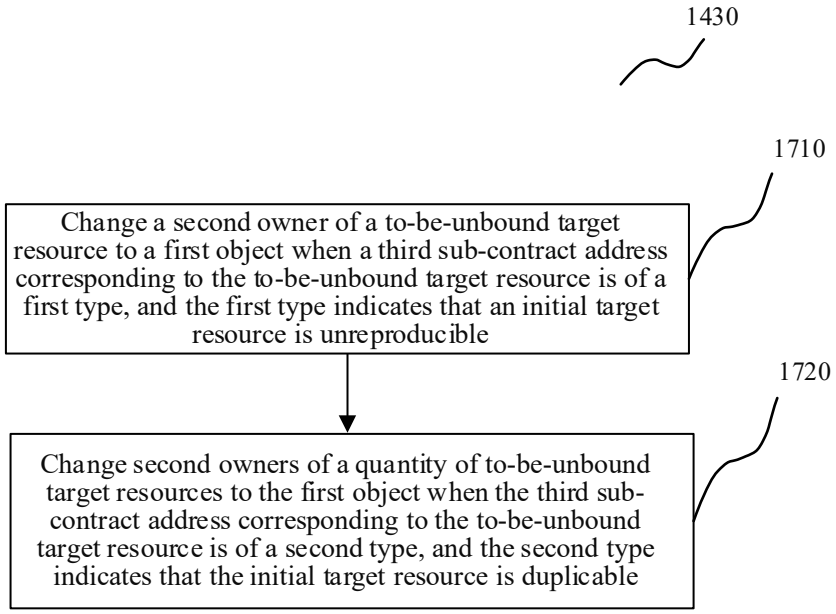

1430
1710
Change a second owner of a to-be-unbound target resource to a first object when a third sub-contract address corresponding to the to-be-unbound target resource is of a first type, and the first type indicates that an initial target resource is unreproducible
1720
Change second owners of a quantity of to-be-unbound target resources to the first object when the third sub-contract address corresponding to the to-be-unbound target resource is of a second type, and the second type indicates that the initial target resource is duplicable

FIG. 17

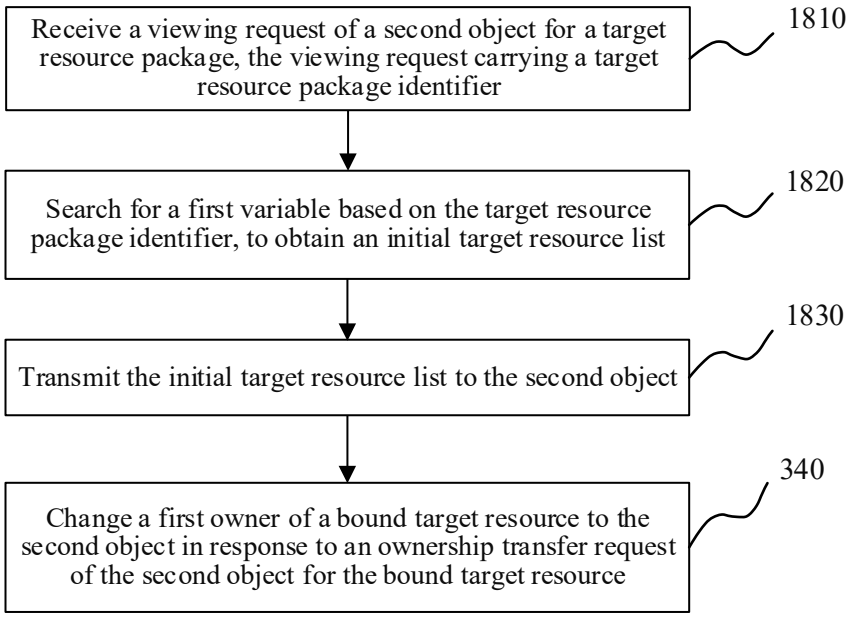

Receive a viewing request of a second object for a target resource package, the viewing request carrying a target resource package identifier
1810
Search for a first variable based on the target resource package identifier, to obtain an initial target resource list
1820
Transmit the initial target resource list to the second object
1830
Change a first owner of a bound target resource to the second object in response to an ownership transfer request of the second object for the bound target resource
340

FIG. 18

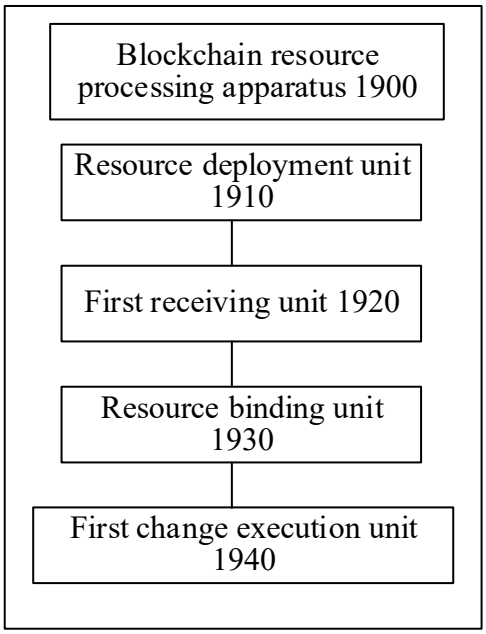

Blockchain resource processing apparatus 1900
Resource deployment unit 1910
First receiving unit 1920
Resource binding unit 1930
First change execution unit 1940

FIG. 19

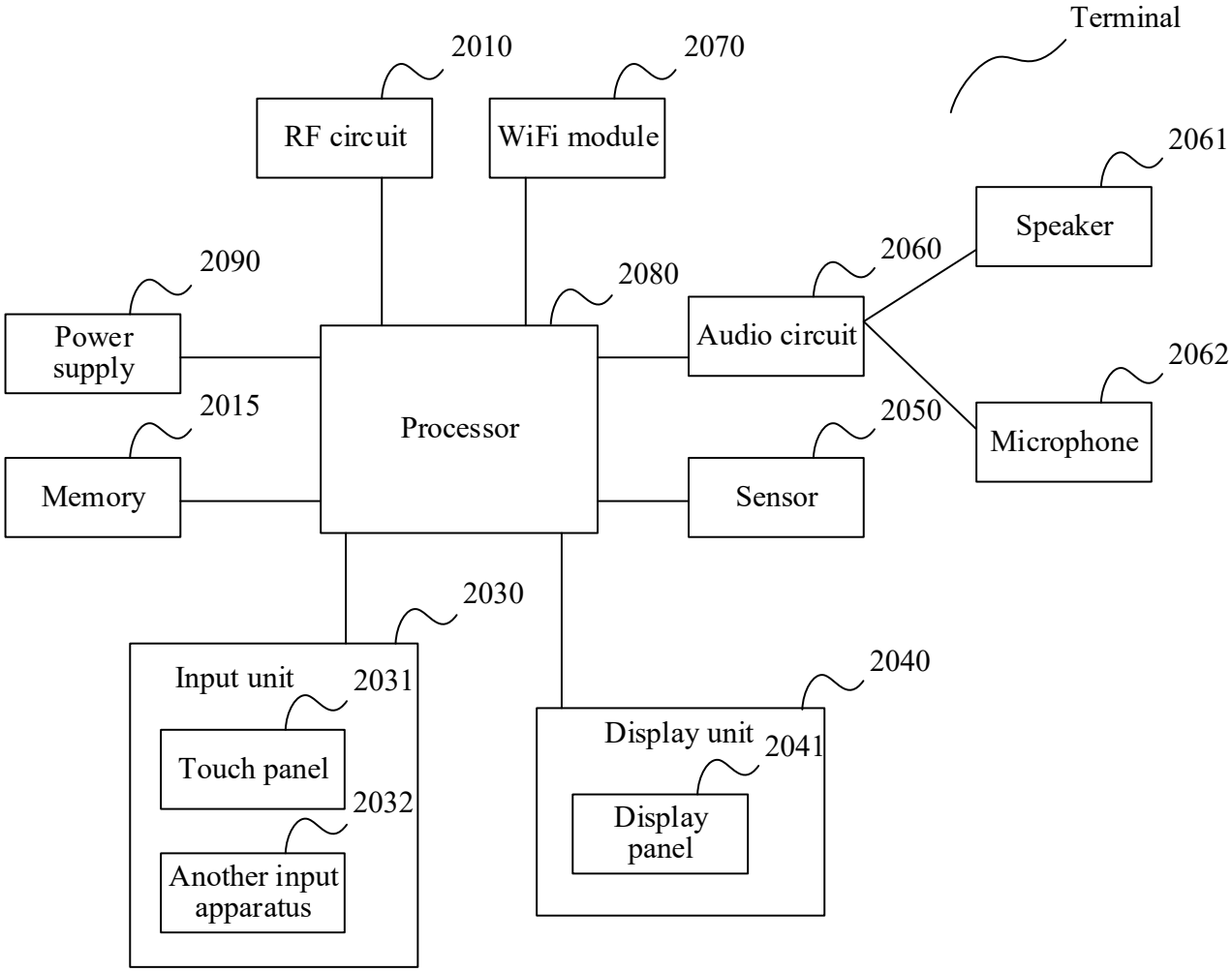

Terminal
2010
2070
RF circuit
WiFi module
2061
Speaker
2090
2080
2060
Power supply
Processor
Audio circuit
2062
2015
2050
Memory
Sensor
Microphone
2030
Input unit
2031
2040
Display unit
2041
Touch panel
2032
Display panel
Another input apparatus

FIG. 20

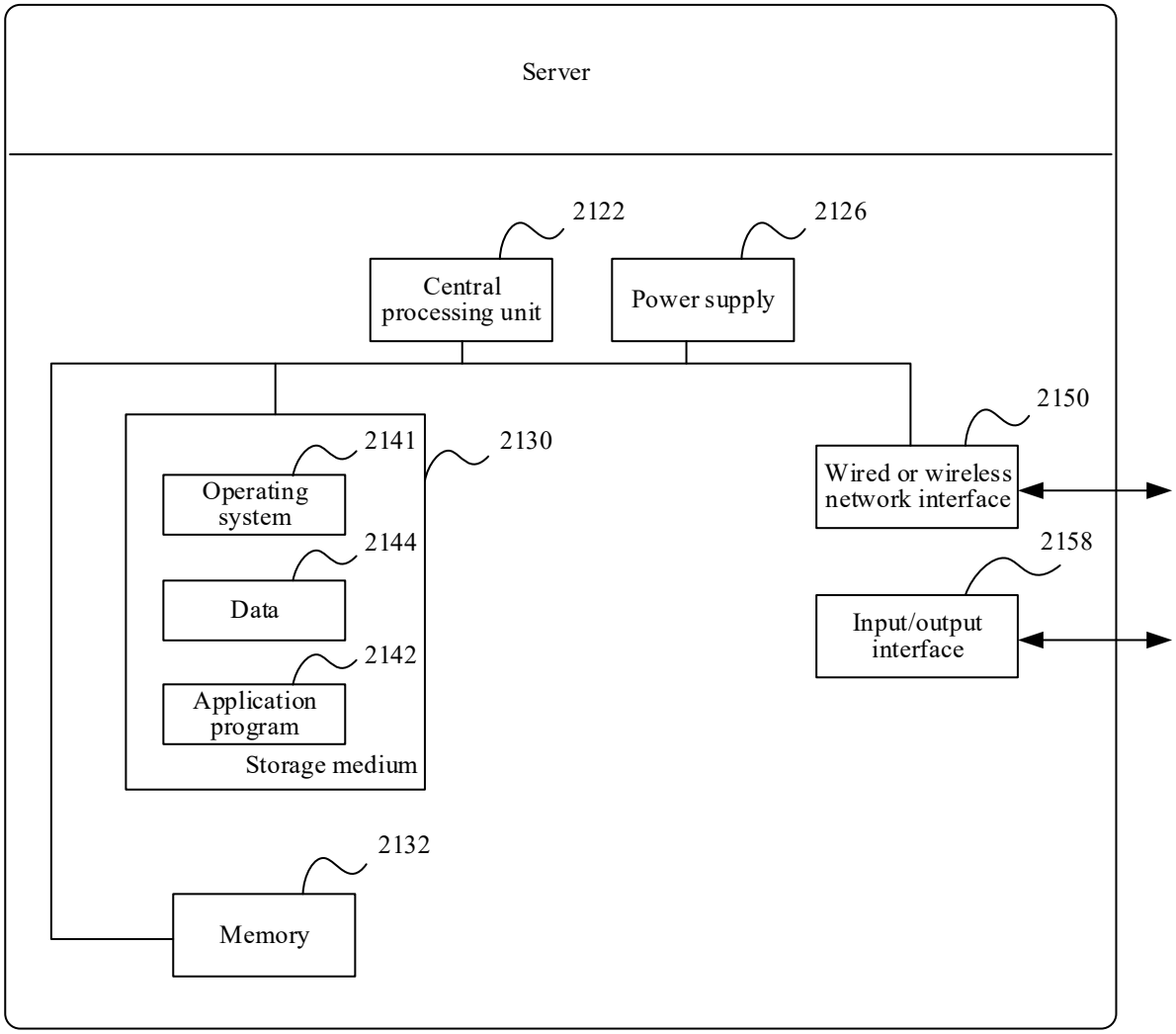

Server
2122
2126
Central processing unit
Power supply
2150
2141
2130
Operating system
Wired or wireless network interface
2144
2158
Data
Input/output interface
2142
Application program
Storage medium
2132
Memory

FIG. 21