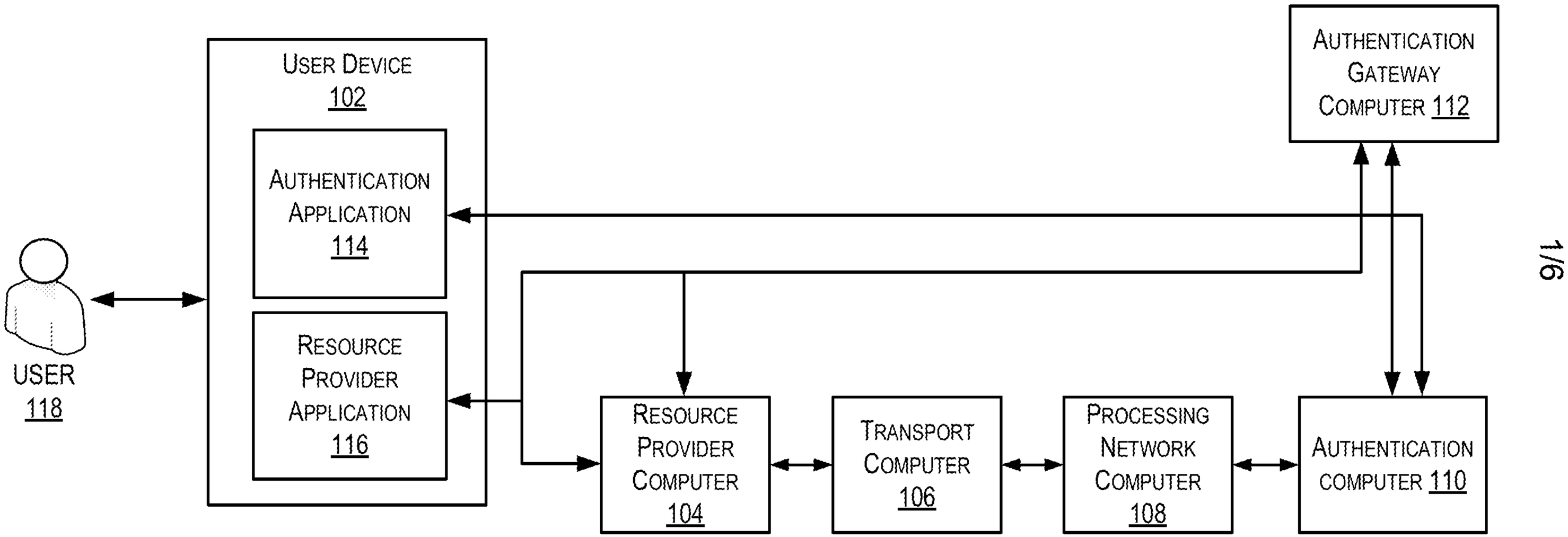

USER DEVICE
102
AUTHENTICATION APPLICATION
114
RESOURCE PROVIDER APPLICATION
116
USER
118
AUTHENTICATION GATEWAY COMPUTER 112
RESOURCE PROVIDER COMPUTER
104
TRANSPORT COMPUTER
106
PROCESSING NETWORK COMPUTER
108
AUTHENTICATION COMPUTER 110
100

FIG. 1

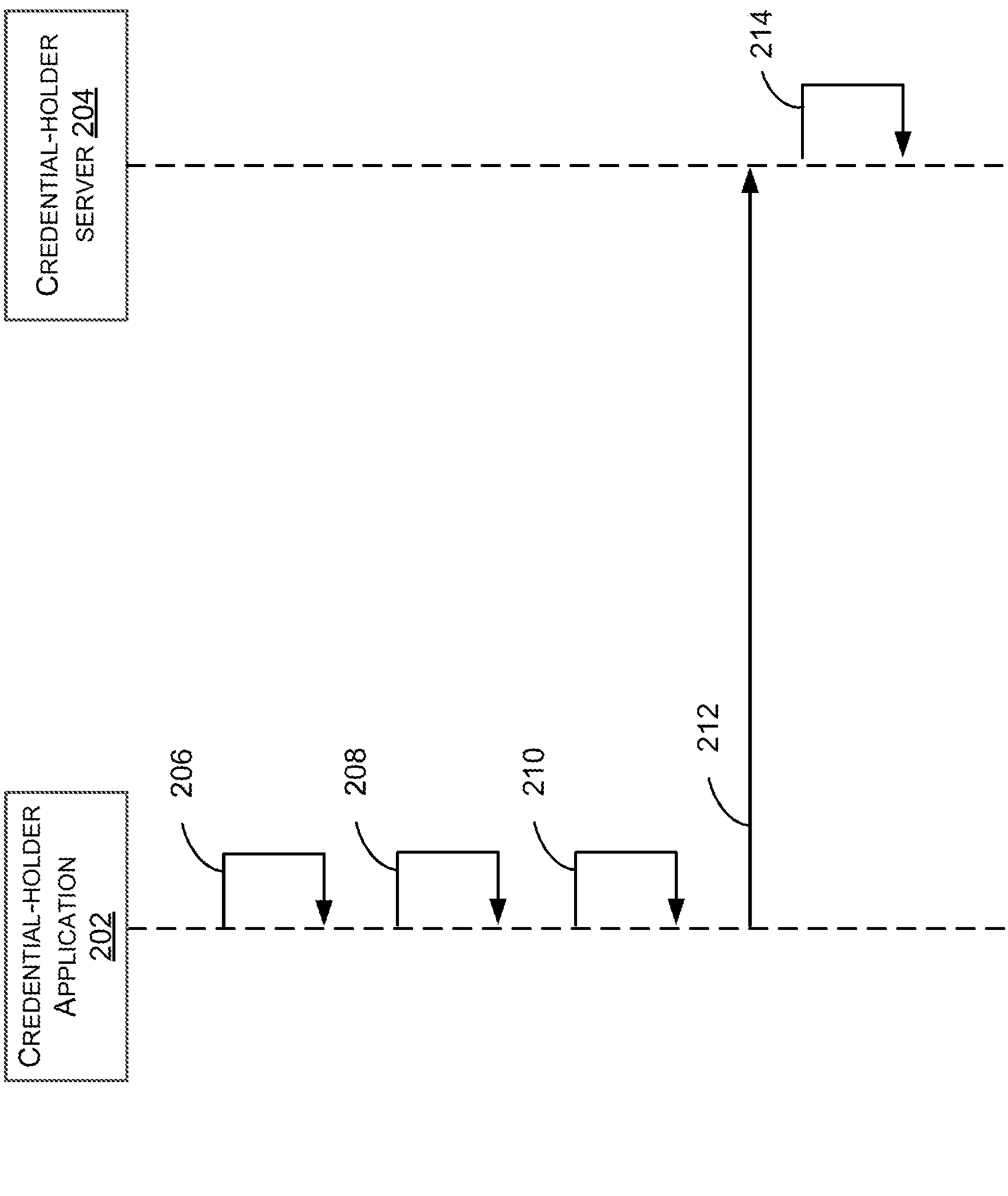

CREDENTIAL-HOLDER APPLICATION 202
CREDENTIAL-HOLDER SERVER 204
206
208
210
212
214
200

FIG. 2

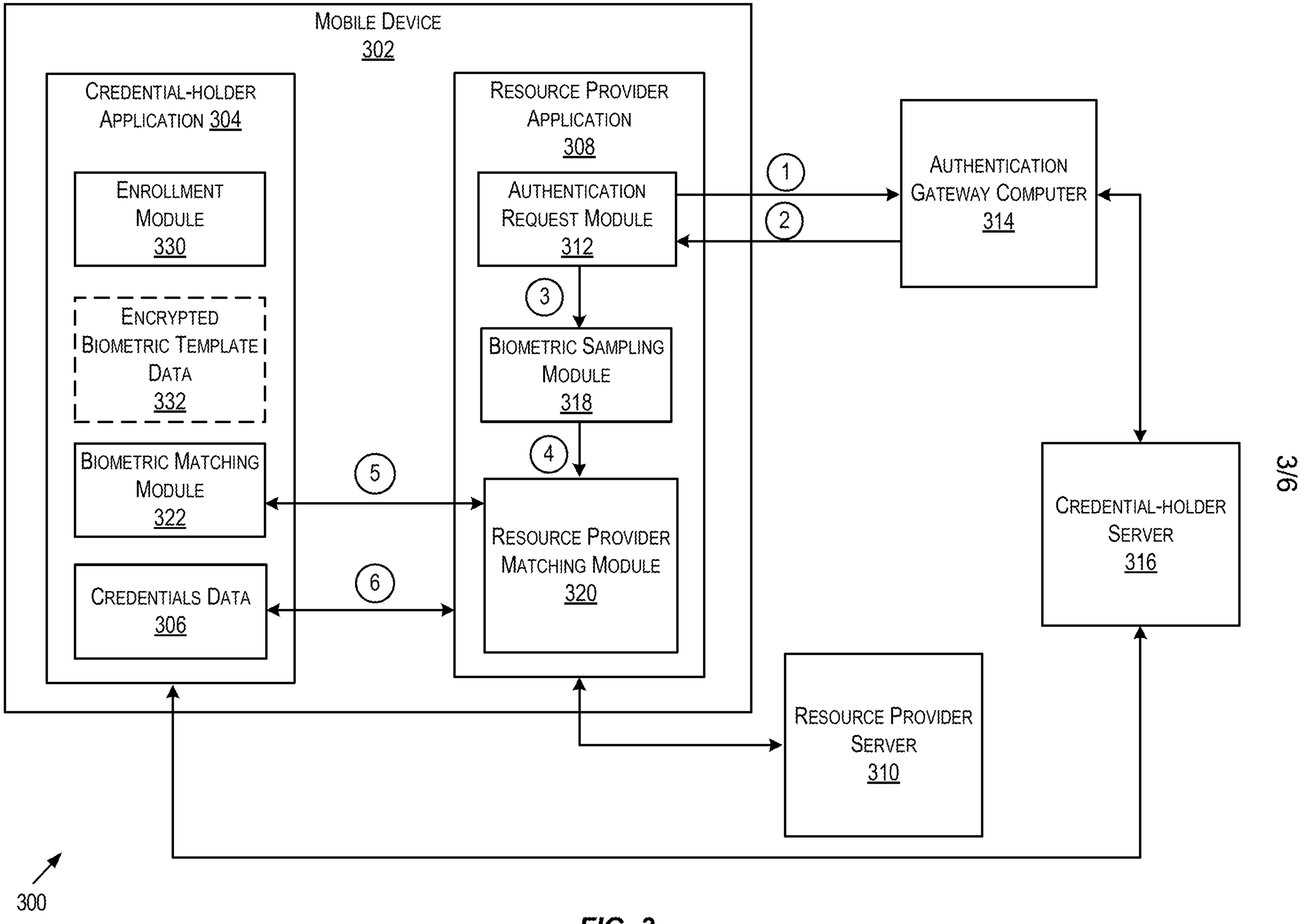

MOBILE DEVICE
302
CREDENTIAL-HOLDER APPLICATION 304
ENROLLMENT MODULE
330
ENCRYPTED BIOMETRIC TEMPLATE DATA
332
BIOMETRIC MATCHING MODULE
322
CREDENTIALS DATA
306
RESOURCE PROVIDER APPLICATION
308
AUTHENTICATION REQUEST MODULE
312
BIOMETRIC SAMPLING MODULE
318
RESOURCE PROVIDER MATCHING MODULE
320
1
2
3
4
5
6
AUTHENTICATION GATEWAY COMPUTER
314
CREDENTIAL-HOLDER SERVER
316
RESOURCE PROVIDER SERVER
310
300

FIG. 3

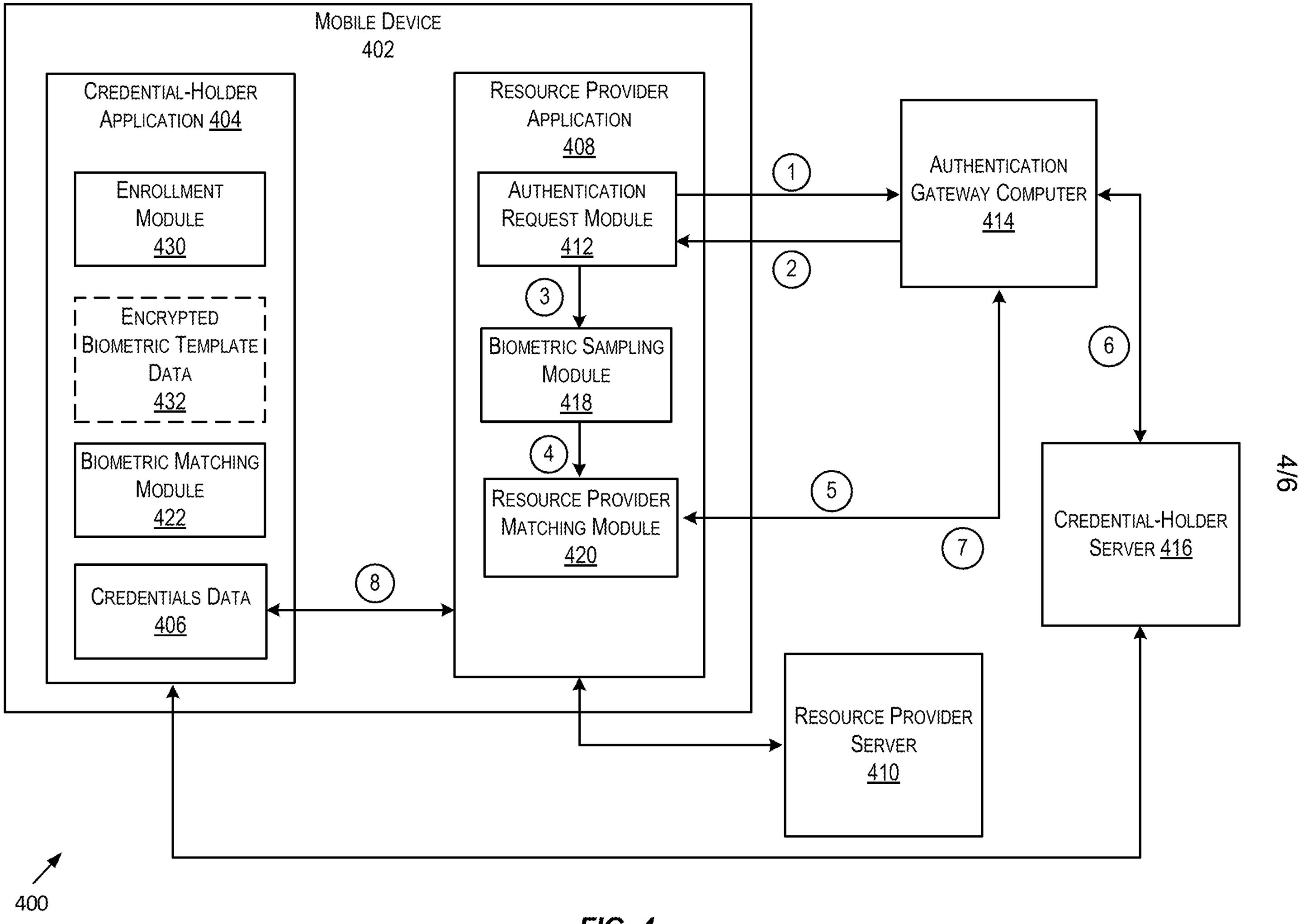

Mobile Device
402
Credential-Holder Application 404
Enrollment Module
430
Encrypted Biometric Template Data
432
Biometric Matching Module
422
Credentials Data
406
Resource Provider Application
408
Authentication Request Module
412
Biometric Sampling Module
418
Resource Provider Matching Module
420
Authentication Gateway Computer
414
Credential-Holder Server 416
Resource Provider Server
410
1
2
3
4
5
6
7
8
400

FIG. 4

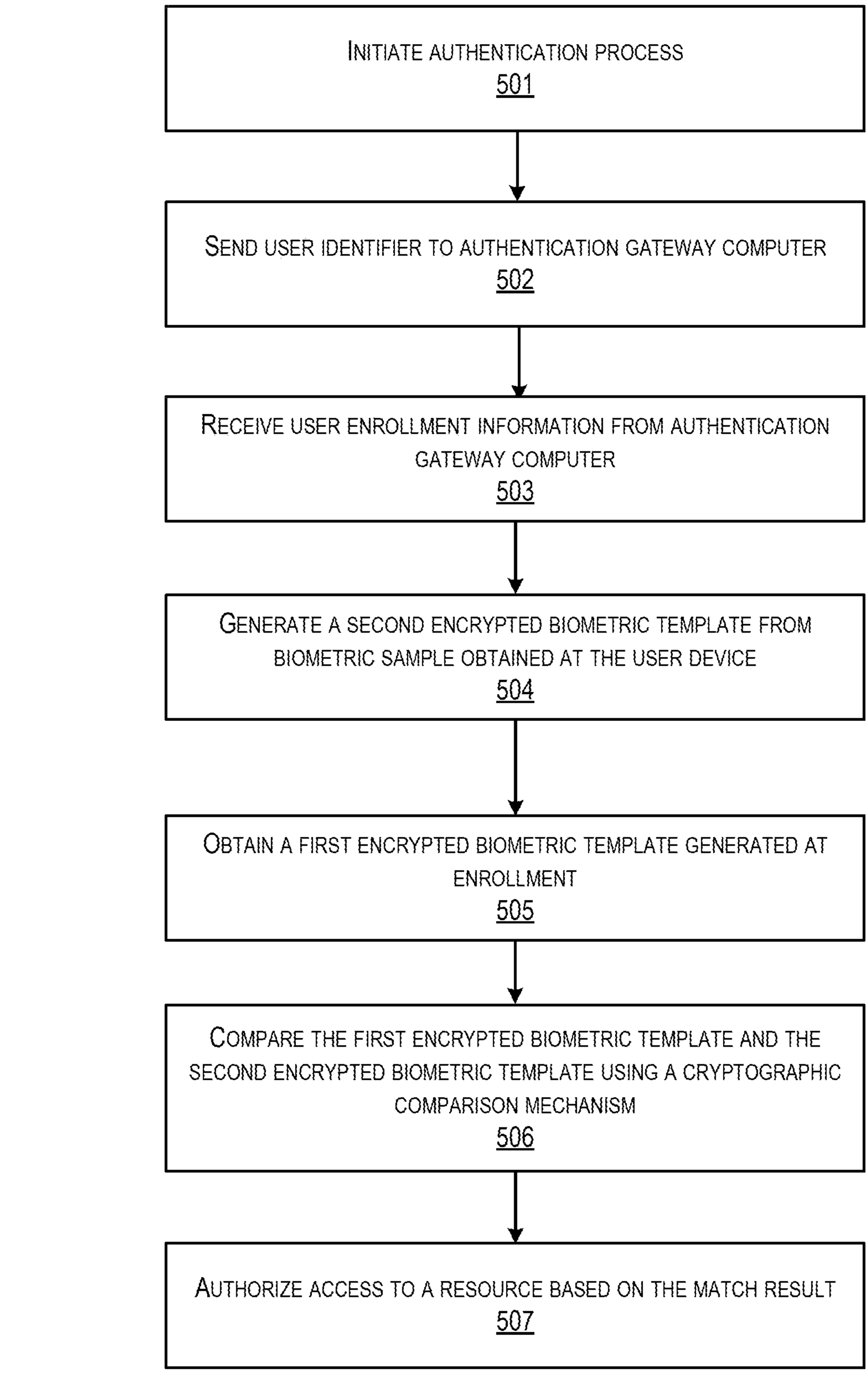

INITIATE AUTHENTICATION PROCESS
501
SEND USER IDENTIFIER TO AUTHENTICATION GATEWAY COMPUTER
502
RECEIVE USER ENROLLMENT INFORMATION FROM AUTHENTICATION GATEWAY COMPUTER
503
GENERATE A SECOND ENCRYPTED BIOMETRIC TEMPLATE FROM BIOMETRIC SAMPLE OBTAINED AT THE USER DEVICE
504
OBTAIN A FIRST ENCRYPTED BIOMETRIC TEMPLATE GENERATED AT ENROLLMENT
505
COMPARE THE FIRST ENCRYPTED BIOMETRIC TEMPLATE AND THE SECOND ENCRYPTED BIOMETRIC TEMPLATE USING A CRYPTOGRAPHIC COMPARISON MECHANISM
506
AUTHORIZE ACCESS TO A RESOURCE BASED ON THE MATCH RESULT
507
500

FIG. 5

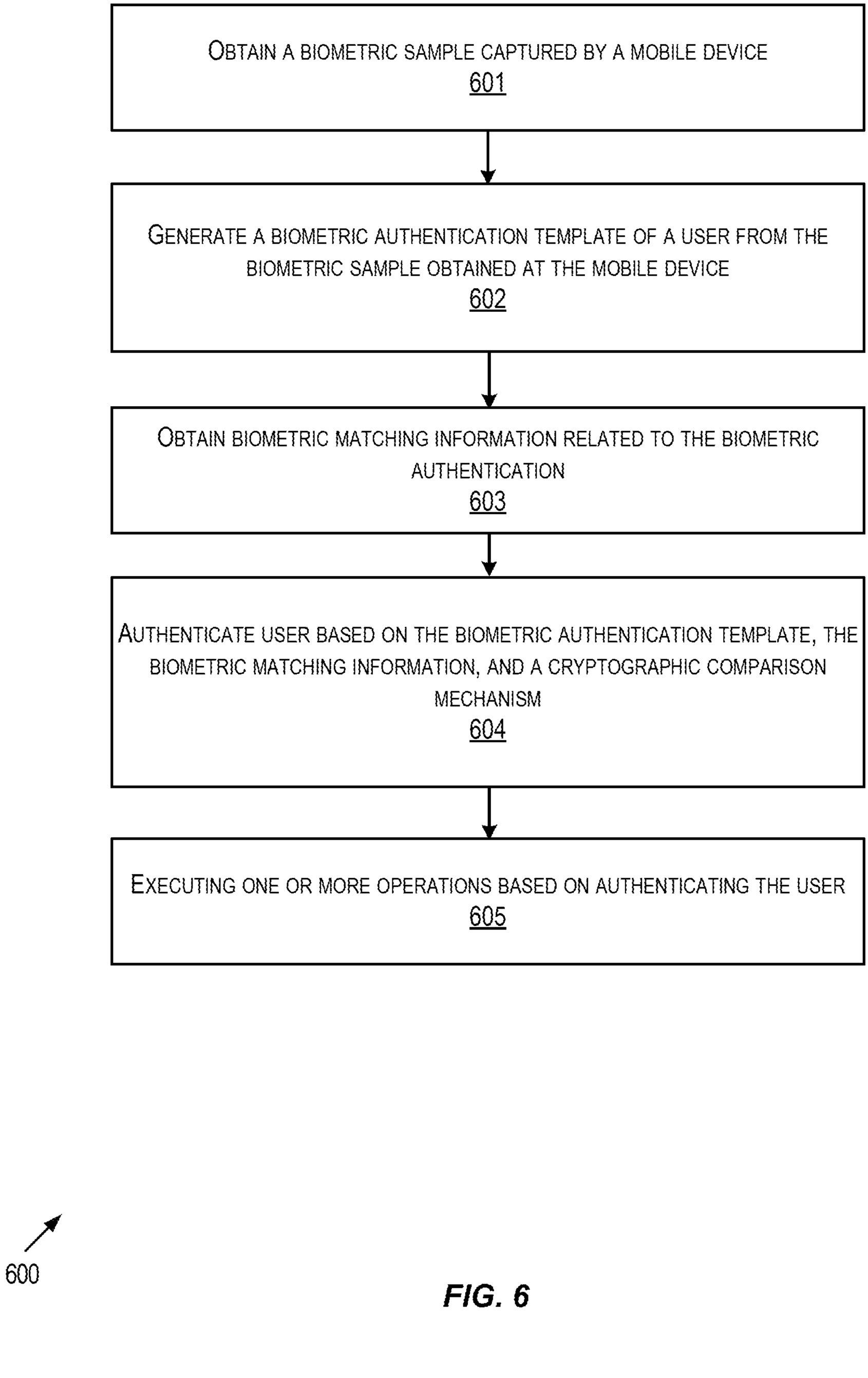

OBTAIN A BIOMETRIC SAMPLE CAPTURED BY A MOBILE DEVICE
601
GENERATE A BIOMETRIC AUTHENTICATION TEMPLATE OF A USER FROM THE BIOMETRIC SAMPLE OBTAINED AT THE MOBILE DEVICE
602
OBTAIN BIOMETRIC MATCHING INFORMATION RELATED TO THE BIOMETRIC AUTHENTICATION
603
AUTHENTICATE USER BASED ON THE BIOMETRIC AUTHENTICATION TEMPLATE, THE BIOMETRIC MATCHING INFORMATION, AND A CRYPTOGRAPHIC COMPARISON MECHANISM
604
EXECUTING ONE OR MORE OPERATIONS BASED ON AUTHENTICATING THE USER
605
600

FIG. 6