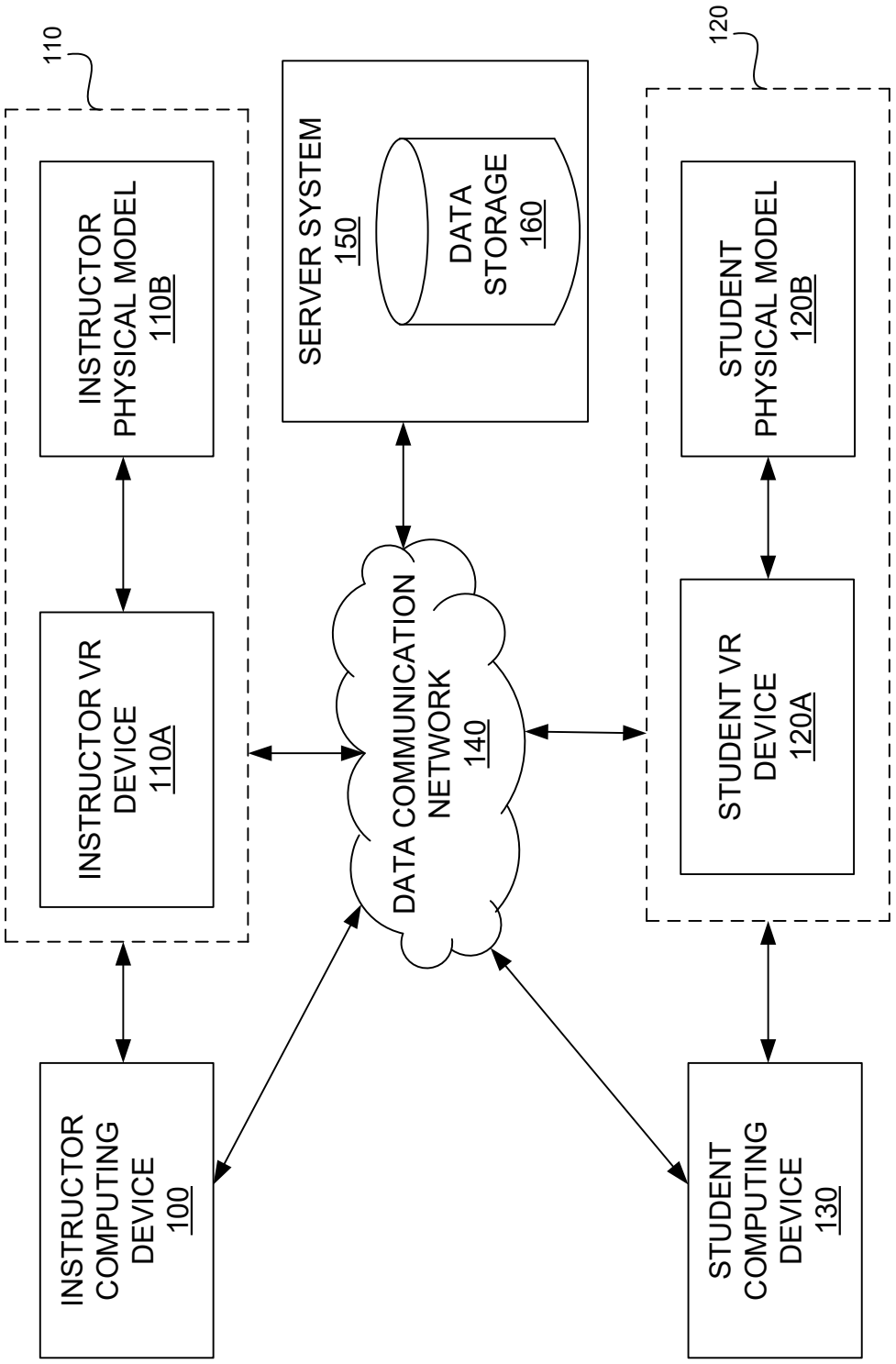

110
INSTRUCTOR PHYSICAL MODEL 110B
INSTRUCTOR VR DEVICE 110A
INSTRUCTOR COMPUTING DEVICE 100
SERVER SYSTEM 150
DATA STORAGE 160
DATA COMMUNICATION NETWORK 140
120
STUDENT PHYSICAL MODEL 120B
STUDENT VR DEVICE 120A
STUDENT COMPUTING DEVICE 130

FIG. 1

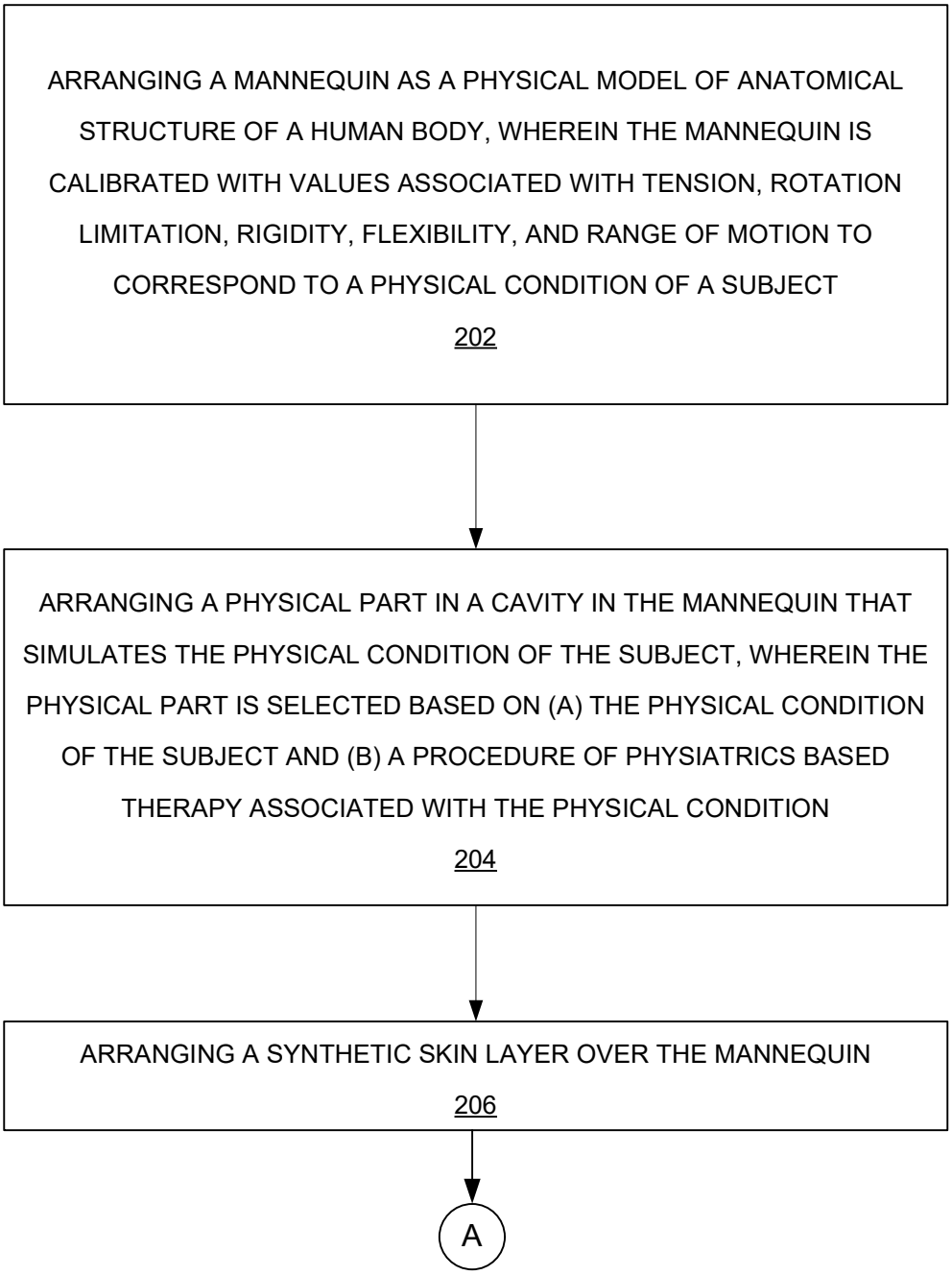

ARRANGING A MANNEQUIN AS A PHYSICAL MODEL OF ANATOMICAL STRUCTURE OF A HUMAN BODY, WHEREIN THE MANNEQUIN IS CALIBRATED WITH VALUES ASSOCIATED WITH TENSION, ROTATION LIMITATION, RIGIDITY, FLEXIBILITY, AND RANGE OF MOTION TO CORRESPOND TO A PHYSICAL CONDITION OF A SUBJECT
202
ARRANGING A PHYSICAL PART IN A CAVITY IN THE MANNEQUIN THAT SIMULATES THE PHYSICAL CONDITION OF THE SUBJECT, WHEREIN THE PHYSICAL PART IS SELECTED BASED ON (A) THE PHYSICAL CONDITION OF THE SUBJECT AND (B) A PROCEDURE OF PHYSIATRICS BASED THERAPY ASSOCIATED WITH THE PHYSICAL CONDITION
204
ARRANGING A SYNTHETIC SKIN LAYER OVER THE MANNEQUIN
206
A

FIG. 2A

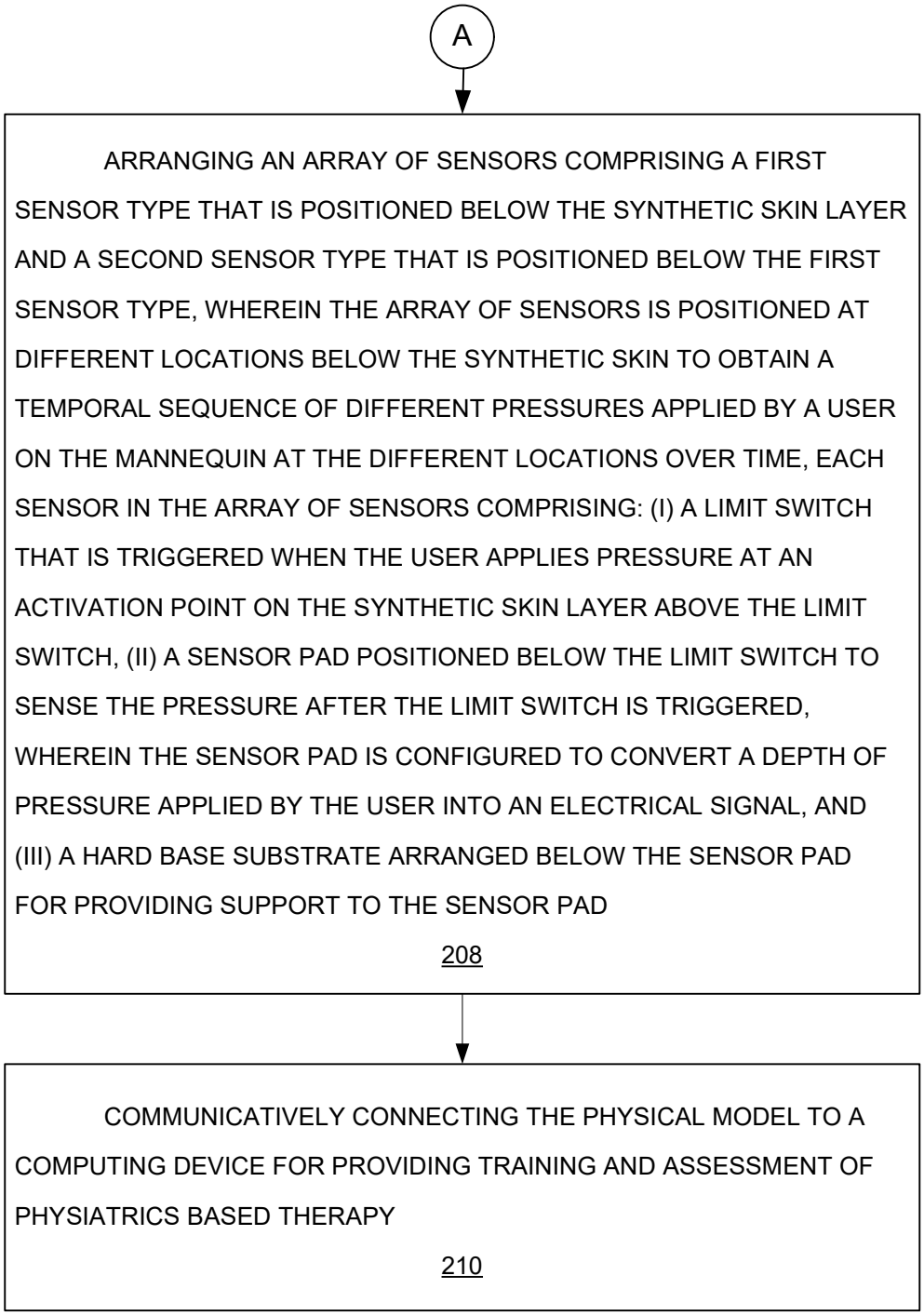

A
ARRANGING AN ARRAY OF SENSORS COMPRISING A FIRST SENSOR TYPE THAT IS POSITIONED BELOW THE SYNTHETIC SKIN LAYER AND A SECOND SENSOR TYPE THAT IS POSITIONED BELOW THE FIRST SENSOR TYPE, WHEREIN THE ARRAY OF SENSORS IS POSITIONED AT DIFFERENT LOCATIONS BELOW THE SYNTHETIC SKIN TO OBTAIN A TEMPORAL SEQUENCE OF DIFFERENT PRESSURES APPLIED BY A USER ON THE MANNEQUIN AT THE DIFFERENT LOCATIONS OVER TIME, EACH SENSOR IN THE ARRAY OF SENSORS COMPRISING: (I) A LIMIT SWITCH THAT IS TRIGGERED WHEN THE USER APPLIES PRESSURE AT AN ACTIVATION POINT ON THE SYNTHETIC SKIN LAYER ABOVE THE LIMIT SWITCH, (II) A SENSOR PAD POSITIONED BELOW THE LIMIT SWITCH TO SENSE THE PRESSURE AFTER THE LIMIT SWITCH IS TRIGGERED, WHEREIN THE SENSOR PAD IS CONFIGURED TO CONVERT A DEPTH OF PRESSURE APPLIED BY THE USER INTO AN ELECTRICAL SIGNAL, AND (III) A HARD BASE SUBSTRATE ARRANGED BELOW THE SENSOR PAD FOR PROVIDING SUPPORT TO THE SENSOR PAD
208
COMMUNICATIVELY CONNECTING THE PHYSICAL MODEL TO A COMPUTING DEVICE FOR PROVIDING TRAINING AND ASSESSMENT OF PHYSIATRICS BASED THERAPY
210

FIG. 2B

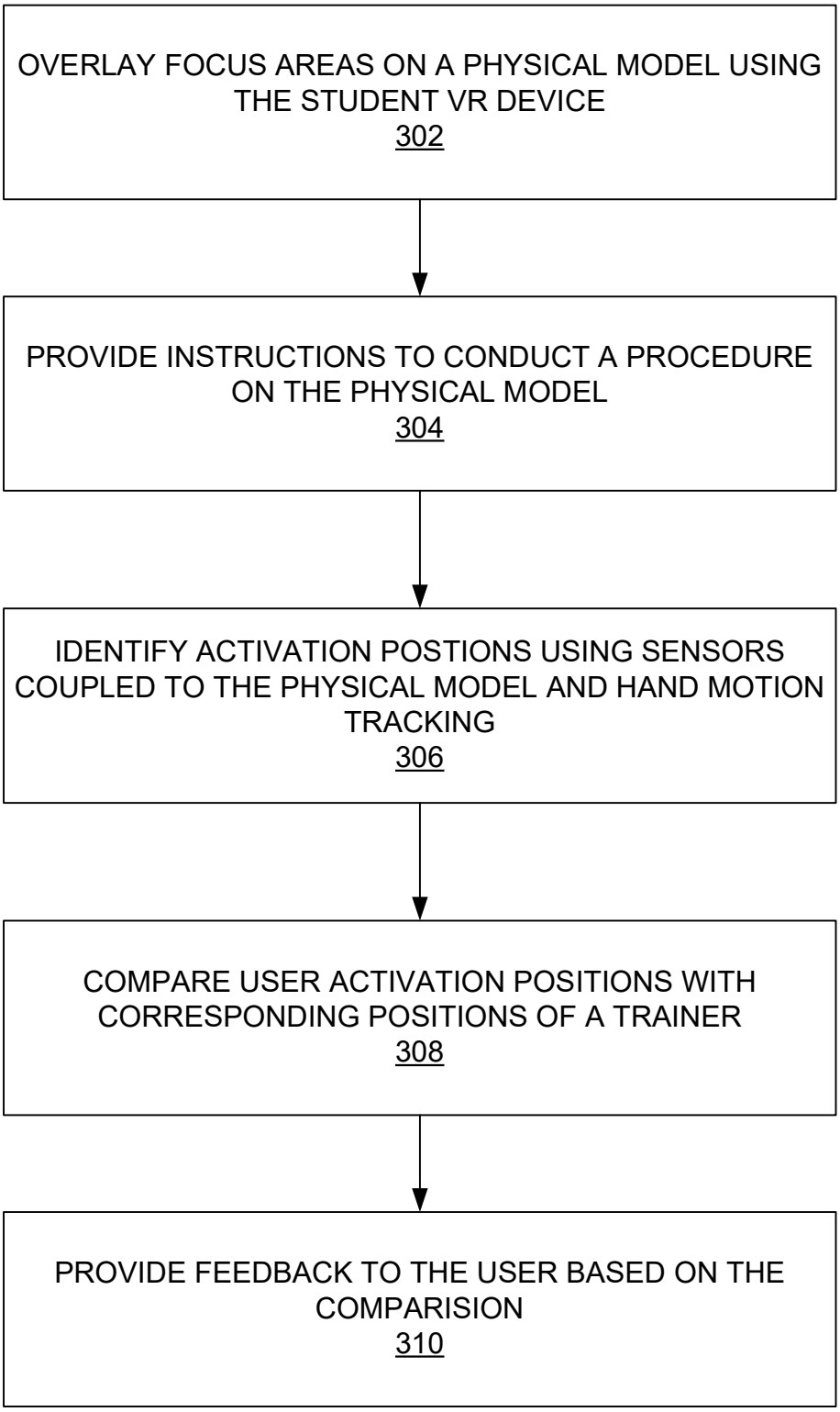

OVERLAY FOCUS AREAS ON A PHYSICAL MODEL USING THE STUDENT VR DEVICE
302
PROVIDE INSTRUCTIONS TO CONDUCT A PROCEDURE ON THE PHYSICAL MODEL
304
IDENTIFY ACTIVATION POSTIONS USING SENSORS COUPLED TO THE PHYSICAL MODEL AND HAND MOTION TRACKING
306
COMPARE USER ACTIVATION POSITIONS WITH CORRESPONDING POSITIONS OF A TRAINER
308
PROVIDE FEEDBACK TO THE USER BASED ON THE COMPARISION
310

FIG. 3

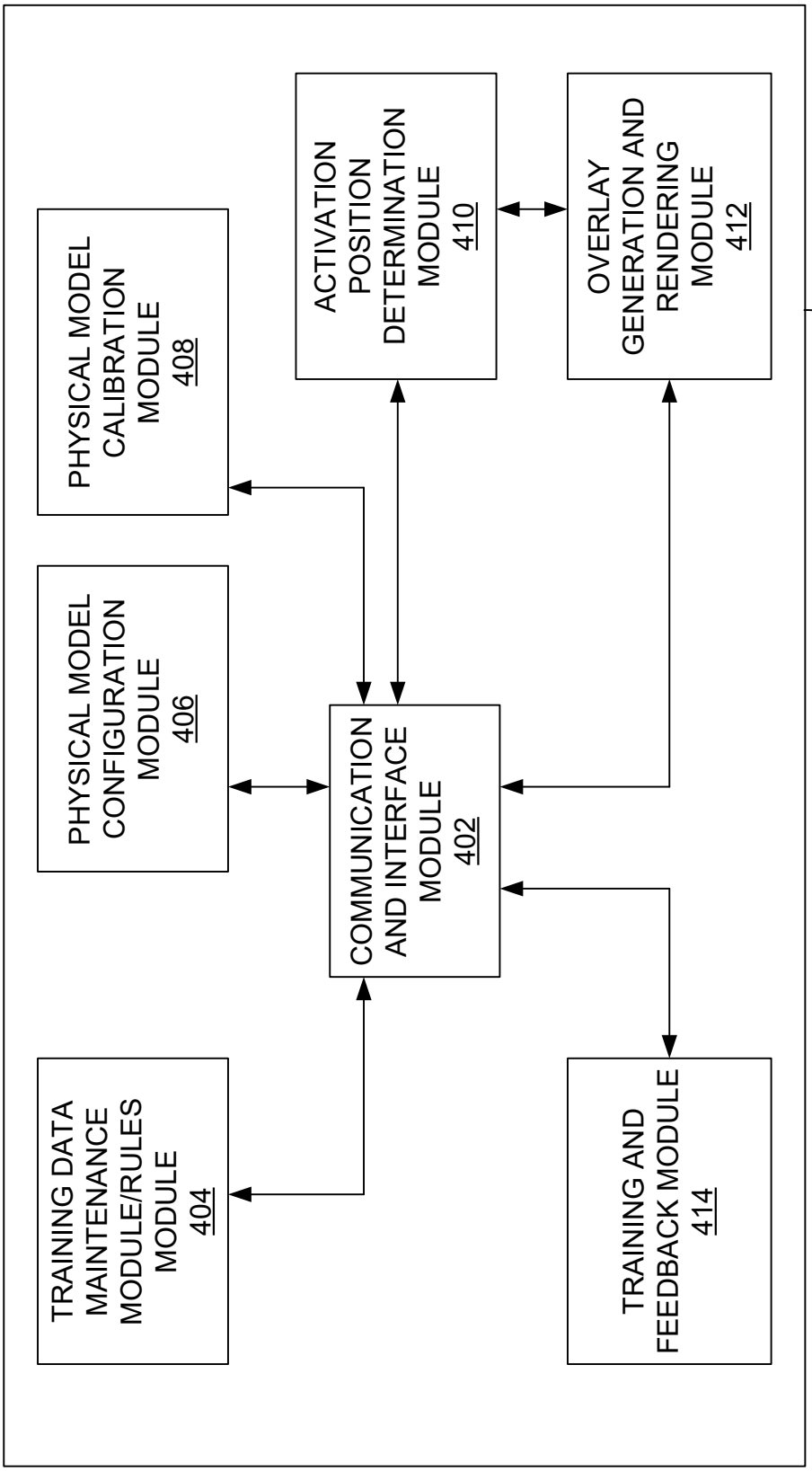

PHYSICAL MODEL CALIBRATION MODULE 408
ACTIVATION POSITION DETERMINATION MODULE 410
OVERLAY GENERATION AND RENDERING MODULE 412
PHYSICAL MODEL CONFIGURATION MODULE 406
COMMUNICATION AND INTERFACE MODULE 402
TRAINING DATA MAINTENANCE MODULE/RULES MODULE 404
TRAINING AND FEEDBACK MODULE 414
100/130

FIG. 4A

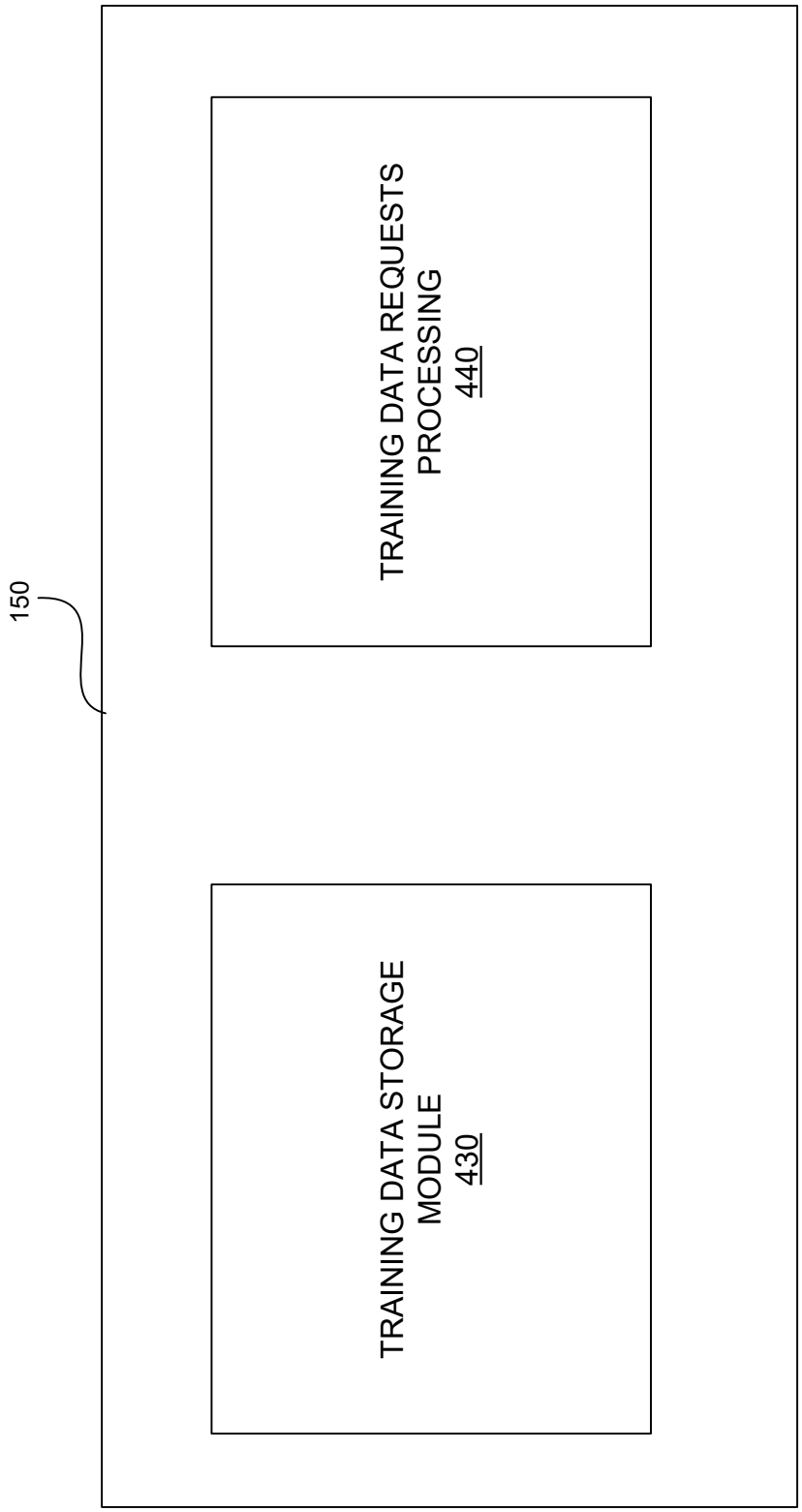

150
TRAINING DATA REQUESTS PROCESSING
440
TRAINING DATA STORAGE MODULE
430

FIG. 4B

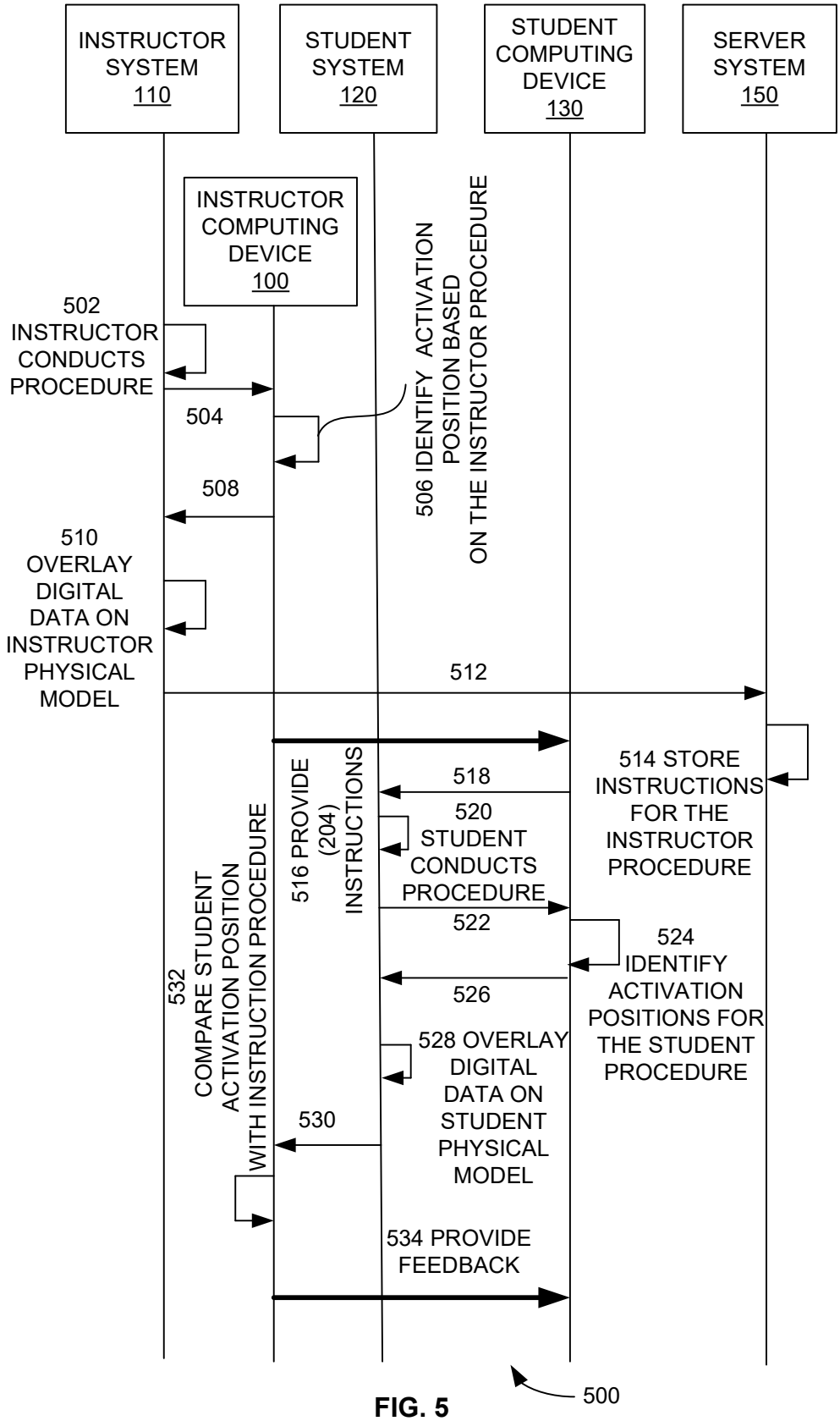

INSTRUCTOR SYSTEM 110
STUDENT SYSTEM 120
STUDENT COMPUTING DEVICE 130
SERVER SYSTEM 150
INSTRUCTOR COMPUTING DEVICE 100
502 INSTRUCTOR CONDUCTS PROCEDURE
504
506 IDENTIFY ACTIVATION POSITION BASED ON THE INSTRUCTOR PROCEDURE
508
510 OVERLAY DIGITAL DATA ON INSTRUCTOR PHYSICAL MODEL
512
514 STORE INSTRUCTIONS FOR THE INSTRUCTOR PROCEDURE
516 PROVIDE (204) INSTRUCTIONS
518
520 STUDENT CONDUCTS PROCEDURE
522
524 IDENTIFY ACTIVATION POSITIONS FOR THE STUDENT PROCEDURE
526
528 OVERLAY DIGITAL DATA ON STUDENT PHYSICAL MODEL
530
532 COMPARE STUDENT ACTIVATION POSITION WITH INSTRUCTION PROCEDURE
534 PROVIDE FEEDBACK
500

FIG. 5

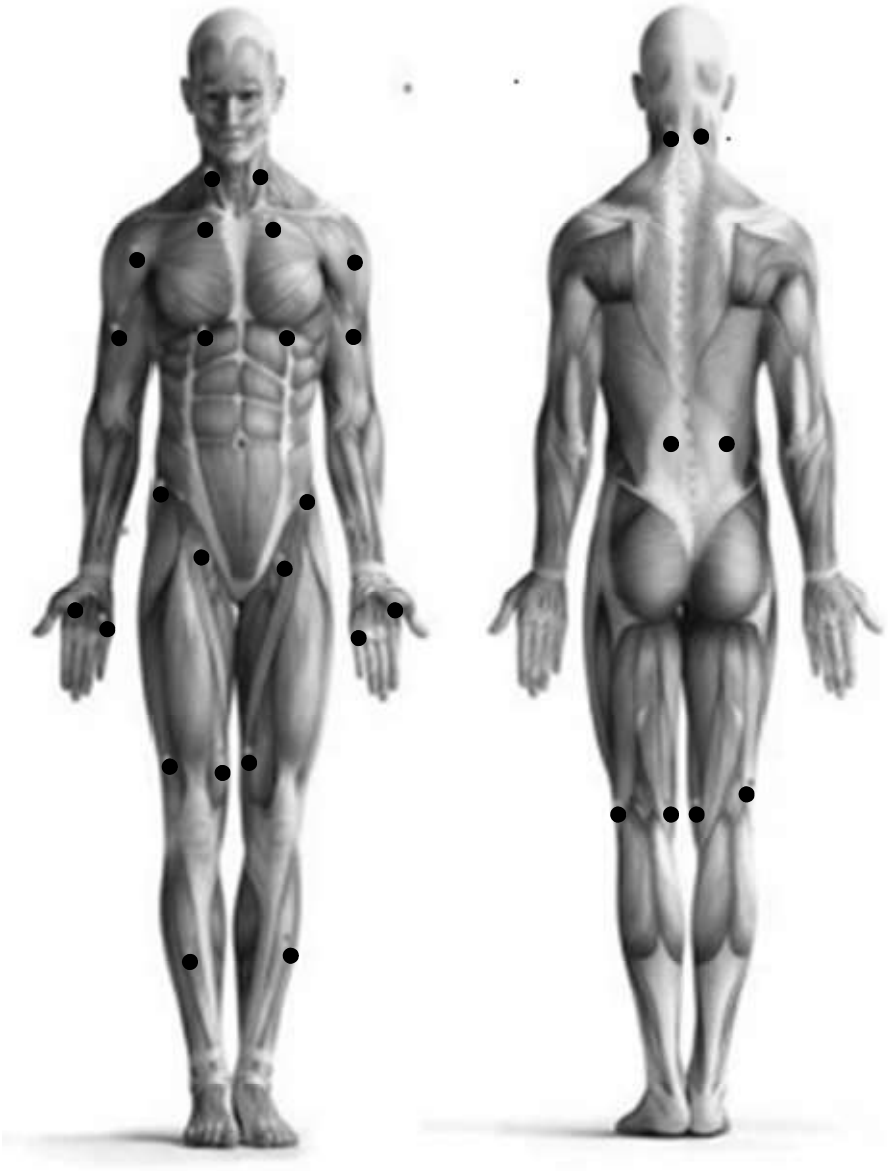


FIG. 6A

FIG. 6B

610



FIG. 6C

620

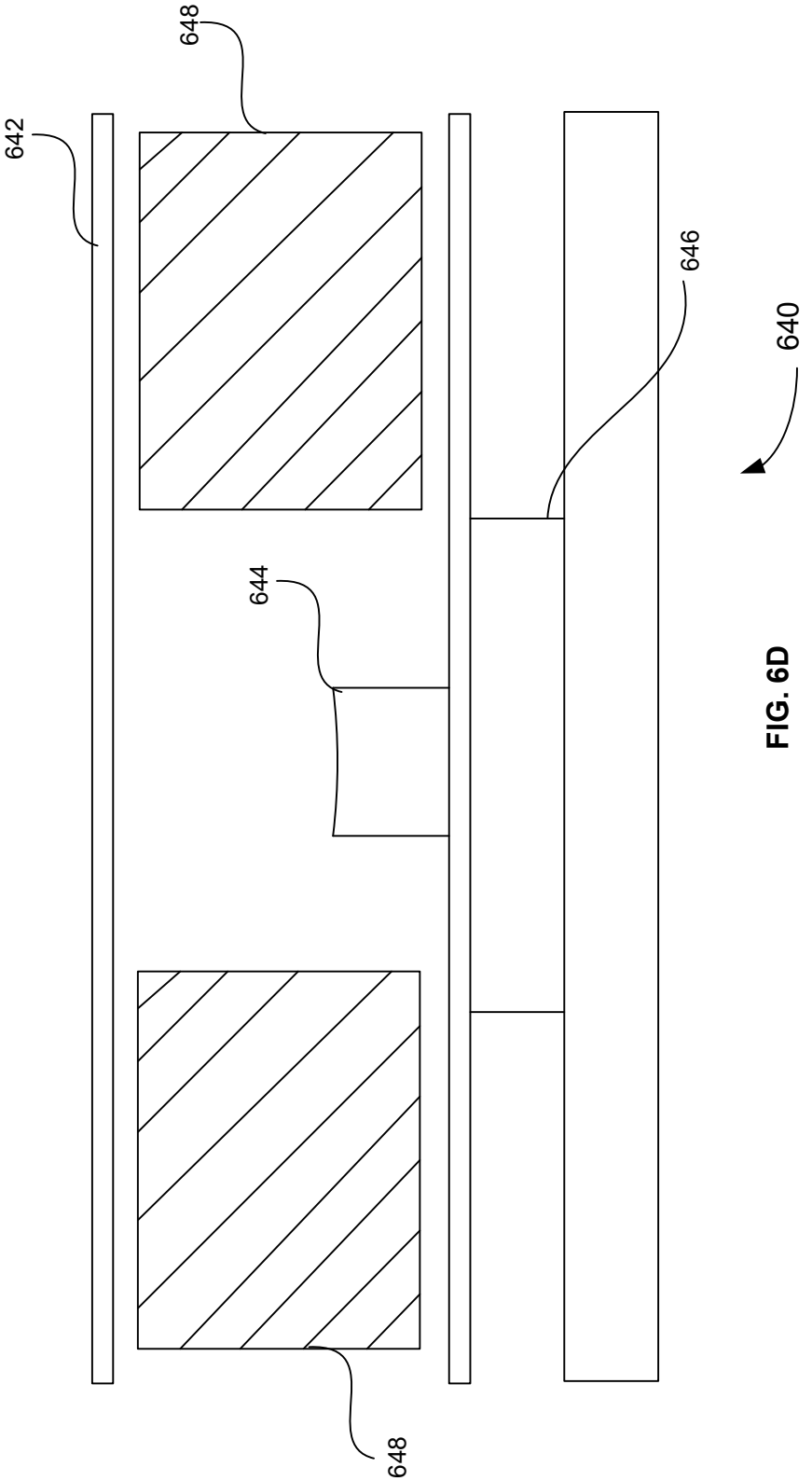


FIG. 6D

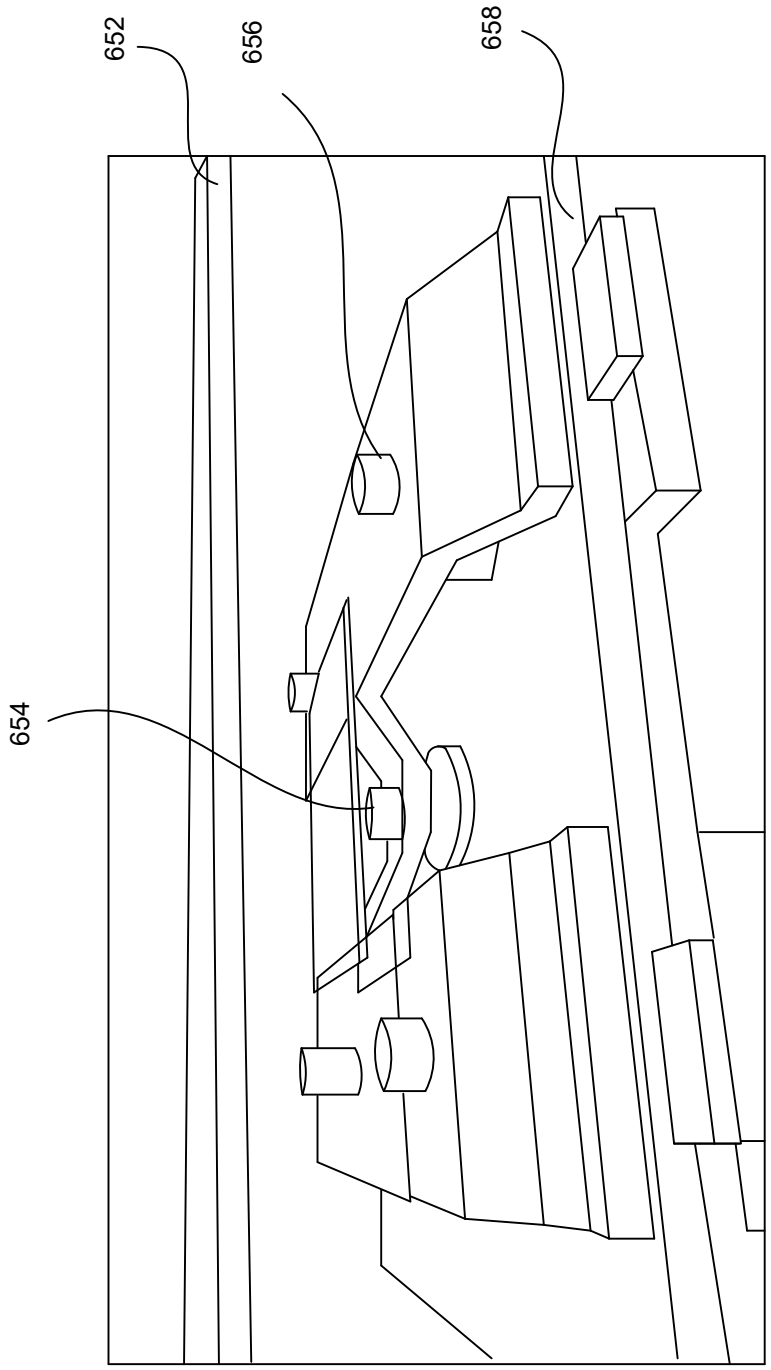


FIG. 6E

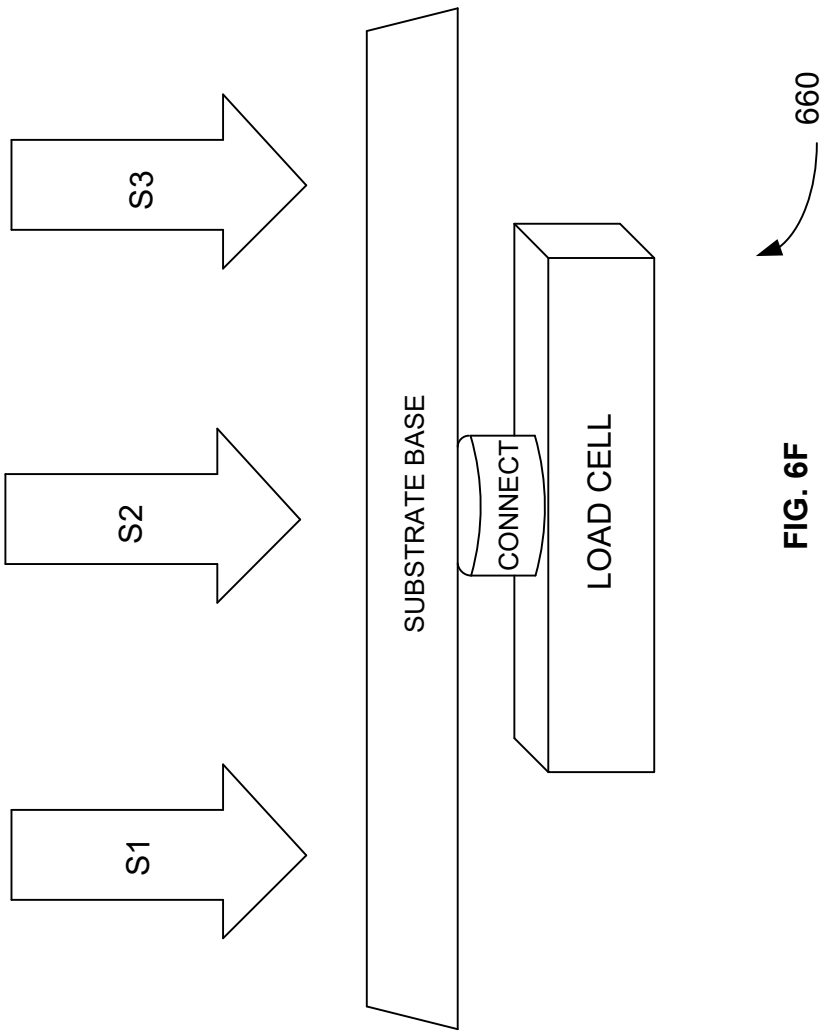


FIG. 6F

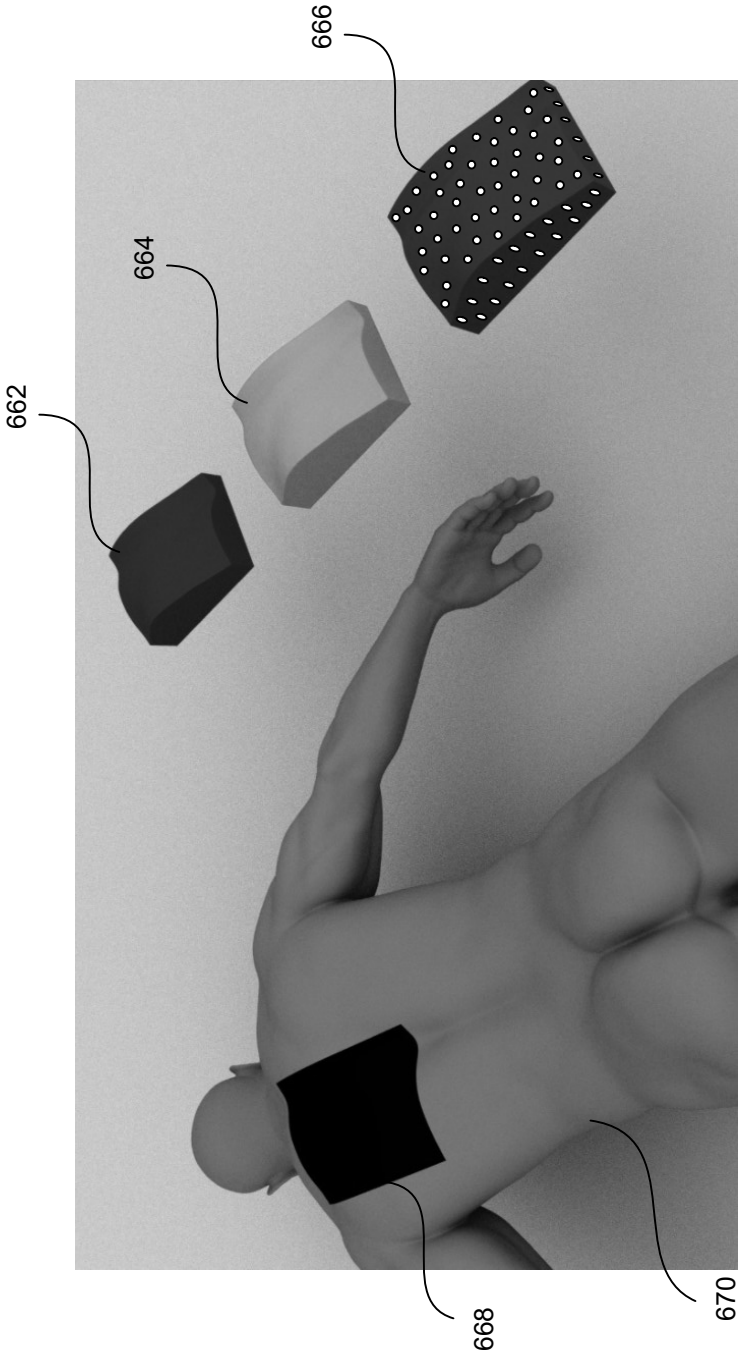


FIG. 6G

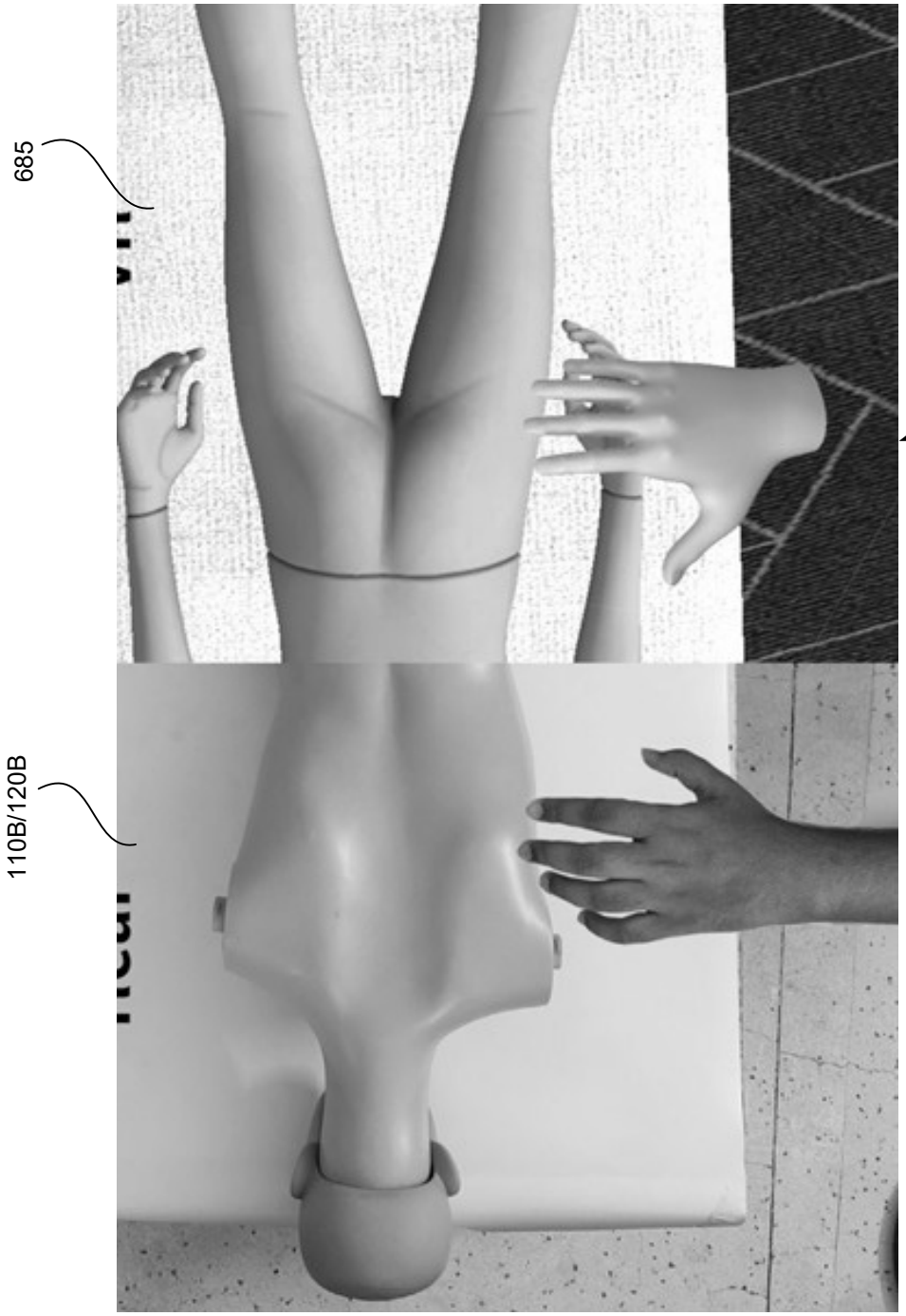


FIG. 6H

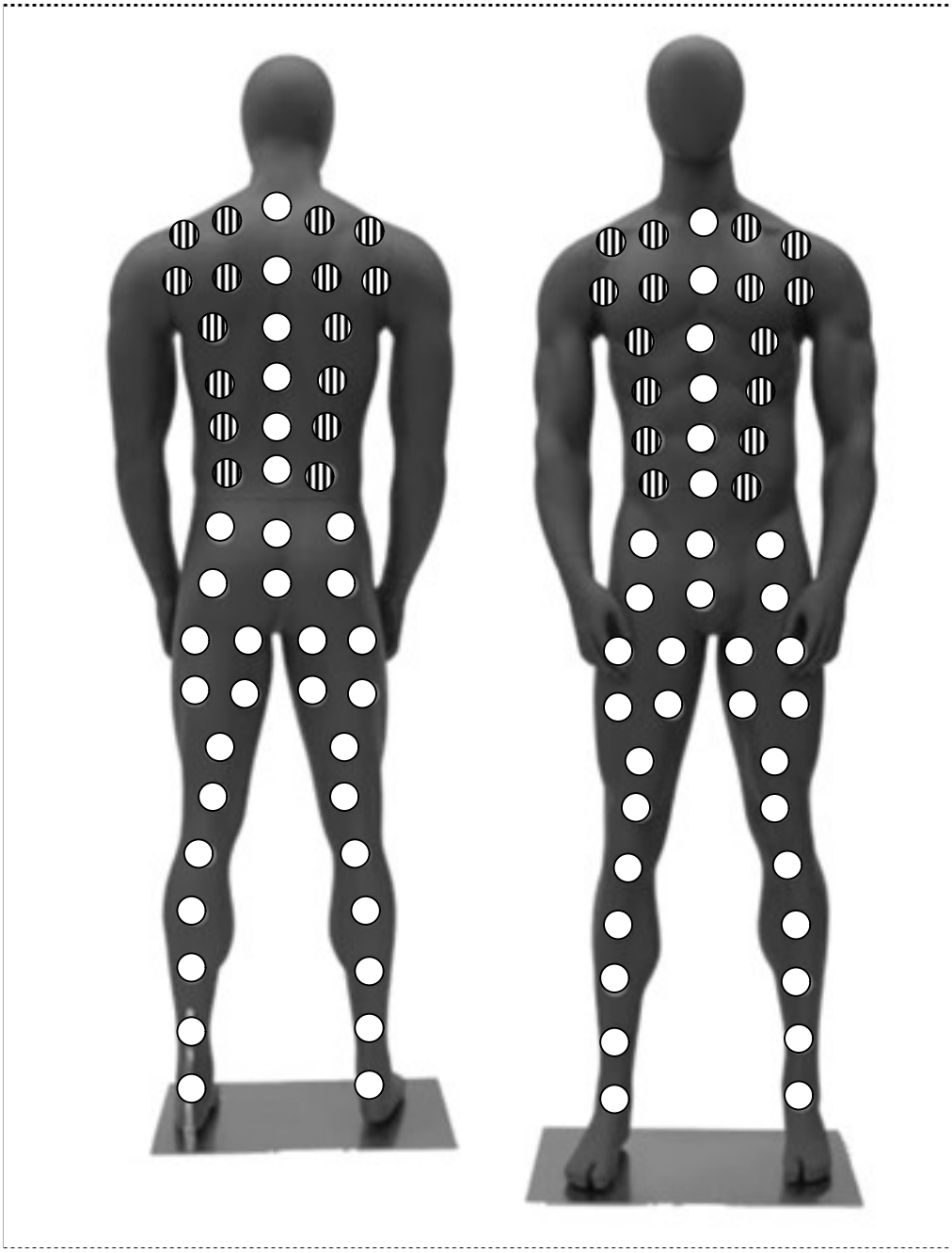


FIG. 7A

FIG. 7B



FIG. 8



FIG. 9

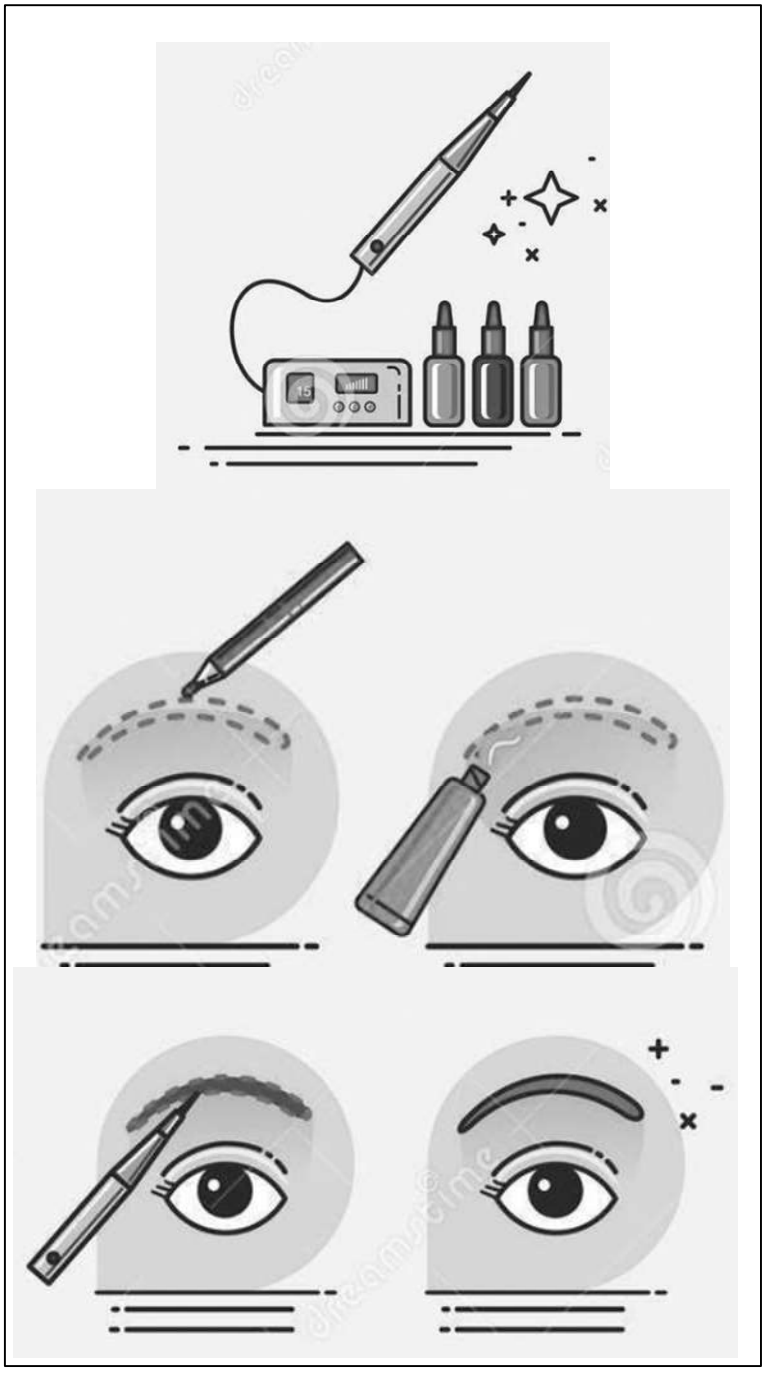


FIG. 10

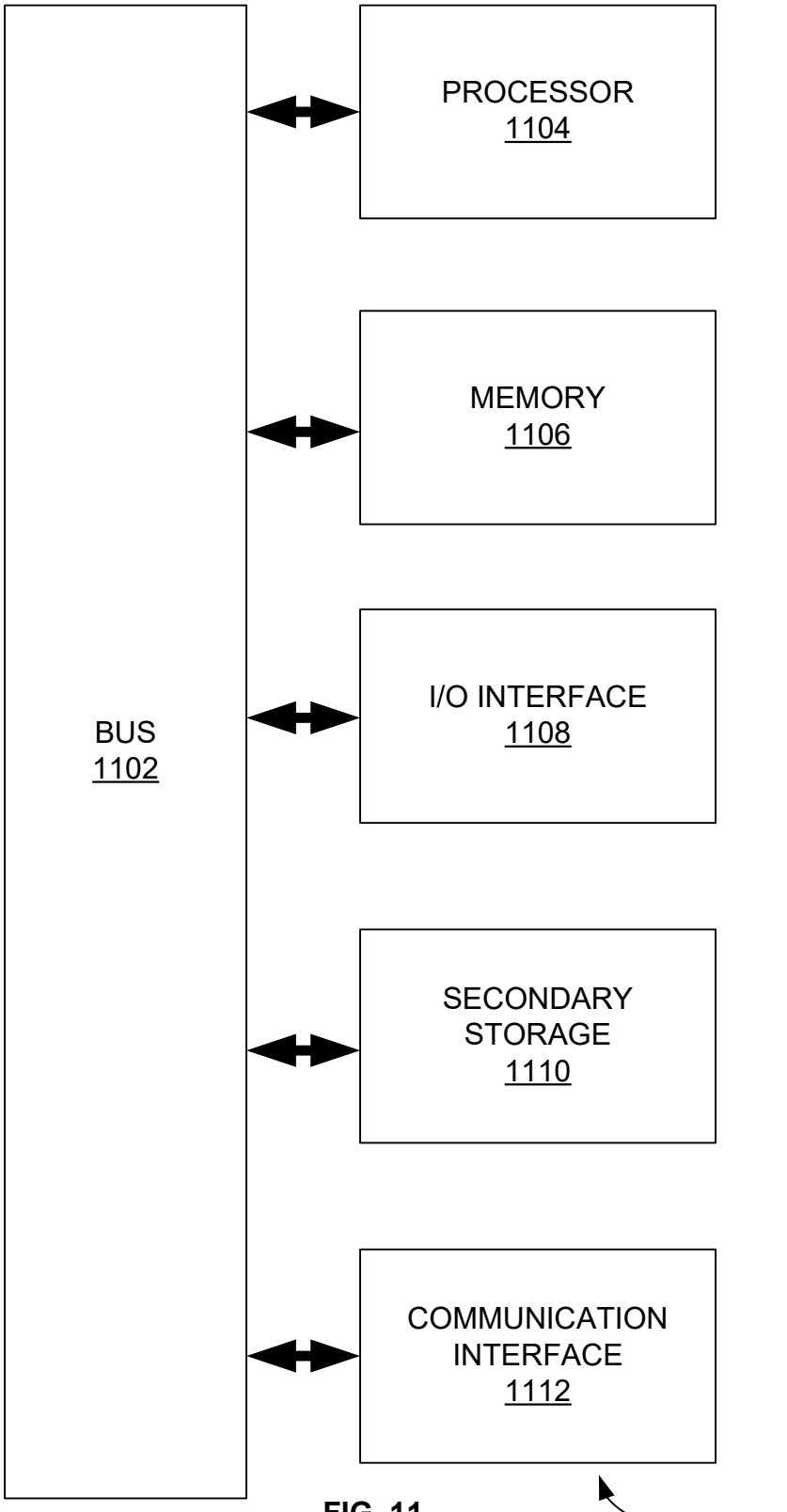

BUS
1102
PROCESSOR
1104
MEMORY
1106
I/O INTERFACE
1108
SECONDARY
STORAGE
1110
COMMUNICATION
INTERFACE
1112
1100

FIG. 11