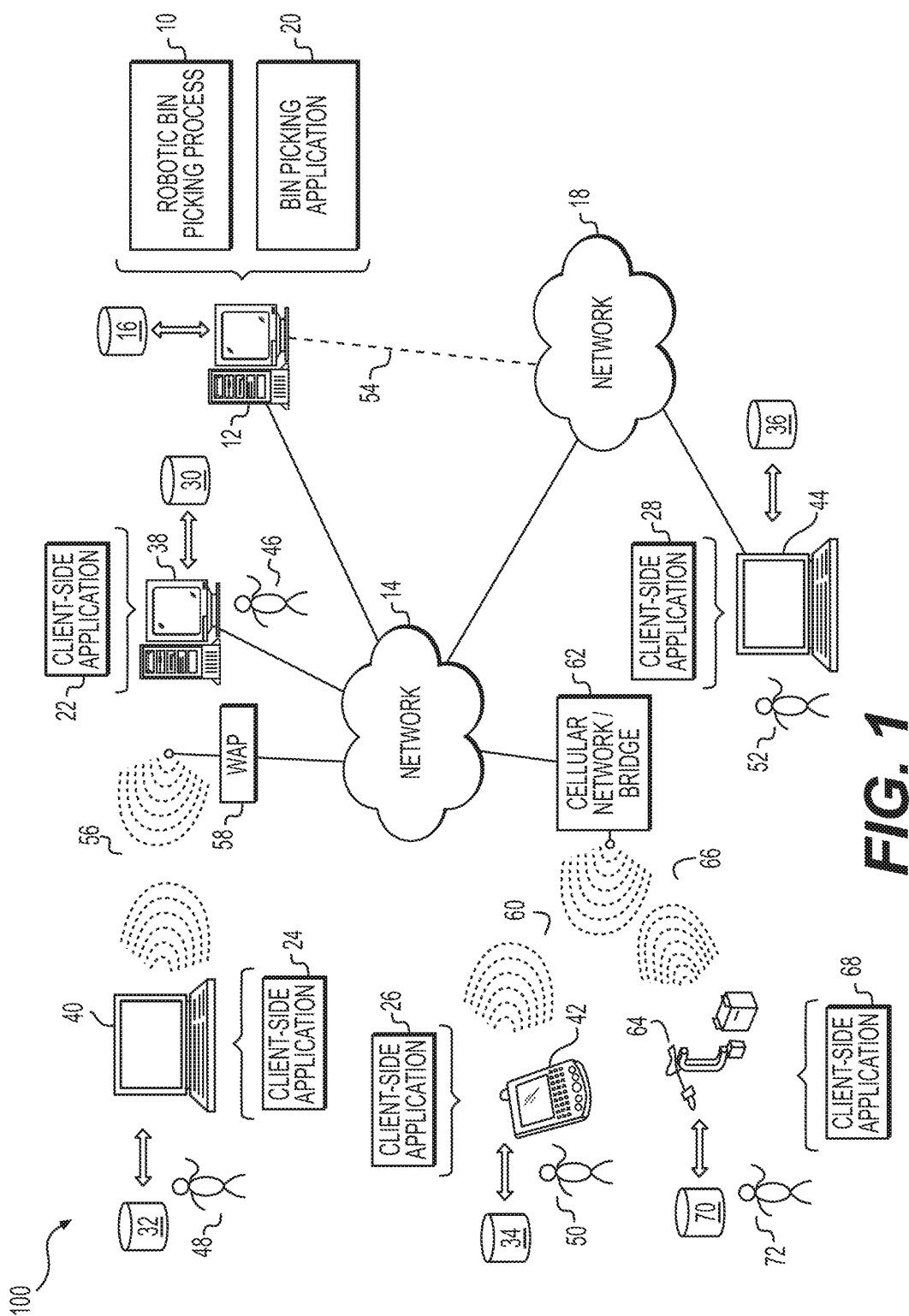
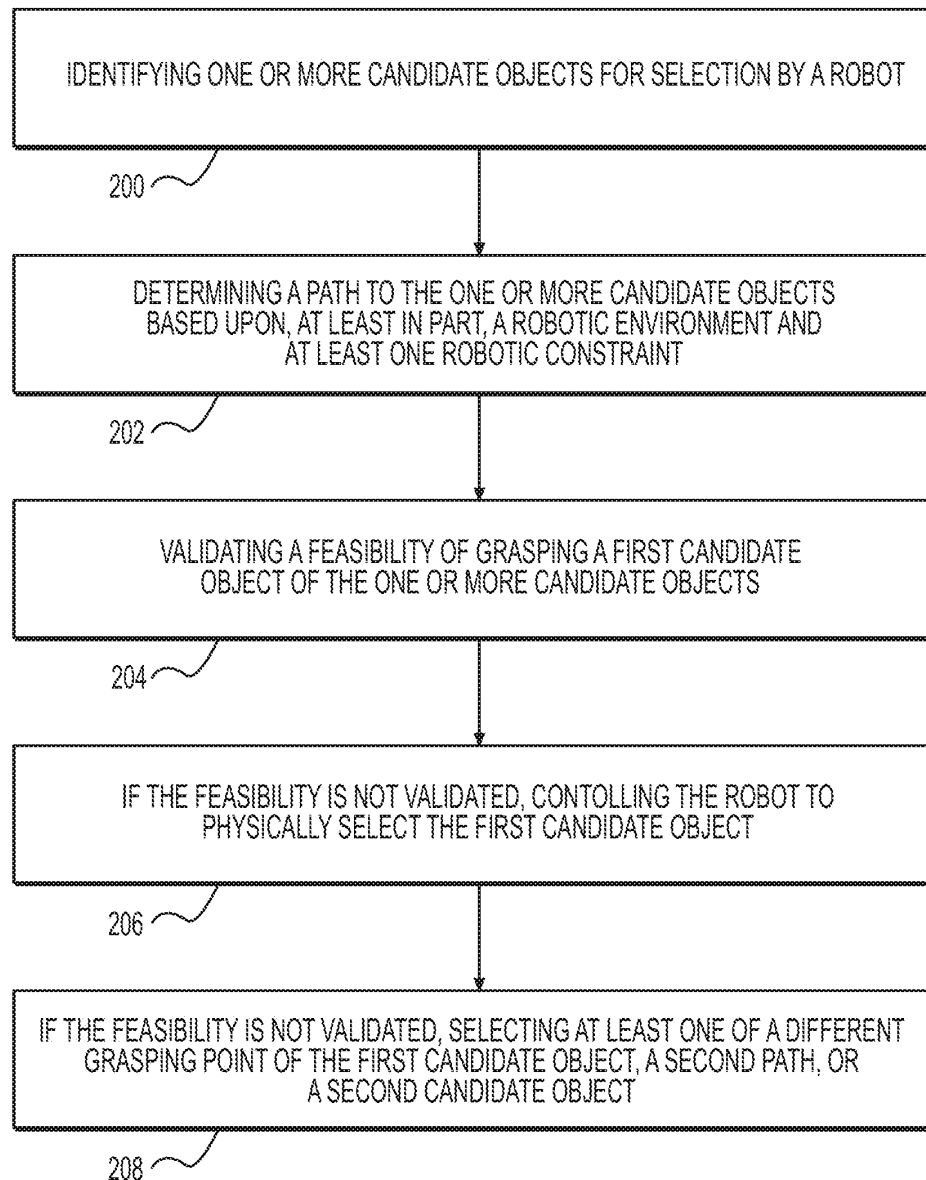




10**FIG. 2**

SUBSTITUTE SHEET (RULE 26)

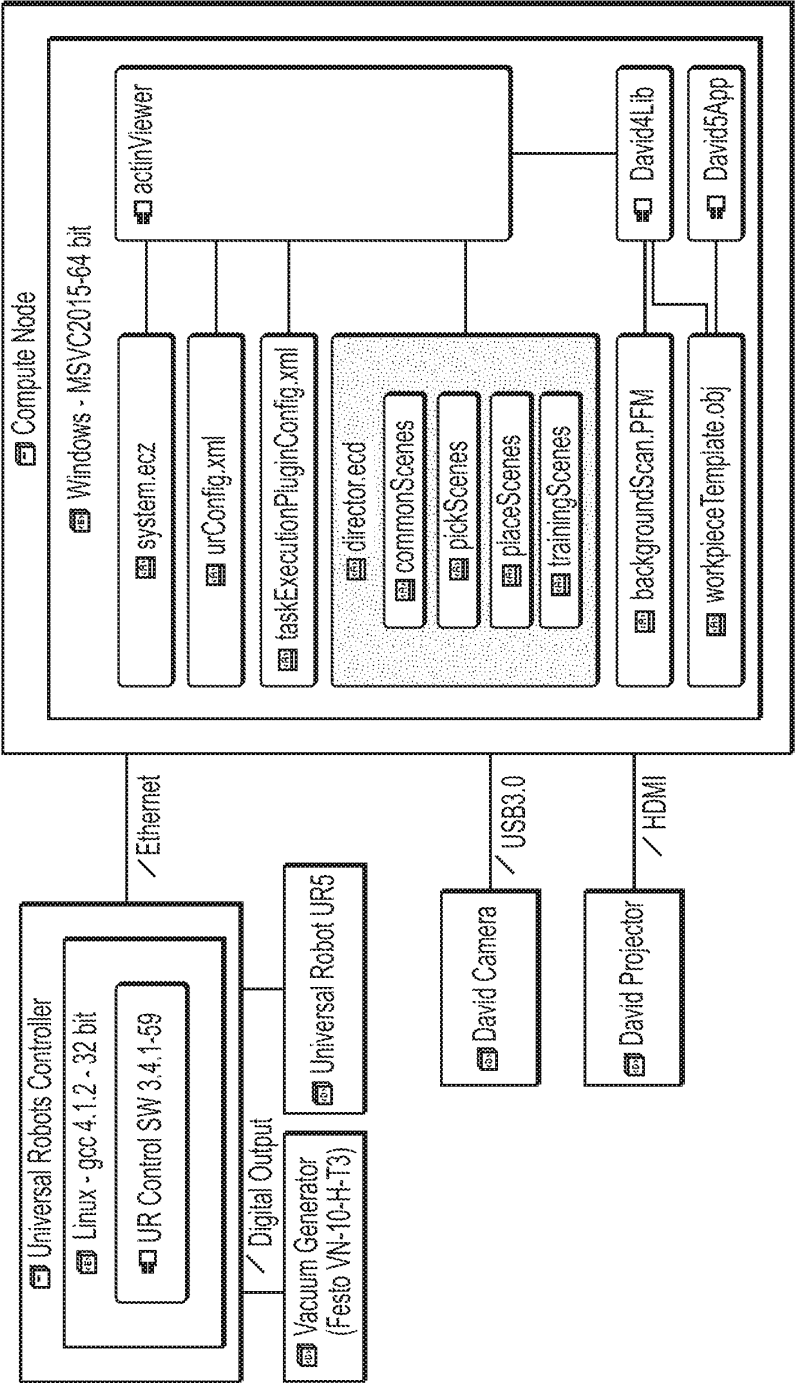


FIG. 3

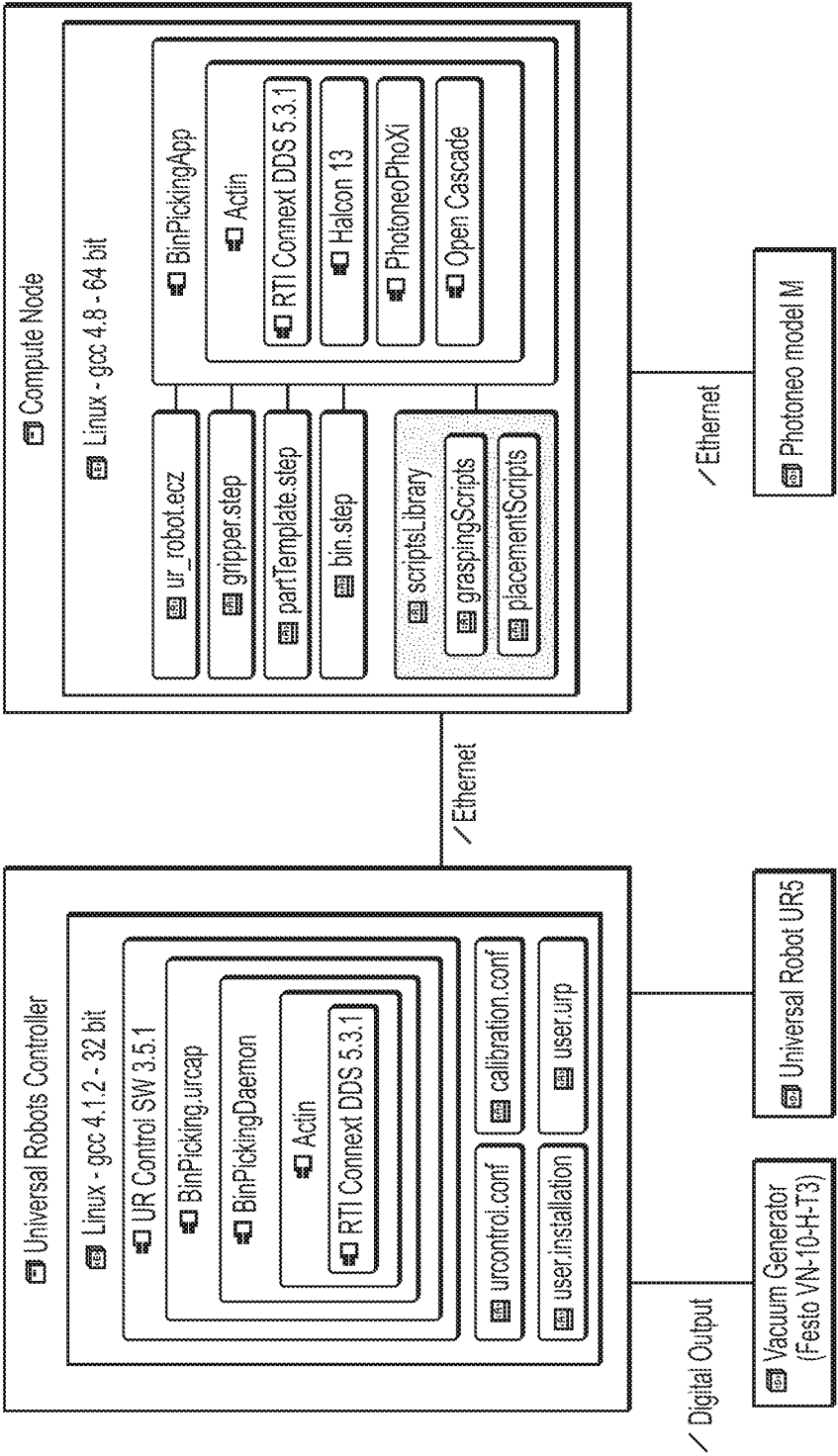


FIG. 4

?

SETUP ROBOT

INITIALIZE ROBOT

LANGUAGE

UPDATE

SET PASSWORD

CALIBRATE SCREEN

NETWORK

TIME

URCAPS

BACK

URCAPS

ACTIVE URCAPS

☒ BIN PICKING

URCAP INFORMATION

URCAP NAME: BIN_PICKING
VERSION: 5.0.0_SNAPSHOT
DEVELOPER: ENERGID TECHNOLOGIES
CONTACT INFO: ONE MIFFLIN PLACE SUITE 400 CAMBRIDGE, MA 02138
DESCRIPTION: BIN PICKING URCAP
COPYRIGHT: (C) ENERGID 2017
LICENSE TYPE: PROPRIETARY
LICENSE:
ENERGID TECHNOLOGIES CORPORATION
END USER LICENSE AGREEMENT
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YOU THE LICENSEE ASSUME RESPONSIBILITY FOR THE SELECTION OF THE

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RESTART

FIG. 5

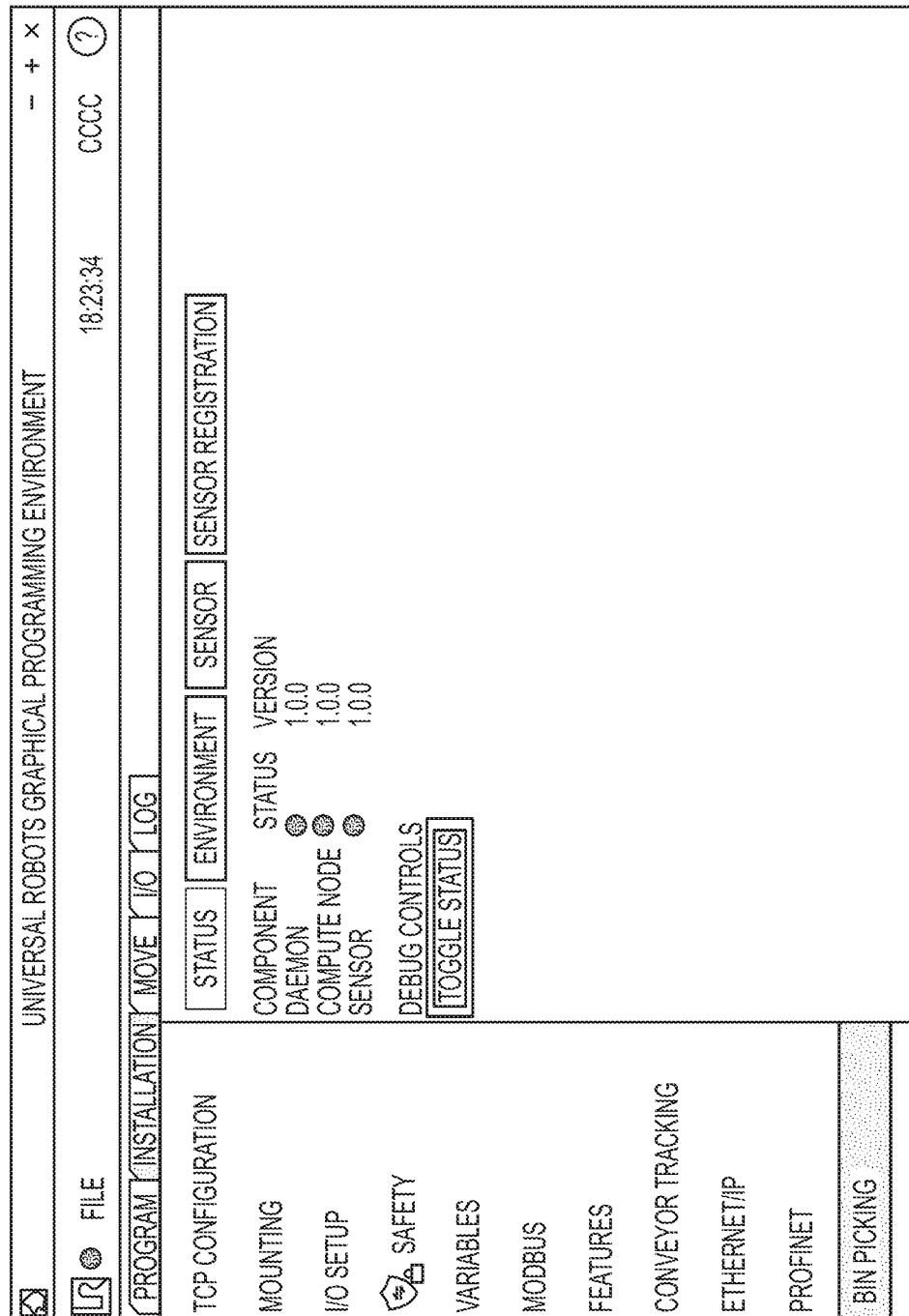


FIG. 6

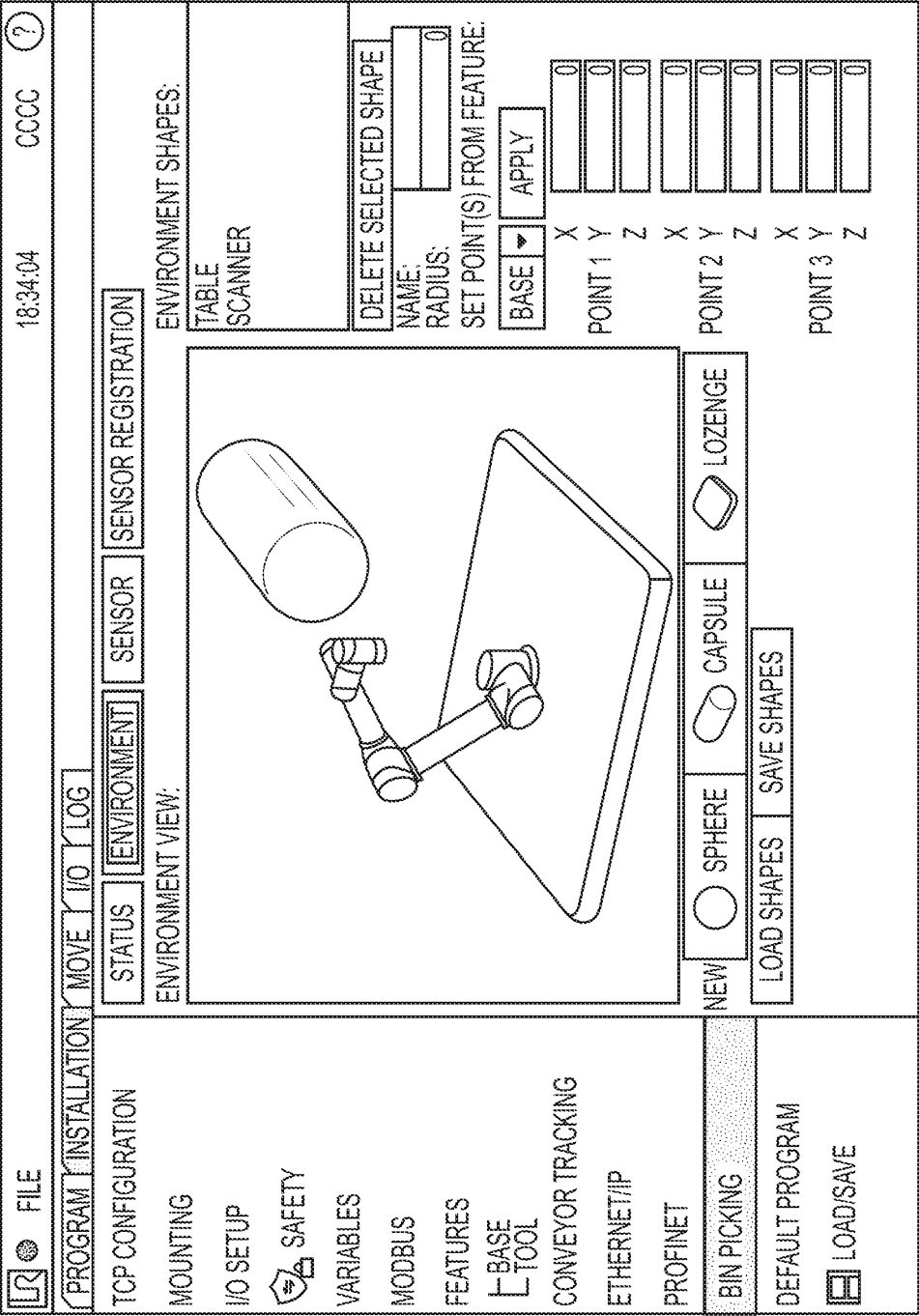


FIG. 7

FILE	18:45:08	CCCC	?
------	----------	------	---

PROGRAM	INSTALLATION	MOVE	I/O	LOG
---------	--------------	------	-----	-----

TCP CONFIGURATION

MOUNTING

I/O SETUP

SAFETY

VARIABLES

MODBUS

FEATURES

FIG. 8

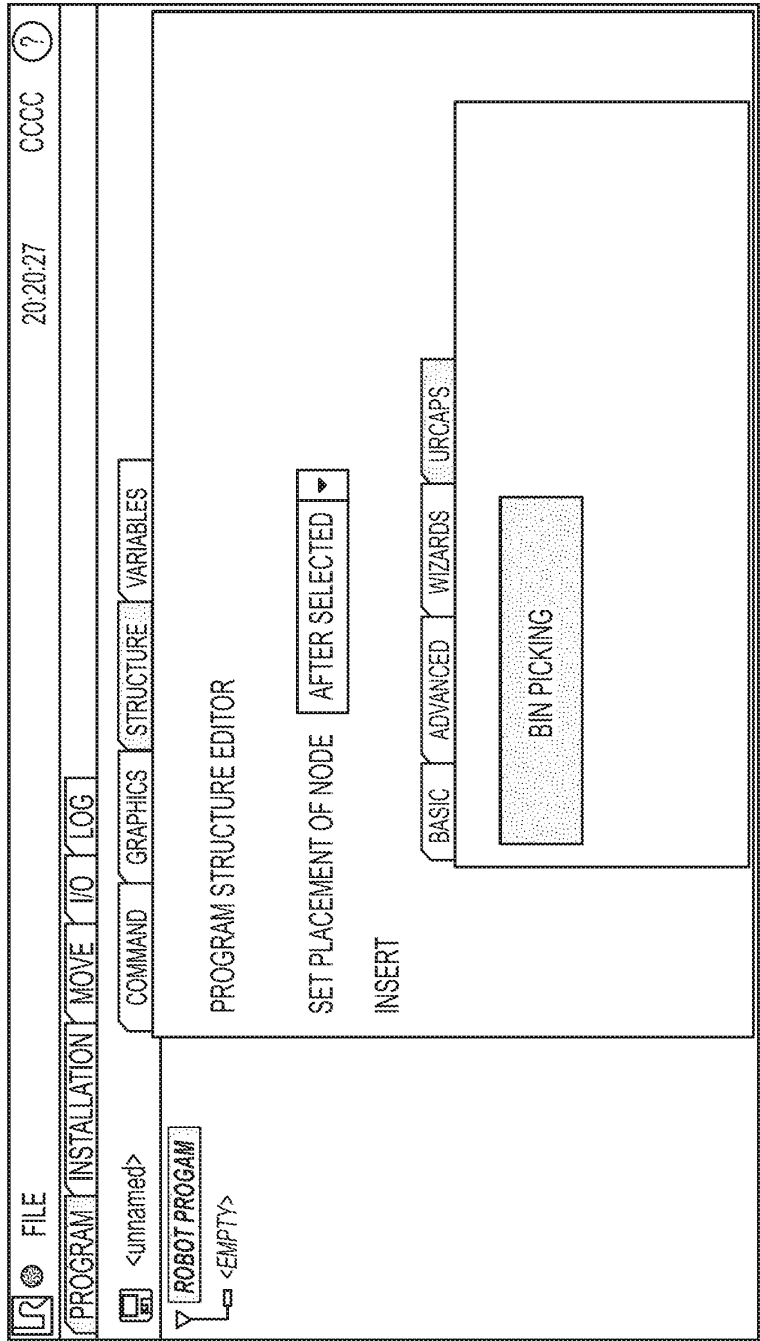


FIG. 9

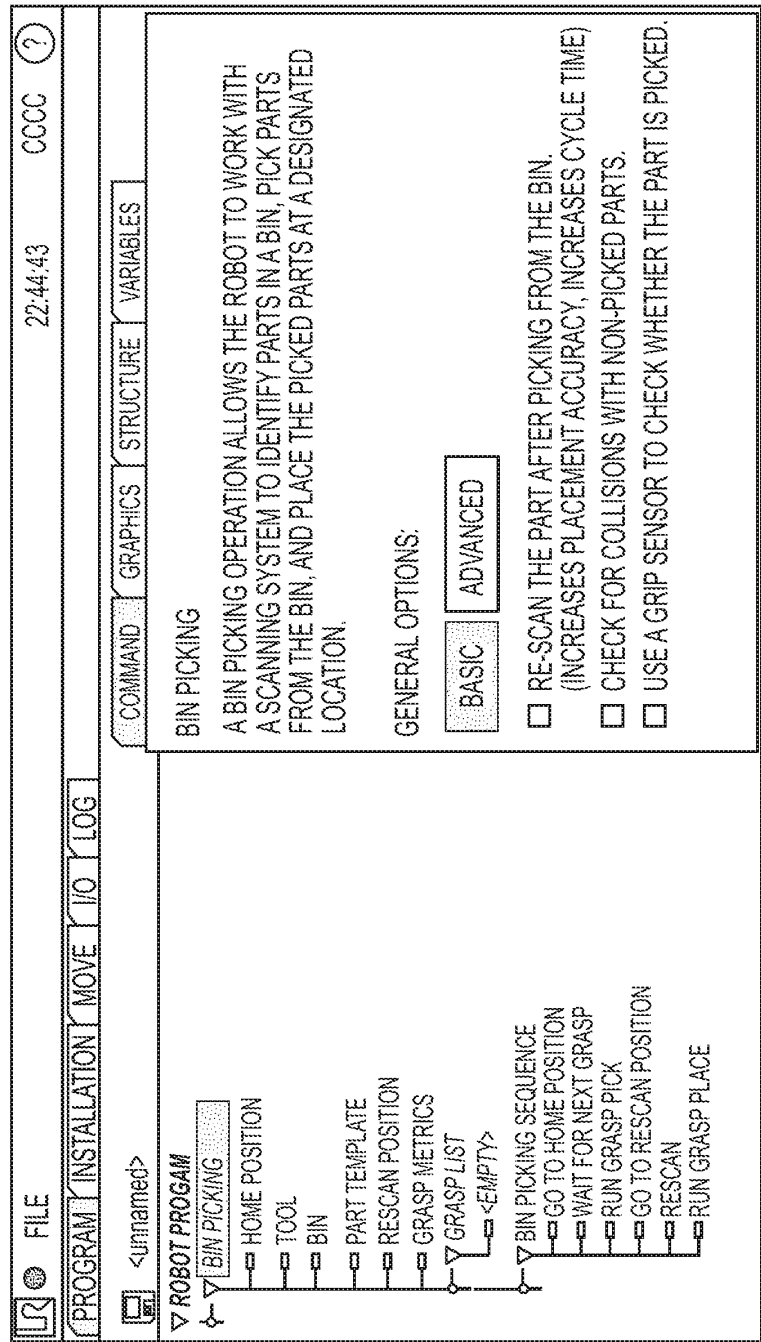


FIG. 10

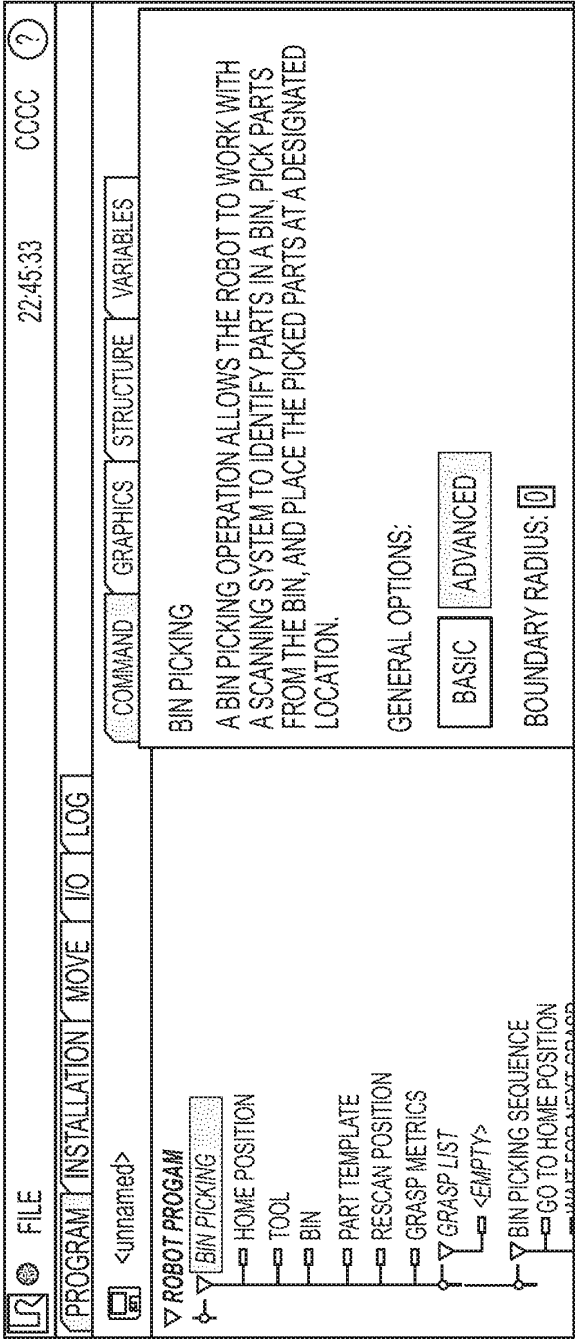


FIG. 11

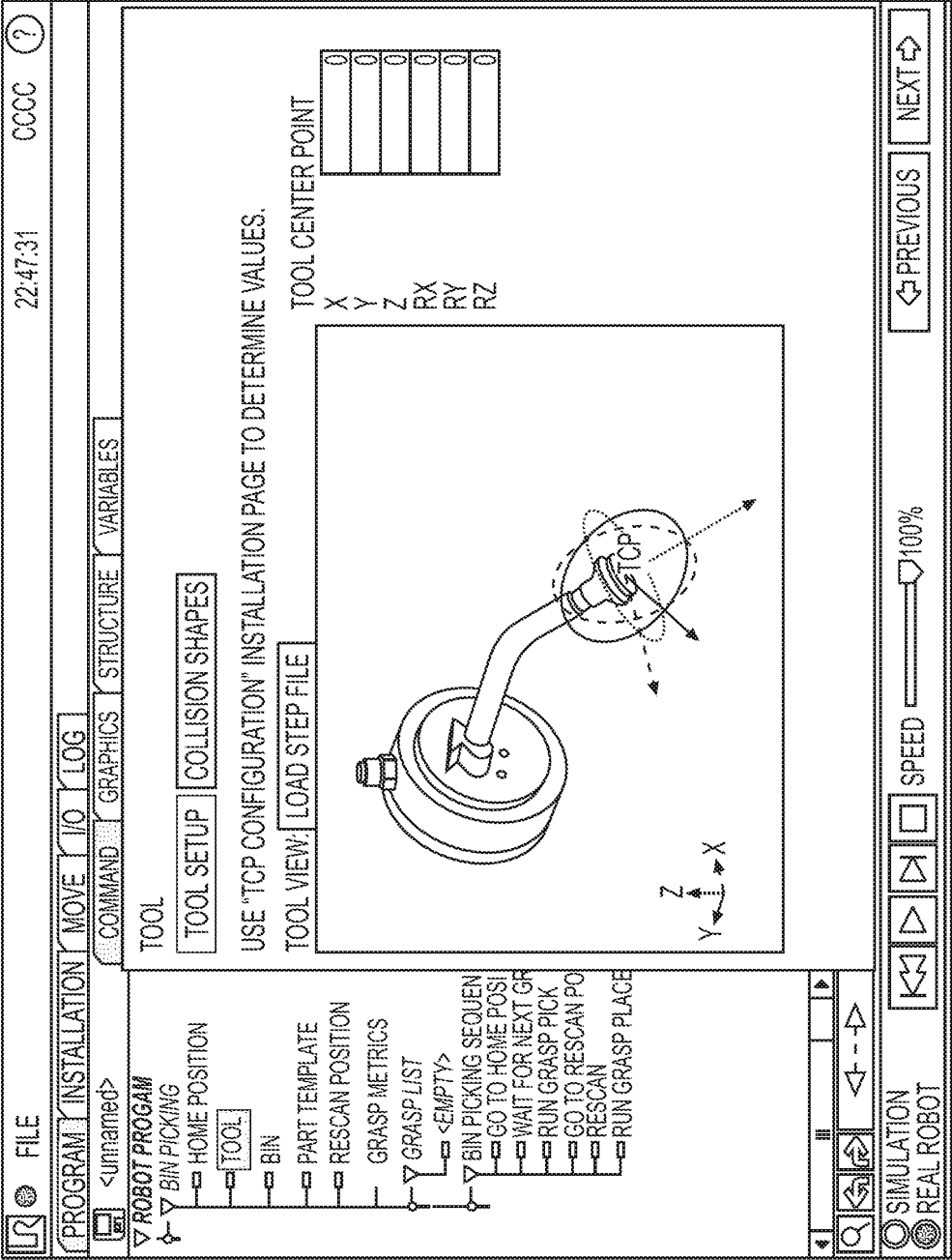


FIG. 12

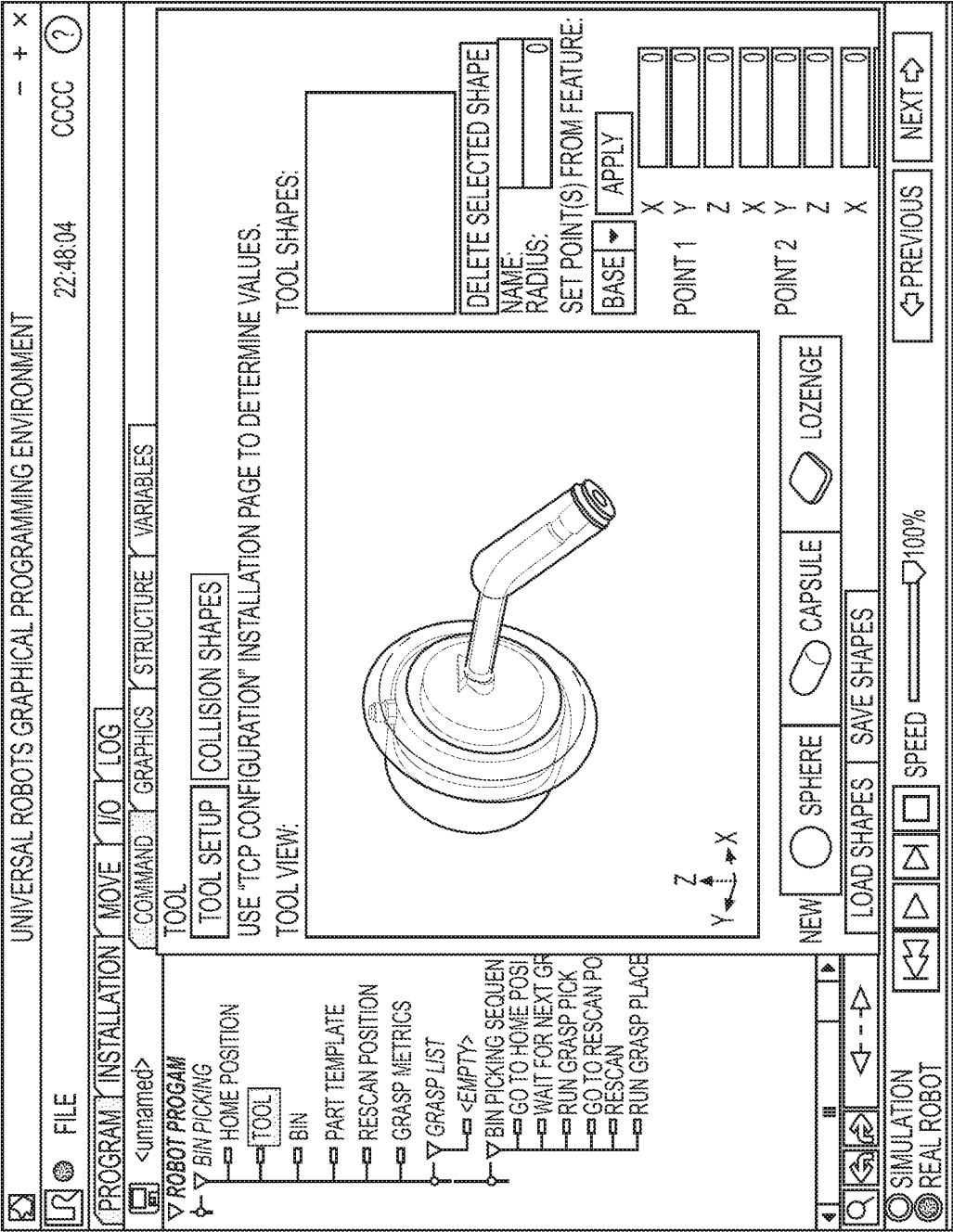


FIG. 13

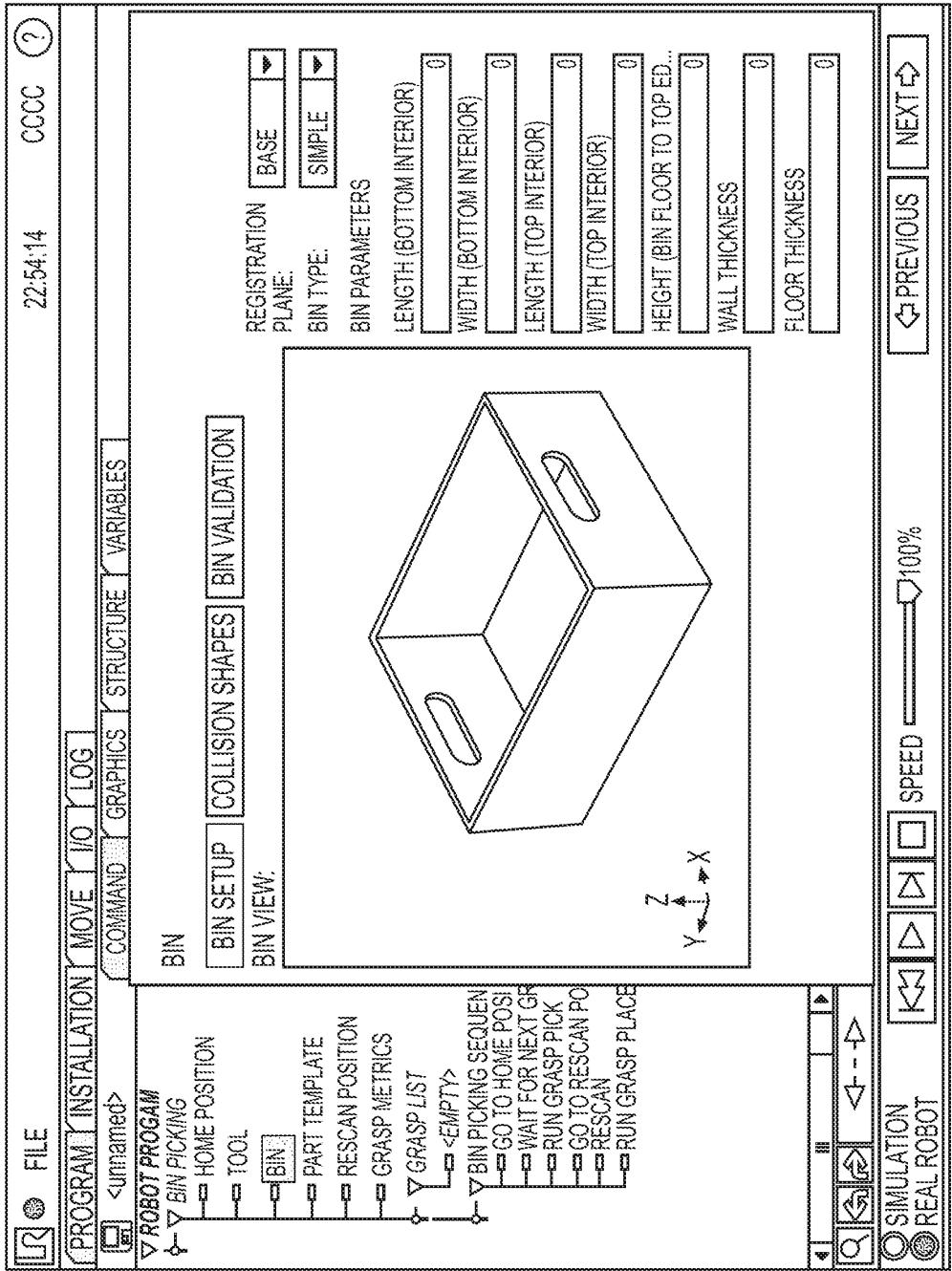


FIG. 14

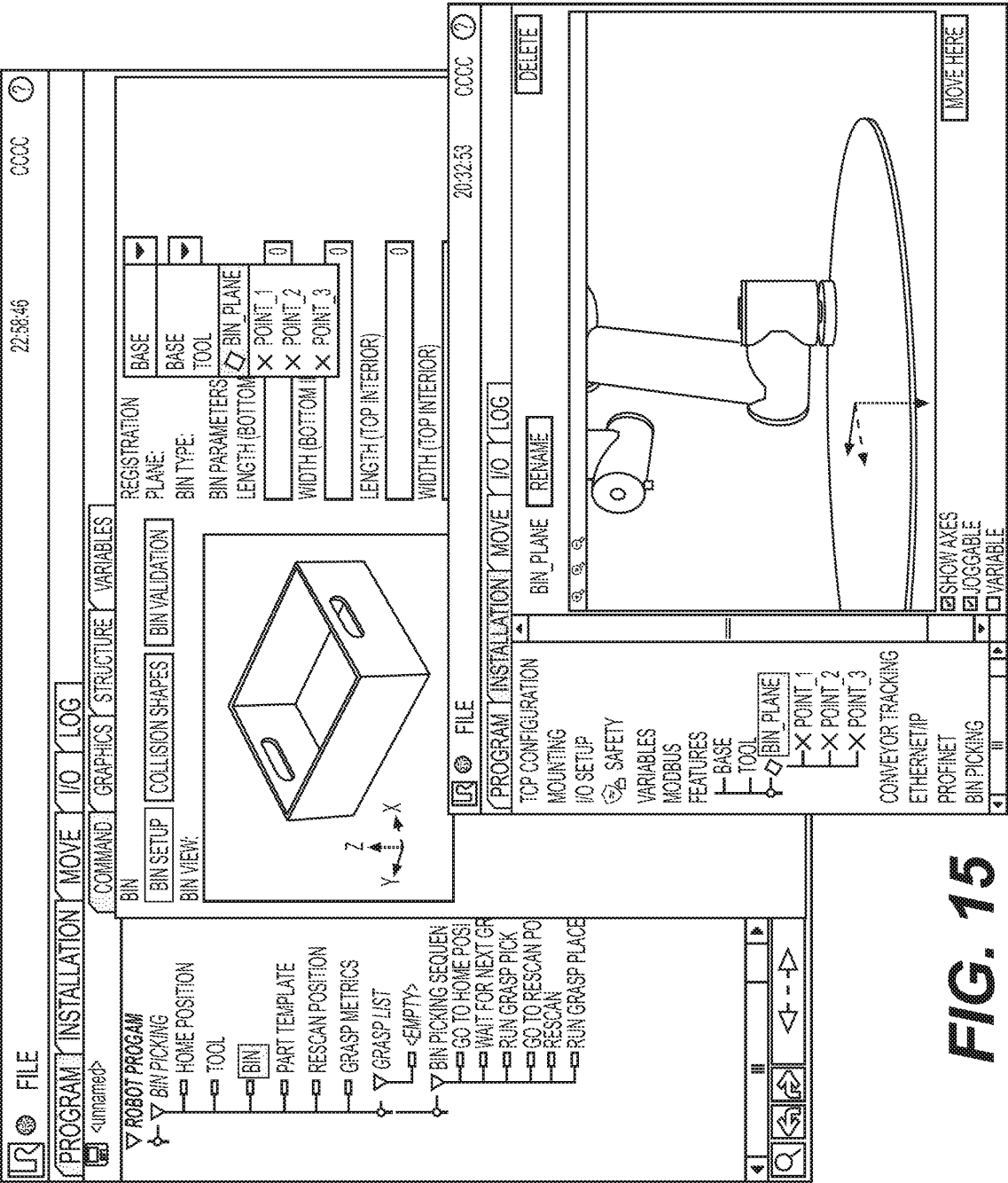


FIG. 15

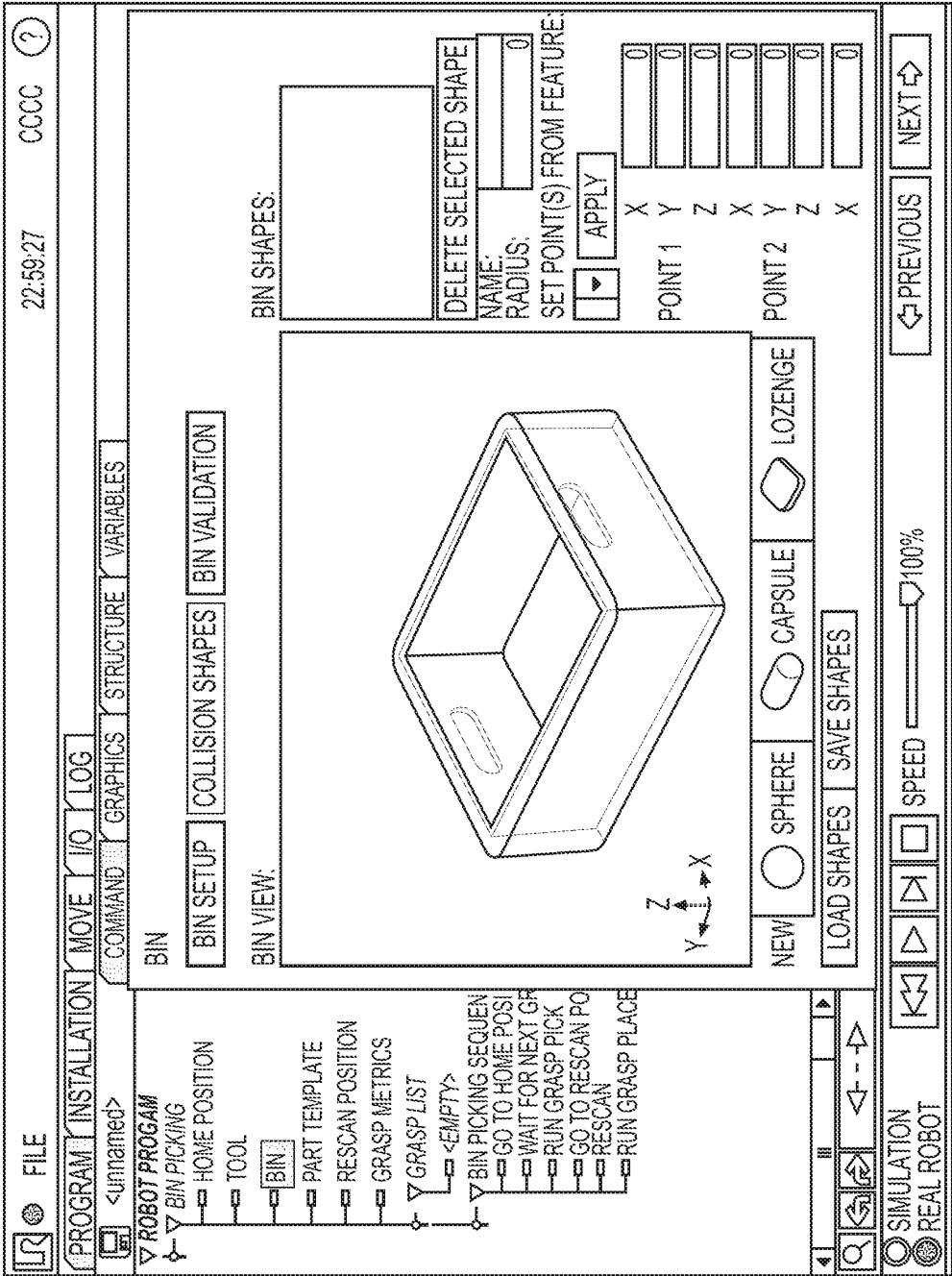


FIG. 16

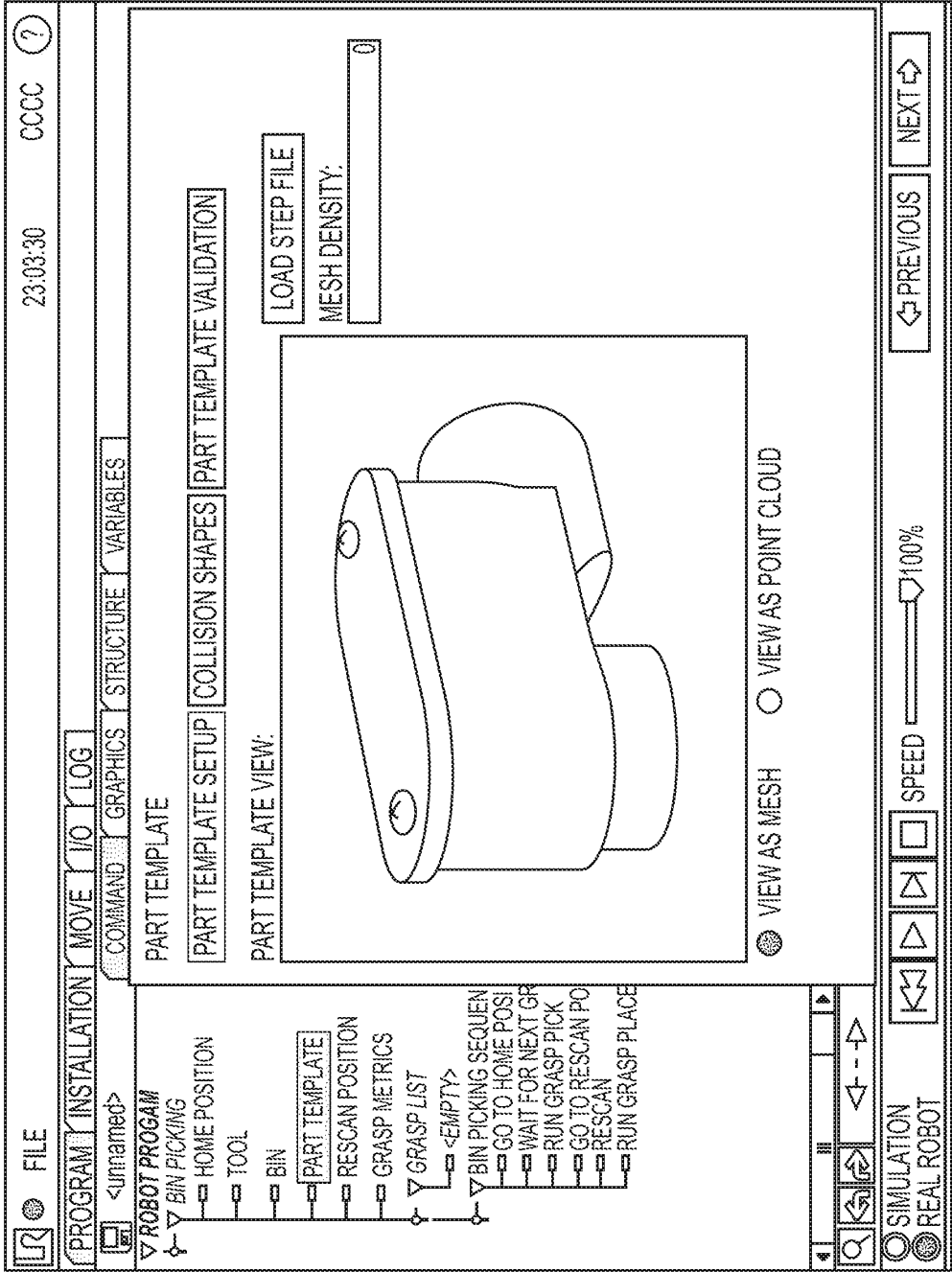


FIG. 17

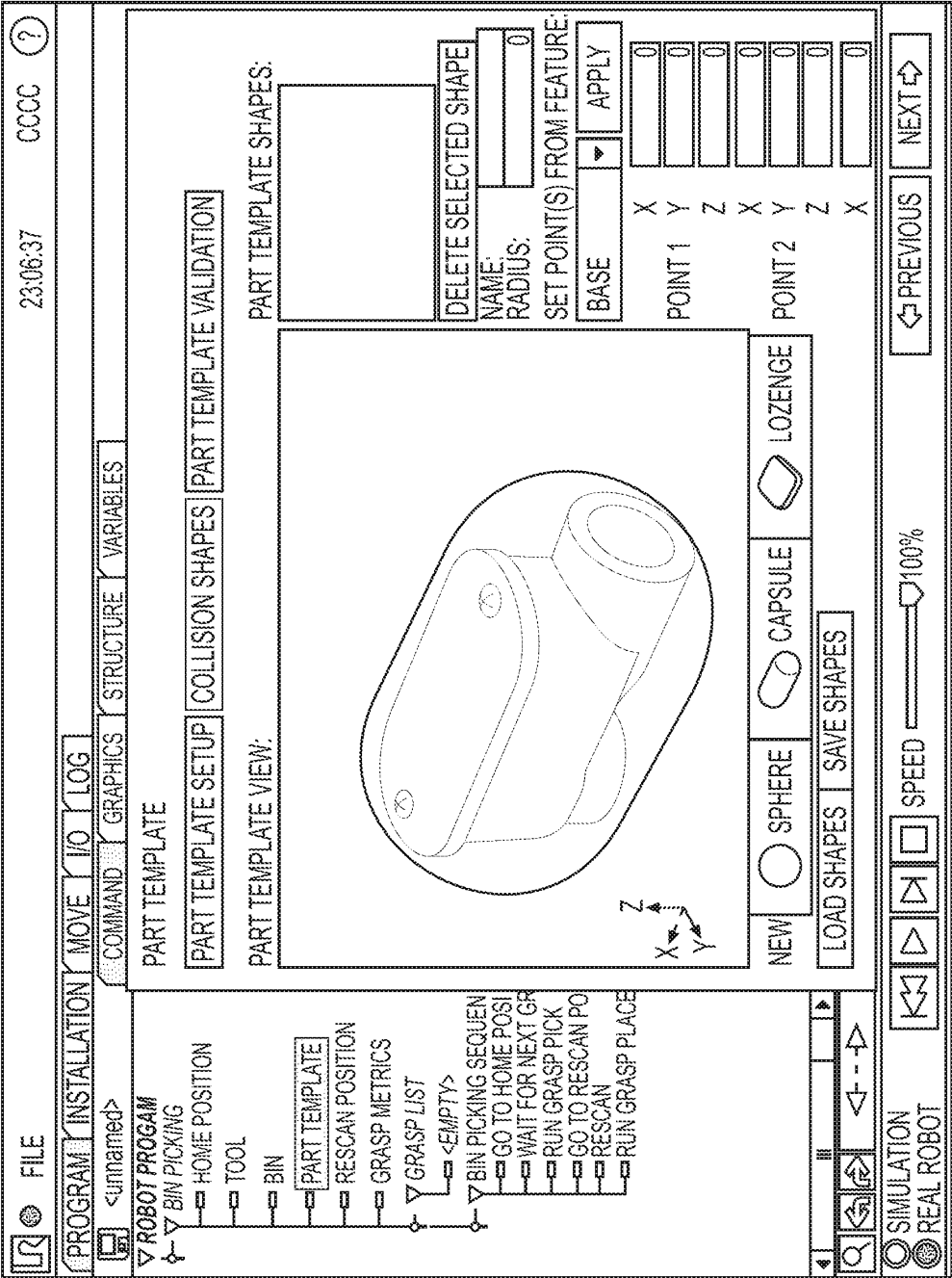


FIG. 18

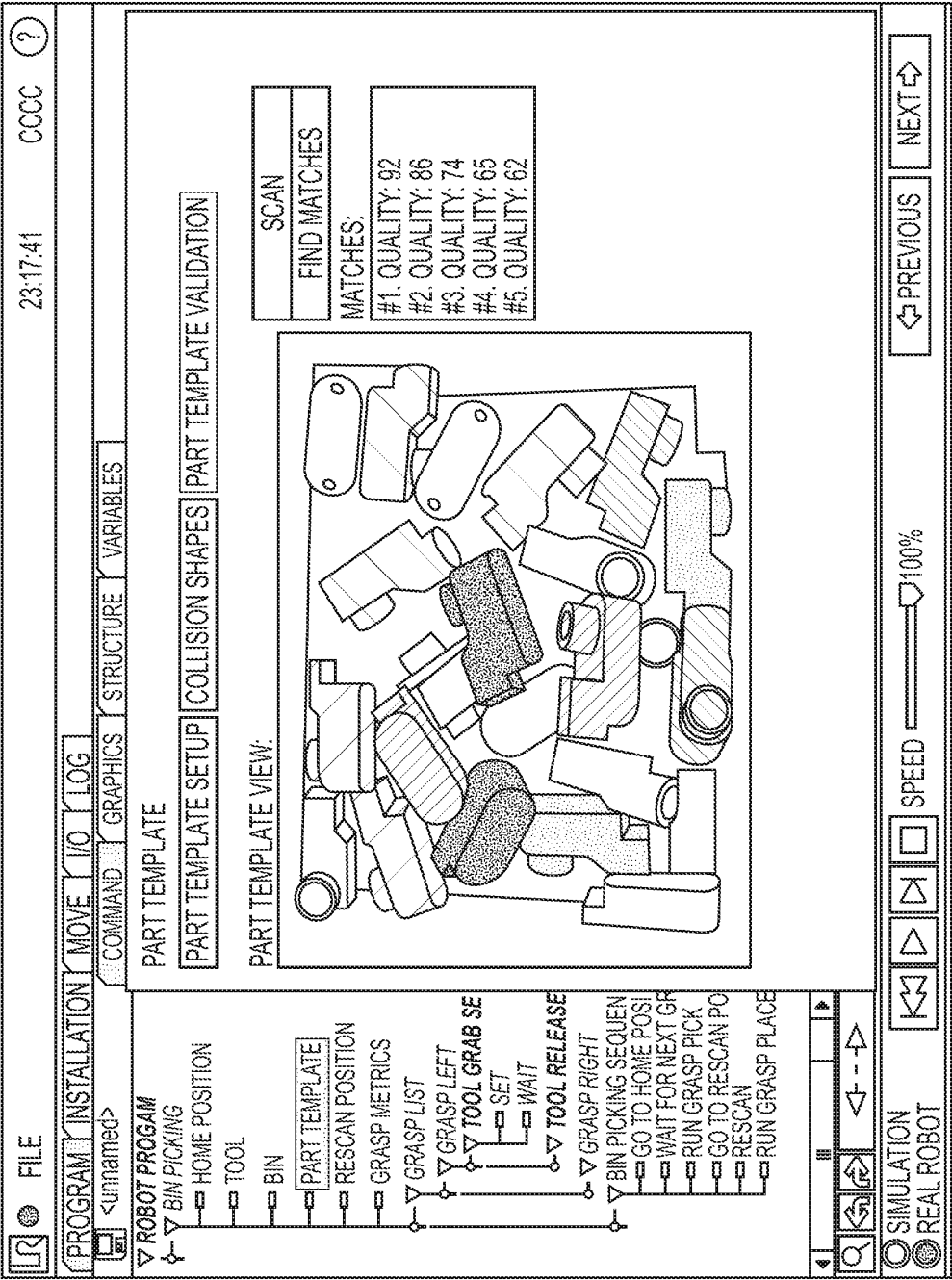


FIG. 19

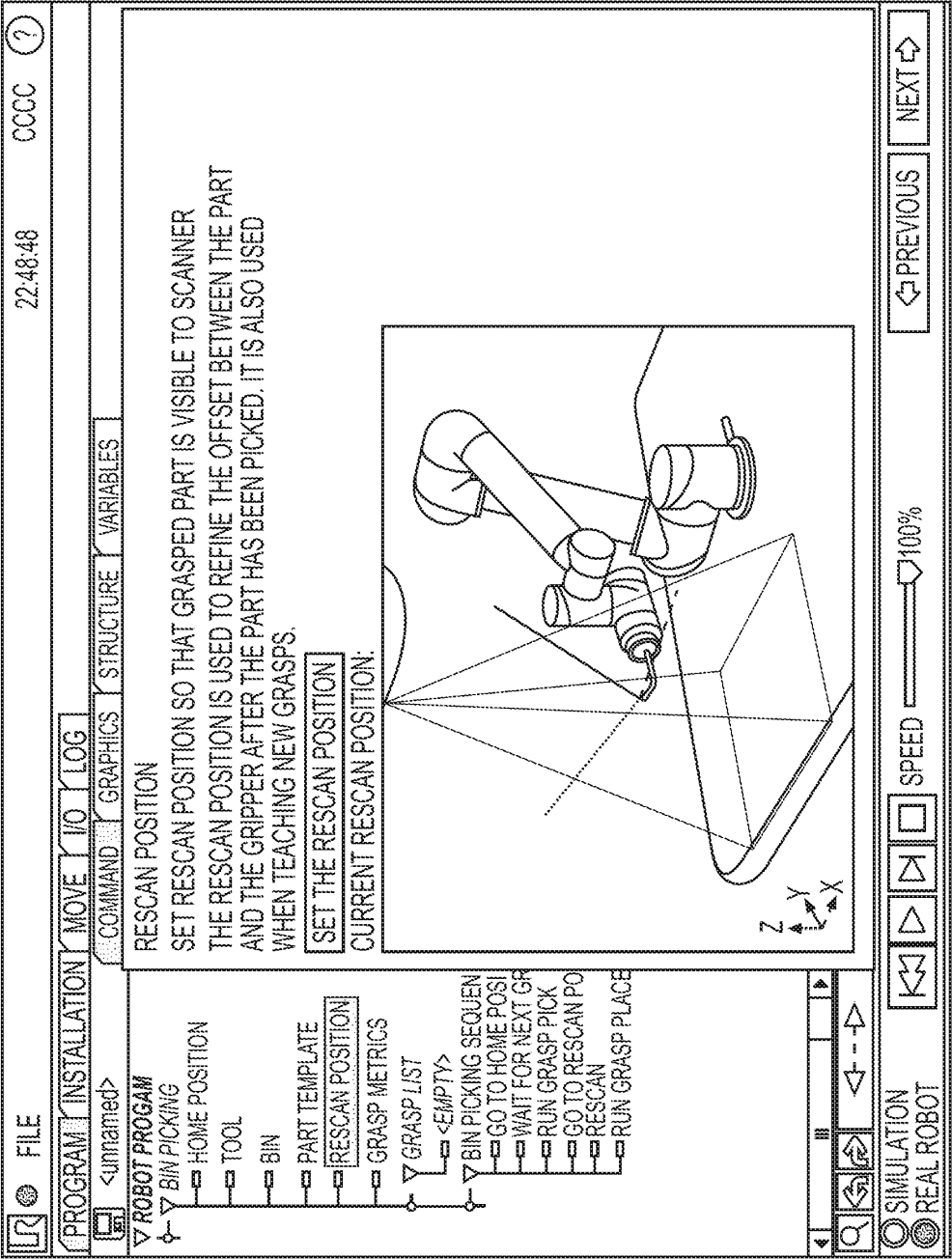


FIG. 20

FILE

PROGRAM

INSTALLATION

MOVE

I/O

LOG

COMMAND

GRAPHICS

STRUCTURE

VARIABLE

ROBOT PROGRAM

BIN PICKING

HOME POSITION

TOOL

BIN

PART TEMPLATE

RESCAN POSITION

GRASP METRICS

GRASP LIST

<EMPTY>

BIN PICKING SEQUENC

GO TO HOME POSIT

WAIT FOR NEXT GR

RUN GRASP PICK

GO TO RESCAN POS

RESCAN

RUN GRASP PLACE

GRASP METRICS

GRASPS ARE SCORED BY SEVERAL METRICS ON A SCALE

GRASPS ARE PERFORMED IN ORDER FROM HIGHEST SCO

ANY GRASPS BELOW THE MINIMUM SCORE ARE NOT ATTE

MINIMUM GRASP SCORE: 0

GRASP METRICS:

ANGLE

HEIGHT

THE MAXIMUM ANGLE AWAY

MAXIMUM ANGLE:

IMPORTANCE (0 TO 100):

C

<<

7

8

9

4

5

6

1

2

3

0

.

±

45

1

FIG. 21

FILE

23:09:51

CCCC ?

PROGRAM

INSTALLATION

MOVE

I/O

LOG

COMMAND

GRAPHICS

STRUCTURE

VARIABLES

ROBOT PROGRAM

BIN PICKING

HOME POSITION

TOOL

BIN

PART TEMPLATE

RESCAN POSITION

GRASP METRICS

GRASP LIST

<EMPTY>

BIN PICKING SEQUENCE

GO TO HOME POSIT

WAIT FOR NEXT GR

RUN GRASP PICK

GO TO RESCAN POS

RESCAN

RUN GRASP PLACE

GRASP METRICS

GRASPS ARE SCORED BY SEVERAL METRICS ON A SCALE OF 0 (FAIL) TO 100 (EXCELLENT)

GRASPS ARE PERFORMED IN ORDER FROM HIGHEST SCORE TO LOWEST.

ANY GRASPS BELOW THE MINIMUM SCORE ARE NOT ATTEMPTED.

MINIMUM GRASP SCORE: 0

GRASP METRICS:

ANGLE

HEIGHT

THE MAX AND MIN ALLOWED HEIGHT FOR GRASPS (HIGHER GRASP IS BETTER)

MINIMUM HEIGHT: 0.018

MAXIMUM HEIGHT: 0.16

IMPORTANCE (0 TO 100): 1

FIG. 22

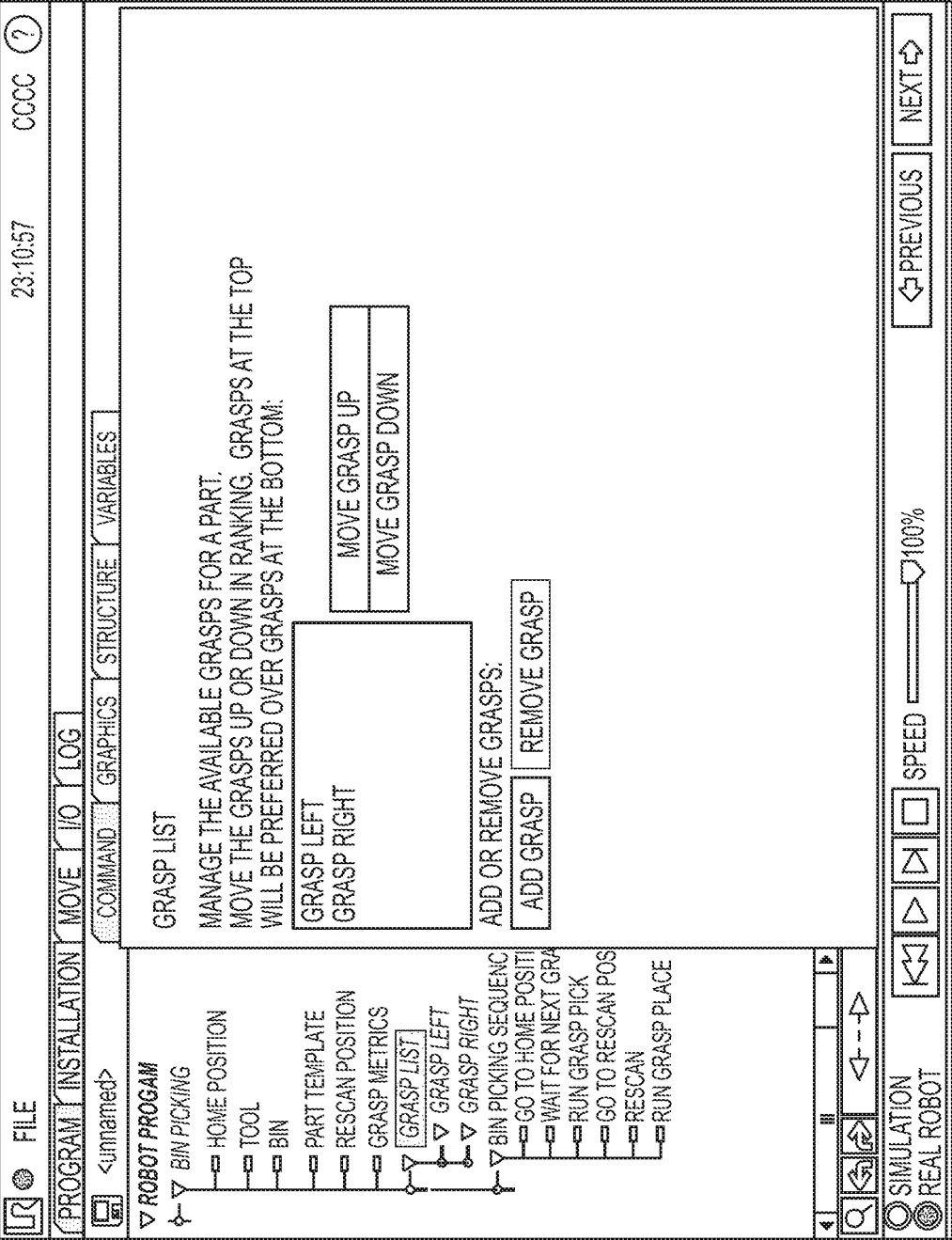


FIG. 23

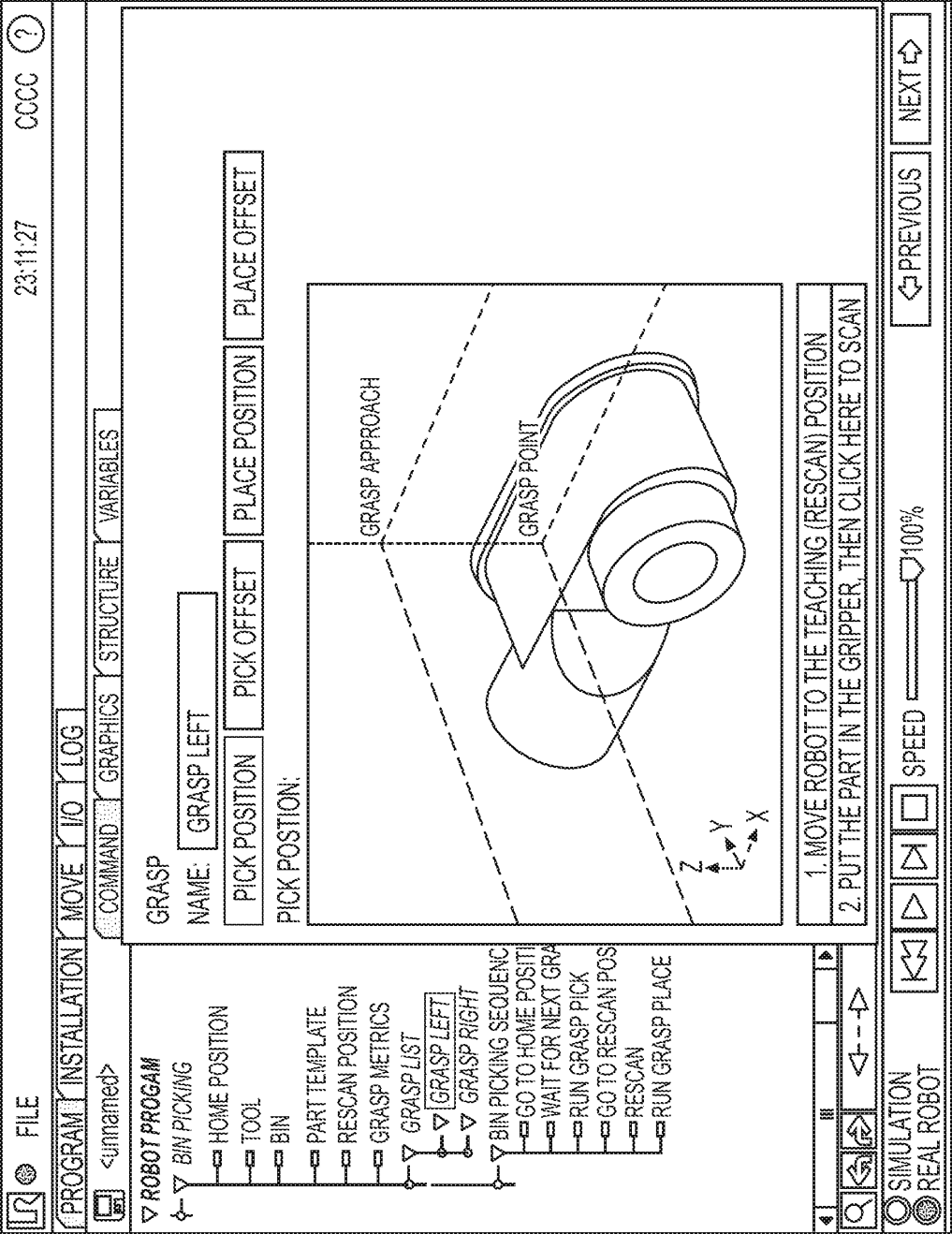


FIG. 24

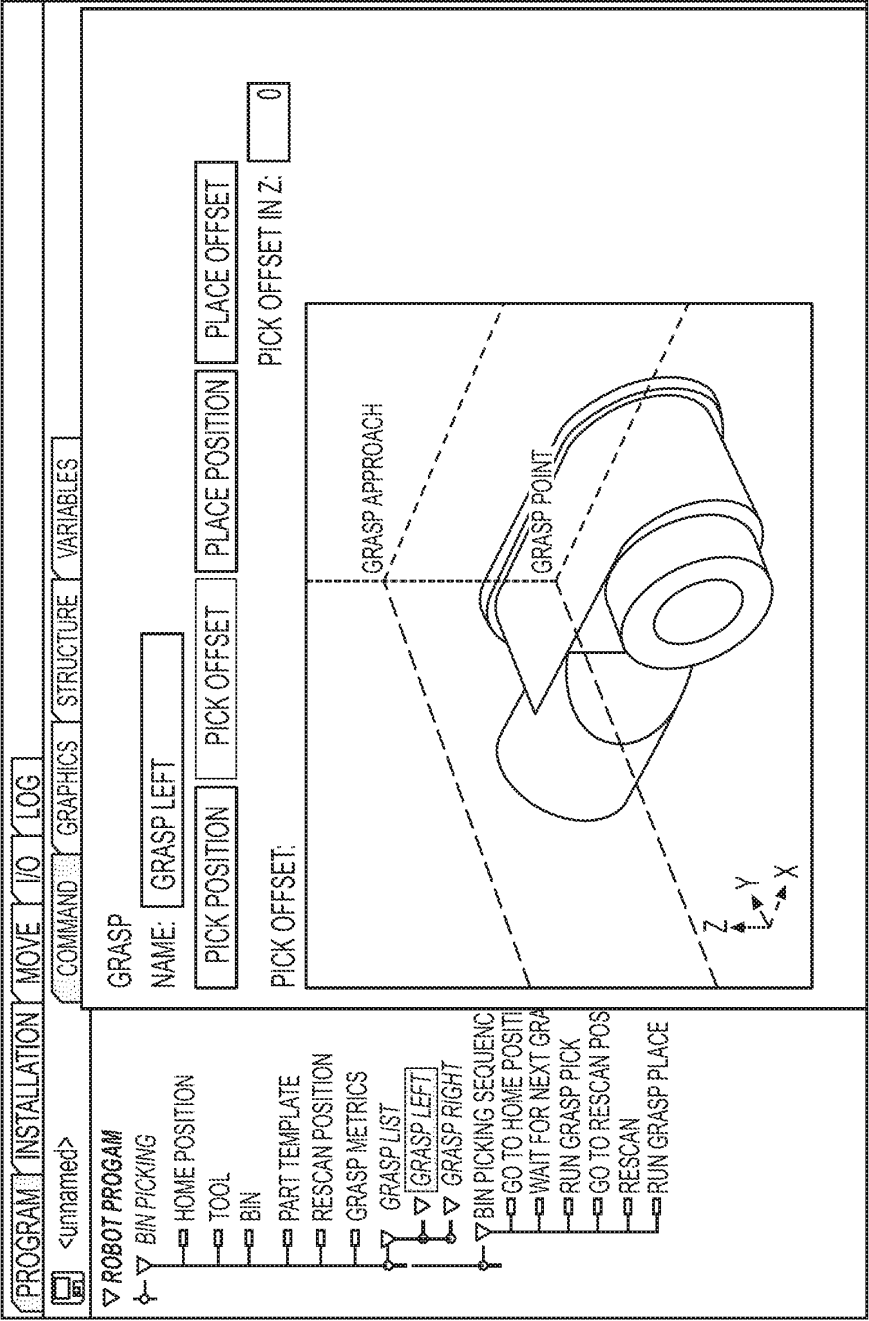


FIG. 25

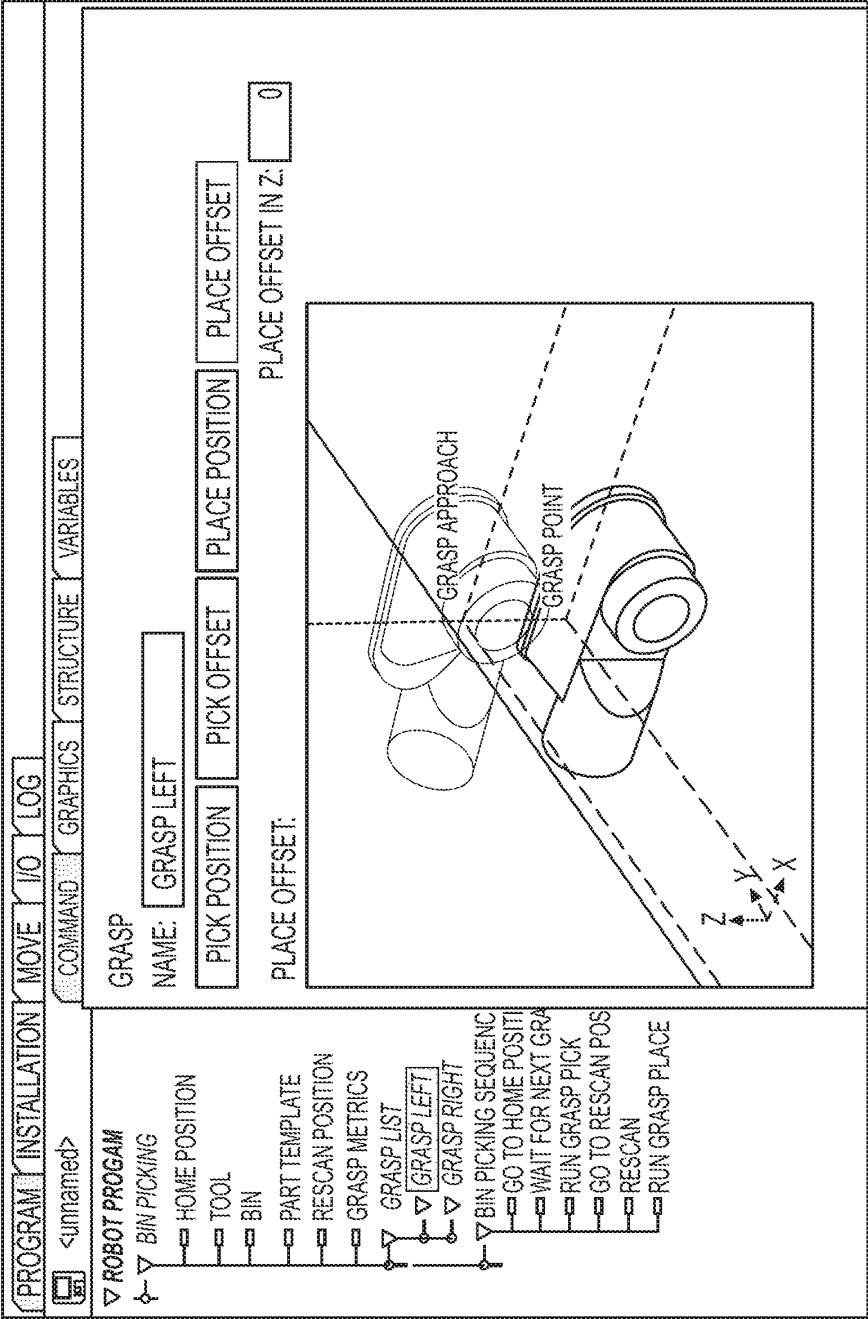


FIG. 26

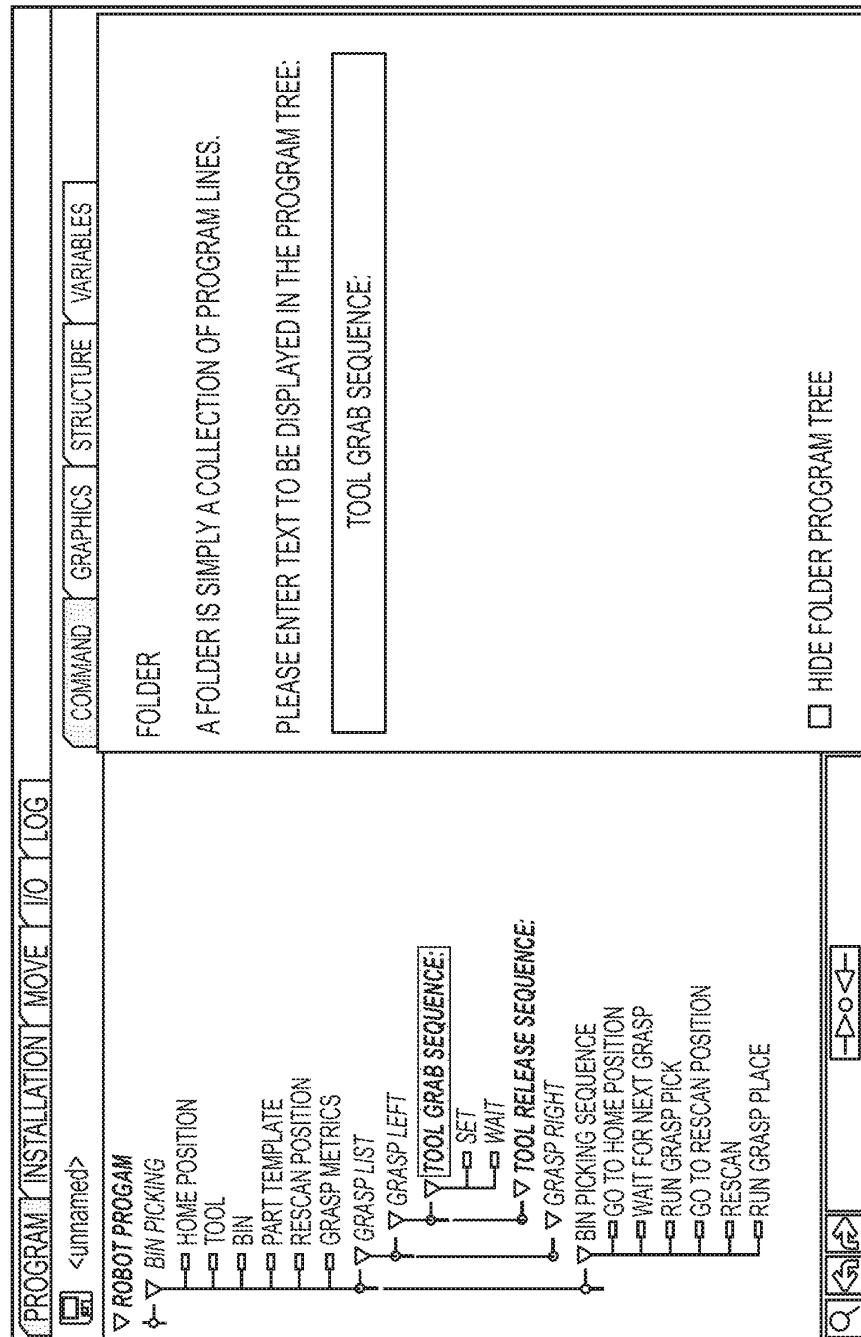


FIG. 27

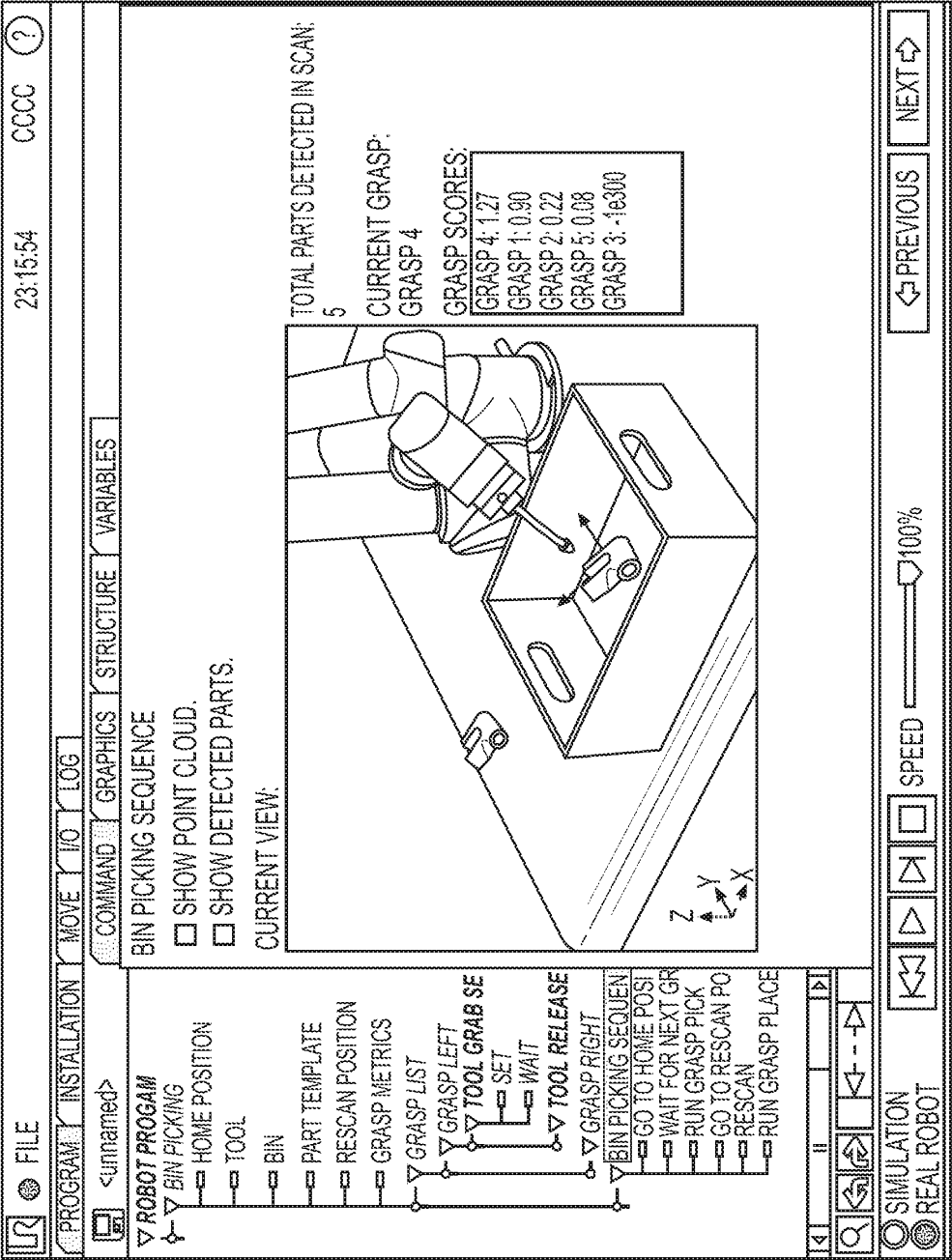


FIG. 28

?

SETUP ROBOT

INITIALIZE ROBOT

LANGUAGE

UPDATE

SET PASSWORD

CALIBRATE SCREEN

NETWORK

TIME

URCAPS

BACK

URCAPS

ACTIVE URCAPS

☒ BIN PICKING

URCAP INFORMATION

URCAP NAME: BIN PICKING
VERSION: 5.0.0 SNAPSHOT
DEVELOPER: ENERGID TECHNOLOGIES
CONTACT INFO: ONE MIFFLIN PLACE SUITE 400 CAMBRIDGE, MA 02138
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COPYRIGHT: (C) ENERGID 2017
LICENSE TYPE: PROPRIETARY
LICENSE:
ENERGID TECHNOLOGIES CORPORATION
END USER LICENSE AGREEMENT
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YOU, THE LICENSEE, ASSUME RESPONSIBILITY FOR THE SELECTION OF THE

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RESTART

FIG. 29

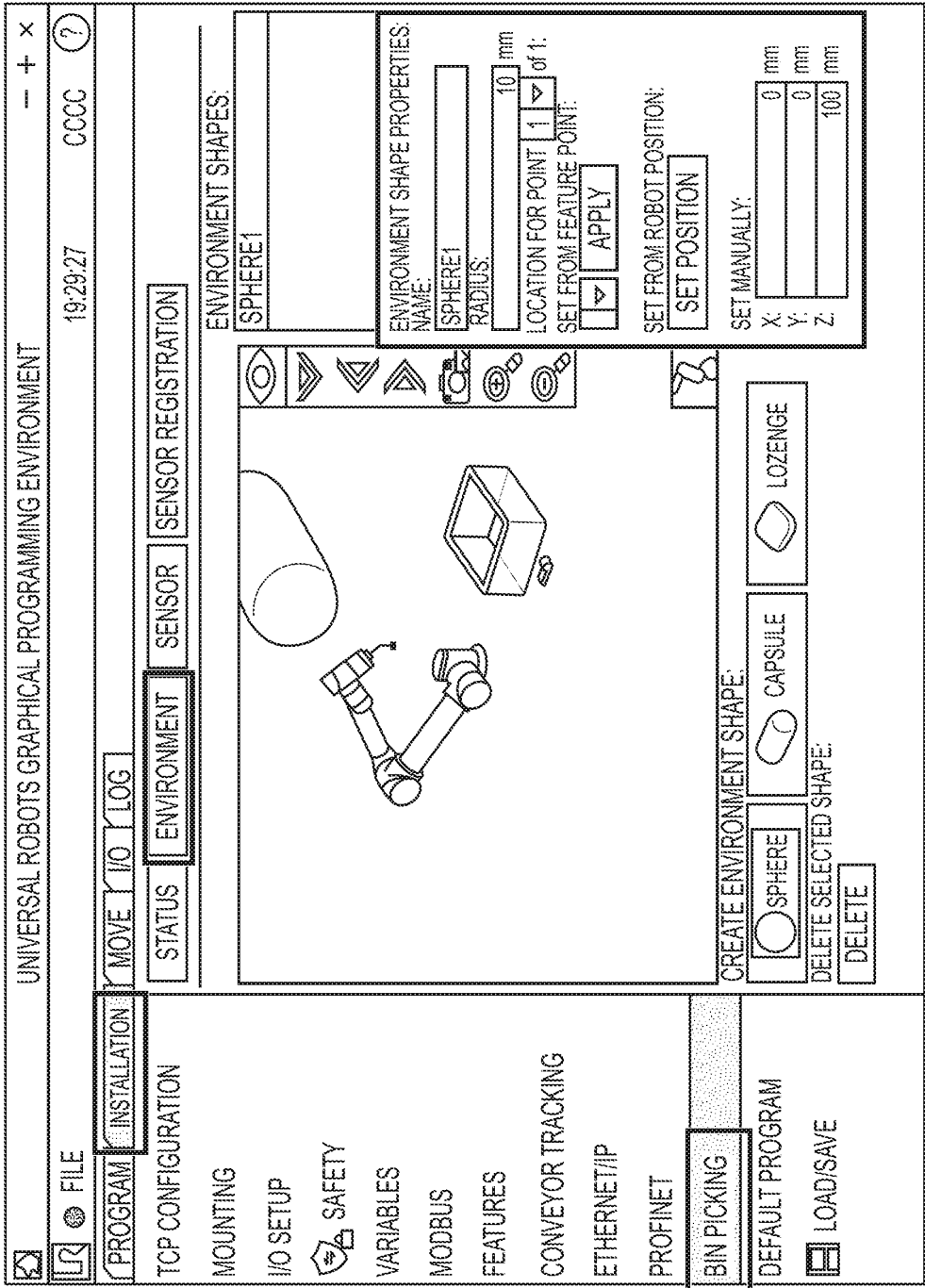


FIG. 30

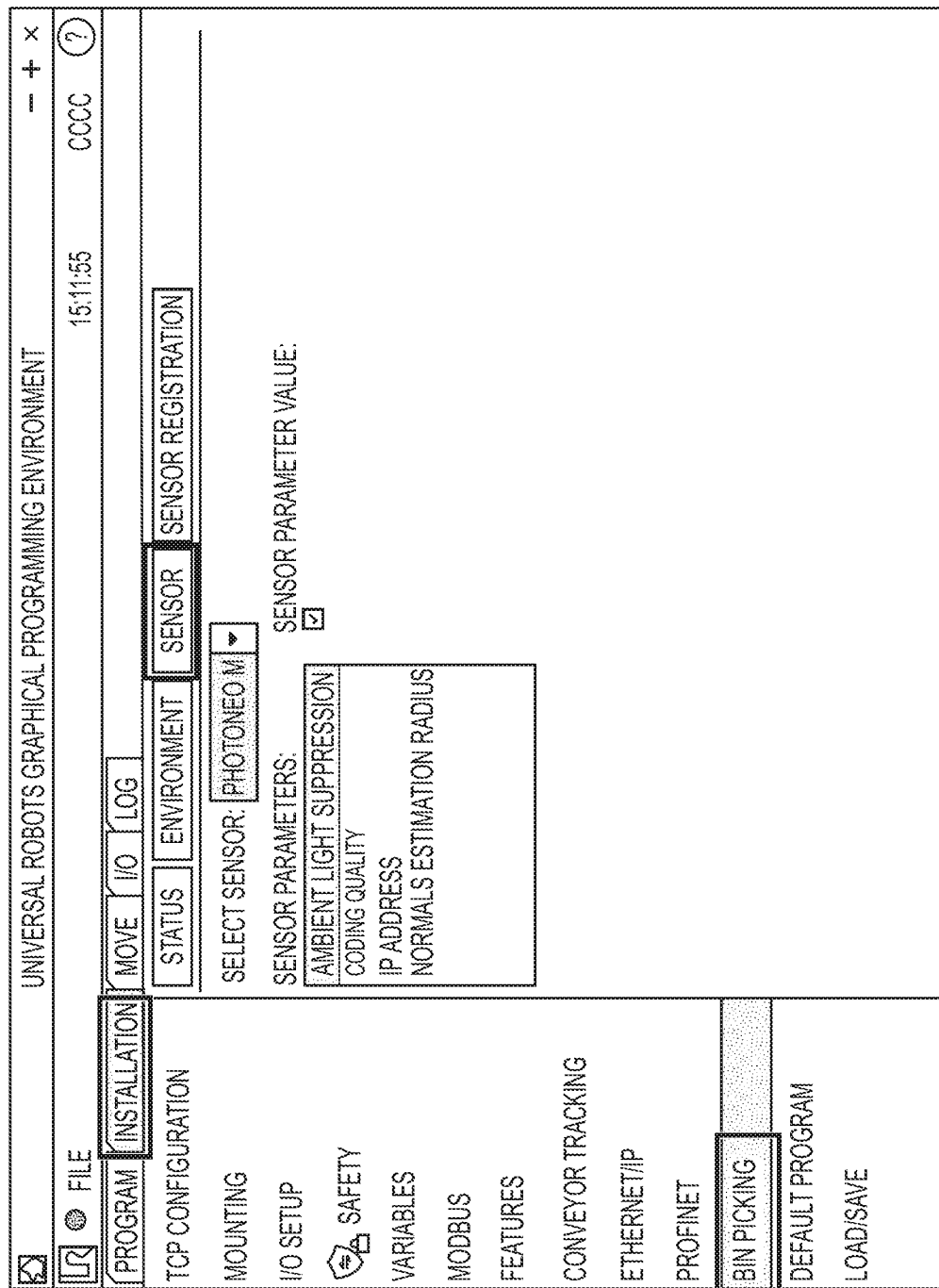


FIG. 31

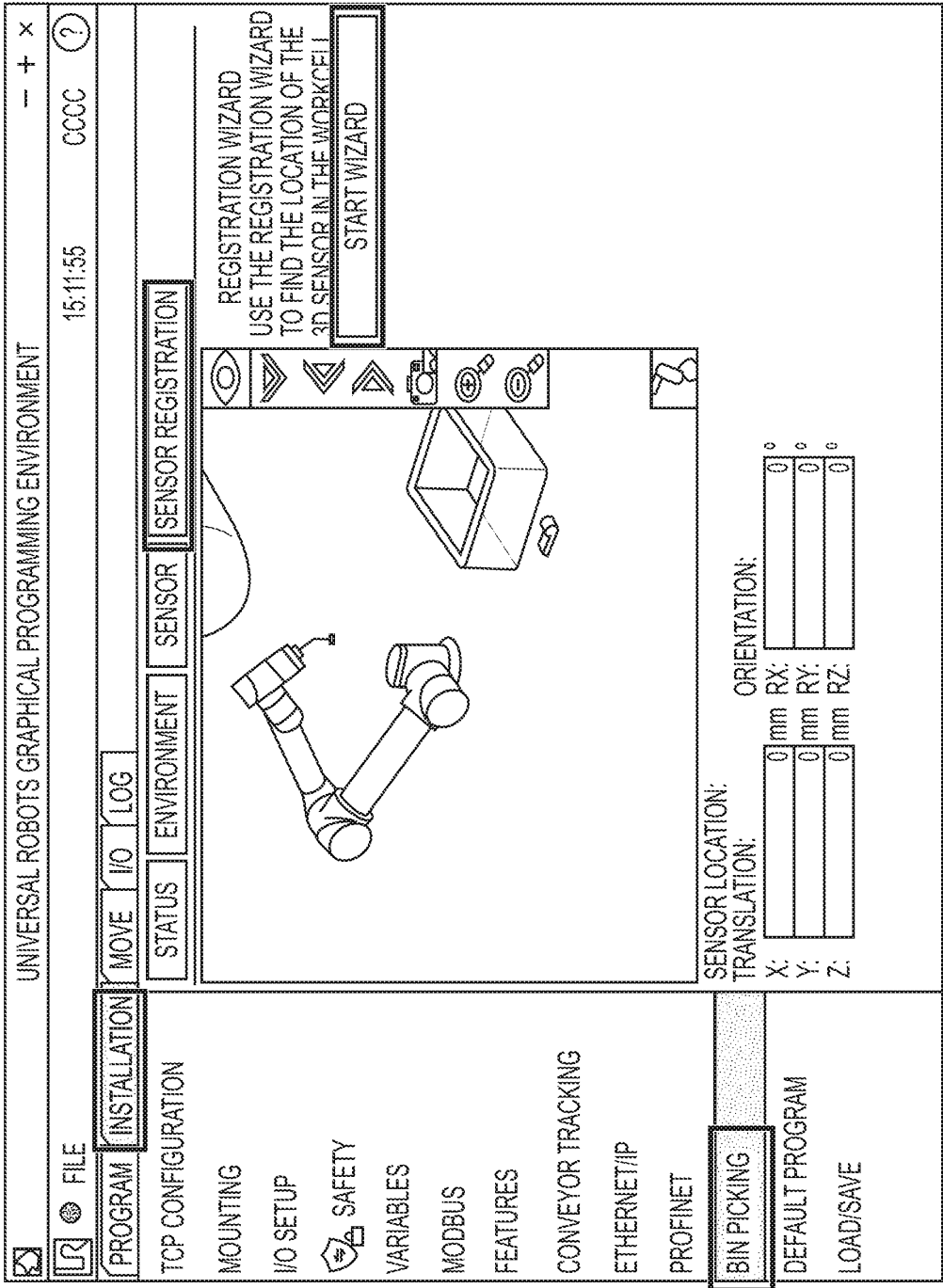


FIG. 32

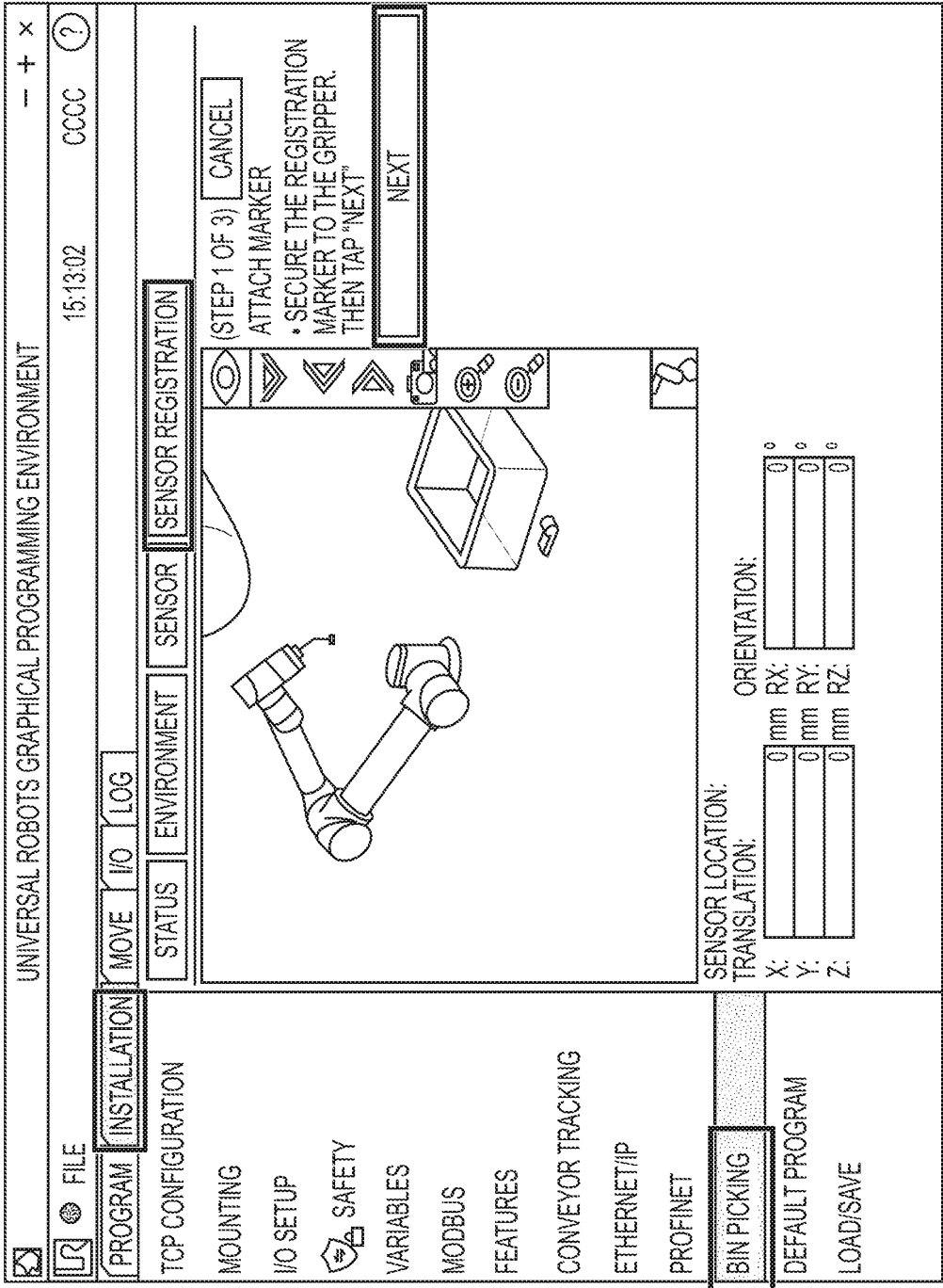


FIG. 33

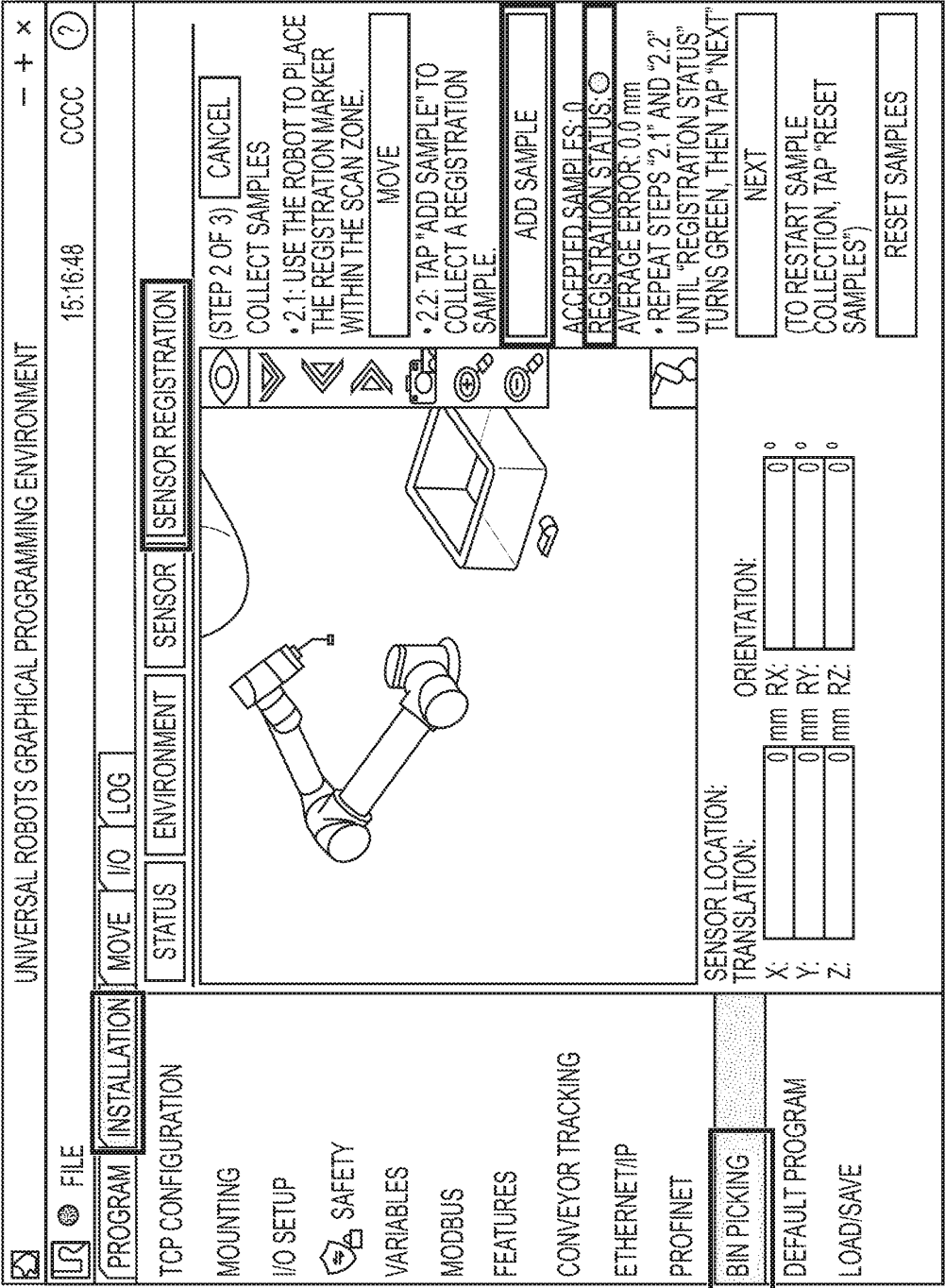


FIG. 34

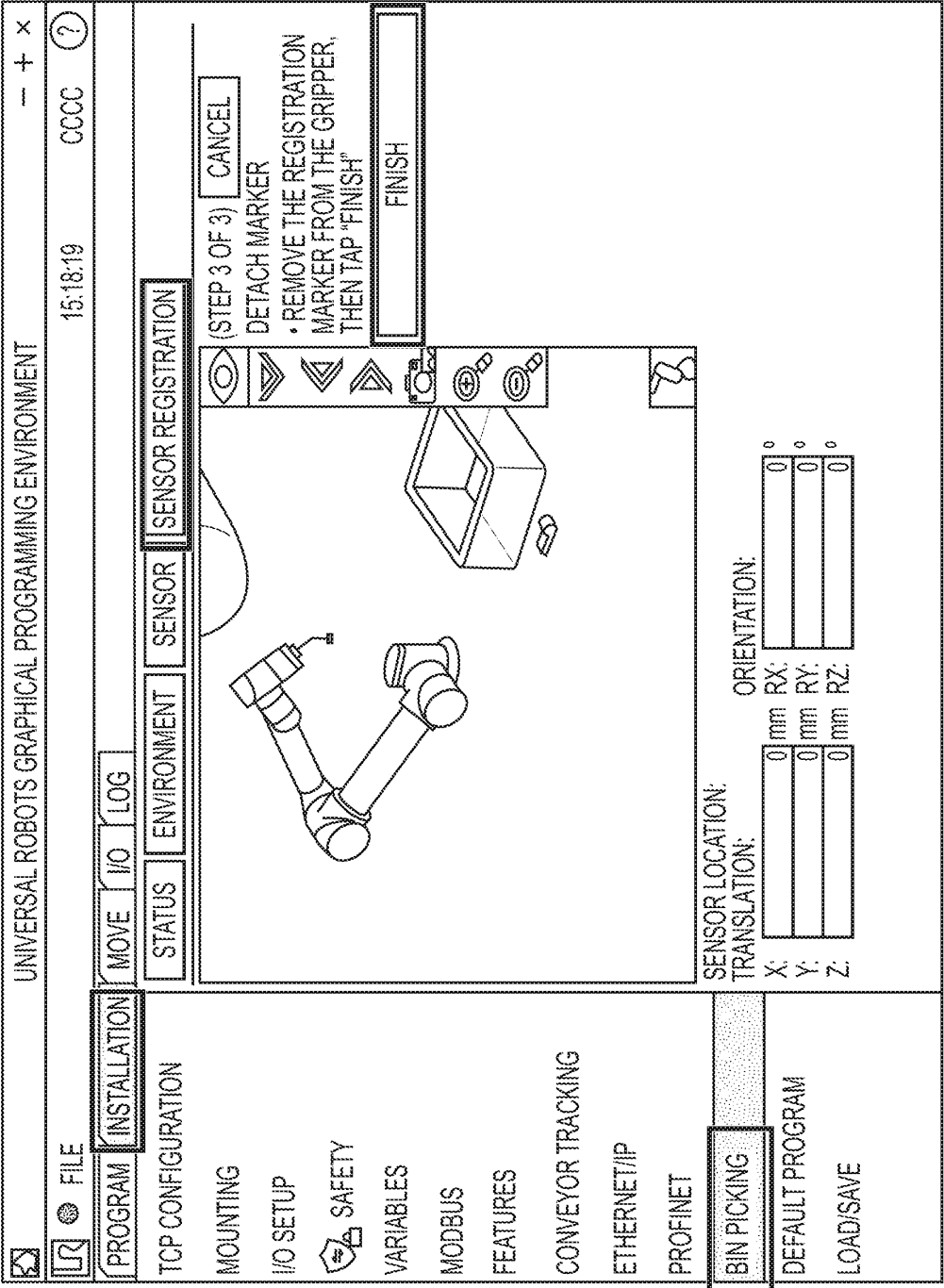


FIG. 35

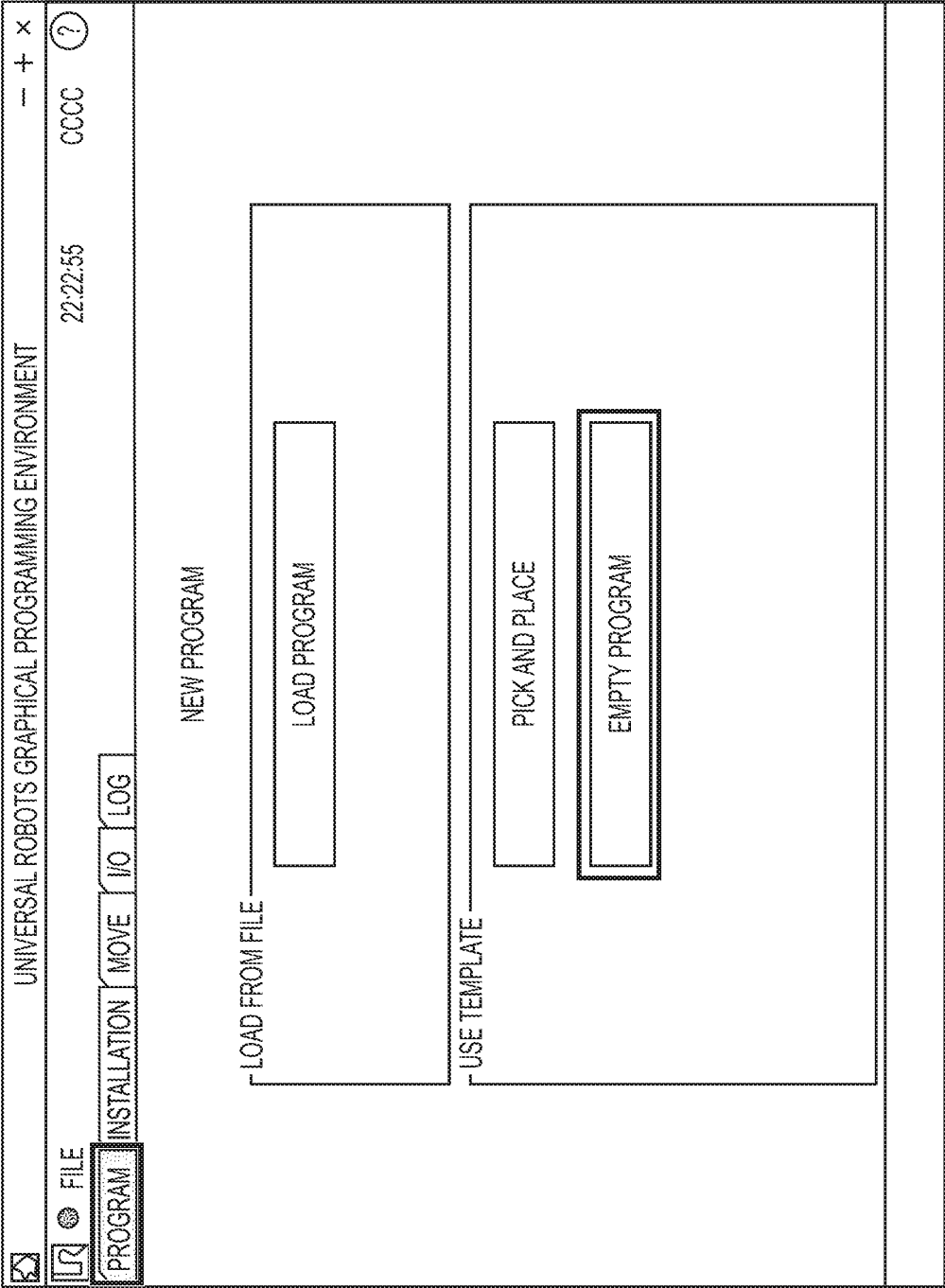


FIG. 36

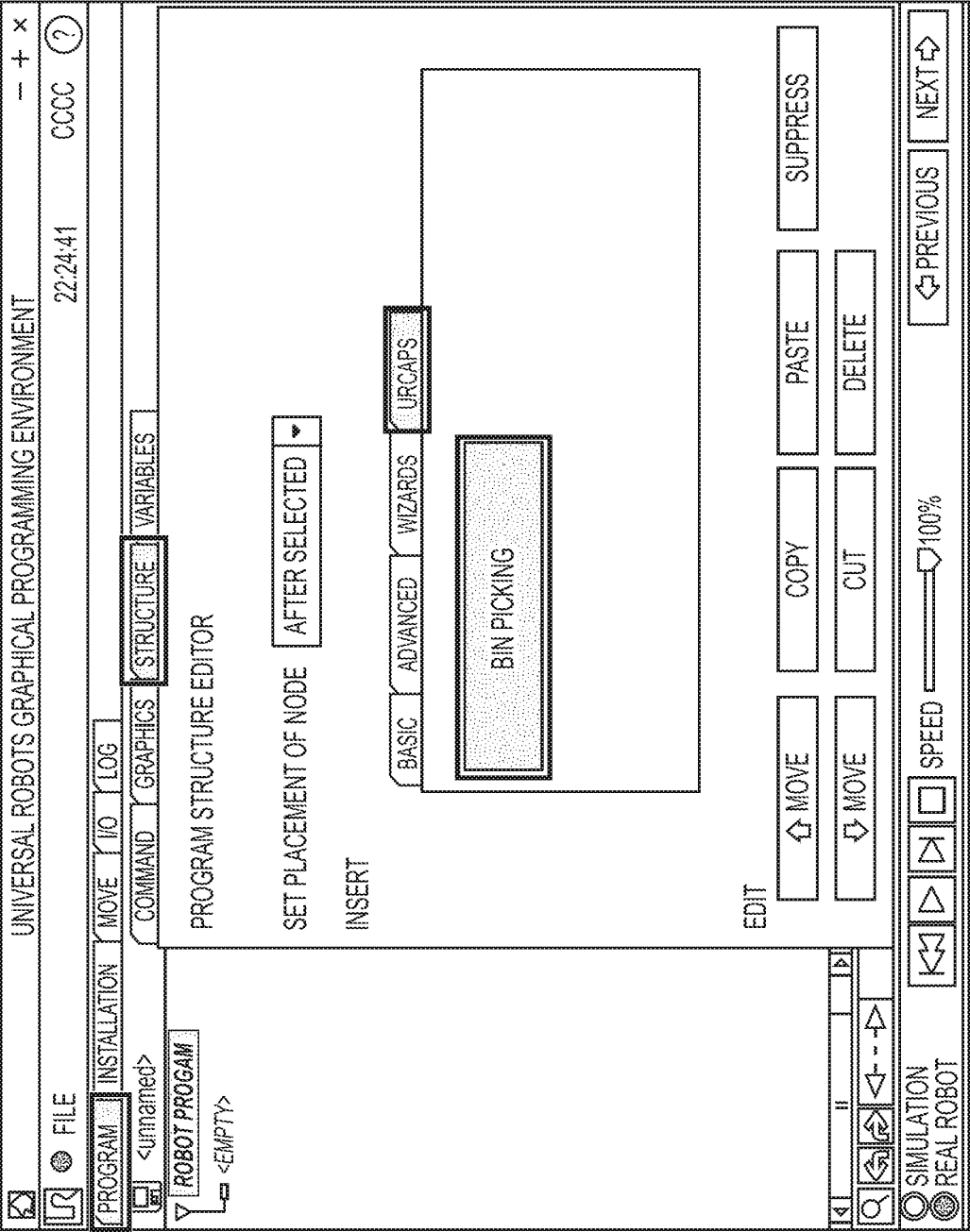


FIG. 37

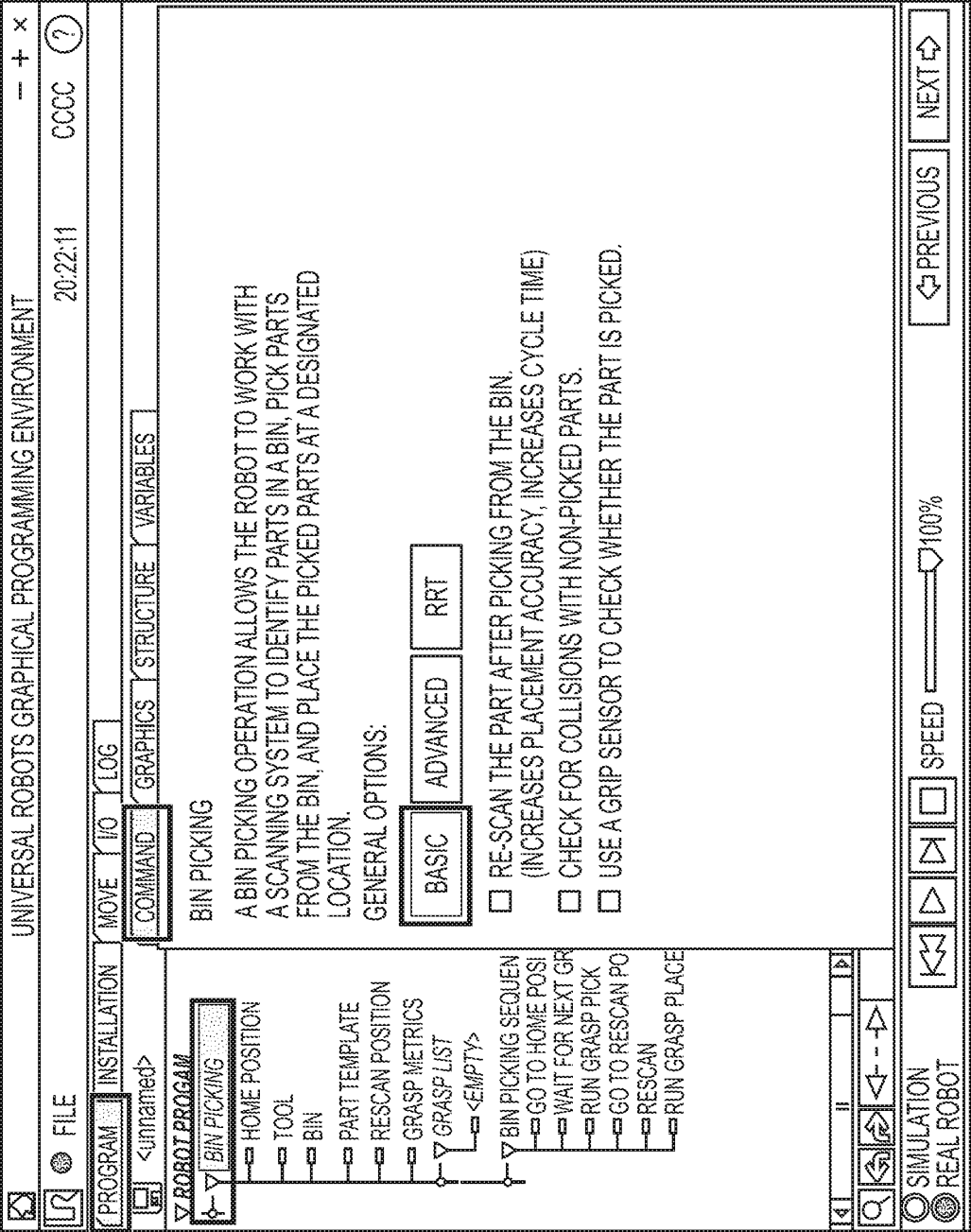


FIG. 38

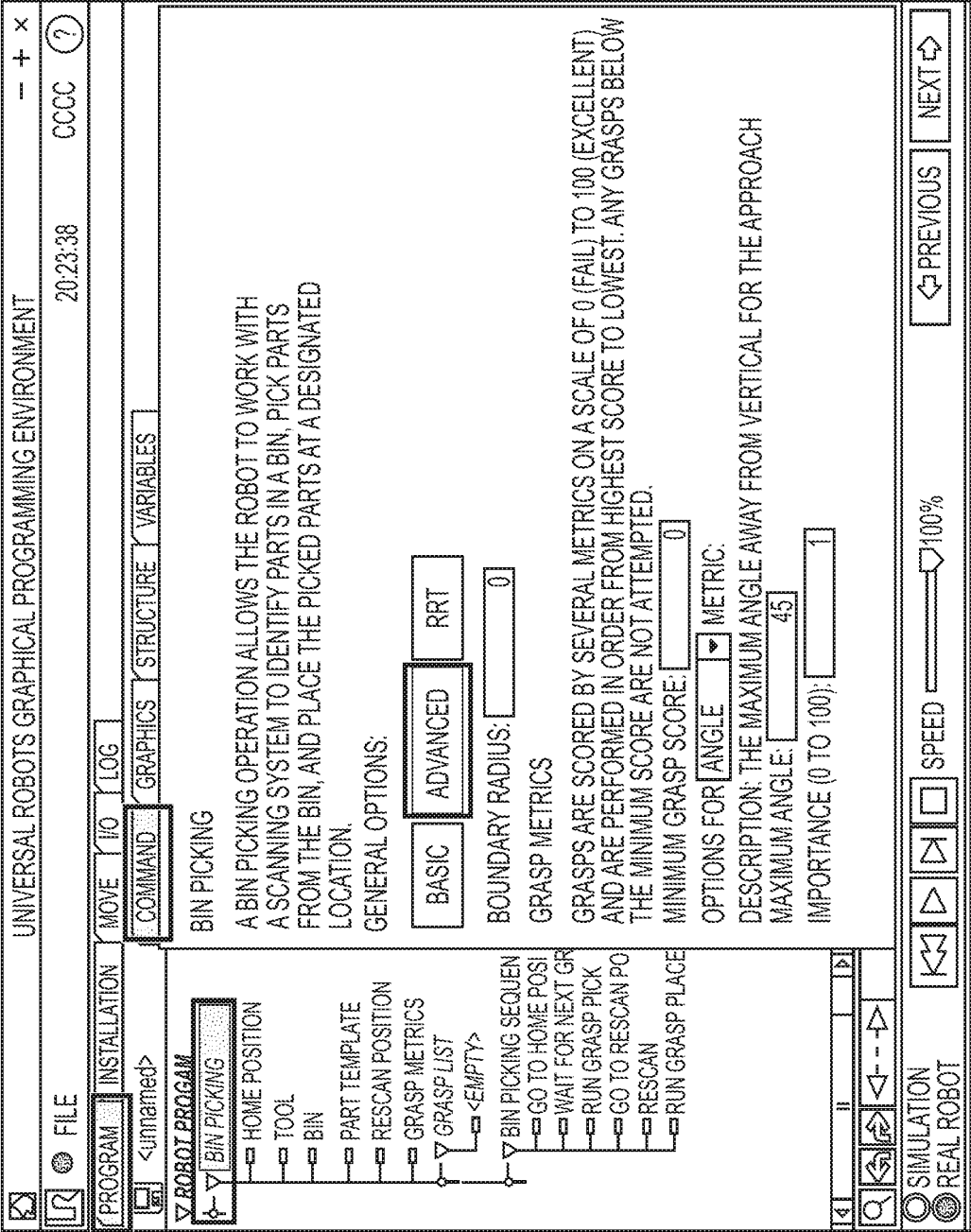


FIG. 39

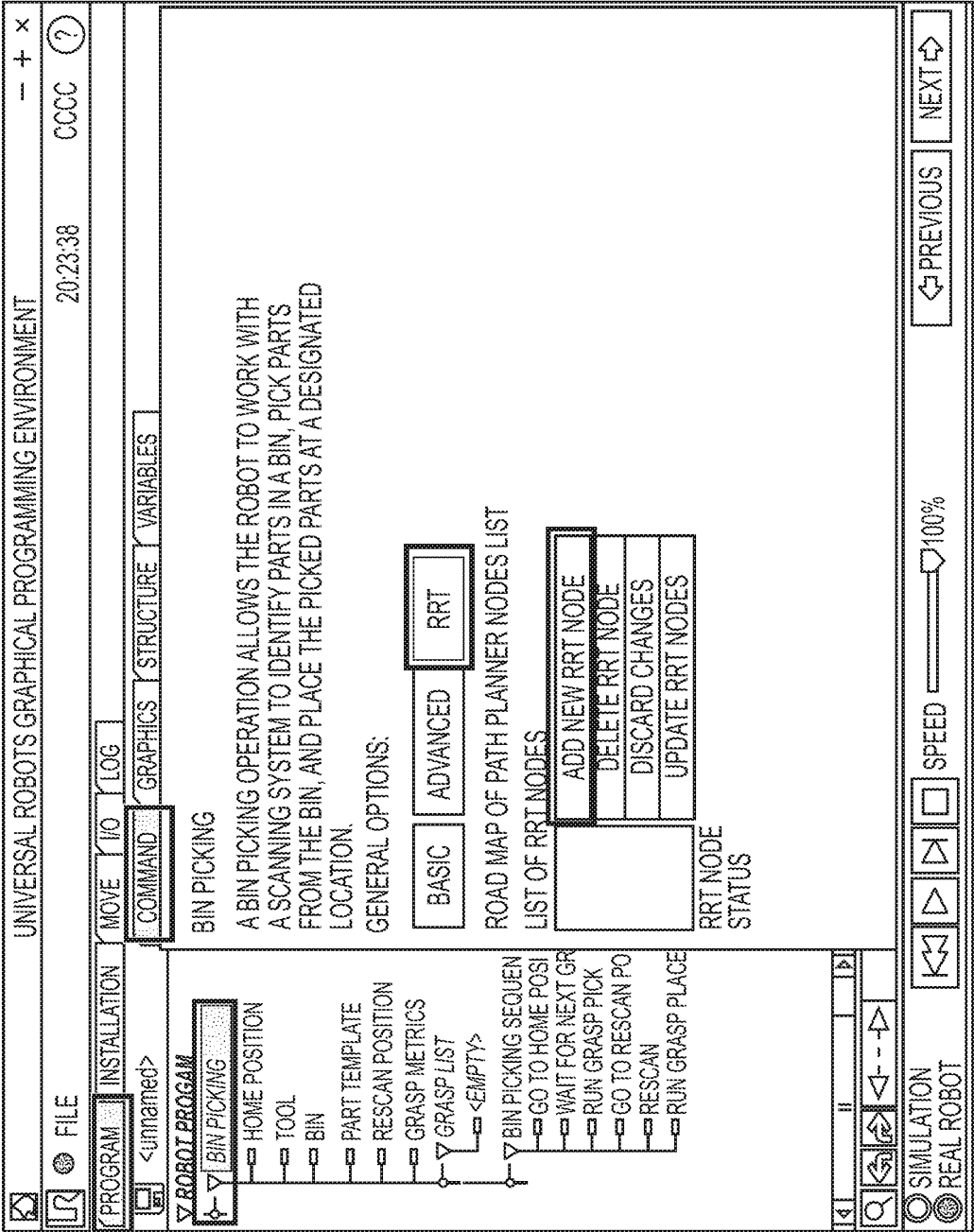


FIG. 40

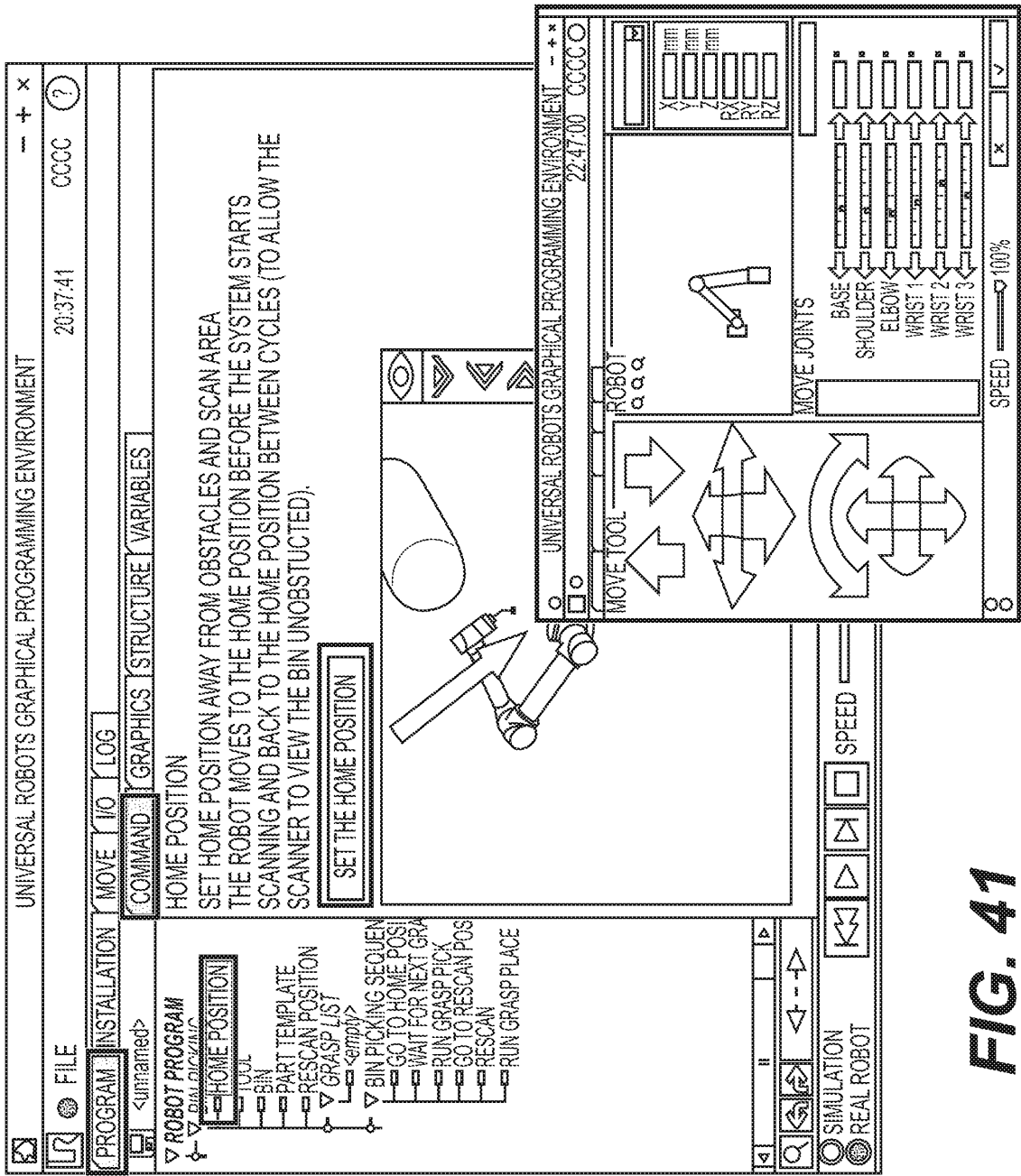


FIG. 41

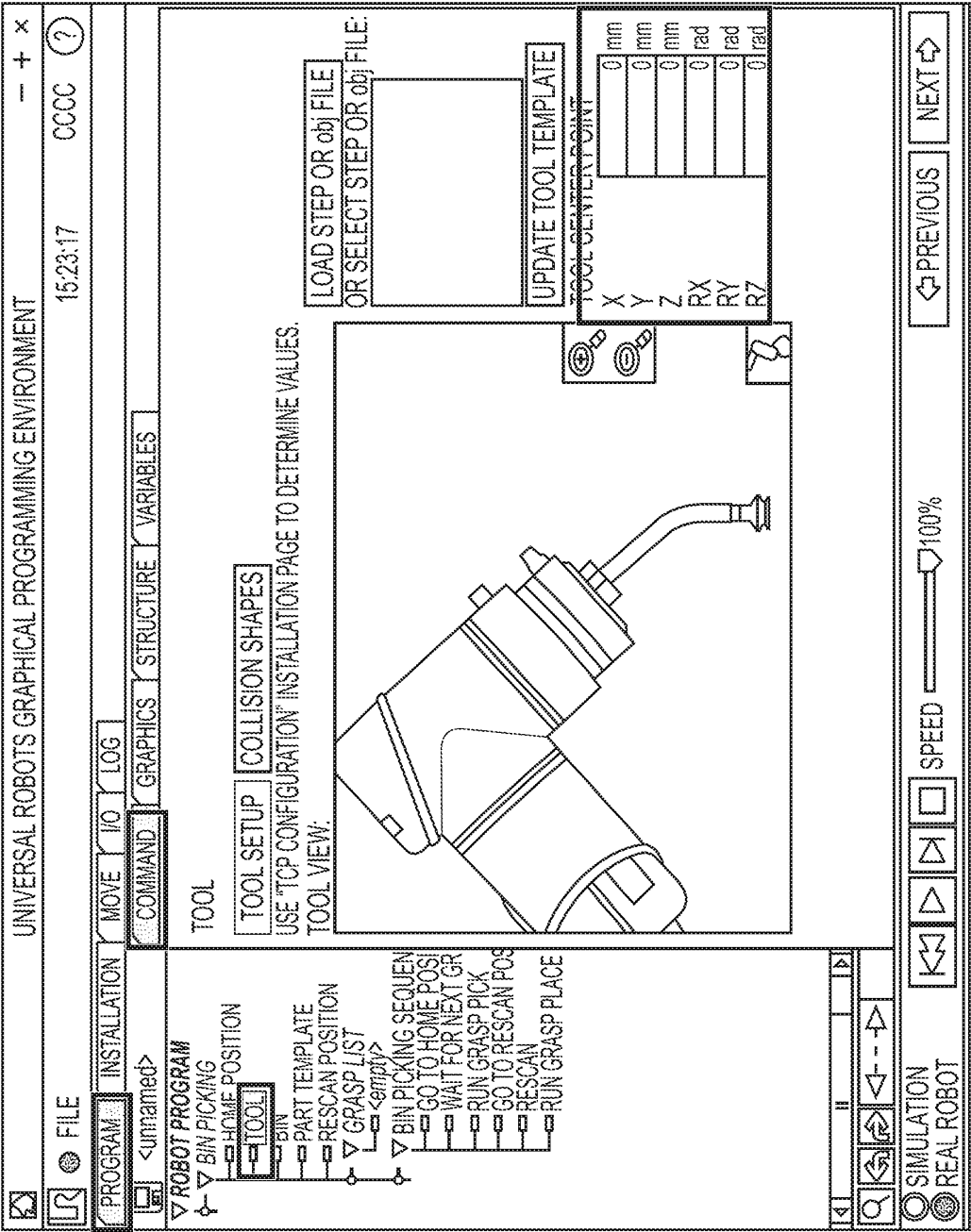


FIG. 42

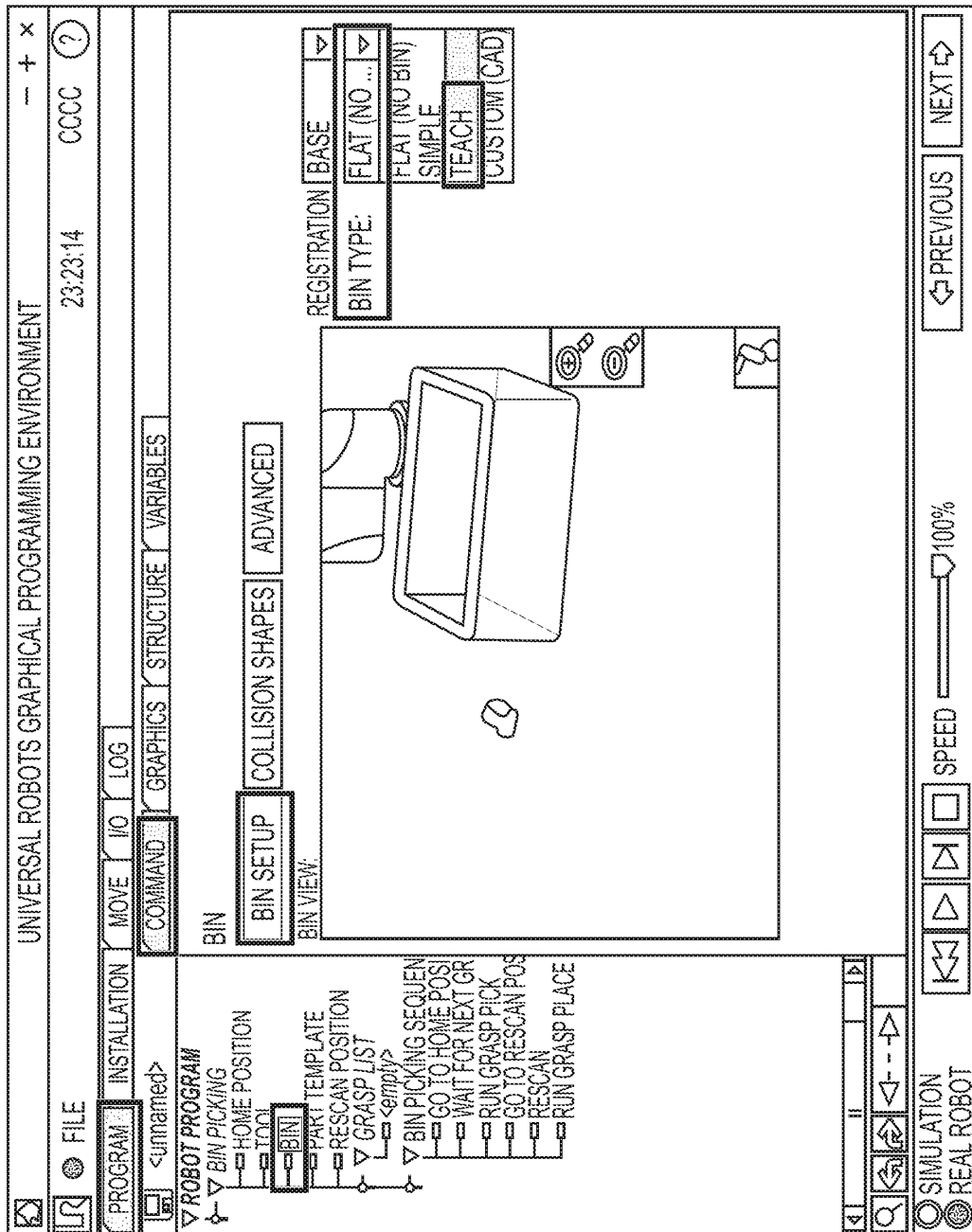


FIG. 43

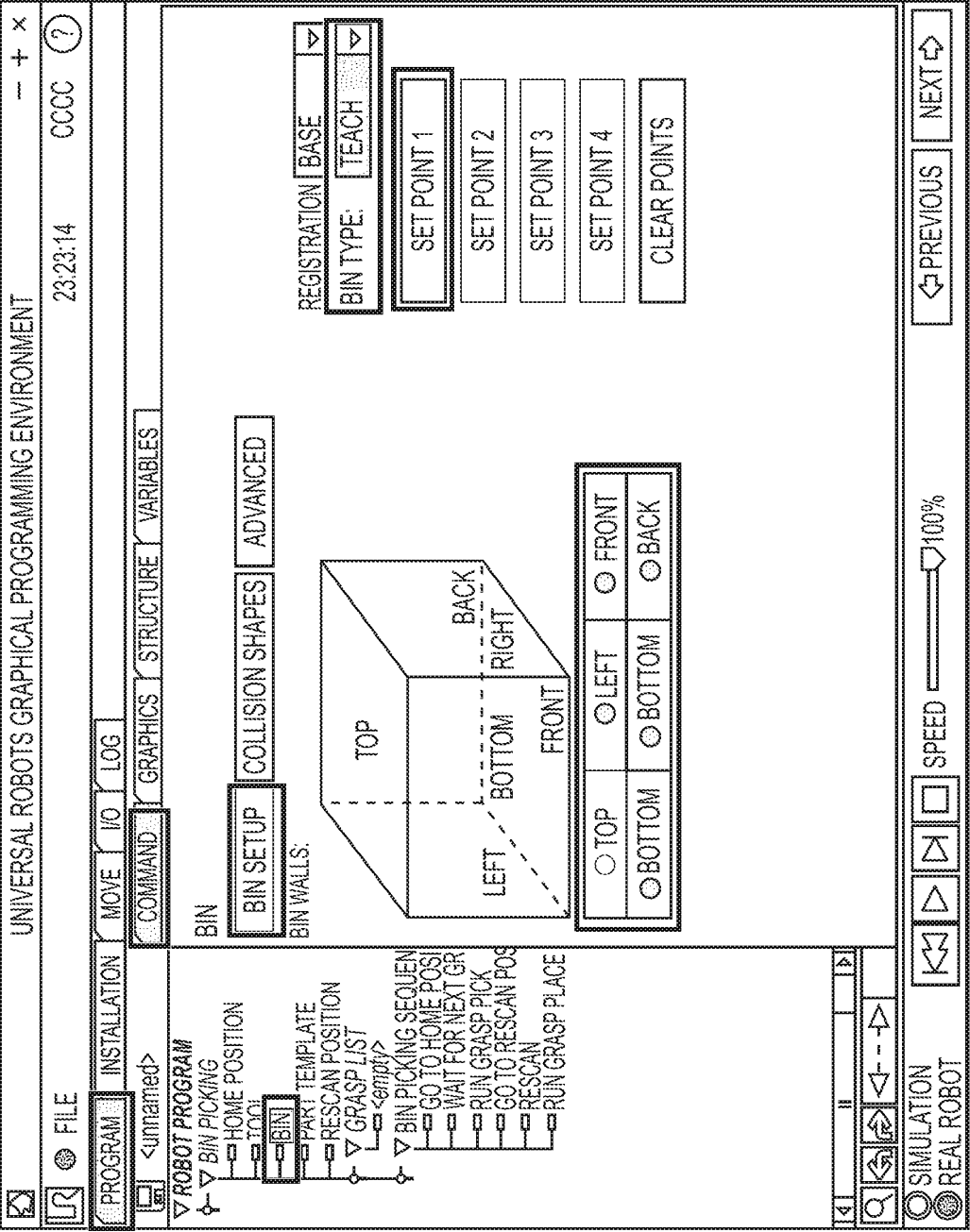


FIG. 44

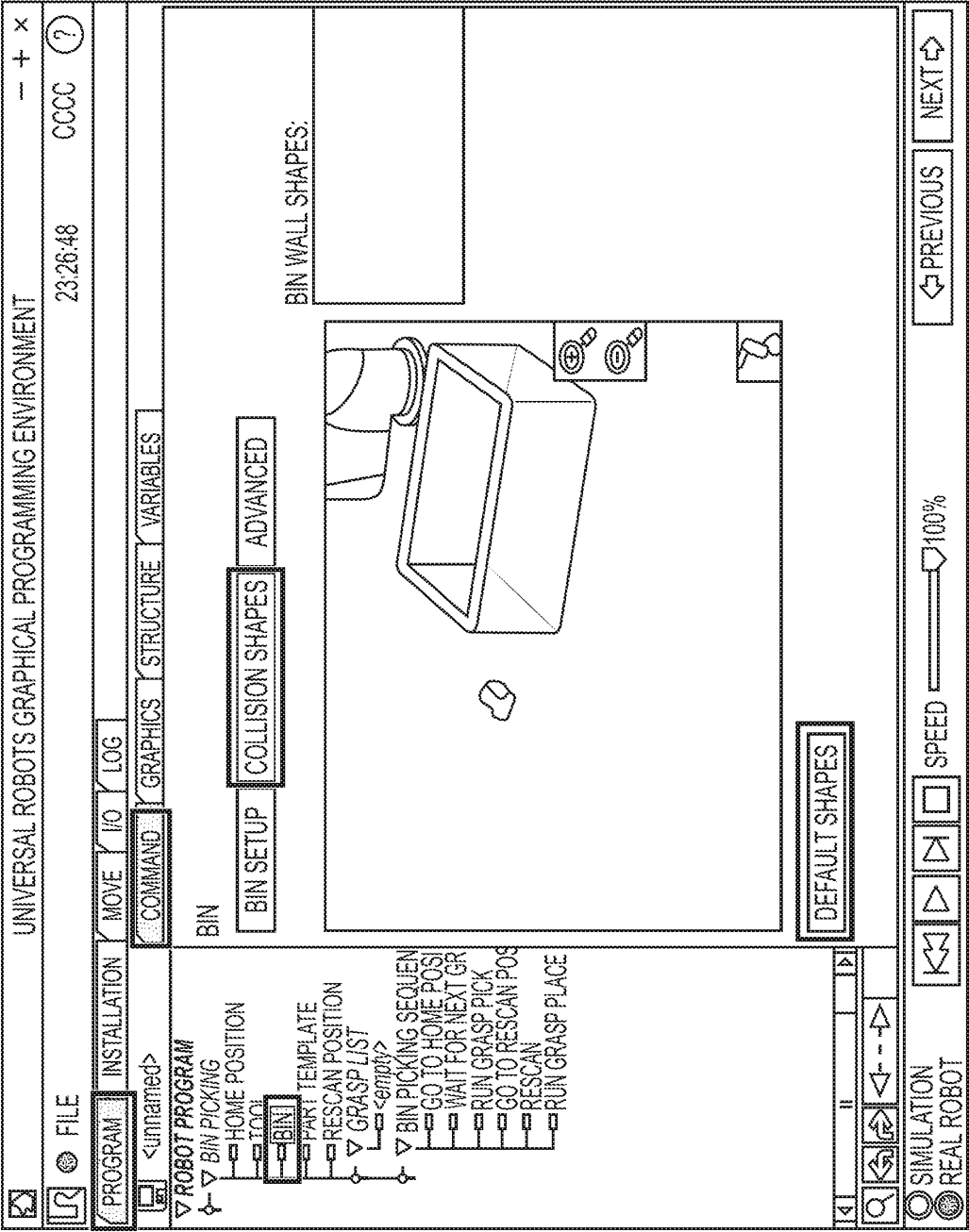


FIG. 45

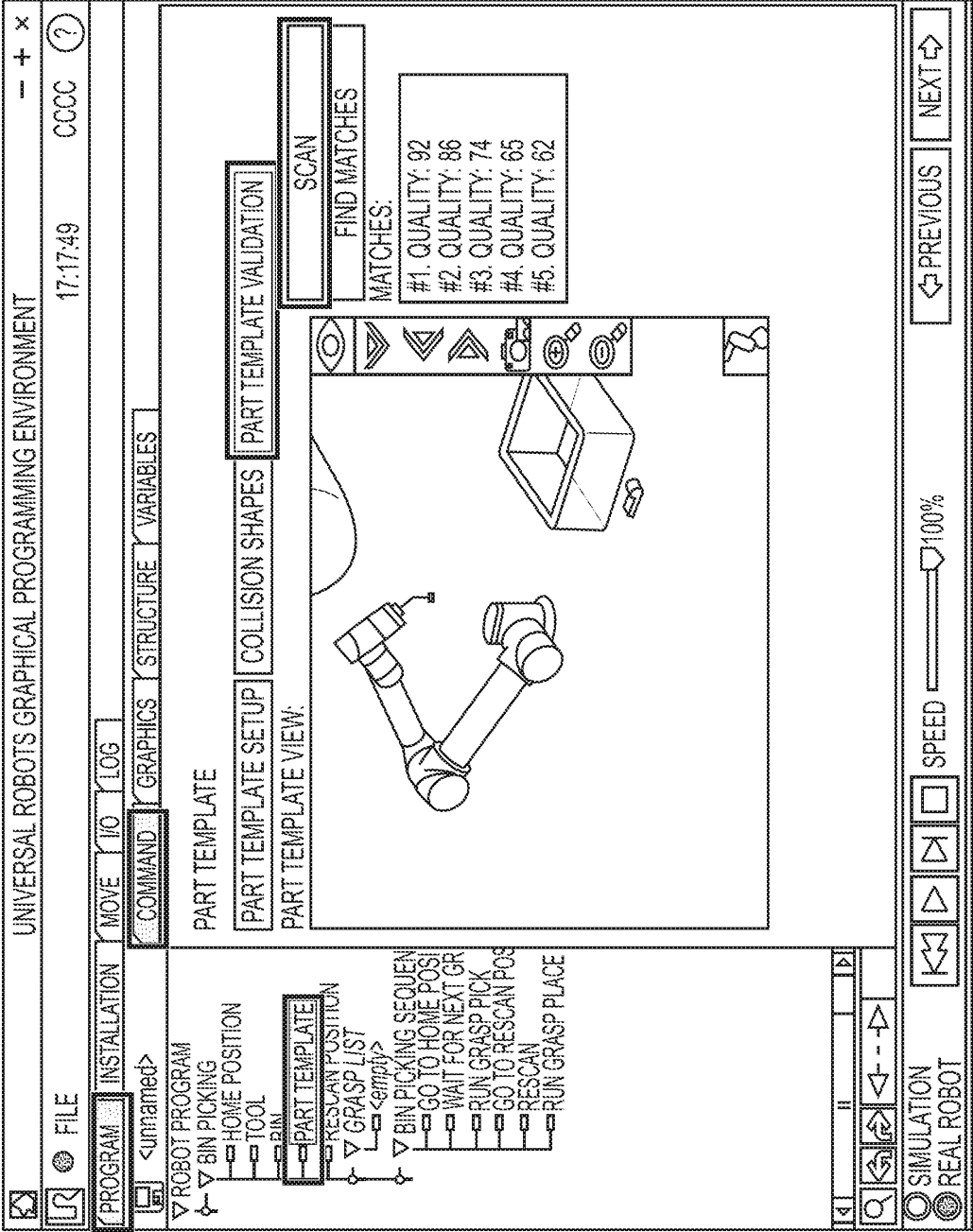


FIG. 46

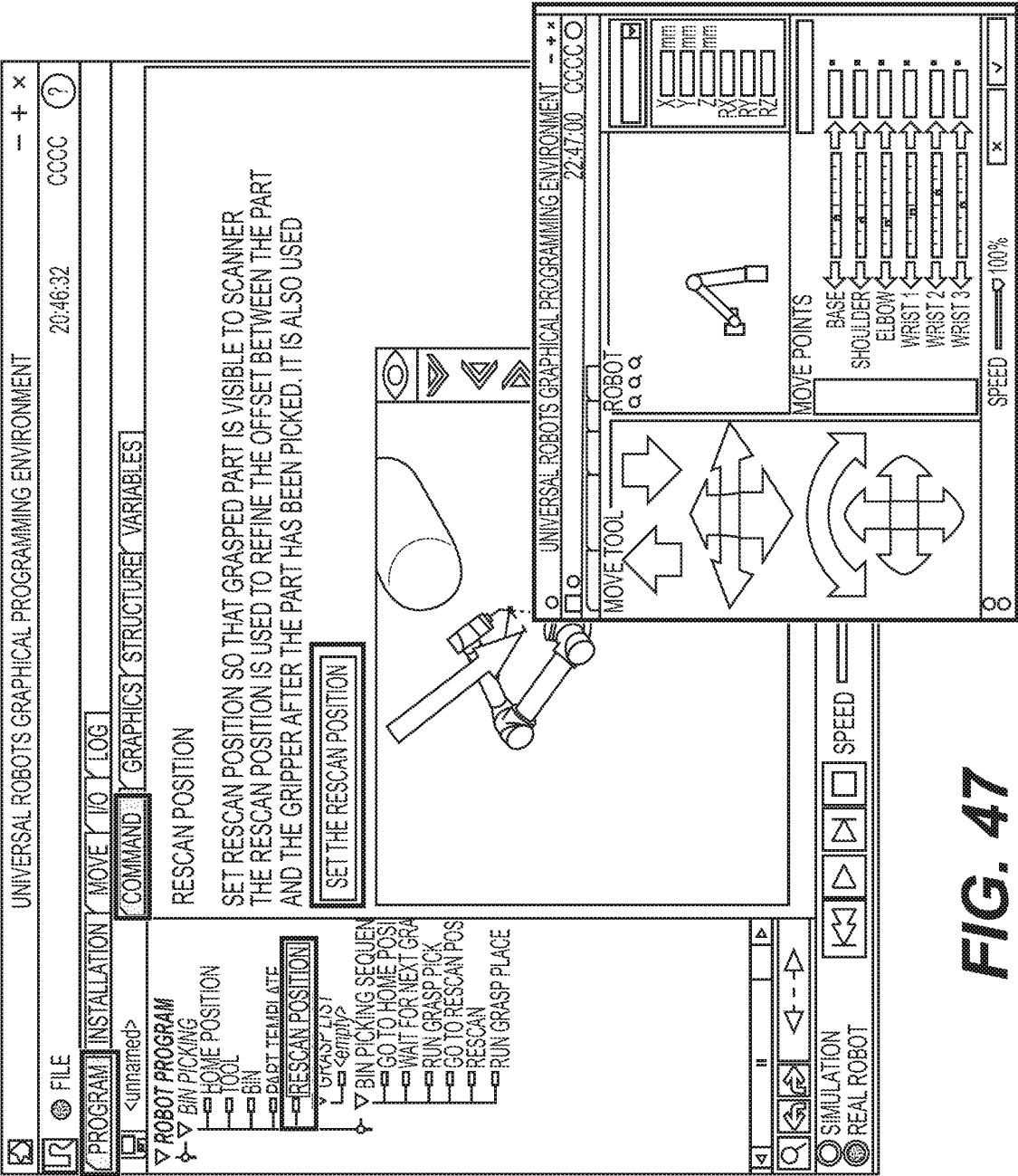


FIG. 47

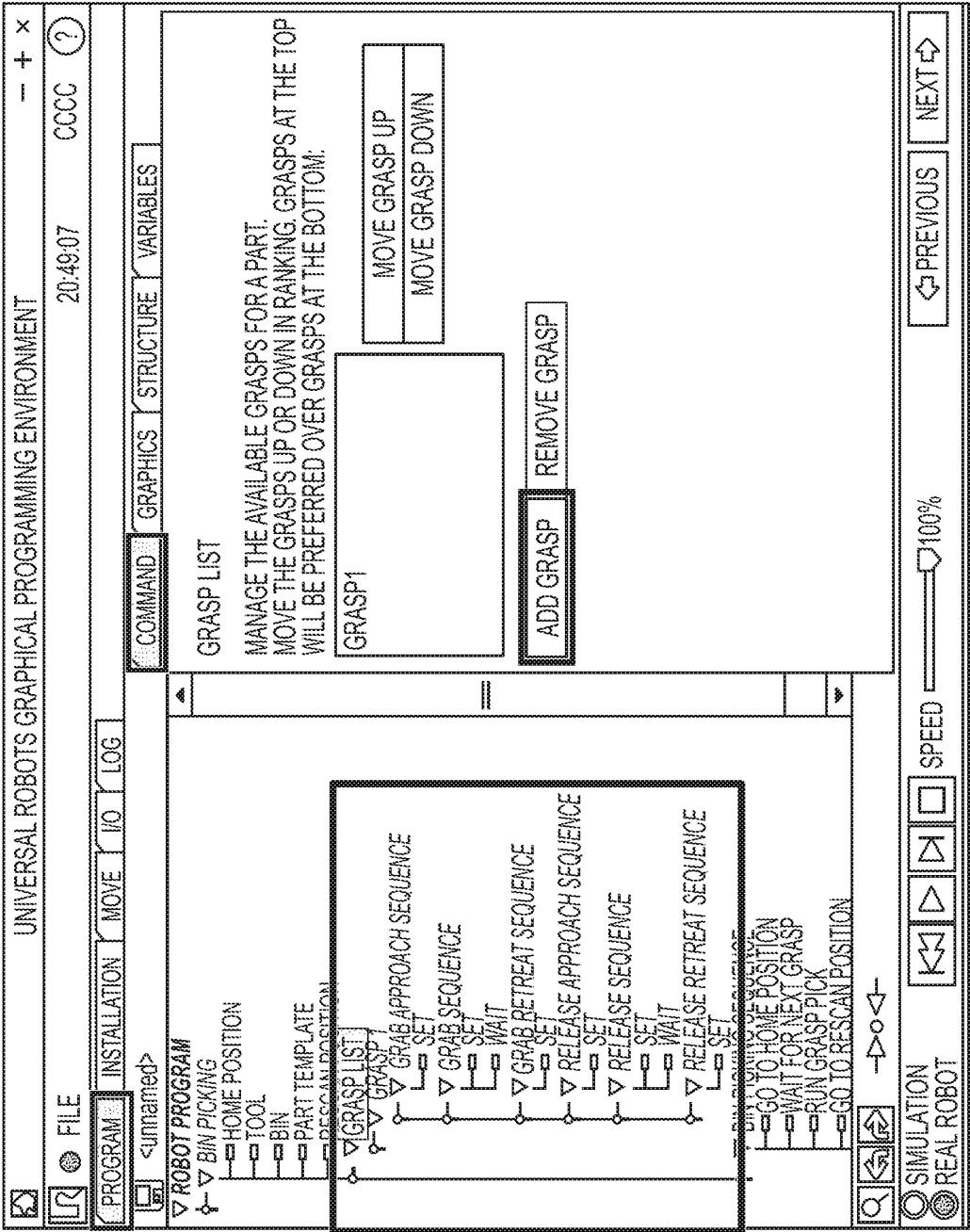


FIG. 48

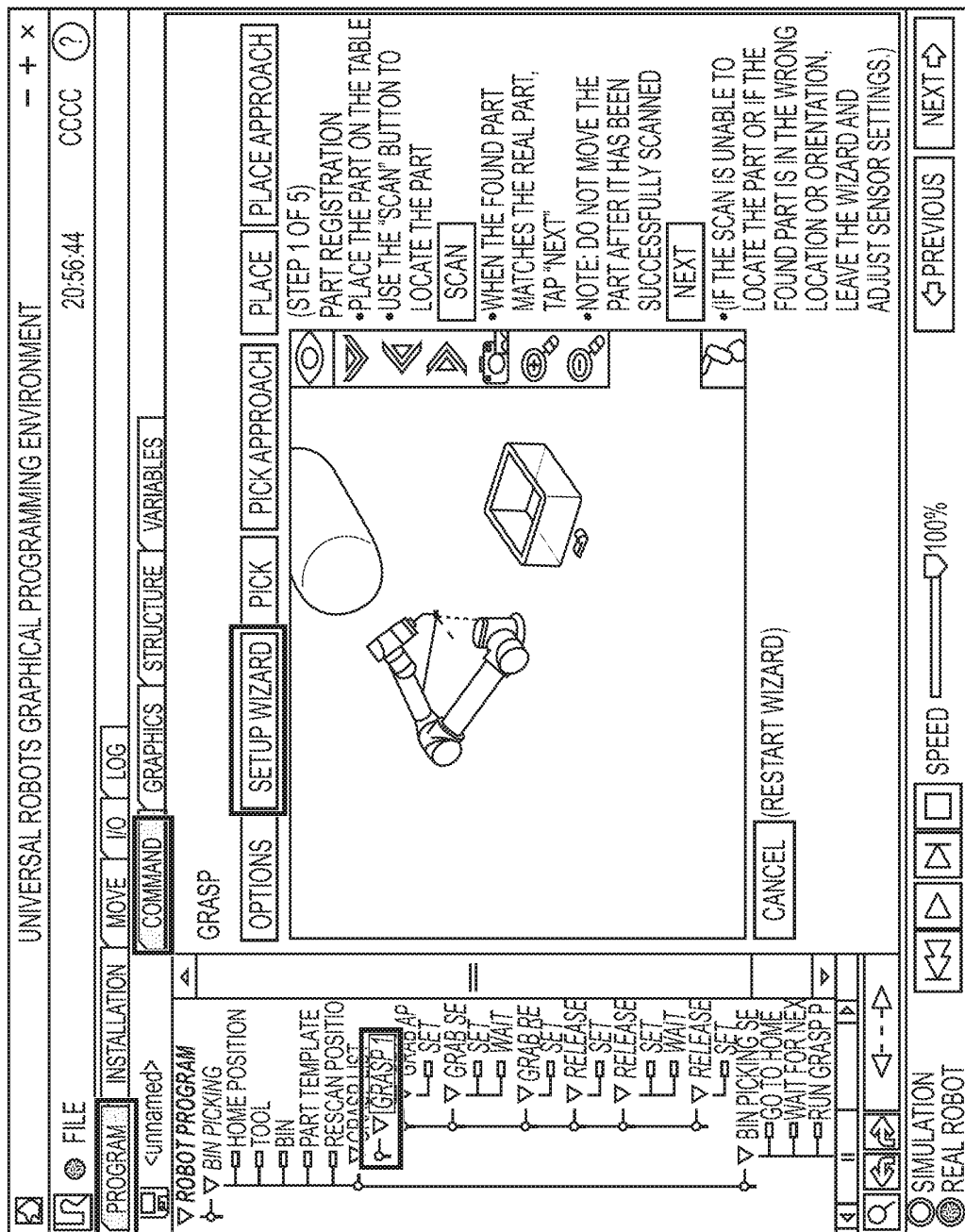


FIG. 49

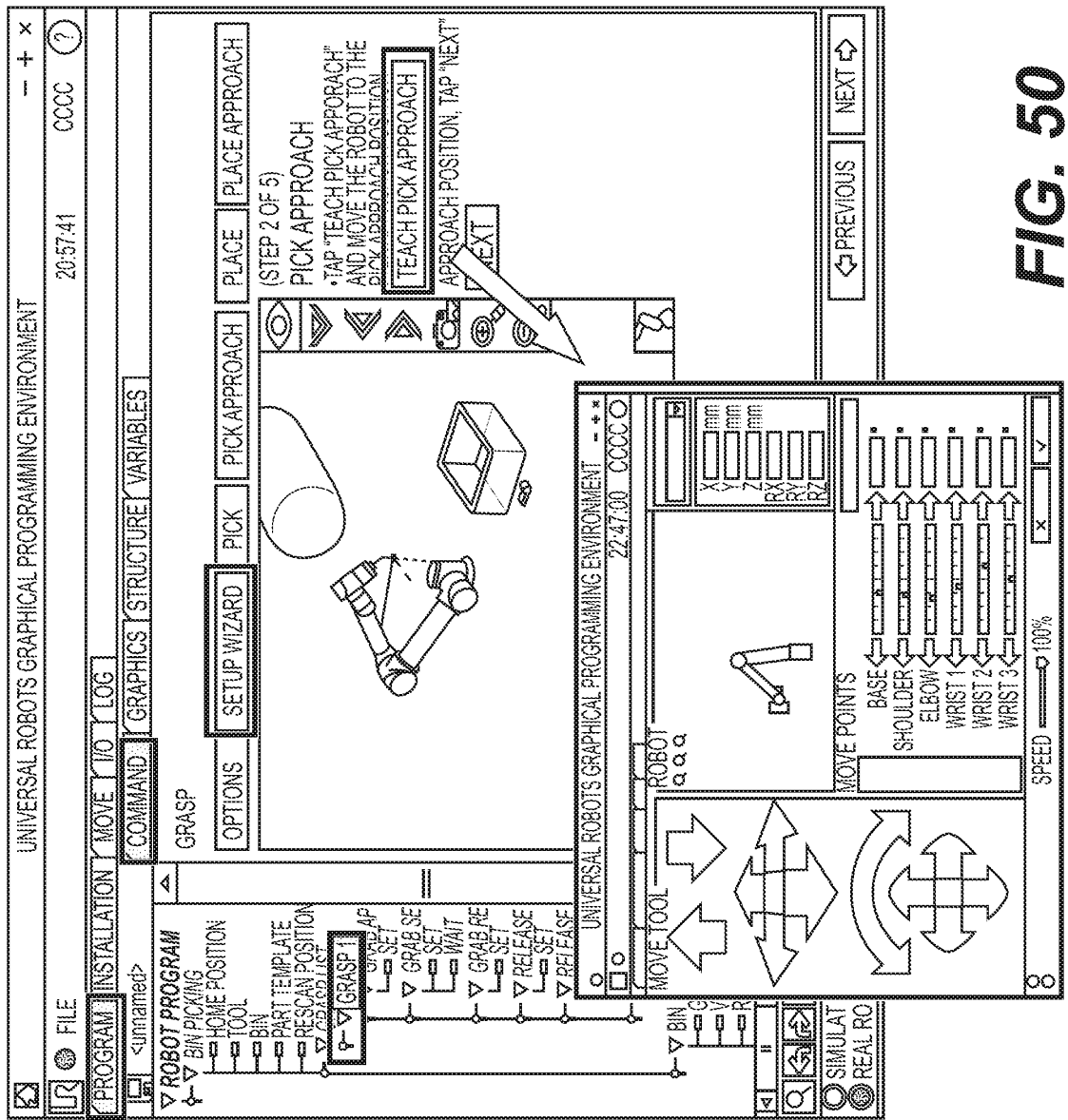


FIG. 50

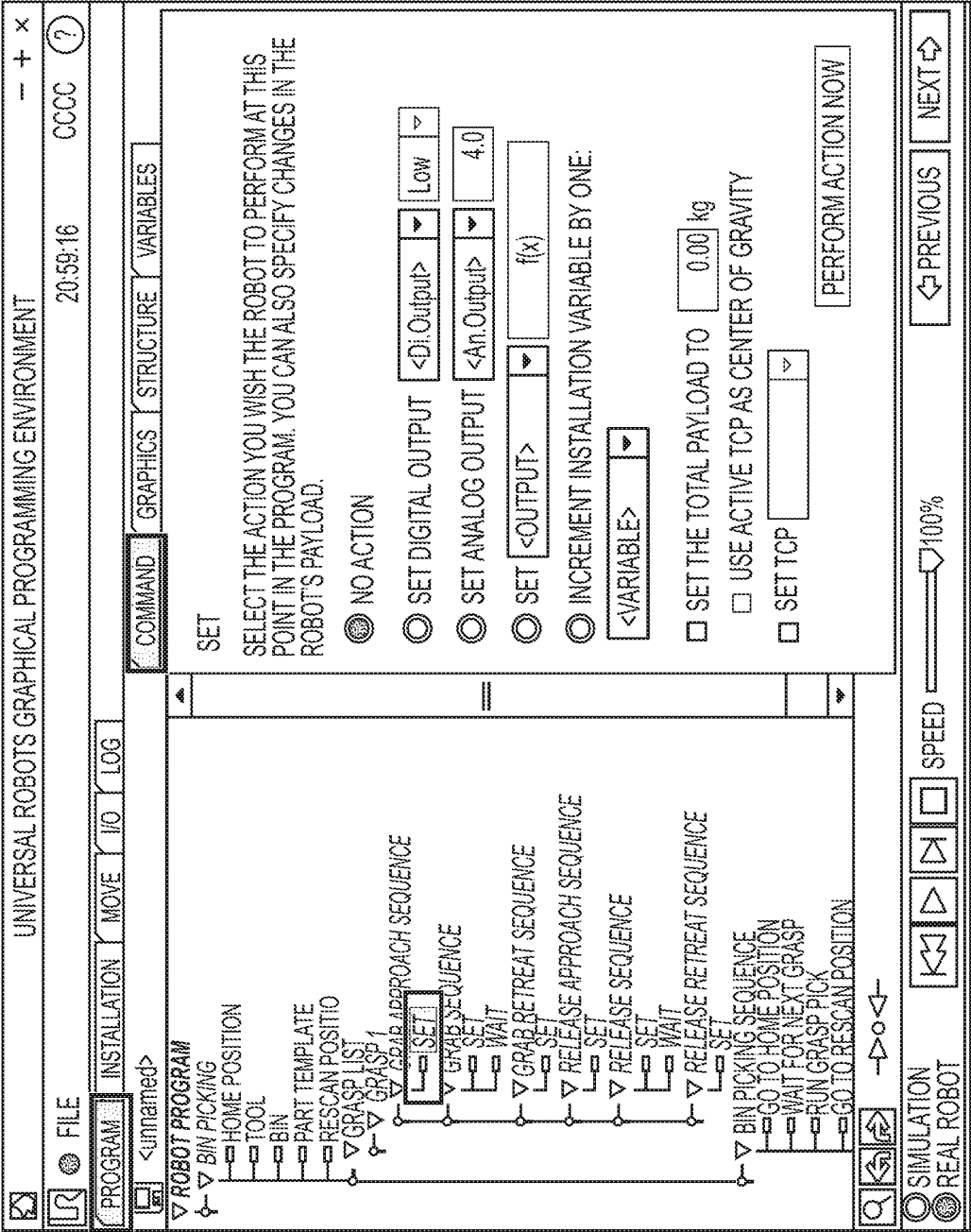


FIG. 51

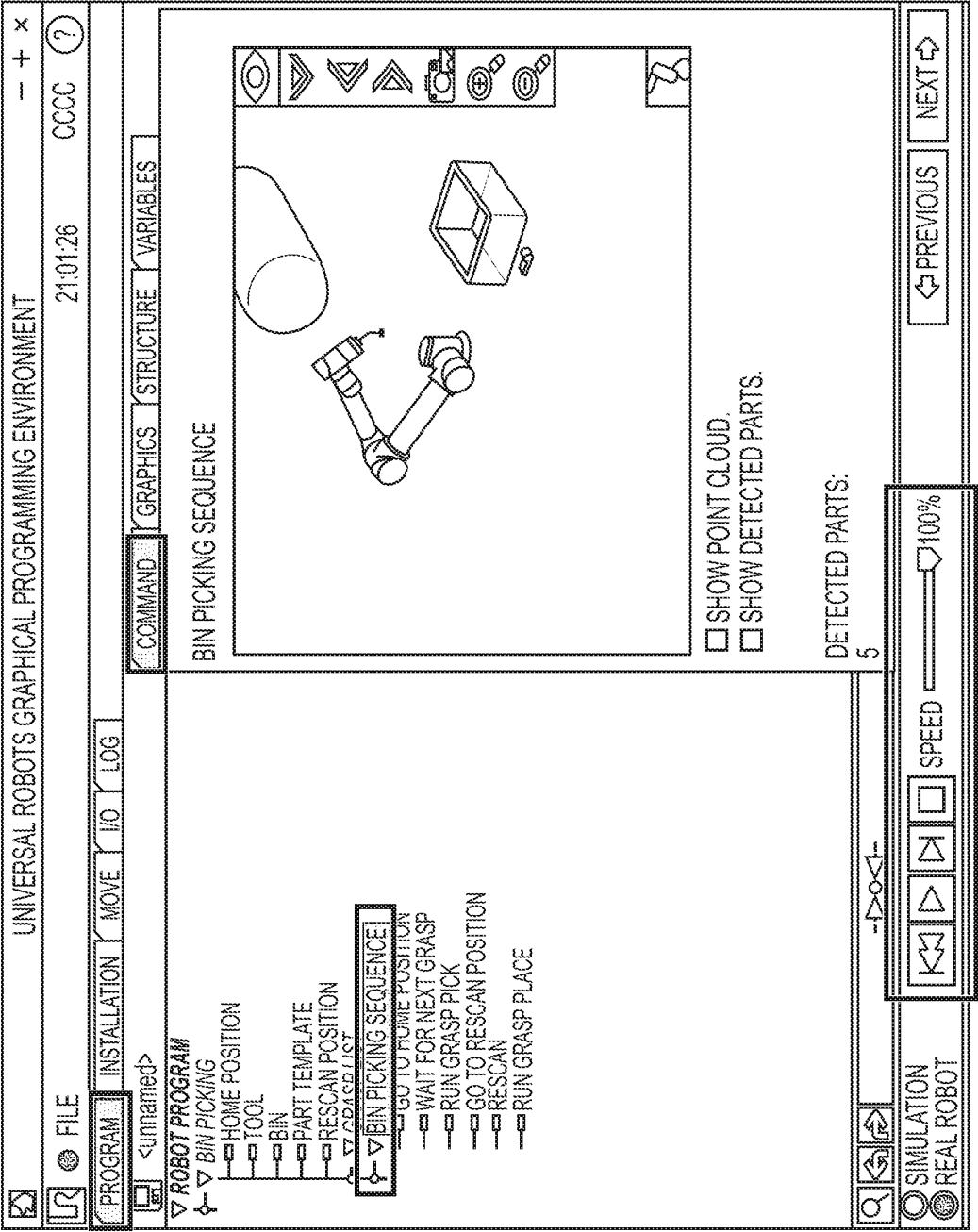


FIG. 52

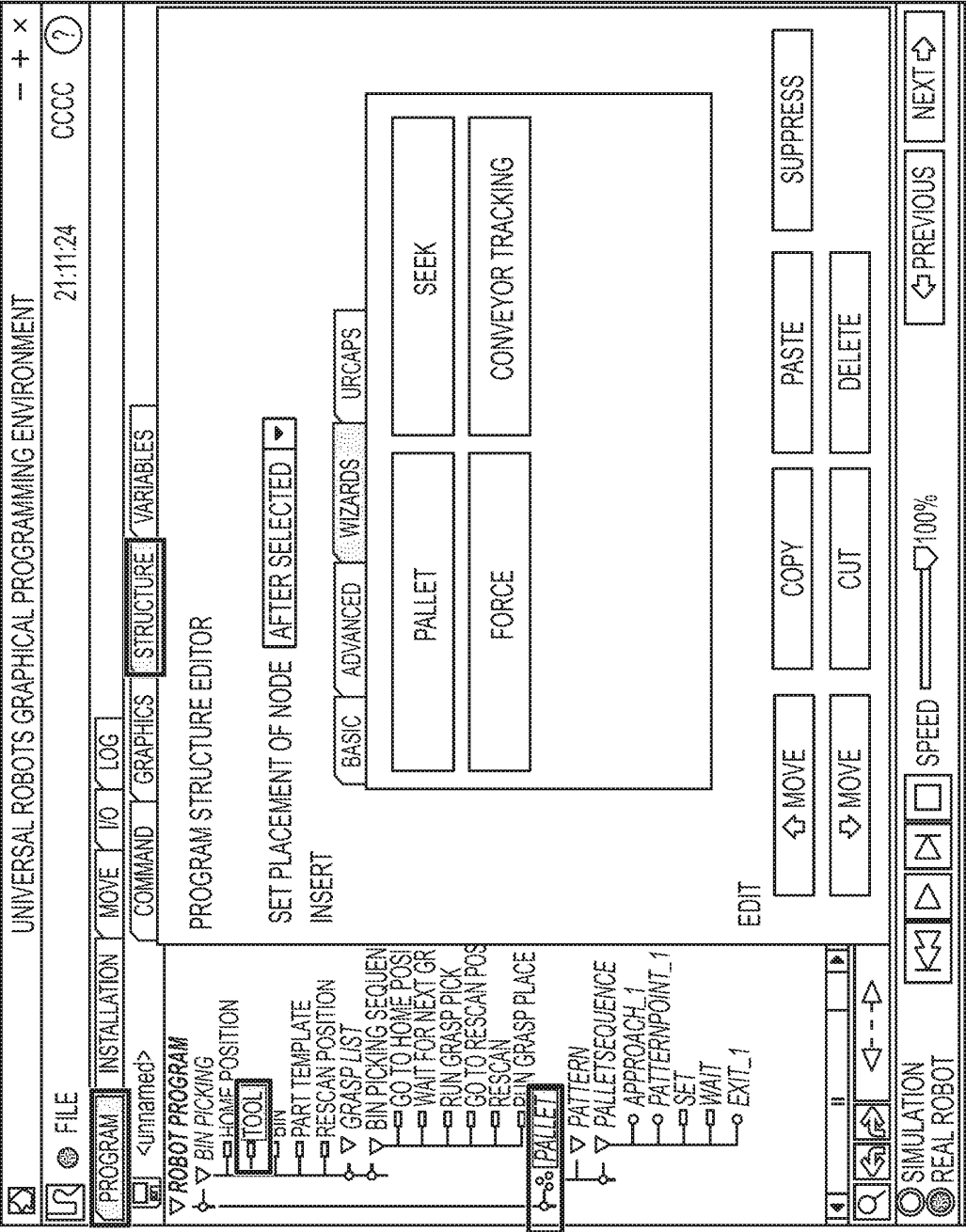


FIG. 53

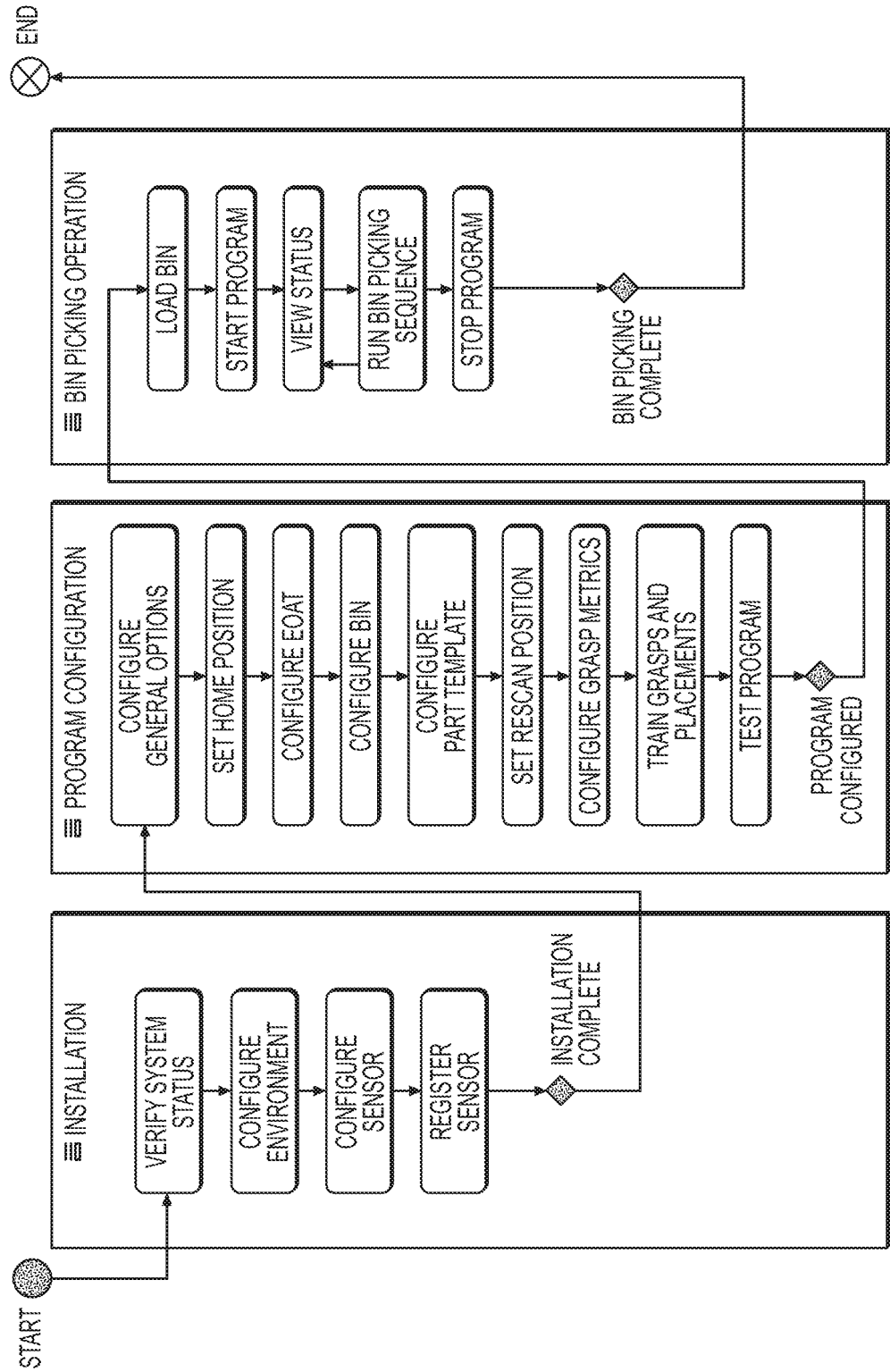


FIG. 54