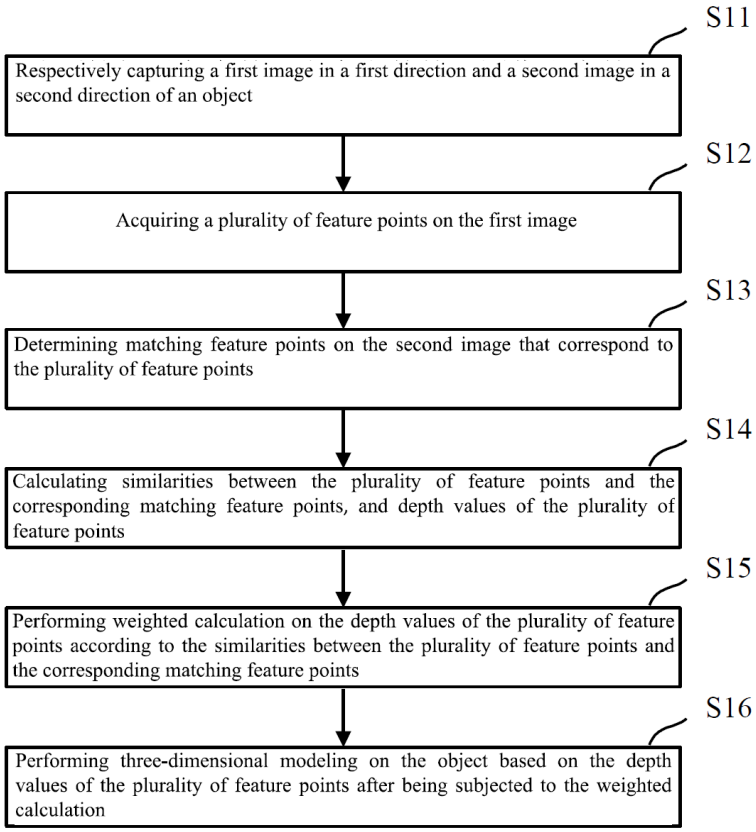
S11
Respectively capturing a first image in a first direction and a second image in a second direction of an object
S12
Acquiring a plurality of feature points on the first image
S13
Determining matching feature points on the second image that correspond to the plurality of feature points
S14
Calculating similarities between the plurality of feature points and the corresponding matching feature points, and depth values of the plurality of feature points
S15
Performing weighted calculation on the depth values of the plurality of feature points according to the similarities between the plurality of feature points and the corresponding matching feature points
S16
Performing three-dimensional modeling on the object based on the depth values of the plurality of feature points after being subjected to the weighted calculation

Fig. 1

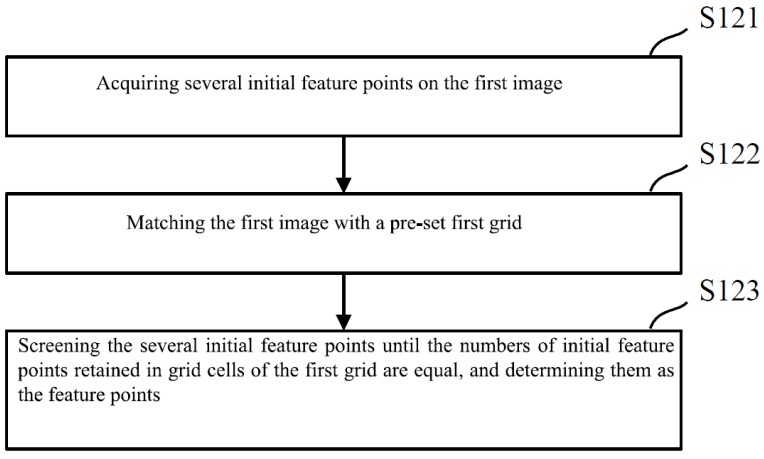
S121
Acquiring several initial feature points on the first image
S122
Matching the first image with a pre-set first grid
S123
Screening the several initial feature points until the numbers of initial feature points retained in grid cells of the first grid are equal, and determining them as the feature points

Fig. 2

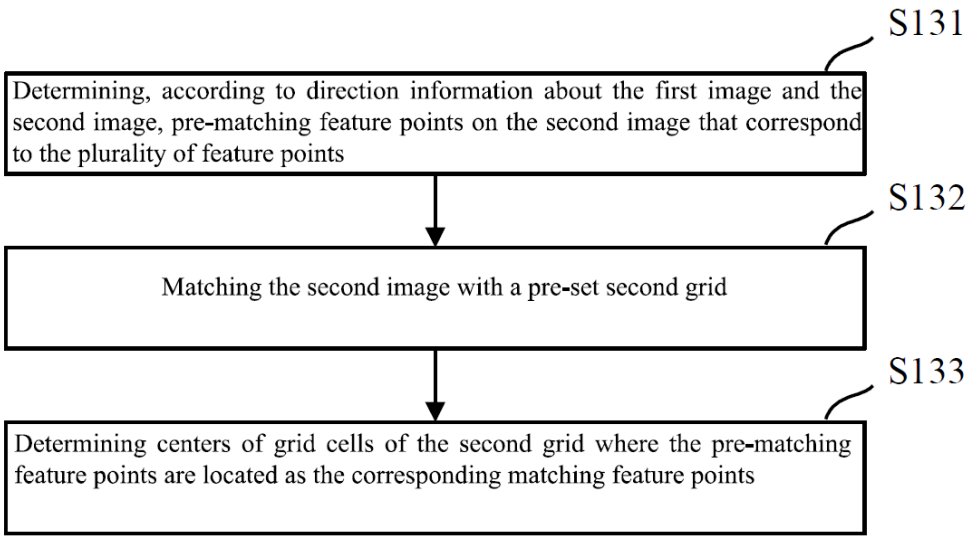
S131
Determining, according to direction information about the first image and the second image, pre-matching feature points on the second image that correspond to the plurality of feature points
S132
Matching the second image with a pre-set second grid
S133
Determining centers of grid cells of the second grid where the pre-matching feature points are located as the corresponding matching feature points

Fig. 3

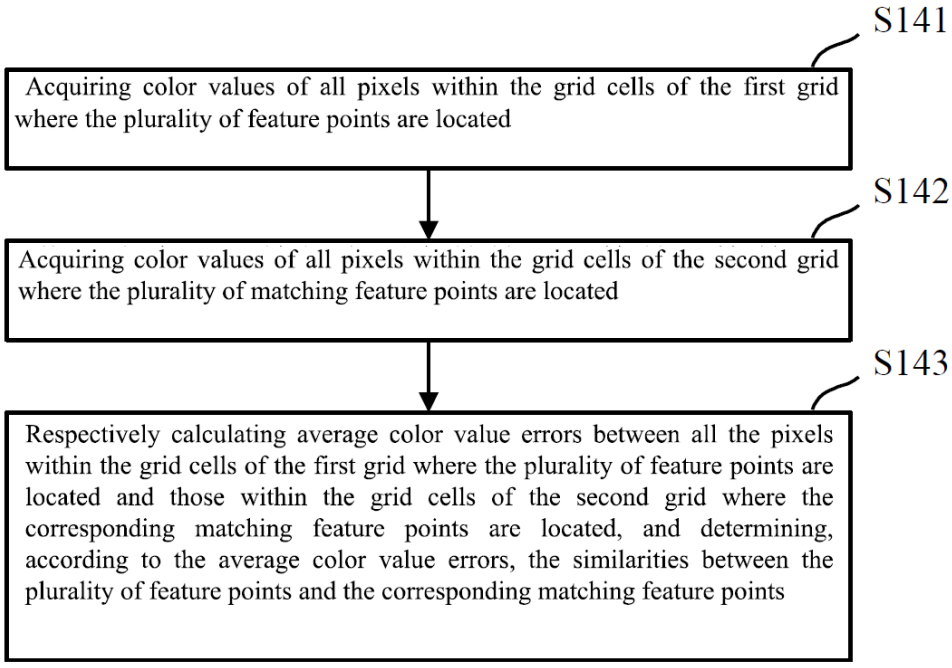
S141
Acquiring color values of all pixels within the grid cells of the first grid where the plurality of feature points are located
S142
Acquiring color values of all pixels within the grid cells of the second grid where the plurality of matching feature points are located
S143
Respectively calculating average color value errors between all the pixels within the grid cells of the first grid where the plurality of feature points are located and those within the grid cells of the second grid where the corresponding matching feature points are located, and determining, according to the average color value errors, the similarities between the plurality of feature points and the corresponding matching feature points

Fig. 4

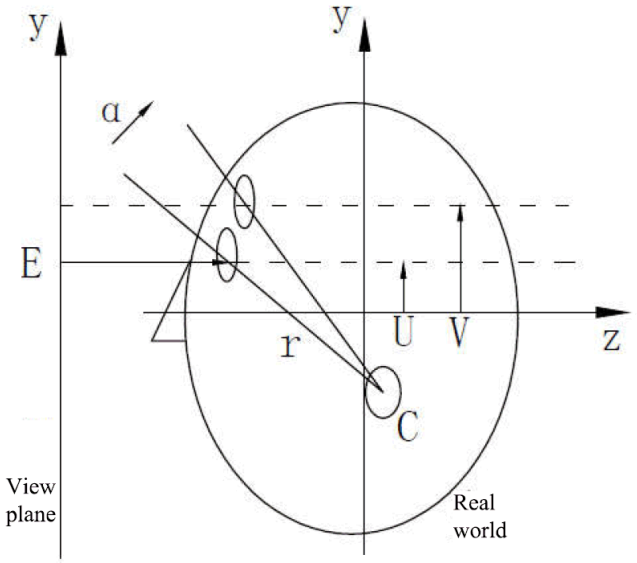
y
y
α
E
r
U
V
z
C
View
plane
Real
world

Fig. 5

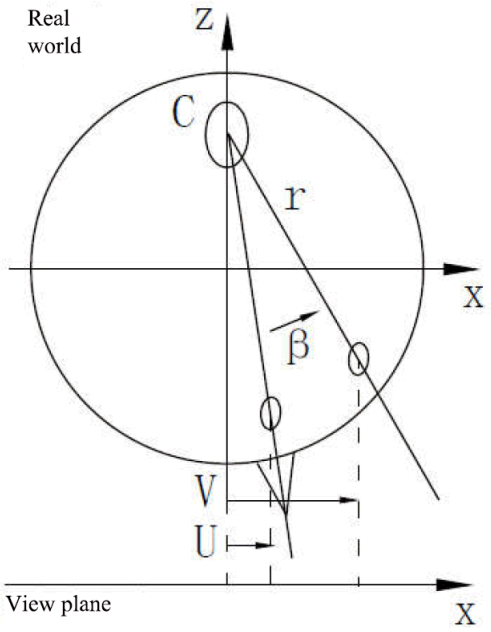
Real
world
z
C
r
x
β
V
U
View plane
x

Fig. 6

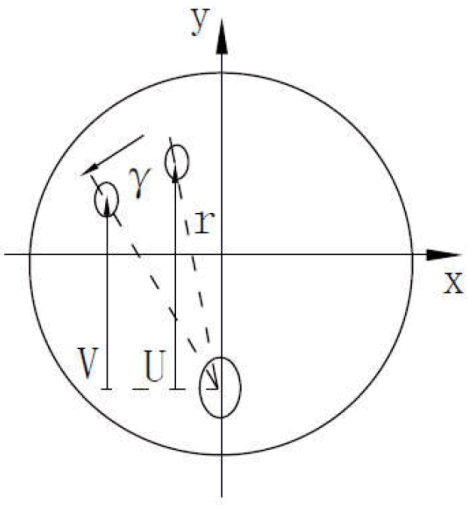

Fig. 7

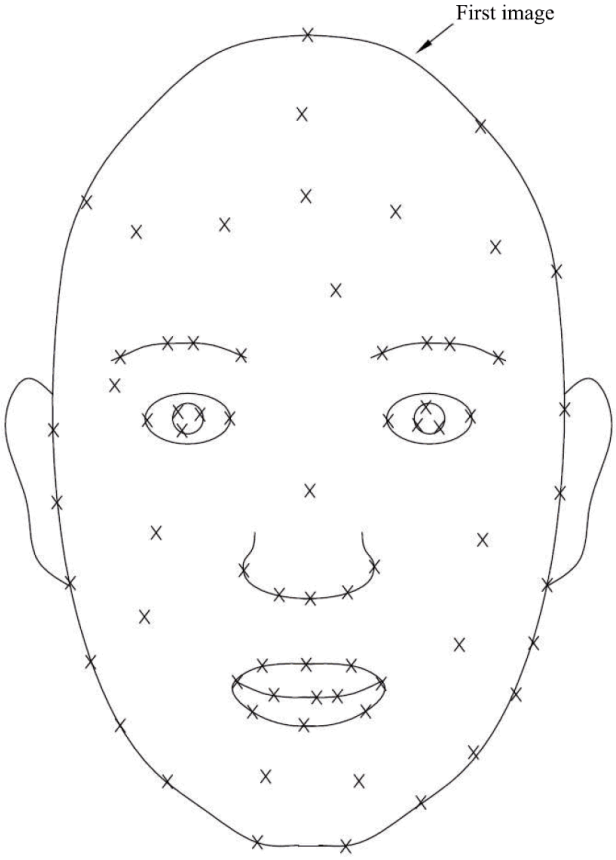

Fig. 8

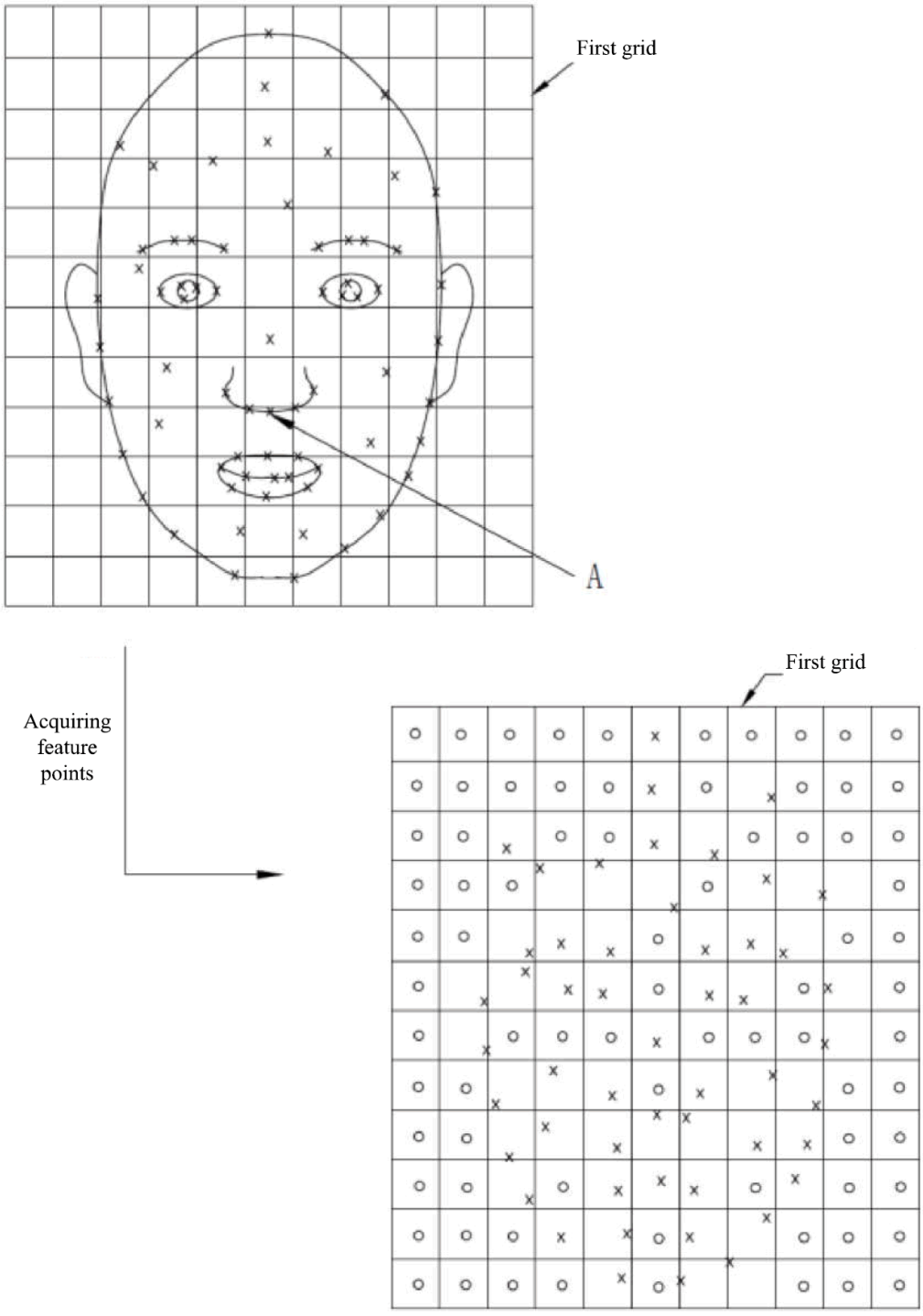

Fig. 9

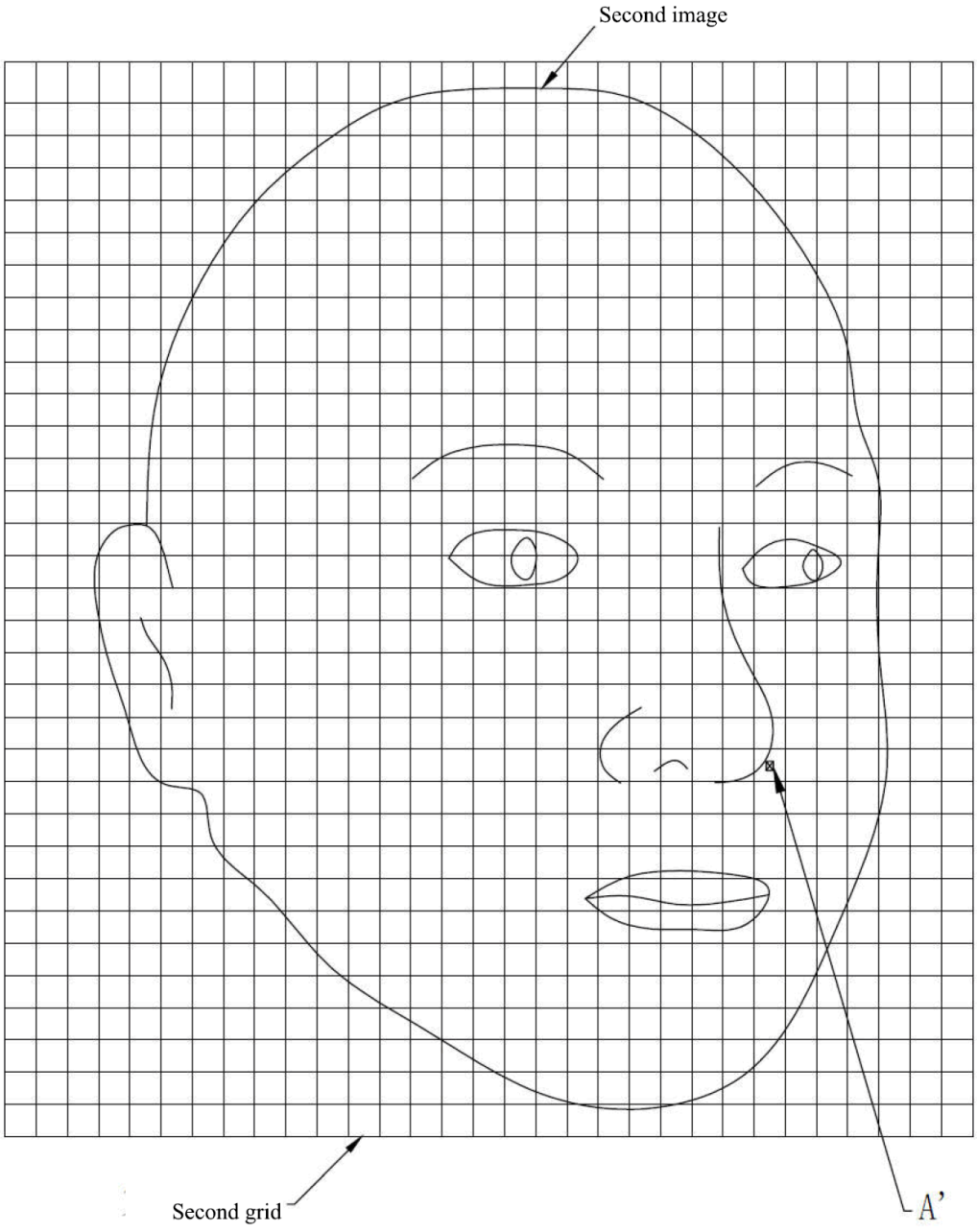

Fig. 10

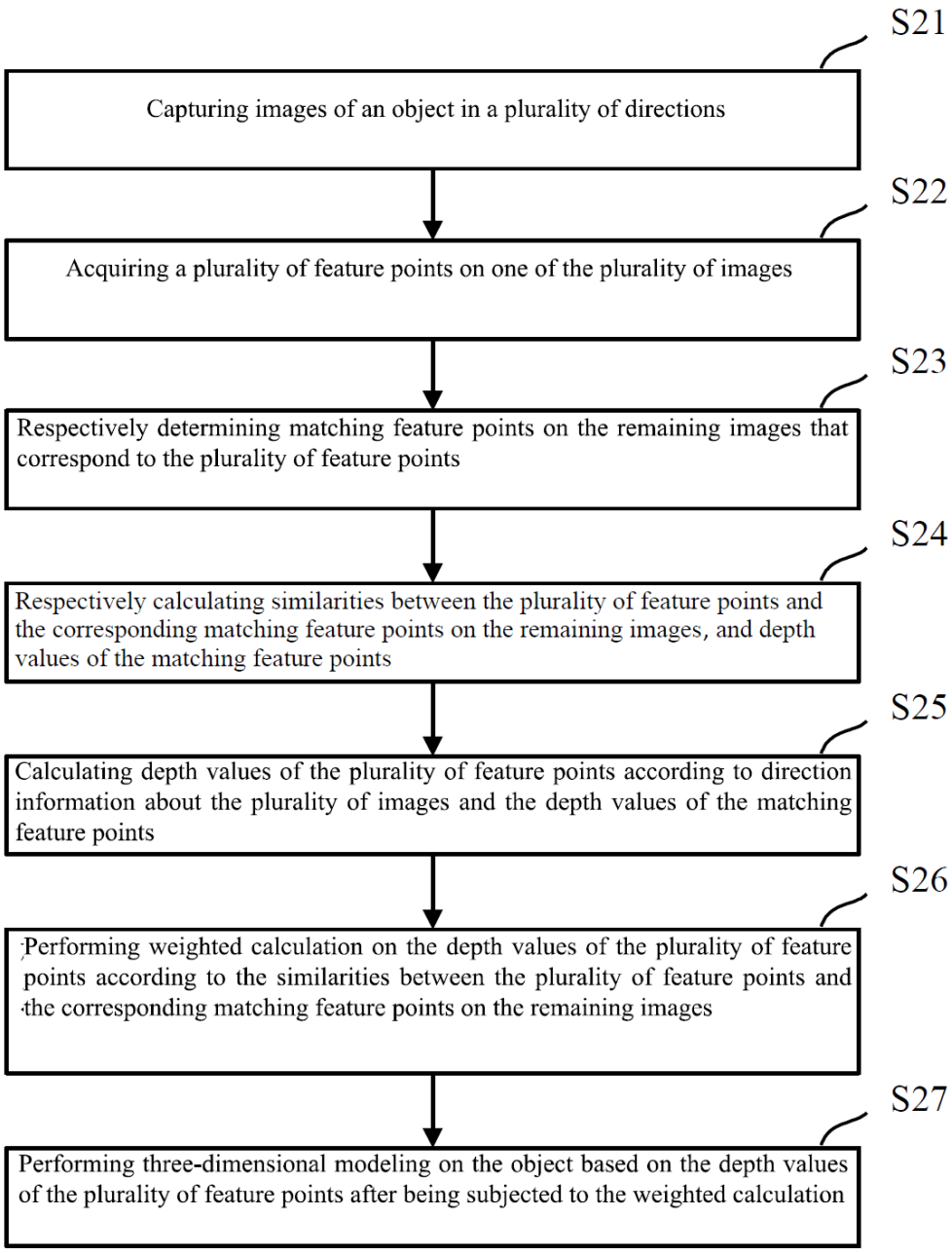
S21
Capturing images of an object in a plurality of directions
S22
Acquiring a plurality of feature points on one of the plurality of images
S23
Respectively determining matching feature points on the remaining images that correspond to the plurality of feature points
S24
Respectively calculating similarities between the plurality of feature points and the corresponding matching feature points on the remaining images, and depth values of the matching feature points
S25
Calculating depth values of the plurality of feature points according to direction information about the plurality of images and the depth values of the matching feature points
S26
Performing weighted calculation on the depth values of the plurality of feature points according to the similarities between the plurality of feature points and the corresponding matching feature points on the remaining images
S27
Performing three-dimensional modeling on the object based on the depth values of the plurality of feature points after being subjected to the weighted calculation

Fig. 11

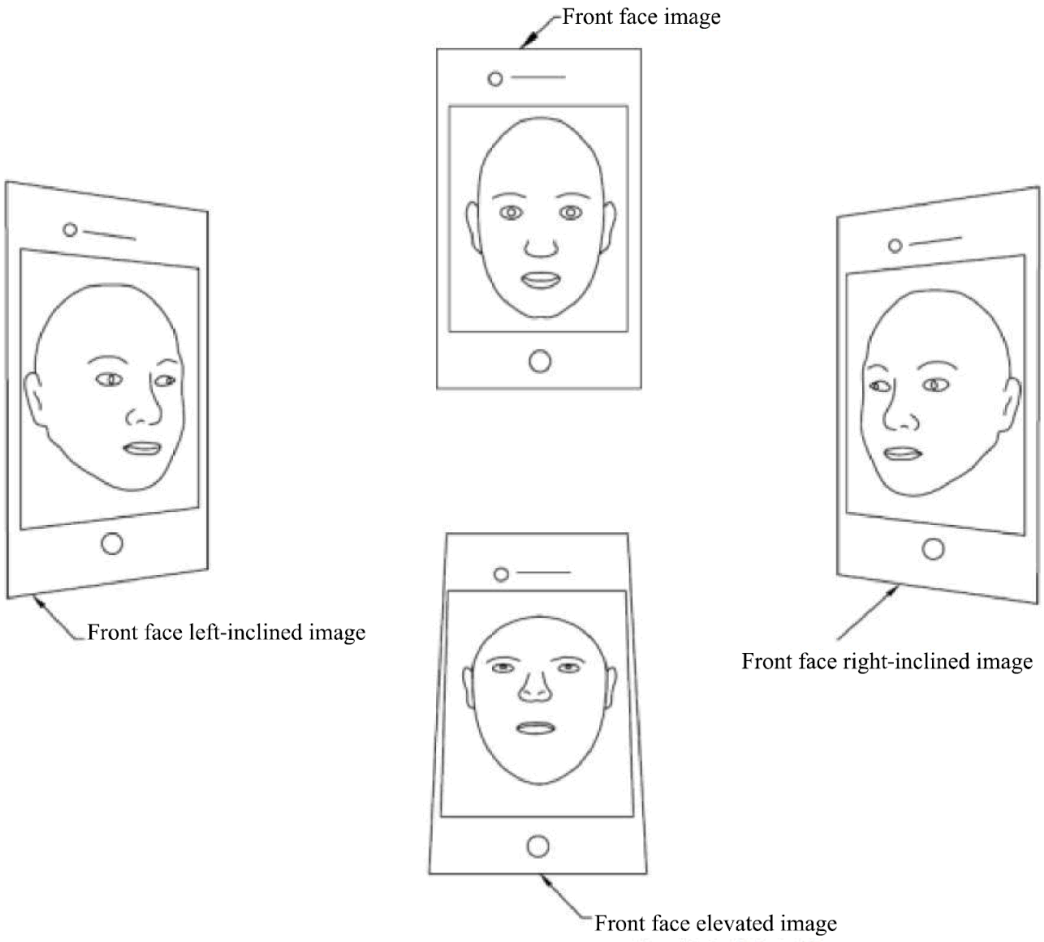
Front face image
Front face left-inclined image
Front face right-inclined image
Front face elevated image

Fig. 12

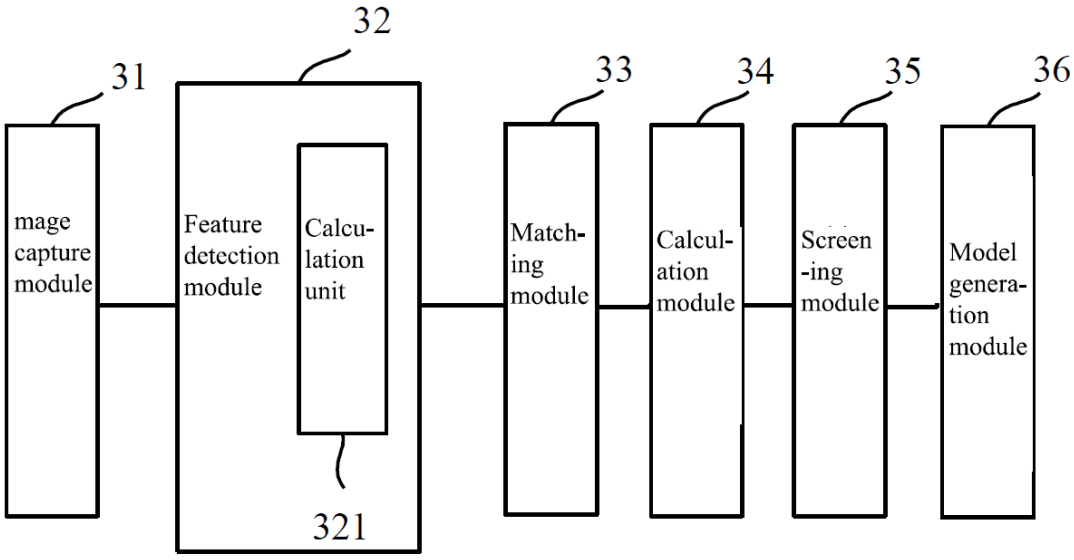
31
32
33
34
35
36
mage capture module
Feature detection module
Calcu-lation unit
321
Match-ing module
Calcul-ation module
Screen -ing module
Model genera-tion module

Fig. 13