WHAT IS CLAIMED IS:

1. A parts fastening system using a cooperative robot that fastens a plurality of module parts to a fastening target, the system comprising:

a jig configured to load the plurality of module parts disposed at different predetermined positions on the jig;

a loading robot configured to grip the plurality of module parts loaded on the jig, and to move and align the plurality of module parts to a fastening area in which the plurality of module parts are fastened to the fastening target;

a fastening robot including a first camera, the fastening robot configured to fasten the plurality of module parts to the fastening target; and

a control device configured to control movements of the loading robot and the fastening robot,

wherein the control device is further configured to perform position-based control of the loading robot to grip each module part, and the position-based control is a control that a position at which each module part is to be gripped is stored in advance and each module part is gripped based on the stored position information without using a camera.

2. The system of claim 1, further comprising:

a parts supply robot configured to load the plurality of module parts to the different predetermined positions on the jig.

3. The system of claim 1 or claim 2, wherein

when the loading robot aligns the plurality of module parts to the fastening target, the control device controls the loading robot using the first camera.

4. The system of any one of claims 1 to 3, wherein

the jig includes a proximity sensor configured to detect whether the plurality of module

parts are loaded on the jig.

5. The system of claim 4, wherein

the control device is configured to receive a detection signal from the proximity sensor to determine whether the plurality of module parts are loaded on the jig.

6. The system of claim 2, wherein

the loading robot is disposed in a first intermediate area away from a driving radius of the parts supply robot such that the loading robot does not physically interfere with a movement of the parts supply robot while the parts supply robot loads the plurality of module parts on the jig.

7. The system of any one of claims 1 to 6, wherein

the jig is formed such that the plurality of module parts are disposed at the different predetermined positions according to a shape of each module part.

8. A parts fastening method using a cooperative robot that fastens a plurality of module parts to a fastening target, the method comprising:

a determination process of determining whether the plurality of module parts are loaded at different predetermined positions on a jig;

a gripping process of controlling a loading robot to grip the plurality of module parts;

an alignment process of controlling the loading robot to align the plurality of module parts with the fastening target in a fastening area; and

a fastening process of controlling a fastening robot to fasten the plurality of module parts to the fastening target,

wherein the gripping process is performed by position-based control of the loading robot to grip each module part, and the position-based control is a control that a position at which each module part is to be gripped is stored in advance and each module part is gripped based on the stored position information without using a camera.

9. The method of claim 8, wherein

the alignment process is performed by controlling the loading robot based on vision information collected using a first camera disposed on the fastening robot.

10. The method of claim 8 or claim 9, wherein

the fastening process includes:

a partial fastening process in which the fastening robot fastens only a portion of a plurality of fastening parts connecting the plurality of module parts and the fastening target;

a retraction process performed after the partial fastening process, in which the loading robot retracts from the fastening area; and

a remaining fastening process performed after the retraction process, in which the fastening robot fastens a remaining portion of the plurality of fastening parts.

11. The method of any one of claims 8 to 10, further comprising:

a loading process of controlling a parts supply robot to load the plurality of module parts at the different predetermined positions on the jig before the determination process.

12. The method of claim 11, wherein

the loading process is performed while one or both of the alignment process and the fastening process are performed.

13. The method of any one of claims 8 to 12, wherein

the determination process includes determining whether the plurality of module parts are loaded at the different predetermined positions using a proximity sensor disposed on the jig.