**WHAT IS CLAIMED IS:**

1. A part support apparatus for supporting a plurality of parts which form a product by being connected to each other, comprising:

a plurality of support robots arranged in a work space and configured to support the plurality of parts;

a control unit configured to control the plurality of support robots; and

a storage unit configured to store a form pattern of each support robot corresponding to a type of a product,

wherein each of the plurality of support robots includes:

a support unit configured to support a part; and

a multiaxial robot to which the support unit is attached, and which changes a posture and position of the support unit, and

the control unit controls the posture and position of each support unit by the multiaxial robot based on the form pattern, such that the plurality of parts are arranged to be connectable to each other in the work space.

2. The apparatus according to claim 1, wherein the plurality of support robots include:

first support robots arrayed on one side of the work space; and

second support robots arrayed on the other side of the work space.

3. The apparatus according to claim 2, further comprising a frame configured to define the work space,

wherein the one side is an upper portion of the work space,

the other side is a lower portion of the work space, and

the frame includes:

an upper frame configured to support the first support robots; and

a lower frame configured to support the second support

robots.

4. The apparatus according to claim 1, further comprising a fixing unit configured to fix the plurality of parts arranged in the work space to each other.

5. The apparatus according to claim 4, wherein the fixing unit is a welding unit configured to weld the parts to each other.

6. The apparatus according to claim 1, further comprising a frame configured to define the work space,

wherein the frame defines an opening through which the plurality of parts or the product is permitted to move between an inside and outside of the work space.

7. The apparatus according to claim 6, wherein the frame includes a support portion configured to array all or some of the plurality of support robots in a predetermined direction.

8. The apparatus according to claim 1, wherein the support unit includes a support portion in which a part is set,

each multiaxial robot includes an attaching portion to which the support unit is detachably attached, and

the attaching portion includes:

a positioning portion configured to position the support unit; and

a lock mechanism configured to lock the positioned support unit to the multiaxial robot.

9. A part support apparatus for supporting a plurality of parts which form a product by being connected to each other, comprising:

a frame configured to define a work space in which the plurality of parts are arranged;

a plurality of support robots arranged in the work space and configured to support the plurality of parts; and

a control unit configured to control the plurality of support robots,

wherein each of the plurality of support robots includes:

a support unit configured to support a part; and

an articulated robot to which the support unit is attached, and which changes a posture and position of the support unit,

the control unit controls, before any of the support units supports a part, the posture and position of each support unit by the articulated robot based on a form pattern, such that the plurality of parts are arranged to be connectable to each other in the work space, and maintains the posture and position of all of the support units which support parts during connecting work for the plurality of parts, and

the plurality of support robots includes:

an upper group of a plurality of support robots which are arranged in one row in a width direction of the work space and are supported by the frame in an upper side of the work space; and

a lower group of a plurality of support robots which are arranged in one row in the width direction of the work space and are supported by the frame in lower side of the work space.

10. A method of manufacturing a product formed by connecting a plurality of parts to each other, comprising:

arranging the plurality of parts by a plurality of support robots in positions where the plurality of parts are connectable to each other in a work space;

connecting the plurality of parts arranged in the arranging to each other; and

setting information of the plurality of parts and information of the product,

wherein each of the plurality of support robots includes:

a support unit configured to support a part; and

a multiaxial robot to which the support unit is attached, and which changes a posture and position of the support unit,

the arranging includes controlling the posture and

position of each support unit by the multiaxial robot based on the information, such that each of the plurality of parts is placed in the position, and

the work space is defined by a frame, and

the method further comprises:

setting each of the plurality of parts in the support unit before or after the controlling;

loading the plurality of parts from outside the work space to inside the work space through an opening defined by the frame; and

unloading the product from inside the work space to outside the work space through the opening.

11. The method according to claim 10, wherein the arranging includes initially controlling the posture and position of the support unit for supporting a reference part of the plurality of parts.

12. A method of manufacturing a product formed by connecting a plurality of parts to each other, comprising:

arranging the plurality of parts by a plurality of support robots in positions where the plurality of parts are connectable to each other in a work space;

connecting the plurality of parts arranged in the arranging to each other; and

setting information of the plurality of parts and information of the product,

wherein each of the plurality of support robots includes:

a support unit configured to support a part; and

a multiaxial robot to which the support unit is attached, and which changes a posture and position of the support unit,

the arranging includes controlling the posture and position of each support unit by the multiaxial robot based on the information, such that each of the plurality of parts is placed in the position, and

the method further comprises replacing the support unit

based on the information.

13. A method of manufacturing a product formed by connecting a plurality of parts to each other, comprising:

arranging the plurality of parts by a plurality of support robots in positions where the plurality of parts are connectable to each other in a work space;

connecting the plurality of parts arranged in the arranging to each other; and

setting information of the plurality of parts and information of the product,

wherein each of the plurality of support robots includes:

a support unit configured to support a part; and

a multiaxial robot to which the support unit is attached, and which changes a posture and position of the support unit,

the arranging includes controlling the posture and position of each support unit by the multiaxial robot based on the information, such that each of the plurality of parts is placed in the position,

the product is a piping product, and

each of the plurality of parts is a cylindrical part forming a portion of the piping product.