

CLAIMS

5 I claim:

1. In a computerized environment comprising a computer system that receives user design input, a computerized method for automatically resolving joint anomalies within digital joints of an architectural design, wherein such digital joints are representative of physical joints manufacturable in a millwork facility, the method comprising:

receiving a digital architectural design comprising a first furniture sub-component, a second furniture sub-component, and a third furniture sub-component;

15 identifying, with a computer processor, a first joint between the first furniture sub-component and the second furniture sub-component, a second joint between the second furniture sub-component and the third furniture sub-component, a third joint between the third furniture sub-component and the first furniture sub-component, wherein the received digital architectural design includes a particular type of joint corresponding to each of the first joint, the second joint, and the third joint;

identifying an anomaly at the intersection of the first joint, the second joint, and the third joint, wherein the anomaly is created when the first joint, the second joint, and the third joint fail to create a proper corner; and

25 automatically resolving the anomaly by changing the shape or orientation of at least one of the first joint, the second joint, or the third joint within the digital architectural design, and sending rendering instructions to a display device for visually displaying the corrected anomaly.

30

2. The method as recited in claim 1, wherein each of the first furniture sub-component, the second furniture sub-component, and the third furniture sub-component is associated with a respective independently executable software object.

5

3. The method as recited in claim 2 further comprising:
accessing the independently executable software object that is associated with the second furniture sub-component;
determining one or more types of joints that are compatible with the second
furniture sub-component; and
changing the type of the second joint to one of the one or more types of compatible joints.

10

4. The method as recited in claim 2 further comprising:
accessing the independently executable software object that is associated with the third furniture sub-component;
determining one or more types of joints that are compatible with the third furniture sub-component; and
changing the type of the third joint to one of the one or more types of compatible joints.

15

20

5. The method as recited in claim 1 further comprising:
determining that the first joint is preferred; and
automatically resolving the anomaly by changing the type of at least one of
the second joint or the third joint.

25

6. The method as recited in claim 5 wherein determining that the first joint is preferred comprises receiving an indication from a user that the first joint is preferred.

30

7. The method as recited in claim 5 wherein determining that the first joint is preferred further comprises determining that the first joint was created before the second joint and the third joint.

8. The method as recited in claim 5 wherein determining that the first joint is preferred further comprises determining that the first joint was created after the second joint and the third joint.

10

9. The method as recited in claim 5 wherein determining that the first joint is preferred further comprises:

identifying one or more additional joints within the architectural design;
determining a joint type associated with each of the one or more additional joints; and

15

determining that the first joint is the same type of joint as the one or more additional joints.

10. The method as recited in claim 1 further comprising:
generating a computer numerical code file that corresponds with the architectural design, including the changed first, second, or third joint.

20

11. In a computer-based system comprising one or more processors for receiving and processing user design input, a computerized method for automatically resolving joint anomalies within digital joints of an architectural design, wherein such digital joints are representative of physical joints manufacturable in a millwork facility, the method comprising:

analyzing, with a computer processor, digital architectural design input received from a user, the digital architectural design input comprising a first furniture sub-component, a second furniture sub-component, and a third furniture sub-component, wherein the first furniture sub-component, the second furniture sub-component, and the third furniture sub-component are each associated with one or more independently executable software objects;

identifying a first joint between the first furniture sub-component and the second furniture sub-component, a second joint between the second furniture sub-component and the third furniture sub-component, a third joint between the third furniture sub-component and the first furniture sub-component, wherein the received digital architectural design includes a particular type of joint corresponding to each of the first joint, the second joint, and the third joint;

identifying an anomaly at the intersection of the first joint, the second joint, and the third joint, wherein the anomaly is created when the first joint, the second joint, and the third joint fail to create a proper corner;

determining one or more joint specifications that are compatible with the architectural design from information retrieved from the one or more independently executable software objects;

creating an updated digital architectural design with an automatic resolution of the anomaly by changing the type of at least one of the first joint, the second joint, or the third joint to comprise a revised joint that conforms with the one or more joint specifications; and

storing the updated digital architectural design in a format acceptable to a millwork facility.

5 12. The system as recited in claim 11 further comprising:
 determining that the first joint is preferred; and
 automatically resolving the anomaly by changing the type of at least one of
 the second joint or the third joint.

10 13. The system as recited in claim 12 wherein determining that the first joint is
 preferred comprises receiving an indication from a user that the first joint is preferred.

 14. The system as recited in claim 12 wherein determining that the first joint is
 preferred further comprises determining that the first joint was created before the second
15 joint and the third joint.

 15. The system as recited in claim 12 wherein determining that the first joint is
 preferred further comprises determining that the first joint was created after the second
 joint and the third joint.

20

 16. The system as recited in claim 12 wherein determining that the first joint is
 preferred further comprises:

 identifying one or more additional joints within the architectural design;
 determining a joint type associated with each of the one or more additional
25 joints; and

 determining that the first joint is the same type of joint as the one or more
 additional joints.

17. The system as recited in claim 11 further comprising:
identifying one or more additional joints within the architectural design;
determining the type of joint associated with each of the one or more
5 additional joints; and
automatically resolving the anomaly by changing the type of at least one of
the first joint, the second joint, or the third joint to comprise a revised joint that
matches one of the determined type of joints.
- 10 18. The system as recited in claim 17 wherein the one or more additional joints
within the architectural design are joints adjacent to the first joint, the second joint, or the
third joint.
- 15 19. The system as recited in claim 17 wherein the one or more additional joints
within the architectural design are joints framing the same furniture sub-component as the
first joint, the second joint, or the third joint.

20. In a computerized environment comprising one or more computer systems having one or more processors, one or more physical storage media comprising computer executable instructions that, when executed by the one or more processors cause the one or more computer systems to automatically resolve joint anomalies within digital joints of an architectural design, wherein such digital joints are representative of physical joints manufacturable in a millwork facility, the one or more processors performing the following:

receiving a digital architectural design comprising a first furniture sub-component, a second furniture sub-component, and a third furniture sub-component;

identifying a first joint between the first furniture sub-component and the second furniture sub-component, a second joint between the second furniture sub-component and the third furniture sub-component, a third joint between the third furniture sub-component and the first furniture sub-component, wherein the received digital architectural design includes a particular type of joint corresponding to each of the first joint, the second joint, and the third joint;

identifying an anomaly at the intersection of the first joint, the second joint, and the third joint, wherein the anomaly is created when the first joint, the second joint, and the third joint fail to create a proper corner; and

automatically resolving the anomaly by changing the type of at least one of the first joint, the second joint, or the third joint within the digital architectural design, and sending rendering instructions to a display device for visually displaying the corrected anomaly.