CLAIMS

What is claimed is:

1. A method of injecting laser-blocking material into a workpiece comprising:

placing a workpiece in an enclosed environment;

connecting a laser-blocking material inlet connection and outlet connection to the workpiece;

subjecting the workpiece to an at least partial vacuum within the enclosed environment; and

communicating a molten laser-blocking material into the workpiece through the laser-blocking material inlet connection while subjecting the workpiece to the at least partial vacuum such that air bubbles in the laser-blocking material are expanded and transported out of workpiece through the laser-blocking material outlet connection.

2. The method as recited in claim 1, wherein the workpiece is an airfoil.

3. The method as recited in claim 1, wherein the workpiece is a blade.

4. The method as recited in claim 1, wherein the workpiece is a High Pressure Turbine blade.

5. The method as recited in claim 1, further comprising:

determining that the molten laser-blocking material within the workpiece is air bubble free; and

shutting down the flow of laser-blocking material once the molten laser-blocking material within the workpiece is air bubble free.

6. The method as recited in claim 5, further comprising:

hardening the laser-blocking material; and

laser drilling the airfoil.

7. The method as recited in claim 6, further comprising

removing the hardened laser-blocking material from the laser drilled airfoil.

8. A system, comprising:

an enclosed environment operable to contain a workpiece;

an inlet connection to communicate a laser-blocking material into the workpiece within said enclosed environment; and

an outlet connection to communicate the laser-blocking material from the workpiece within said enclosed environment as the workpiece is subjected to an at least partial vacuum within the enclosed environment such that the partial vacuum expands air bubbles in the laser-blocking material and the air bubbles are transported out of the workpiece.

9. The system as recited in claim 8, wherein said laser-blocking material is an epoxy resin.

10. The system as recited in claim 8, wherein said laser-blocking material is a wax.

11. The system as recited in claim 8, wherein the workpiece is an airfoil.

12. The system as recited in claim 8, wherein the workpiece is a blade.

13. The system as recited in claim 8, wherein the workpiece is a High Pressure Turbine blade.

14. A workpiece, comprising:

a hardened, air bubble free, laser-blocking material within a passageway of the workpiece.

15. The laser-blocking material as recited in claim 15, wherein said laser-blocking material is an epoxy resin.

16. The laser-blocking material as recited in claim 15 wherein said laser-blocking material is a wax.

17. The laser-blocking material as recited in claim 15 wherein said workpiece is an airfoil.

18. The laser-blocking material as recited in claim 15 wherein said workpiece is a High Pressure Turbine blade.

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What is claimed is:

1. A method of injecting laser-blocking material into a workpiece comprising:

placing a workpiece in an enclosed environment;

connecting a laser-blocking material inlet connection and outlet connection to the workpiece;

subjecting the workpiece to an at least partial vacuum within the enclosed environment; and

communicating a molten laser-blocking material into the workpiece through the laser-blocking material inlet connection while subjecting the workpiece to the at least partial vacuum such that air bubbles in the laser-blocking material are expanded and transported out of workpiece through the laser-blocking material outlet connection.

2. The method as recited in claim 1, wherein the workpiece is an airfoil.

3. The method as recited in claim 1, wherein the workpiece is a blade.

4. The method as recited in claim 1, wherein the workpiece is a High Pressure Turbine blade.

5. The method as recited in claim 1, further comprising:

determining that the molten laser-blocking material within the workpiece is air bubble free; and

shutting down the flow of laser-blocking material once the molten laser-blocking material within the workpiece is air bubble free.

6. The method as recited in claim 5, further comprising:

hardening the laser-blocking material; and

laser drilling the airfoil.

7. The method as recited in claim 6, further comprising

removing the hardened laser-blocking material from the laser drilled airfoil.

8. A system, comprising:

an enclosed environment operable to contain a workpiece;

an inlet connection to communicate a laser-blocking material into the workpiece within said enclosed environment; and

an outlet connection to communicate the laser-blocking material from the workpiece within said enclosed environment as the workpiece is subjected to an at least partial vacuum within the enclosed environment such that the partial vacuum expands air bubbles in the laser-blocking material and the air bubbles are transported out of the workpiece.

9. The system as recited in claim 8, wherein said laser-blocking material is an epoxy resin.

10. The system as recited in claim 8, wherein said laser-blocking material is a wax.

11. The system as recited in claim 8, wherein the workpiece is an airfoil.

12. The system as recited in claim 8, wherein the workpiece is a blade.

13. The system as recited in claim 8, wherein the workpiece is a High Pressure Turbine blade.