CLAIMS

What is claimed is:

1. A system for twisting at least one hollow bar, comprising:

at least one supporting device for supporting and fixing one end of the hollow bar;

at least one connector, wherein one end of the connector is engaged with the other end of the hollow bar; and

at least one twisting device configured to rotate at a predetermined speed for providing a torque to the hollow bar, wherein the twisting device has at least one shaft having at least one pivoted point to which the other end of the connector is mechanically connected such that the twist force applied to the other end of the hollow bar alters the muscle memories of the hollow bar without distorting a physical structure and a cross sectional shape of the hollow bar.

2. The system of claim 1, wherein the supporting device has at least one supporting portion comprising a lower support bracket and an upper support bracket, the supporting portion configured for supporting one end of the hollow bar.

3. The system of claim 2, wherein the supporting device has one or more fixing elements for firmly fixing the one end of the hollow bar when inserted into the supporting portion.

4. The system of claim 1, wherein the supporting portion has an opening which is shaped to hold a specified hollow bar.

5. The system of claim 1, wherein the shaft is connected to at least one motor.

6. The system of claim 1, wherein the twisting device functions to twist the hollow bar so that the hollow bar retains a twist shape after being twisted beyond the elasticity limit of the hollow bar.

7. The system of claim 1, wherein the twist force is applied to the connector.

8. The system of claim 1, wherein the connector is an external connector comprising a pivoting bracket, the external connector configured to enclose an end of the hollow bar.

9. The system of claim 8, wherein the other end of the hollow bar is slotted into the pivoting bracket.

10. The system of claim 1, wherein the connector is an internal connector configured for insertion into the hollow bar, the internal connector comprising a pivoting bracket and a guide bar.

11. The system of claim 10, wherein the pivoting bracket is configured for insertion into the hollow bar and the guide bar is configured for insertion into the pivoting bracket.

12. A method for twisting a hollow bar, comprising:

fixing one end of the hollow bar in at least one supporting device;

connecting the other end of the hollow bar to one end of at least one connector;

inserting other end of the connector to at least one pivoting point in a shaft of at least one twisting device, wherein the shaft is connected to a motor;

rotating the twisting device at a predetermined speed so as to produce a first twisting force in a first direction to over twist the hollow bar; and

providing a second twisting force in a second direction, opposite to the first direction so as to produce a required twist of the hollow bar.

13. The system of claim 12, wherein the step of connecting the other end of the hollow bar comprises the step of inserting the connector into the hollow bar.

14. The system of claim 13, wherein the outside surface of the connector generally conforms to the inside surface of the hollow bar.

15. The system of claim 12, wherein the step of connecting the other end of the hollow bar comprises the step of enclosing the other end of the hollow bar in the connector.

16. The system of claim 15, wherein the outside surface of the connector conforms to the inside surface of the hollow bar.

17. A method for producing a twist in a hollow bar, the method comprising the steps of:

over twisting the hollow bar in a first direction so as to change muscle memories of the hollow bar; and

twisting the hollow bar in a direction opposite to first direction so as to achieve a predetermined degree of twist in the hollow bar without requiring supports to retain the predetermined degree of twist.

CLAIMS

What is claimed is:

1. A system for twisting at least one hollow bar, comprising:

at least one supporting device for supporting and fixing one end of the hollow bar;

at least one pivoting bracket which is sized and shaped for insertion into the hollow bar; and

at least one twisting device configured to rotate at a predetermined speed and degree for providing a torque to the hollow bar;

wherein the twisting device has at least one shaft having at least one pivoted point to which one end of at least one guide bar is mechanically connected such that the twist force applied to the other end of the hollow bar alters the shape memories of the hollow bar by maintaining a cross sectional shape of the hollow bar;

wherein the guide bar is sized and shaped for insertion into a hole in the pivoted point;

wherein the outside surface of the guide bar is the same size and shape as inside surface of a hole of the pivoting bracket; and

wherein during operation the pivoting bracket is placed into an opening of the hollow bar and engaged with the guide bar.

2. The system of claim 1, wherein the supporting device has at least one supporting portion comprising a lower support bracket and an upper support bracket, the supporting portion configured for supporting one end of the hollow bar.

3. The system of claim 2, wherein the supporting device has one or more fixing elements for firmly fixing the one end of the hollow bar when inserted into the supporting portion.

4. The system of claim 1, wherein the supporting portion has an opening which is shaped to hold a specified hollow bar.

5. The system of claim 1, wherein the shaft is connected to at least one motor.

6. The system of claim 1, wherein the twisting device functions to twist the hollow bar so that the hollow bar retains a twist shape after being twisted beyond the elasticity limit of the hollow bar.

7. The system of claim 1, wherein the twist force is applied to the connector.

8. The system of claim 1, wherein the connector is an external connector comprising a pivoting bracket, the external connector configured to enclose an end of the hollow bar.

9. The system of claim 8, wherein the other end of the hollow bar is slotted into the pivoting bracket.

10. The system of claim 1, wherein the connector is an internal connector configured for insertion into the hollow bar, the internal connector comprising a pivoting bracket and a guide bar.

11. The system of claim 10, wherein the pivoting bracket is configured for insertion into the hollow bar and the guide bar is configured for insertion into the pivoting bracket.

12. A method for twisting a hollow bar, comprising:

fixing one end of the hollow bar in at least one supporting device;

connecting the other end of the hollow bar to one end of at least one pivoting bracket;

connecting the other end of the pivoting bracket to one end of at least one guide bar;

connecting the other end of the guide bar to at least one pivoting point in a shaft of at least one twisting device, wherein the shaft is connected to a motor;

rotating the twisting device at a predetermined speed so as to produce a first twisting force in a first direction to over twist the hollow bar to change the shape memories of the hollow bar; and

providing a second twisting force in a second direction, opposite to the first direction so as to produce a required twist of the hollow bar.

13. The system of claim 12, wherein the step of connecting the other end of the hollow bar comprises the step of inserting the connector into the hollow bar.

14. The system of claim 13, wherein the outside surface of the connector generally conforms to the inside surface of the hollow bar.

15. The system of claim 12, wherein the step of connecting the other end of the hollow bar comprises the step of enclosing the other end of the hollow bar in the connector.

16. The system of claim 15, wherein the outside surface of the connector conforms to the inside surface of the hollow bar.