What is Claimed is:

1. A mixing system for mixing components in a vessel having a top portion and a bottom portion, comprising:

a fixed conduit connected to the top portion of the vessel that extends at least partially to the bottom portion;

a rotating shaft having a first end and a second end disposed within said fixed conduit that rotates within said fixed conduit while the mixing system is in operation, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller;

a seal disposed within said space;

an impeller connected to said rotating shaft at said second end, said impeller comprising:

a central disk portion having a center axis;

at least a pair of extensions extending at an angle from the central disk portion; and

at least two leading edges defined by an outer periphery of the central disk portion, each leading edge spanning from one extension to an adjacent extension, and each leading edge having at least a portion at which the radius of the leading edge from the center axis increases to form a continuous increasing radius curve.

~~2. The mixing system according to claim 1, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller.~~

~~3. The mixing system according to claim 1 or 2, further comprising a seal disposed within said space.~~

4.2.The mixing system according to any of claims 1 to 3, wherein said stationary conduit is a thin wall lightweight stationary conduit.

5.3.The mixing system according to any of the preceding claimsclaim 1 or 2, wherein the rotating shaft is connected to a mixer motor.

6.4.The mixing system according to any of the preceding claims, wherein said fixed conduit is mounted to a base plate.

7.5.The mixing system according to any of the preceding claims, wherein each leading edge has at least a portion having an outward increasing spiral profile.

8.6.The mixing system according to any of the preceding claims, wherein the central disk portion lies substantially in a plane, and each extension projects away from the disk at an angle relative to the plane.

9.7.The mixing system according any of the preceding claims, wherein the number of extensions comprises two and the number of leading edges comprises two, and wherein the extensions and the leading edges are symmetrical with each other.

10.8. The mixing system according to any of claims 1 to 86, wherein the number of extensions comprises at least three and the number of leading edges comprises at least three, and wherein the extensions and the leading edges are symmetrical with each other.

~~11.~~9. The mixing system according to any of the preceding claims, further comprising a hub mounted to the central disk portion to facilitate mounting of the impeller onto the rotating shaft.

~~12.~~10. A mixing apparatus, comprising:

a motor mounted to a mounting plate;

a fixed conduit connected to mounting plate;

a rotating shaft having a first end and a second end that is disposed within said fixed conduit that rotates within said fixed conduit wherein said first end is connected to said motor, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller;

a seal disposed within said space; and

an impeller connected to said second end of said rotating shaft.

~~13. The mixing system according to claim 12, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller.~~

~~14. The mixing system according to claim 12 or 13, further comprising a seal disposed within said space.~~

~~15.~~11. The mixing system according to ~~any of~~ claim~~s 12 to 14~~10, wherein said stationary conduit is ~~is~~ a thin wall lightweight stationary conduit.

~~16.~~12. The mixing apparatus according to ~~any of~~ claim~~s 12 to 15~~ 10 or 11, wherein said impeller comprises:

a central disk portion having a center axis;

at least a pair of extensions extending at an angle from the central disk portion; and

at least two leading edges defined by an outer periphery of the central disk portion, each leading edge spanning from one extension to an adjacent extension, and each leading edge having at least a portion at which the radius of the leading edge from the center axis increases to form a continuous increasing radius curve.

~~17.~~13. The mixing system according to claim ~~16~~12, wherein each leading edge has at least a portion having an outward increasing spiral profile.

~~18.~~14. The mixing system according to claim ~~16~~12 or ~~17~~13, wherein the central disk portion lies substantially in a plane, and each extension projects away from the disk at an angle relative to the plane.

~~19.~~15. A method for treating a material, comprising:

placing the material to be treated in a vessel; and

disposing a rotational shaft within a fixed conduit connected to the vessel, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller;

disposed a seal within said space;

rotationally driving the rotational shaft having an impeller blade attached thereto, the impeller blade comprising:

a central disk portion having a center axis;

at least a pair of extensions extending from the central disk portion; and

at least two leading edges defined by the outer periphery of the central disk portion, each leading edge spanning from one extension to an adjacent extension, and each leading edge having at least a portion at which the radius of the leading edge from the center axis increases to form a continuous increasing radius curve.

~~20.~~16. A mixing system for mixing a fluid or the like in a vessel, comprising:

means for placing the material to be treated in a vessel; and

means for disposing a rotational shaft within a fixed conduit connected to the vessel, wherein said fixed conduit extends to cover said rotating shaft at least partially all the way to create a space between said fixed conduit and said impeller;

means for disposing a seal within said space;

means for rotationally driving the rotational shaft having an impeller blade attached thereto, the impeller blade comprising:

a central disk portion having a center axis;

at least a pair of extensions extending from the central disk portion; and

at least two leading edges defined by the outer periphery of the central disk portion, each leading edge spanning from one extension to an adjacent extension, and each leading edge having at least a portion at which the radius of the leading edge from the center axis increases to form a continuous increasing radius curve.